SENATE—Wednesday, June 19, 1991

(Legislative day of Tuesday, June 11, 1991)

The Senate met at 10 a.m., on the expiration of the recess, and was called to order by the Honorable J. ROBERT KERREY, a Senator from the State of Nebraska.

PRAYER

The Chaplain, the Reverend Richard C. Halverson, D.D., offered the following prayer:

Let us pray:

Blessed be God, even the Father of our Lord Jesus Christ, the Father of mercies, and the God of all comfort; Who comforteth us in all our tribulation, that we may be able to comfort them which are in any trouble, by the comfort wherewith we ourselves are comforted of God.—II Corinthians 1:3,4.

God of all comfort, our hearts join with those of Senator BURNS and his staff in the loss of James Parsons, a brilliant young man, killed in a tragic highway accident last Friday evening on his way to see his parents in New Jersey. We pray that Thou wilt fill their hearts with Your comfort and peace. We remember James' family who, in their grief, find no answers to the question, "Why?". You alone can respond to that profound need in their lives, and we pray for Your comfort to satisfy that need.

In this large Senate family, Father, there are many who are hurting, and most of us are unaware. There are those who are ill, some seriously; some who struggle at their tasks, finding office relationships difficult. Some face the battle with alcohol, in themselves, their spouse or another family member. Many are frustrated, possessed by a sense of futility. There are some for whom life has become meaningless. Gracious Father, for all our hurting friends we pray. Help each of us to be sensitive to the needs of others and wisely respond when the needy need us. May the love of God fill our hearts so that whatever the situation, lonely, hurting people really experience love.

We pray in His name who is incarnate love. Amen.

APPOINTMENT OF ACTING PRESIDENT PRO TEMPORE

The PRESIDING OFFICER. The clerk will please read a communication to the Senate from the President pro tempore [Mr. BYRD].

The assistant legislative clerk read the following letter:

U.S. SENATE,
PRESIDENT PRO TEMPORE,
Washington, DC, June 19, 1991.

To the Senate:

Under the provisions of rule I, section 3, of the Standing Rules of the Senate, I hereby appoint the Honorable J. ROBERT KERREY, a Senator from the State of Nebraska, to perform the duties of the Chair.

ROBERT C. BYRD,
President pro tempore.

Mr. KERREY thereupon assumed the chair as Acting President pro tempore.

RESERVATION OF LEADER TIME

The ACTING PRESIDENT pro tempore. Under the previous order, the leadership time is reserved.

SURFACE TRANSPORTATION EFFICIENCY ACT

The ACTING PRESIDENT pro tempore. The Senate will now resume consideration of S. 1204, which the clerk will report.

The assistant legislative clerk read as follows:

A bill (S. 1204) to amend title 23, United States Code, and for other purposes.

The Senate resumed consideration of the bill.

The ACTING PRESIDENT pro tempore. Under the previous order, the Senator from Mississippi [Mr. LOTT] is recognized to offer an amendment.

Mr. LOTT. Thank you, Mr. President.

AMENDMENT NO. 358

(Purpose: To eliminate language which lowers the Federal share payable for certain projects)

Mr. LOTT. Mr. President, I send an amendment to the desk and ask for its immediate consideration.

The ACTING PRESIDENT pro tempore. The clerk will report.

The assistant legislative clerk read as follows:

The Senator from Mississippi [Mr. LOTT] proposes an amendment numbered 358.

Mr. LOTT. Mr. President, I ask unanimous consent that reading of the amendment be dispensed with.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

The amendment is as follows:

On page 5, line 4, insert "pursuant to section 144 of title 23, United States Code" after "gram".

On page 5, line 11, insert "pursuant to section 119 of title 23, United States Code" after "Highways".

On page 28, strike out lines 2 through 25.

On page 29, line 1, strike out "(c)" and insert in lieu thereof "(a)".

On page 29, line 8, strike out "(d)" and insert in lieu thereof "(b)".

On page 29, line 11, strike out "(e)" and insert in lieu thereof "(c)".

On page 29, line 21, strike out "(f)" and insert in lieu thereof "(d)".

Begining on page 30, strike out line 20 and all that follows through line 4 on page 35.

Mr. LOTT. Mr. President, I would like to inquire first about the division of time.

The ACTING PRESIDENT pro tempore. The time on this amendment will be 15 minutes, equally divided and controlled in the usual form.

Mr. LOTT. Mr. President, let me start off by explaining basically what this amendment would do. It seeks to bring the Federal matching ratios for interstate maintenance and bridges back to current law, which would mean that interstate maintenance would be 90–10, and bridges, all bridges, would be 80–20.

Mr. President, the States are struggling under ever increasing loads already. Many programs that the States have primary responsibility for are increasing in costs. The States are trying to improve themselves in areas as diverse as education, health care, and Medicaid.

We in the Congress and in Washington, for several years now, have been shifting more and more responsibility and costs for our programs back to the States. And there has been a lot of debate about that. I personally have voted many times to shift some of those responsibilities and costs back to the State and local level.

All that is fine, up to a point. Some of the programs that we have run and funded from Washington for several years truly are State and local in nature, and they should be held responsible and they should bear the costs for those programs. But in this bill, we are talking about the Federal highway bill, we are talking about interstate highways and interstate maintenance and bridges.

One of the important things about this bill is the support that we do provide for bridges. Bridges are extremely expensive. I know in my own State, we have the need for some bridges. One of them is $35 million; another $50 million; another $55 million; very expensive items which are expensive to build and they are expensive to maintain. So it is very important that we not shift more of the burden for these highways, these Federal highways, these interstate highways, back to the States.

We are, in effect, saying, "Look; we will build these interstate highways,

• This "bullet" symbol identifies statements or insertions which are not spoken by a Member of the Senate on the floor.

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but you are going to have to bear an even greater responsibility for maintaining them as they deteriorate and need repair."

But the intent of this amendment, I want to emphasize, is only to keep the current law. I am not trying to lower the States' share. I am not trying to show preference to one region over another. And I recognize and fully acknowledge that the committee members in the committee bill came up with a formula that is more favorable to the States with regard to some of the rural highways, the off Interstate Highway System, and that is great. I commend them for it. I do not deal with this. My amendment only effects these two areas where the burden is going up.

The amendment would not change any other ratios except for interstate maintenance and bridges. It would produce a Federal matching average of approximately 81 percent for the entire bill, which is only slightly lower than current law, an average of 83 percent. The Moynihan bill produces a Federal matching average of approximately 79 percent.

Now, you might say you are only talking about 2 or 3 percent; what is the big deal? When you are talking of hundreds of millions of dollars, in fact, billions of dollars, it makes a lot of difference. And the poor States, the rural States, are not able to come up with 25 percent matching, in many instances, of these $30 and $40 million projects.

I think that this question of Federal matching ratios has kind of been lost in the debate because we got so tangled up over the formula of allocation, and that is understandable. But if you talk to your Governors, if you talk to your State highway commissioners, they will tell you this is a very important item. In fact, they would probably tell you it is one of the two most important items in this legislation: The allocation formula and the Federal matching share.

Some people will say, well, the administration is opposed to this; the administration has come up with legislation that would raise the States' share. I know that. I fully understand that, and I try, whenever possible, to support the administration when they make recommendations for legislation.

But this is much more important than one branch of the Government saying: We have to have it. It is much more important than partisanship. This is a question of the ability of people to be able to build and maintain roads and bridges for safety, for development, for opportunity to move around the State.

And let me emphasize again, there are many sections in this bill that I think really work to the disadvantage of rural poor States.

My amendment would amend a section in the bill, section 108, with regard to the bridge program. This is section 108(a)(f), line 4. It says:

> The Federal share payable for any project undertaken under this subsection shall be 80 per centum, except for any costs attributable to the expansion of the capacity of any bridge or the construction of any new bridge where such new capacity or new bridge is primarily available to single occupant vehicles.

Mr. President, in most States, that is every bridge. Only where you have car pools and mass transit would it not affect you. So what is happening here is a State like my State would be forced to have to come up with the higher share of funds.

I ask unanimous consent, Mr. President, that a "Comparison of Federal Matching Ratios" of the various bills and amendments be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

COMPARISON OF FEDERAL MATCHING RATIOS—SURFACE TRANSPORTATION EFFICIENCY ACT

	Interstate completion	Interstate maintenance	Bridges
Current law	90/10	90/10	80/20
Lott	90/10	90/10	80/20
Administration bill	90/10	90/10	75/25
Moynihan (S. 1204)	90/10	80/20	[1] 75/25 [2] 80/20
Graham	90/10	90/10	85/15

[1] Single occupancy.
[2] All other.

Mr. LOTT. The current law on interstate completion is 90–10. I would keep that at 90–10. The Moynihan bill would keep it at 90–10. But interstate maintenance in current law is 90–10; the Moynihan bill, S. 1204, would drop that to 80–20. The State would have to come up with 20 percent.

For bridges, the current law is 80–20. I would keep it at 80–20. S. 1204 would make it 75–25 for single occupancy, which is every bridge in a lot of States, and 80–20 for all others.

I think it is fundamentally a question of fairness or even the ability to repair these bridges or build bridges. Out of all the Federal Government's responsibilities, I think a primary responsibility is the Interstate Highway System.

So I urge my colleagues to take a close look at this amendment. It is not a lot of money from the Federal standpoint, but it is a lot of money, and it is important money, for States like my own State that have a high gasoline tax, low income, and an inadequate highway system. We are paying a tremendous share of our revenues coming into the State in Mississippi already for highways. We have an 18-cent State gasoline tax. In my own home area we add another, I believe it is, 4 cents for seawall protection and the road along the seawall. So we are talking about as much as 22 cents for State gasoline tax. And then we have Federal tax on top of that of 14 cents. We are doing all we can do. Without a fair Federal-State ratio, we will not be able to provide the interstate maintenance and bridge maintenance we so desperately need.

The ACTING PRESIDENT pro tempore. The time of the Senator has expired.

The Senator from Idaho is recognized.

Mr. SYMMS. Mr. President, I have great respect for the Senator from Mississippi, as he knows; we have discussed this. But, to put this in perspective of where we are with Senator MOYNIHAN and myself on this bill, we started out with an administration that told the committee they would guarantee us a veto if we did not have a 60–40 ratio. There is some merit in what the administration wants to do. I think they want a lever so more States and more local entities participate in the funding of the transportation system of the country and decentralize it from Washington, DC. That is a view I know my good friend from Mississippi shares, that we should decentralize all this authority.

We made a compromise. But I can tell my colleagues the administration has contacted me this morning, and the Lott amendment is totally anathema to the Department of Transportation, the Federal Highway Administration, and to the President. So I urge my colleagues to support a tabling motion that will be offered by Senator MOYNIHAN and myself very soon, at 10:15.

Senator DOLE and Senator BYRD—if Senators have noticed—Senator BYRD offered an amendment that has been accepted that pays a reward to States for their participation. This helps with the general theory of a higher match because it rewards States that put in a better participation.

Senator DOLE is going to come in and make an attempt to modify the Byrd amendment or to amend it to make what he thinks is a more fair distribution, based on a level of effort made by States. In my opinion, we should resolve this through the aspects of the Dole-Byrd, some compromise, something in between—we do not know how it will come out with respect to the conference—and not accept this amendment at this time. This bill generally is 80–20, and in certain instances 75–25. The interstate construction still is the 90–10.

I think it is a good compromise, and I ask my colleagues, with all due respect to my good friend from Mississippi, to vote to support the committee in a tabling motion that we will make shortly.

The ACTING PRESIDENT pro tempore. The Senator from New York is recognized.

Mr. MOYNIHAN. Mr. President, we feel, as managers of the legislation before us, that we have a responsibility to the Senate as well as to the commit-

tee which sends us here with a bill reported 15 to 1. We understood the reasons the administration wanted to leverage more money by having a more nearly equal contribution ratio. Indeed, up until 1965, all Federal highway moneys were 50–50. We went to the extraordinary 90–10 to build the Interstate and Defense Highway System. It was not a very scientific thing. One of the participants in the decisions is recorded as having said that we had a gut feeling that would get the job done, and they were not wrong. At 90–10, who can say no?

But 90–10 is a formula, we said over and again in this debate, for treating these moneys as free goods. Free goods are always wasted. We are talking productivity here.

I read to my despair in one of our newspapers this morning that our bill emphasized repairs. No, it does not. We are talking about productivity; we are talking about cost effectiveness; we are talking about trying to find some way to get principles of competitive choice. And the last way to do it is to go back to the notion that this is all free money. If you want less investment in infrastructure, here is your way to do it. Whereas the Federal moneys would have been matched at 20 percent under our bill, at 10 the aggregate drops about 50 percent.

I just cannot support this. I do hope Senators will understand why, while this might seem attractive, the whole thrust of our legislation is to say otherwise.

Mr. SYMMS. I think, Mr. President, if the Senator will yield, it also makes it so that those State engineers are more sensitive to the decisions that are made because there is a little bit more of the State money in it.

Mr. MOYNIHAN. Yes.

Mr. SYMMS. It is not a whole lot more, but there is a little more commitment, enough to make a difference in their thinking so they do not build some of the white sidewalls and some of the expensive, unnecessary adornments along the road, thinking the Federal Government is paying for it anyway.

Mr. MOYNIHAN. That is our theory, Mr. President, about why productivity disappeared from this sector of the economy. Because there was no reward for productivity; the money was free.

Mr. SYMMS. The Senator is correct.

Mr. MOYNIHAN. Mr. President, I do not want to delay. With respect to the amendment of our friend from Mississippi, I move to table the measure. The yeas and nays were ordered.

The ACTING PRESIDENT pro tempore. Did the Senator ask for the yeas and nays on the motion to table?

Mr. SYMMS. The yeas and nays were ordered. So we ask for the yeas and nays on the motion to table.

The ACTING PRESIDENT pro tempore. The yeas and nays have been ordered on the amendment, not the motion to table.

Mr. SYMMS. On the motion to table, Mr. President, I ask for the yeas and nays.

The ACTING PRESIDENT pro tempore. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

The ACTING PRESIDENT pro tempore. There being no further debate, the question is on agreeing to the motion of the Senator from New York. The yeas and nays have been ordered. The clerk will call the roll.

The assistant legislative clerk called the roll.

Mr. FORD. I announce that the Senator from Arizona [Mr. DECONCINI] and the Senator from Georgia [Mr. NUNN] are necessarily absent.

I also announce that the Senator from Arkansas [Mr. PRYOR] is absent because of illness.

The ACTING PRESIDENT pro tempore. Are there any other Senators in the Chamber who desire to vote?

The result was announced, yeas 53, nays 44, as follows:

[Rollcall Vote No. 97 Leg.]

YEAS—53

Adams	Fowler	Nickles
Akaka	Garn	Pell
Baucus	Gorton	Pressler
Bentsen	Gramm	Reid
Biden	Harkin	Rockefeller
Bradley	Inouye	Roth
Brown	Jeffords	Rudman
Burdick	Kennedy	Sanford
Byrd	Kerrey	Sarbanes
Chafee	Kerry	Simon
Craig	Kohl	Simpson
Cranston	Lautenberg	Smith
D'Amato	Leahy	Stevens
Dixon	Lieberman	Symms
Dodd	Mikulski	Wallop
Domenici	Mitchell	Wellstone
Durenberger	Moynihan	Wirth
Exon	Murkowski	

NAYS—44

Bingaman	Glenn	Mack
Bond	Gore	McCain
Boren	Graham	McConnell
Breaux	Grassley	Metzenbaum
Bryan	Hatch	Packwood
Bumpers	Hatfield	Riegle
Burns	Heflin	Robb
Coats	Helms	Sasser
Cochran	Hollings	Seymour
Cohen	Johnston	Shelby
Conrad	Kassebaum	Specter
Danforth	Kasten	Thurmond
Daschle	Levin	Warner
Dole	Lott	Wofford
Ford	Lugar	

NOT VOTING—3

DeConcini	Nunn	Pryor

So the motion to lay on the table the amendment (No. 358) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the motion to table was agreed to.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

The PRESIDING OFFICER. The Senate will come to order.

Mr. MOYNIHAN. Mr. President, we are now in the final hours of our deliberation, and I do not mean to extend them.

The PRESIDING OFFICER. The Senate will come to order.

The Senator from New York.

Mr. MOYNIHAN. Mr. President, we are now in the closing hours of our deliberations. I expect we will be through before long. I do not mean to prolong that process. But at the risk of being repetitive, and sometimes there is no alternative to being repetitive, may I point out that just now, by the narrowest of margins, we refused to accept a measure which went absolutely against the spirit of this legislation.

And could we have order, Mr. President?

The ACTING PRESIDENT pro tempore. The Senate will come to order.

Mr. MOYNIHAN. Had we adopted this measure, Mr. President, there would have been no honorable course but to have the bill recommitted, it was so absolutely at odds with the spirit of this legislation.

My comanager, Senator SYMMS, said that the President would surely veto the measure. He had been told it would be vetoed. And it would have been right. This was a return to free money, which is exactly the disease that has produced our present situation.

At least 15 Senators came to me on the floor and said: My highway department has just called to say vote for this. Of course, they did. How can you say no to free moneys? Yet, it is our job to do that. Do not blame the highway departments. For 30 years or 35 years, they have lived on 90–10 moneys with no responsibility, no accountability. Productivity died and quality dropped off.

But the arrangements went on. The moneys flowed, and that became the end of the system, just to get the Federal money. What you did with it did not make any difference. And here my comanager nods in resigned agreement.

Has no one heard anything we have said? Has no one read the principles of the legislation? They are upright, on one page, and very simple. It was a very close thing—53 votes. I hope the highway departments are hearing us. I wish that Secretary Skinner and Dr. Larson were here. But they are necessarily absent. They could explain this matter.

We survived, and we will go on with the rest of the day. I thank, once again, my stalwart companion from the Rocky Mountains.

The Senator from Florida is going to offer an amendment, which we look forward to.

AMENDMENT NO. 359

(Purpose: To provide for the utilization of the most current census data in certain laws related to the environment and public works)

Mr. MACK. Mr. President, I send an amendment to the desk and ask for its immediate consideration.

The ACTING PRESIDENT pro tempore. The clerk will report.

The legislative clerk read as follows:

The Senator from Florida [Mr. MACK], for himself, Mr. GRAHAM, Mr. SANFORD, and Mr. HELMS, proposes an amendment numbered 359.

Mr. MACK. I ask unanimous consent that reading of the amendment be dispensed with.

The ACTING PRESIDENT pro tempore. Without objection, it is so ordered.

The amendment is as follows:

On page 22, after line 21, insert the following: "*Provided*, That the Secretary shall use estimates prepared by the Secretary of Commerce to determine the population figures of the individual States for the fiscal years 1987, 1988, 1989, 1990, and 1991: *And provided further*, That those estimates shall be used to distribute apportionments under this section.".

Mr. MACK. Mr. President, I can share the frustration expressed by the Senator from New York about whether anybody has heard anything that has been said, in the sense that the amendment that I am offering today, along with Senator GRAHAM of Florida, Senator SANFORD, and Senator HELMS, deals with a population issue. This is an issue that I have talked about over and over and over again. I suggest that before this session of Congress is complete, I will probably talk about it over and over again.

The issue has to do with basic fairness. As I understand the present legislation that is before us, the so-called underlying formula has a portion of that formula which is based on population, and it is that roughly 15 percent of the allocation of dollars will be based on population census information.

The troubling part about it is that we are using 1980 census information to make a determination about how funds will be divided up between 1992 and 1996. Let me say again, so that everyone understands. I am talking about the fact that 1980 census information will be used in allocating highway resources, not in 1982 or 1984 or 1986 or 1988. But that 1980 census information will be used to calculate how we will divvy up highway funds in 1992, 1993, 1994, 1995, and 1996.

I just make the charge that that is just blatantly unfair. The charge is going to be made that I am going to try to change the formula. I am not trying to change the formula at all—although I would love to see it changed.

What this amendment does is say if you are going to use the formula which was identified, the formula that was used for 1986 through 1991, it is only fair you use current census data in that formula.

Why does it make a big difference to me? Why does it make a big difference to my State and to the people of the State of Florida? I will tell you why. In 1980, there were 9,700,000 people living in the State of Florida. In 1990, there were 12,937,000. In 1991, it is estimated to be at 13,261,000 people.

Mr. President, I once again contend that basic fairness would say that if you are going to have a formula in which there is going to be consideration for population data, we should use the most current census data available. And that data is, in fact, available. I ask that we use it in 1992, 1993, 1994, 1995, and 1996.

There is also going to be a charge that there is going to be a massive transfer of resources from one State to another. Well, we ran some figures based on 1990 only, and if you use 1990 for that 5-year period as an average, we can only come up with a transfer from State to State totaling, for all 50 States, approximately $80 million. Eight million out of roughly a $120 billion, 5-year highway program. This is not a massive amount of money. What we are asking here is just for some basic fairness, and to use updated census information that is already available.

So again, Mr. President, I ask that my colleagues support this amendment. It is straightforward; it does not undermine the basic formula. It merely says that if you have chosen to use a formula in which there is population as a part of that equation, you should use current census information to do that.

Mr. President, I ask for the yeas and nays.

The ACTING PRESIDENT pro tempore. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

Mr. SYMMS. Mr. President, I find myself in an unusual position this morning of standing on the floor opposing amendments from two of my comrades in arms on most issues: The distinguished Senator from Mississippi, and now the distinguished Senator from Florida.

Just to bring everybody up to date on how this was arrived at, the committee decided in coming out with the formula that we would try to hold harmless all States and give States basically as much as they had been getting. No matter how this was decided, no matter what method was used, someone is always going to be unhappy with the highway formula.

The Senator from Florida brought two amendments in to deal with this issue. The committee accepted part of his amendment, which deals with population internally in the State, and with the MPO's, and that will be accepted in the committee amendment.

So he has gained already; he has gotten half a loaf, and it will be part of this bill. But I think what all Senators need to recognize is that we now generally have an idea where we are with the bill. The bill has been before the Senate for nearly 2 weeks now. We had the bill in the committee with the Federal Highway Administration pounding out all kinds of numbers.

But with respect to the Mack census-data amendment, if we change this now, there are no tables regarding the effect on apportionments. We do not have a table on population changes in the eighties. Thirteen States either lost population or gained population at a rate lower than the national average, which is 9.8 percent. There may be certain evidence regarding which States win and which States lose under the Mack amendment. We do not know that, but my guess would be that the 13 States will lose money if the Mack amendment is adopted.

The reason we did not change the basic formula from the past in this bill is that it always turns out the way Senators vote, they vote based on what their State gets. The bottom line is how much money do they get. We have seen that on the last two amendments. Senators walked on the floor on the Lott amendment—they know that the President is probably right on his leverage position with respect to trying to encourage more State participation, more county participation, more city participation, more people participation in funding the crumbling infrastucture. The President wants to lever them to do it. Senators know that. They say, yes, he is probably right in policy. But somebody calls from the home State and says, in this one amendment that was offered, in this case the Lott amendment, our State would tend to get x number of dollars more. I hope you will vote for it. They pay no attention to the principle; they simply vote on the way the numbers look. As Senator MOYNIHAN said, we have already lost what the thrust of what we are trying to do with this bill is, to improve productivity, improve efficiencies in transportation in this country.

So I think we have spent a week and half, as I say, haggling over the distribution of funds, and, if Members adopt this motion by the Senator from Florida—I cannot support it because it has so much uncertainty; I do not know what it will do. So at the appropriate time—I do not want to cut off any debate—it is my intention, on behalf of myself and Senator MOYNIHAN, to offer a motion to table this. This will totally disrupt what we have done.

Before I do that, I want to say, to my best guess and the best guess of the committee staff, the following States will lose money if the Mack census amendment is adopted and becomes part of the bill: Alabama, Arkansas, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, West Vir-

ginia, Wisconsin, and Wyoming. That is the best estimate I can give the Senate.

Does the Senator have more debate he wants to do? I do not want to cut him off in any way.

Mr. MACK. Mr. President, I wish to make a few remarks.

Mr. SYMMS. I yield the floor, Mr. President.

Mr. MACK. Mr. President, I just want to make a few remarks in response to the Senator from Idaho.

First, the Senator just read a list of those States he believes will be losers if my amendment were to be agreed to. I take the approach of saying that any State that experienced growth during the past 10 years, and there are 40 States, regardless of how small that growth might be, if they do not support this amendment, the growth in population in their State is not going to be taken into consideration in the basic formula. So I ask Senators to think twice if you heard the name of your State called out on that list that was just read by the Senator from Idaho.

Mr. SYMMS. Mr. President, will the Senator yield on that point?

Mr. MACK. I am glad to yield.

Mr. SYMMS. Forty States grew, but they grew less than the national average.

Mr. MACK. I did not say they did not.

Mr. SYMMS. Many grew less than the national average. The ones I mentioned either grew less than the national average—the national average was almost 10 percent in the country. Any State that grew 5 or 6 percent, in my opinion, if they accept the Senator's amendment, would tend to fall below the national average, and they would lose funds.

Mr. MACK. I understand the point the Senator is making. I am merely making the point, and I think the Senator will have to agree with this, that, clearly, if this amendment is not accepted, any State, regardless of the amount of growth they experienced, that growth will not be taken into consideration under the formula that is being used. I do not argue the point the Senator has made.

In addition, with respect to the amendment that was previously defeated but came relatively close to passage, it makes sense that the Senate almost adopted the amendment. Why would any of us go back home and ask our States to put up more money to gain matching dollars when we are not getting back what we put into the fund? I think is a clear recognition of the reason the amendment was almost adopted. It is another indication of the unfairness of this formula. It was bad enough for the last 5 years, but to now have to operate for the next 5 years with a formula, that clearly does not take into effect population increase, let alone the number of highways built in the State. Florida for example, is the second State in the Nation with respect to its commitment to highways when you count in all the factors, not just gasoline tax, diesel fuel. What about licensing fees, what about registration fees, and so forth?

So, again, I make the argument, while I appreciate the committee's accepting the other amendment I offered, this amendment clearly goes to the allocation of scarce resources. It is a question of fairness, it is a question of whether you are going to use current census data and whether you are going to use 1980 census data to make a decision about the allocation of resources in 1996. The information is available, and I would encourage the Senate to use it.

I yield the floor.

Mr. SANFORD. Mr. President, I am very pleased to be a cosponsor of the Mack-Graham amendment which authorizes the use of the 1990 census figures when distributing base apportionments for Federal-aid Highway Programs under the Surface Transportation Efficiency Act.

The very idea that without the acceptance of this amendment we would be allocating Federal highway funds based upon the 1980 census data is not only alarming but illogical. The population of my home State of North Carolina increased by nearly 13 percent in the 1980 decade. To even consider not adjusting the current formulas to reflect such an extreme growth is absurd.

Without this amendment we will be using the 1980 census in allocating highway resources until 1996. The growth rate for my State is expected to continue to grow into the 1990 decade. We cannot be tied to not only an outdated formula, but also outdated census figures in allocating highway funds. Where is the logic or the fairness in this practice?

I urge my colleagues to support our efforts to change the current formula to at least reflect the current census data. As a State's population grows, so too does its transportation needs and its highway maintenance needs. It makes good sense and good policy to ensure that the legislation we pass will utilize the most recent census information. To ignore growth and change in setting long term transportation policy is wrong, and to support maintaining the 1980 census on the basis that your State fares better under an old census figure is like wishing you could turn back time and live in the past. We must move forward with this legislation, we must ready ourselves for future progress and growth.

I hope that the good sense of this body prevails and that my fellow colleagues will support this amendment.

The PRESIDING OFFICER (Mr. ROBB). Who seeks recognition?

Mr. SYMMS addressed the Chair.

The PRESIDING OFFICER. The Senator from Idaho [Mr. SYMMS] is recognized.

Mr. SYMMS. Mr. President, if there are no other Senators seeking recognition, on behalf of myself and Senator MOYNIHAN, I move to table the amendment and ask for the yeas and nays.

The PRESIDING OFFICER. Is there a sufficient second?

There is not a sufficient second.

Mr. SYMMS. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. SYMMS. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. SYMMS. Mr. President, I renew my request for the yeas and nays on the motion to table.

The PRESIDING OFFICER. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

The PRESIDING OFFICER. The question is on agreeing to the motion of the Senator from Idaho to lay on the table the amendment of the Senator from Florida. On this question, the yeas and nays have been ordered, and the clerk will call the roll.

The legislative clerk called the roll.

Mr. FORD. I announce that the Senator from Arizona [Mr. DECONCINI] is necessarily absent.

I also announce that the Senator from Arkansas [Mr. PRYOR] is absent because of illness.

The PRESIDING OFFICER. Are there any other Senators in the Chamber desiring to vote?

The result was announced—yeas 63, nays 35, as follows:

[Rollcall Vote No. 98 Leg.]

YEAS—63

Adams	Durenberger	Lieberman
Baucus	Exon	Lugar
Bond	Ford	McConnell
Boren	Glenn	Metzenbaum
Bradley	Gore	Mikulski
Breaux	Grassley	Moynihan
Bumpers	Harkin	Nickles
Burdick	Hatfield	Packwood
Burns	Heflin	Pell
Byrd	Inouye	Pressler
Chafee	Jeffords	Riegle
Coats	Johnston	Rockefeller
Cohen	Kassebaum	Sasser
Conrad	Kasten	Shelby
Craig	Kennedy	Simon
D'Amato	Kerrey	Simpson
Danforth	Kerry	Specter
Daschle	Kohl	Symms
Dixon	Lautenberg	Wallop
Dodd	Leahy	Wellstone
Domenici	Levin	Wofford

NAYS—35

Akaka	Garn	Mitchell
Bentsen	Gorton	Murkowski
Biden	Graham	Nunn
Bingaman	Gramm	Reid
Brown	Hatch	Robb
Bryan	Helms	Roth
Cochran	Hollings	Rudman
Cranston	Lott	Sanford
Dole	Mack	Sarbanes
Fowler	McCain	

Seymour	Stevens	Warner
Smith	Thurmond	Wirth

NOT VOTING—2

DeConcini	Pryor

So the motion to lay on the table the amendment (No. 359) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the motion was agreed to.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

The PRESIDING OFFICER. The Senator from New York.

AMENDMENT NO. 360

Mr. MOYNIHAN. Mr. President, we are approaching third reading, and we have a committee amendment which I will send to the desk on behalf of the managers of the bill, the Senator from Idaho and myself, and ask for its immediate consideration.

The PRESIDING OFFICER. The clerk will report.

The legislative clerk read as follows:

The Senator from New York, [Mr. MOYNIHAN], for himself and Mr. SYMMS, proposes an amendment numbered 360.

Mr. MOYNIHAN. Mr. President, I ask unanimous consent that the reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

At the appropriate place in the bill, insert the following new section:

SEC. . NATIONAL POLICY FOR INFRASTRUCTURE REUSE.

(a)(1) STUDY AND REPORT.—(1) Section 307 of title 23, United States Code, is amended by adding at the end the following new subsection:

"(g)(1) Not later than 12 months after the date of the enactment of the Surface Transportation Efficiency Act of 1991, the Secretary shall conduct a study of methods of facilitating the reuse of industrial manufacturing facilities.

"(2) In conducting the study described in paragraph (1), the Secretary shall consult with the heads of such departments and agencies of the Federal Government as the Secretary determines to be appropriate to ascertain regulatory, technical and other problems or constraints associated with the reuse of industrial manufacturing facilities.

"(3) Upon completion of the study described in paragraph (1), the Secretary shall submit a report to the appropriate committees of Congress on the findings of the study, including a summary of any information submitted to the Secretary by the head of a department or agency pursuant to paragraph (2).

"(4) For fiscal year 1992, an amount not to exceed $200,000 shall be taken out of the administration and research funds authorized by section 104 of this title for the purpose of carrying out the provisions of this subsection.".

(2) Section 104 of title 23, United States Code, is amended by striking "authorized by subsections (a) and (b) of section 307" and inserting "authorized by subsections (a), (b), and (g) of section 307".

On page 49, lines 18 through 25, strike "All provisions" and everything that follows and insert in lieu thereof "Sums".

On page 37 of the bill, at the end of section 111, add the following new subsection:

"(e) INDIAN RESERVATION ROADS.—Notwithstanding any other provision of law, funds allocated for Indian reservation roads may be used for the purpose of funding road projects on roads of tribally controlled postsecondary vocational institutions.".

At page 25, line 13 add a new paragraph (4) as follows:

"(4) pursuant to this subsection projects which research, develop and test technologies to control highway related emissions which contribute to the nonattainment of any ambient air quality standard or the impairment of visibility within an urbanized area within the state shall be deemed to be eligible projects."

At page 57, line 7 add a new paragraph (6) as follows:

"(6)(a) The Secretary in cooperation with other appropriate federal agencies, the Governors of Arizona, California, New Mexico and Texas, and the appropriate representatives of the Republic of Mexico, shall assess the need for transportation infrastructure to facilitate trade between the United States and Mexico. Within 18 months following the date of the enactment of this Act, the Secretary shall report to Congress and the Governors of Arizona, California, New Mexico and Texas on such transportation infrastructure needs and the associated costs."

(b) The Secretary in cooperation with other appropriate federal agencies, the Governors of Maine, New Hampshire, Vermont, New York, Michigan, Minnesota, North Dakota, Montana, Idaho, Washington, and Alaska and the appropriate representatives from Canada, shall assess the need for transportation infrastructure to facilitate trade between the United States and Canada. Within 18 months following the date of the enactment of this Act of the Secretary shall report to Congress and the Governors of Maine, New Hampshire, Vermont, New York, Michigan, Minnesota, North Dakota, Montana, Idaho, Washington, and Alaska on such transportation infrastructure needs and the associated costs.

On page 19, between lines 17 and 18, insert the following:

"(c) For purposes of paragraph (1)(A)(i) and paragraph (6) of subsection (b), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 22, between lines 21 and 22, insert the following:

"(D) For purposes of subparagraph (C), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 26, line 3, before the period insert the following: ": *Provided further*, That the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 51, between lines 15 and 16, insert the following:

"(h) For purposes of subsections (b) and (e), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 77, line 2, before the quotation marks, insert the following: "For purposes of this subsection, the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

Insert at the appropriate place in title I:

SEC. . DECLARATION OF NONNAVIGABILITY OF PORTION OF HUDSON RIVER, NEW YORK.

(a) DECLARATION OF NONNAVIGABILITY.—

(1) IN GENERAL.—Subjection to subsections (b), (c) and (d), the area described in paragraph (2) is declared to be nonnavigable waters of the United States.

(2) AREA DESCRIBED.—The area referred to in paragraph (1) is the portion of the Hudson River, New York, described as follows (according to coordinates and bearings in the system used on the Borough Survey, Borough President's Office, New York, New York).

Beginning at a point in the United States Bulkhead Line approved by the Secretary of War, July 31, 1941, having a coordinate of north 1918,003 west 9806,753:

(1) Running thence easterly, on the arc of a circle curving to the left, whose radial line bears north 3°-44′-20″ east, having a radius of 390.00 feet and a central angle of 22°-05′-50″, 150.41 feet to a point of tangency;

(2) Thence north 71°-38′-30″ east, 42.70 feet;

(3) Thence south 11°-05′-40″ east, 33.45 feet;

(4) Thence south 78°-54′-20″ west, 0.50 feet;

(5) Thence south 11°-05′-40″ east, 2.50 feet;

(6) Thence north 78°-54′-20″ east, 0.50, feet;

(7) Thence south 11°-05′-40″ east, 42.40 feet to a point of curvature;

(8) Thence southerly, on the arc of a circle curving to the right, having a radius of 220.00 feet and a central angle of 18°-37′40″, 83.85 feet to a point of compound curvature;

(9) Thence still southerly, on the arc of a circle curving to the right, having a radius of 150.00 feet and a central angle of 38°-39′-00″, 101.19 feet to another point of compound curvature;

(10) Thence westerly, on the arc of a circle curving to the right, having a radius of 172.05 feet and a central angle of 32°-32′-03″, 97.89 feet to a point of curve intersection;

(11) Thence south 13°-16′57″ east, 50.86 feet to a point of curve intersection;

(12) Thence westerly, on the arc of a circle curving to the left, whose radius bears north 13°-16′-57″ west, having a radius of 6.00 feet and a central angle of 180°-32′-31″, 18.91 feet to a point of curve intersection;

(13) Thence southerly, on the arc of a circle curving to the left, whose radial line bears north 75°-37′-11″ east, having a radius of 313.40 feet and a central angle of 4°-55′-26″, 26.93 feet to a point of curve intersection;

(14) Thence south 70°-41′-48″ west, 36.60 feet;

(15) Thence north 13°-45′-00″ west, 42.87 feet;

(16) Thence south 76°-15′-00″ west, 15.00 feet;

(17) Thence south 13°-45′-00″ east, 44.33 feet;

(18) Thence south 70°-41′-45″ west, 128.09 feet to a point in the United States Pierhead Line approved by the Secretary of War, 1936;

(19) Thence north 63°-08′-48″ west, along the United States Pierhead Line approved by the Secretary of War, 1936, 114.45 feet to an angle point therein;

(20) Thence north 81°-08′-00″ west, still along the United States Pierhead Line approved by the Secretary of War, 1936, 202.53 feet;

The following three courses being along the lines of George Sollan Park as shown on map prepared by the city of New York, adopted by the Board of Estimate, November 13, 1981, Acc. N° 30071 and lines of property leased to Battery Park City Authority and B.P.C. Development Corp.

(21) Thence north 77°-35′-20″ east, 231.35 feet;

(22) Thence north 12°-24'-40" west, 33.82 feet;

(23) Thence north 54°-49'-00" east, 171.52 feet to a point in the United States Bulkhead Line approved by the Secretary of War, July 31, 1941;

(24) Thence north 12°-24'-40" west, along the United States Bulkhead Line approved by the Secretary of War, July 31, 1941, 62.28 feet to the point or place of beginning.

(b) DETERMINATION OF PUBLIC INTEREST.—The declaration made in subsection (a)(1) shall not take effect if the Secretary of the Army (acting through the Chief of Engineers), using reasonable discretion, finds—

(1) before the date which is 120 days after the date of the submission to the Secretary of appropriate plans for the proposed project, and

(2) after consultation with local and regional public officials (including local and regional public planning organizations), that the proposed project is not in the public interest.

(c) LIMITATION ON APPLICABILITY OF DECLARATION.—

(1) AFFECTED AREA.—The declaration made in subsection (a)(1) shall apply only to those portions of the area described in subsection (a)(2) which are or will be occupied by permanent structures (including docking facilities) comprising the proposed project.

(2) APPLICATION OF OTHER LAWS.—Notwithstanding subsection (a)(1), all activities conducted in the area described in subsection (a)(2) are subject to all Federal statutes and regulations which may otherwise be applicable to such activities, including as may be applicable.

(A) sections 9 and 10 of the Act of March 3, 1899 (33 U.S.C. 401, 403), commonly known as the River and Harbors Appropriation Act of 1899,

(B) section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1254), and

(C) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(d) EXPIRATION DATE.—The declaration made in subsection (a)(1) shall expire—

(1) on the date which is 6 years after the date of enactment of this Act if work on the proposed project to be performed in the area described in subsection

(a)(2) is not commenced before that date, and

(2) on the date which is 20 years after the date of the enactment of this Act, for any portion of the area described in subsection (a)(2) which on that date is not bulkheaded, filled, or occupied by a permanent structure (including docking facilities).

(e) PROPOSED PROJECT DEFINED.—For purposes of this section, the term "proposed project" means any project for the rehabilitation and development of—

(1) the structure located in the area described in subsection (a)(2) and commonly referred to as Pier A; and

(2) the area surrounding that structure.

On page 162, add after line 9 the following new part:

PART D—RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

SEC. 161. RELOCATION ASSISTANCE REGULATIONS RELATING TO THE RURAL ELECTRIFICATION ADMINISTRATION.

Section 213(c) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4633) is amended by inserting "and the Rural Electrification Administration" after "Tennessee Valley Authority".

On page 3, insert immediately after the matter before line 1 the following:

PART D—RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

Sec. 161. Relocation assistance regulations relating to the Rural Electrification Administration.

Mr. MOYNIHAN. Mr. President, in the manner of committee amendments, these have been agreed. We are prepared to make a full explanation if anybody would like.

First is a technical amendment to the Commerce Committee title to correct budgetary problems. All Senators do know that we have a bill that merges the work of the Committee on Environment and Public Works and the Committees on Commerce and Banking.

The second amendment is a study regarding the further beneficial reuse of industrial facilities which Mr. JEFFORDS offers on behalf of the Northeast-Midwest Senate Coalition.

A third amendment ensures that Indian reservation roads that provide access to postsecondary educational institutions are eligible for Federal funds, as indeed they ought be.

A fourth amendment ensures research and development expenses are eligible under the congestion mitigation and air quality improvement program. Research is exactly what we are after. How do we solve this problem we obviously have created in our cities? If it were simple, it would have gone away by now.

A fifth amendment provides for the study of the need of transportation infrastructure to facilitate trade between the United States, Canada, and Mexico.

A sixth amendment will ensure the 1990 census data be used in determining the population of States in metropolitan areas.

There is also a declaration of nonnavigability in lower Manhattan harbor, a technical amendment by the Corps of Engineers, and an amendment cleared by the Governmental Affairs Committee regarding the Uniform Relocation Assistance Act and rural electrical cooperatives.

Mr. NUNN. Will the Senator yield for a brief question? Is the REA amendment in there?

Mr. MOYNIHAN. Yes.

Mr. NUNN. I thank the managers for agreeing to that amendment.

Mr. President, I rise to support a committee amendment cosponsored by Senators FORD and FOWLER that would provide an exemption to title III of the Uniform Relocation Act of 1970 for the Nation's rural electric and telephone cooperatives.

In 1987, Congress passed, as an amendment to the highway reauthorization, amendments to the Uniform Relocation Act to ensure that all programs funded by Federal dollars followed the same rules in acquiring property from individual property owners. Although the rural cooperatives have no record of disputes with property owners or of the kind of property acquisition practices that the Uniform Act is intended to prevent, the Department of Transportation interpreted the statute in such a way as to bring the co-ops' activities under the regulation of the act.

Under the Uniform Relocation Act regulations issued in 1989, the rural electric cooperatives must undertake a number of notification and appraisal procedures which will impose a substantial financial burden on what are nonprofit organizations. According to estimates from several co-ops in the State of Georgia, implementation of these regulations could run as high as $500,000 in the first year.

If we had been contacted by landowners who had suffered abuses by rural electric co-op property acquisition policies the need to include the co-ops under the Uniform Act regulations would be clear. As it stands however, their inclusion represents unnecessary regulation.

It should also be observed that the treatment of the rural electric cooperatives is unique under the Uniform Relocation Act. Other public utilities are not required to observe these regulations and an exemption identical to the one we are proposing is already in effect for the Tennessee Valley Authority. Our amendment simply extends the same exemption to the co-ops.

As a member and customer of an electric cooperative in Georgia, I can testify to the good relations those organizations maintain with their communities. I ask my colleagues to support this important relief measure for the Nation's electric co-ops.

Mr. JEFFORDS. Mr. President, in my home State of Vermont, manufacturing jobs are scarce. Vermont is also in the middle of a recession, so the remaining jobs we have are even more valuable. Recently, one Vermont town had the opportunity to add more jobs to their community. A wooden toy manufacturer wanted to locate in their community. A building suitable for his operation already existed. This building formerly housed a scientific equipment company.

Unfortunately, these jobs were not to be. The previous occupant contaminated part of the building and grounds. The prospective buyer wanted to buy the facility, but also wanted to ensure that he would not be liable for the past contamination. While I understand that procedures do exist to provide a new owner with a shield from liability, these procedures are seldom used. When used, they involved lengthy negotiations and studies. The prospective manufacturer did not have the time or the money for this. He located elsewhere.

It seems to me, Mr. President, that our current policies represent a scorched earth philosophy. Rather than reuse existing manufacturing sites, we

move on to develop new ground, new plants which require more roads, more highways, in short, more development. Meanwhile, the old plants fall to the ground in disrepair, and workers are left unemployed in their hometowns without the money to move to the new factories. The existing infrastructure should be considered a national resource, not a national waste. We should think of industrial reuse as an opportunity for recyling and waste reduction.

I thank my colleagues for including my request for a study of this problem in a package of amendments. This study will start us looking at this problem. While there are environmental constraints to reuse, I believe there are also other constraints which need to be identified and addressed. The study should accomplish this goal. The Secretary of Transportation should be a neutral party and thus an excellent choice to examine this problem. The Secretary can also use this study to address how we can reduce the need for new highways, new infrastructure by reusing our existing infrastructure. Again, I thank my colleagues for their support.

Mr. MACK. Mr. President, today I am offering an amendment to authorize the use of the most recent census data when distributing funds under S. 1204.

I have identified four programs in the committee bill whose financial impact is determined by a State's population. Currently, the census data used to distribute these funds would only be based on the 1990 census. My amendment would ensure the use of the most current data available to distribute these funds between fiscal year 1992 and fiscal year 1996.

My amendment authorizes the Secretary of Transportation to use updated census information when calculating funds in these four provisions of the Surface Transportation Efficiency Act.

The first program my amendment addresses is the Surface Transportation Program, which designates two types of nonattainment regions in each State according to population size. This distinction is made by determining which regions contain areas with populations of 250,000 or greater and urbanized area populations of 50,000 that are in nonattainment for ozone or carbon monoxide.

Another section deals with the distribution of funds under the new Congestion Mitigation and Air Quality Improvement Program. For this program, funds will be apportioned to States based on their nonattainment area population. Similarly, the establishment of an Energy Conservation, Mitigation, and Clean Air Bonus Program uses population figures in its efforts to reward those States which effectively manage growth.

The establishment of metropolitan planning organizations in urbanized areas is another provision in S. 1204 where updated census data is needed. In this section, transportation planning and metropolitan area boundaries would be more accurately determined by using the estimates proposed in my amendment.

Last, in the section dealing with program efficiencies, the Secretary is authorized to permit the highway department of a city of over 1 million people to perform the duties of the State highway department for projects undertaken within the city.

I urge my colleagues to support this amendment which simply seeks to use current census data so that highway funds are fairly distributed.

Mr. McCAIN. Mr. President, I want to thank the Senator from New York and the Senator from Idaho for their hard work and leadership on this vital legislation.

Our Nation demands efficient and dependable transportation systems. Mobility keeps our economic engines turning in high gear, enhances our national defense capabilities and, most importantly, provides the American people with the opportunity to enjoy the freedoms we hold so dear.

While no bill is perfect, this legislation will enable us to maintain and improve our highway systems and to meet the demands of the postinterstate era with greater efficiency. I thank the managers for their diligence and commitment.

Mr. President, I have two amendments to this legislation which I believe have been cleared by both sides. I would like to take this opportunity to describe them briefly.

The first amendment seeks to provide States with greater flexibility under the Congestion Mitigation and Air Quality Improvement Program authorized by the commitee bill.

Specifically, the amendment enables States to use funds allocated under the program to research, develop, and test technologies to control highway related pollution sources. Last year's debate on the Clean Air Act underscored the dramatic link between our transportaion sector and the urban air quality problems which plague cities across the country.

My amendment will make funds available to develop new solutions to carbon monoxide, ozone, and particulate pollution caused by inadequate vehicle, road, and traffic control systems. Today's investments in research and development will result in cleaner air and better modes of transportation for tomorrow. Clearly States should have the discretion to make such research investments under the Air Quality Improvement Program.

In addition, the amendment will enable States to address the urban brown cloud syndrome.

I come from a very beautiful State, Mr. President. Unfortunately in the Phoenix and Tucson areas, the major population centers in Arizona, that beauty is marred by a haze of pollution which shrouds the urban skyline known as the brown cloud.

Interestingly, the brown cloud does not necessarily violate any national ambient air quality standards, including the standard for particulate matter referred to as P-M-TEN. Nevertheless it is a chronic problem of great concern to the people of Arizona, and one we are determined to solve.

Recently, the Arizona Department of Environmental Quality completed a $1 million study to determine the makeup of the brown cloud. The study found that "typically more than 50 percent, as much as 90 percent, of the urban haze in the Phoenix and Tucson areas is caused by vehicular activities."

Auto and diesel truck tailpipe emissions, dust from paved and unpaved roads, rubber particles from tires and brake pad fragments all contribute to the problem.

The amendment will enable Arizona and States which face similar circumstances to develop and demonstrate new and creative solutions to visibility problems, not just carbon monoxide and ozone nonattainment. Such solutions might include improved road construction methods and materials, more effective highway applications to control dust and advanced auto and diesel truck emission control technologies.

Hopefully, with the help of the funding provided under this legislation we can find the means to replace brown clouds with blue skies.

My second amendment, Mr. President, has been worked out with the distinguished Senator from New York. It will require the Secretary of Transportation to assess the need for transportation infrastructure to facilitate trade between the United States and Mexico and the United States and Canada.

As my colleagues know, we are involved in intense negotiations to bring about a free trade agreement with our neighbors to the South. If an agreement is successfully concluded, we can look forward to the benefits of increased trade between the United States and Mexico. Just as we are enjoying improved trade with our Canadian neighbors following the pact signed in 1987.

Increased economic activity is certain to place growing demand on the transportation systems and other infrastructure along our international boundaries. Planning is essential if we are to accommodate and facilitate the increased flow of international commerce in a safe and efficient manner.

The amendment requires the Secretary of Transportation to conduct a needs assessment and cost analysis of border transportation infrastructure. The Secretary will conduct this work in cooperation with other Federal

agencies, the Governors of the border States, and the appropriate Mexican officials.

A final report detailing the findings of the assessment will be submitted to Congress and the border States within 18 months after enactment of this legislation. This report will serve as a project and budget planning document for Federal agencies, as well as the border States, counties and municipalities.

It is my hope that Mexican and Canadian authorities will participate fully in this process so that improvements and preparations can be made on both sides of the border. This will enable our nations to fully enjoy the benefits of increased trade and closer relations. I am pleased to have developed this amendment in cooperation with Senator MOYNIHAN, and I thank him for his contribution.

These are modest but, I believe, important amendments, and I urge their adoption.

Again, I thank the managers of the bill, and I yield the floor.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. SYMMS. Mr. President, the manager of the bill explained the amendments. We have cleared all of them on this side.

Mr. President, if there is no further debate, I urge adoption of the amendment.

The PRESIDING OFFICER. The question is on agreeing to the amendment.

The amendment (No. 360) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the amendment was agreed to.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Mr. SYMMS. Mr. President, we have now reached the point, as the distinguished floor manager said, where we think all amendments—except for one amendment Senator DOLE has been talking about offering and one amendment I think Senator HELMS wants to come to the floor and discuss, or possibly offer an amendment with respect to portions of the interstate. I do not know if either of those amendments are actually going to be offered.

But I believe we have reached a point where we are, as the floor manager said, actually ready to go to third reading.

In my opinion, we will have passed a bill when we do go to third reading, and assuming Senators to vote for the bill, that is a very good solid bill that has maintained its framework from when it left the committee. It gives great flexibility for the State departments of transportation throughout the country; it addresses some of the major concerns the President had in his State of the Union Message 105 days ago.

We have amended our committee bill to include a national highway system, which was very important to the President. We have encouraged more State participation in this bill through the formulas in the bill. It did not go as far as the Secretary of Transportation asked for in the beginning, but it did make a step in the direction of more State participation, which brings better leverage on Federal dollars that are spent.

Also, the Byrd-Dole—if I can say it that way—position of asking for more rewards to States that make a better effort is already included in this bill, and I think it will be further considered when we go to conference with the other body.

I think all in all it is an excellent bill.

I might also mention to my colleagues the amendment this Senator offered with respect to private property is something that had a very good vote on the floor. It is an issue that has become very volatile throughout the country. There is enormous support for that amendment in the bill, and I thank my colleagues for their support.

Mr. President, I want to thank all of my colleagues, but particularly the majority leader and the Republican leader and the chairman and ranking member of the committee, Senators BURDICK and CHAFEE.

I just note, Mr. President, our distinguished chairman of the Environment and Public Works Committee, Senator BURDICK, is celebrating his birthday today, so I can think of no finer present than to pass this bill.

Mr. MOYNIHAN. Will the Senator yield?

Mr. SYMMS. I will be happy to yield on that.

Mr. MOYNIHAN. Is the Senator aware that the senior Senator from North Dakota has decreed he does not any longer have birthdays? This is an honorary birthday.

Mr. SYMMS. It is an honorary birthday, and I can say this sure beats the alternative to him not having birthdays.

I want to pay special thanks to the senior Senator from New York [Mr. MOYNIHAN] for his tireless efforts on this bill and his willingness to work out formulas that recognize the wide differences in the States. Many people say how can a Senator from Idaho and a Senator from New York agree on a bill. The reason for it is I think both of us have great confidence in the States to make the decisions of how best to spend their transportation dollars, their highway dollars, to improve deficiencies.

Mr. President, I have had many friends in town over the years that I have been on this committee, from ARPA, from Associated General Contractors, the Lime Institute, the Stone Association, and others—the Asphalt Institute, the Cement Association—who are very interested in highway legislation and have expressed concerns about the potential for diversion of funds in this bill to light rail systems or to rail systems.

I point out to my colleagues one thing I think will happen—it is not ever mentioned, but the Banking Committee section of this bill also has the same flexibility that conforms with the language that is in the highway section of the bill. They made it the same as we did, where funds can be transferred into some highway uses if that is the way States choose to use them. It is true there will be less funds available because most of those transit funds go to States that have big transit authorities. But the potential is there.

I also say to my colleagues who are concerned about this, and my friends in the associations—and I thank those organizations I named for their help in getting this legislation to where it is. Even though there has been some lukewarm support from some of those associations, they have been very helpful with the adoption of amendments. They have been very helpful in bringing about the National Highway System that is in this bill.

I see the distinguished Presiding Officer, who comes from the State of Virginia. I point out to my colleagues that the HOV lanes on the Shirley Highway carry more traffic on them than any major rail transit system in the United States except for the New York Transit Authority. That is an astounding fact.

In my judgment, for those people who are the road builders of the country, who are concerned that maybe some of their highway funds will be diverted to rail systems, I think the rubber-tired solution, as it is called, is stacking up very well to what has happened in northern Virginia. It is happening in Houston, TX.

There is not any guarantee of just how these funds will be spent, that is true. But in my judgment, that is exactly what the people in my State—Kermit Kiebert and Hugh Lydston and others in the State Department of Transportation in Idaho—have been asking for, more flexibility so they can decide how best to spend these funds now that the interstate system is completed.

That is essentially what the Senator from New York has said over and over and over on the floor. We are giving the States flexibility. I see no reason why any Senator should fear giving States flexibility. If we have any confidence in the people we represent—and obviously we have enough confidence in them that they have given us the opportunity to represent them. We think they must have sound judgment.

I believe that in my State or in the State of New York or in the State of

Texas and other States, given the flexibility, we will recognize the market value of the wasted time of people sitting in gridlock, in traffic congestion. We also recognize in the program efficiencies of this bill that many departments of transportation have the capability to reduce the paperwork and redtape. It is all in this bill. I think this is a bill of which people can be very proud.

There are a couple of problems in this bill, as far as I am concerned. One of these problems—and I have talked about this with my distinguished leader on the floor—are the MPO's. The committee started out with a 50,000 population group for MPO's. We raised it in the committee to 250,000. There is substantial support in the other body to raise that number somewhat higher.

The major cities in the country, like New York City, Los Angeles, and other large metropolitan areas, have very substantial engineering capability to handle some of those transportation difficulties. It becomes more questionable, I think, in the smaller sized cities, where the States have the ability through the State departments of transportation to take care of those problems.

I think we can still look at this and work on it, and maybe try to come to even more accommodation with some of the concerns expressed by some of our colleagues.

I want to say thank you to all of the Senators, and I hope we will be able to bring this bill to passage very shortly today.

Mr. GRAHAM addressed the Chair.

Mr. SYMMS. I will be happy to yield to my friend for a question.

Mr. GRAHAM. I have been listening to the Senator's statement for the last few minutes. Does the Senator disagree with the position of the Federal Highway Administration that we currently have an unfunded backlog of maintenance and capacities needs in our Federal aid highway system of $450 billion?

Mr. SYMMS. I would have to say to the Senator I do not have the figures right here, but I think there are large unmet needs yet to be dealt with in this country.

Without this bill, we are way worse off, I would say to my colleague, than we are with this bill.

Mr. GRAHAM. Does the Senator disagree with the Federal Highway Administration's statement that over the next 5 years, we will add to that inventory of needs $225 billion?

Mr. SYMMS. That may be the case. I do not have the numbers here. But there are large unmet transit and transportation needs in the country, yes.

Mr. GRAHAM. Will the Senator agree that the sum of those numbers is $650 billion of unmet highway needs on the Federal aid highway system itself in the year 1996, assuming we do nothing between now and 1996?

Mr. SYMMS. If we do nothing, it might even be worse than that.

Mr. GRAHAM. Second, what is the proposed level of expenditure under this bill?

Mr. SYMMS. The proposed level of expenditure, Mr. President, I might say is, I believe, $110 billion.

Mr. President, I continue——

Mr. GRAHAM. Can I finish the question?

The PRESIDING OFFICER. The Chair would remind Senators to direct comments through the Chair.

Mr. SYMMS. Mr. President, I will yield to the Senator for one more question. I do want to complete my statement.

Mr. GRAHAM. If we are going to be spending $110 billion of Federal funds, and if that will draw down approximately another $40 billion of required State matching, that is $150 billion, which would indicate that our unmet needs at the end of the 5-year period would be $525 billion, as opposed to the $450 billion that we have today.

Will the Senator, therefore, not agree that rather than this bill advancing our Nation's highway system and achieving the goals of efficiency and rate of service, in fact the system will be $75 billion worse off in 1996 than it is today?

Mr. SYMMS. What I would say is compared to what?

Mr. President, I might just continue my remarks. I appreciate what the Senator from Florida is saying, essentially, and I have heard him say it on the floor that at the end of the 5-year cycle of this bill, at the rate we are going, the roads will be in worse condition than they are today. That may well be the case, but compared to what?

If we expend no effort and pass not this bill nor any other bill, and just return the money back to the general fund of the Treasury, and continue to expand the bureaucracy and the welfare state in this country, to strangle small business then we will be worse off. If we do go ahead and spend the money that we are allocating and trying to get the matchup in the States, we will actually be better off than we would be if we do nothing.

So I think it is a question of whether the glass is half empty or half full. There will never be enough money to satisfy the cost estimates that highway engineers will use to fix the roads.

In my own State, the State legislature funded, Mr. President, a study a couple of years ago which concluded that we have $7 billion of unmet highway needs in the State of Idaho alone over the next 10 years—7 billion dollars' worth. For a small State of 1 million population, and the seventh largest State in the Union geographically, with huge mountains and rivers and difficult terrain to build highways, this is an enormous problem. All we can do is the best we can, spending as much money as we can get the public to be willing to appropriate for improving those transportation problems.

To not move forward would, I think, be a travesty to the people of this country. For those of us who are in leadership, I think it would be a travesty if we do not move forward with legislation and work with the other body to try to get a solution to this, to work with the administration and come out with some kind of a compromise, and move forward to try to solve these transportation problems in the country.

We will never solve them, but I would only say to my colleagues who may be critical of this legislation, first, they should ask the question, compared to what? Compared to doing nothing? This is a huge step. This is the biggest spending bill ever passed through the U.S. Senate to improve the Nation's transportation problems. It is the biggest single bill we have ever passed. We are making a big commitment.

I am told that the other body is going to come in with some $25 billion, a substantial increase over what our bill is. I do not know how this will come out. I know one thing; that when this Senator gets the opportunity, and we will, and we go before the Senate Finance Committee to put the other part of this bill together, which at some point in the next 2 or 3 years must be done, this Senator will offer a motion to take the 2½ cents that Congress, in its wisdom, last year put in the general fund and put it back in the transportation trust funds so that the money will be there.

The Senator from Florida makes the point that we are still underfunding the infrastructure. I do not disagree with the Senator from Florida, but I also say that I do not believe that either of the two Senators from Florida will come before the Senate and suggest that what we should do is freeze the cost-of-living adjustments for all those millions of Floridians that are on Social Security and transfer that money into the highways. That is what we are talking about.

During the period of the eighties, as the infrastructure has been underfunded, one portion of the budget that has grown exponentially is the entitlements. We spend more money every year on transfer payments where we take the money from one worker who earns it and send it out to someone else who is on the receiving end of the benefits than at any other time in our history.

So our budgets have become disproportionately reduced in capital expenditures. We have reduced capital expenditures on highways, on water systems, on military, on all kinds of infrastructure. We have reduced the procurement budgets as a portion of the rest of the money we spend. We have

increased the spending that we send out on individual payments, out to individual Americans, with respect to what is called entitlement programs.

Mr. President, I have been going on about this for a long time. Basically, what we have here is an excellent bill. I urge my colleagues' support of the bill. I hope that the majority leader and the minority leader and the distinguished chairman of the Appropriations Committee, the President pro tempore, come to some kind of an agreement so that we can fuse their amendments together, or whatever, and get this bill passed before we start unwinding it over here on the Senate floor; and pass the bill so we can be able to go to the other body and say, "Here is our bill from the Senate. You give us your bill and we will sit down at conference and try to work out something," and not forget the people down at the other end of Pennsylvania Avenue; to try to recognize some of the directions the President has asked us to go; and, have a bill that we will be able to get signed this year, and get on with the problem so we will not fall further behind.

But in the process, Mr. President, I thank all the Senators and my distinguished friend from New York. I would like to also thank the staff, including Roy Kienitz, Rob Connor, Andrew Samet, Mike Weiss, Kathy Ruffalo; my own staff, Jean Lauver, Steve Shimberg, Angela Plott, and Trent Clark, and, also, George Shoener from the majority side, and my own staff, as I said. Without them, this would have been a much, much more difficult task to get this bill this far. I want to give them all a debt of gratitude on both sides of the aisle. They have been very helpful. I have had many Senators, I would say to the staff, come to me and thank me and Senator MOYNIHAN for the willingness of this staff to cooperate with the other Senators to try to iron out their problems.

If there are any other Senators that wish to do anything in this bill, we are getting close to final passage.

I yield the floor, Mr. President.

(NOTE.—The following occurred later in the proceedings and, by unanimous consent, appears at this point in the RECORD.)

VISIT TO THE SENATE BY MEMBERS OF THE EUROPEAN PARLIAMENT

Mr. MITCHELL. Mr. President, and Members of the Senate, I am honored to have this third opportunity to welcome on behalf of the entire Senate a distinguished delegation from the European Parliament.

Led by Chairman Geoffrey Hoon from the United Kingdom, Mrs. Hiltrud Breyer from Germany, and Mr. Philippe Herzog from France, the 24-member delegation is here to meet with Members of Congress and other American officials to discuss matters of mutual concern.

Their visit is part of a longstanding tradition of exchanges between our two legislative bodies, a tradition that represents the deep ties, mutual respect, and commonality of interest between Europe and the United States.

Europe today is a continent of exciting developments—the integration of a single market by 1992, and the continued progress toward consolidating democracy in the formerly Communist nations. These changes auger well not only for the future of the continent, but for the global community as a whole.

For the United States in particular, these hopeful developments warrant our ever closer attention and involvement to ensure the expansion of economic ties with our European partners and to help smooth Eastern Europe's challenging transition toward democracy.

The dialog between the United States Congress and the European Parliament plays a meaningful role in helping to achieve these objectives. It is a mutually beneficial exchange that reinforces our common purpose of maintaining close ties and advancing our common interests.

Mr. President, I ask unanimous consent that a list of the members of the European Parliament delegation here present be printed in the RECORD.

There being no objection, the list was ordered to be printed in the RECORD, as follows:

EUROPEAN PARLIAMENT DELEGATION FOR RELATIONS WITH THE UNITED STATES

[List of members—25]

	Party	Country	Committees
Mr Geoffrey Hoon, Chairman.	SOC	United Kingdom	Legal/Rules.
Mrs Hiltrud Breyer, 1st Vice-Chairman.	Greens	Germany	Energy.
Mr Philippe Herzog, 2nd Vice-Chairman.	LU	France	Economic.
Mrs Mary Banotti	EPP	Ireland	Environment/Youth & Culture.
Mr Jean-Paul Benoit.	SOC	France	External Economic Relations.
Lord Bethell	ED	United Kingdom	Political Affairs.
Mr Elmer Brok	EPP	Germany	Social Affairs.
Mr Bryan Cassidy	ED	United Kingdom	Economic/Petitions.
Mr Artur da Cuhna Oliveira.	SOC	Portugal	Regional Policy.
Ms Teresa Domingo-Segarra.	LU	Spain	Agriculture/Women's Rights.
Mr Gene Fitzgerald	RDE	Ireland	Regional Policy.
Mr Gerardo Gaibisso.	EPP	Italy	Environment.
Mr Ernest Glinne	SOC	Belgium	Social Affairs.
Ms Annemarie Goedmakers.	SOC	Netherlands	Budgets.
Mr Lyndon H.A. Harrison.	SOC	United Kingdom	Regional Policy/Rules.
Mrs Maria Magnani Noya.	SOC	Italy	External Economic Relations.
Mr Jean Penders	EPP	Netherlands	Political Affairs.
Mr Ioannis Pesmazoglou.	EPP	Greece	Political Affairs.
Mr Luis Planas Puchades.	SOC	Spain	Political Affairs.
Mr Hans-Gert Poettering.	EPP	Germany	Political Affairs.
Mr Gerhard Schmid.	SOC	Germany	Environment.
Mr Jacques Tauran	ER	France	Transport & Tourism.
Mr Josep Verde I Aldea.	SOC	Spain	Political Affairs.

EUROPEAN PARLIAMENT DELEGATION FOR RELATIONS WITH THE UNITED STATES—Continued

[List of members—25]

	Party	Country	Committees
Mr Rudiger von Wechmar.	LDR	Germany	Institutional.

Note.—Also participating: Mr Luigi Colajanni, Chairman of the Group for the European Unitarian Left (Italy).

Abbreviations: SOC—Socialist Group. EPP—European People's Party (Christian-Democratic Group). LDR—Liberal, Democratic and Reformist Group. ED—European Democratic Group. EUL—European Unitarian Left. EDA—European Democratic Alliance. ER—European Right. LU—Left Unity.

RECESS

Mr. MITCHELL. Mr. President, I now ask unanimous consent that the Senate stand in recess for 5 minutes to allow my colleagues to join me in greeting our European friends.

Let us welcome our colleagues from the European Parliament. [Applause.]

There being no objection, the Senate, at 12:24 p.m., recessed until 12:29 p.m.; whereupon, the Senate reassembled when called to order by the Presiding Officer [Mr. GORE].

Mr. MITCHELL. I thank those of my colleagues who were able to be present to greet our guests, and simply conclude by thanking our guests for their presence. We look forward to our continuing dialog with them to advance our aims.

Mr. MOYNIHAN. Mr. President, I say as our guests depart how pleasant it was to see so many friends we met last year in Lake Chautauqua. It is a pleasant thing to have you here. But if you came to more agreeable places than Washington, we could come to see you.

Mr. HELMS. Mr. President, I join in welcoming our friends and bidding them farewell.

It is nice to have you with us.

(Conclusion of later proceedings.)

SURFACE TRANSPORTATION EFFICIENCY ACT

The Senate continued with the consideration of the bill.

Several Senators addressed the Chair.

The PRESIDING OFFICER. The Senator from Florida is recognized.

Mr. GRAHAM. Mr. President, I want to make a couple of comments. One is we ought to have a fundamental level of honesty of what we are doing to America as a result of this bill. This is not a partisan statement. I am looking at a statement from the Democratic Policy Committee for the week of June 10 through June 14 which was recently distributed to our offices. It summarizes the Surface Transportation Efficiency Act of 1991 and states that this bill, which is a major component of the Democratic agenda, will get America moving again. It will "spur economic growth by rebuilding America's infrastructure."

On one of the Sunday morning talk shows, I believe it was David Brinkley, last Sunday, John Sununu appeared representing the administration. He

was asked: "Mr. Sununu, in reference to the criticism that the administration does not have a domestic policy, what is the administration's position relative to rebuilding America's infrastructure?"

His answer was, "Our program is the Surface Transportation Act."

So both parties are representing that this legislation will rebuild America's transportation infrastructure and, by rebuilding America's infrastructure, will make us more economically competitive.

Mr. President, that is absolutely, uncategorically not the consequence of this bill. Quite to the contrary, the fundamental effect of this bill is that American's highways, America's public transit systems will be worse off in 1996 than they are today. In neither of those areas are we proposing to make a sufficient investment even to stay current with the sagging backlog of needs.

If the people who rode from northern Virginia into the District of Columbia today felt that they were in an intolerable gridlock, if the people who rode from St. Petersburg to the Tampa Airport this morning thought that it had taken 20 minutes longer than it should have, if people like them across America were concerned as to what happened to them this morning, be assured that it will be worse 5 years from now as a result of the level of funding that we are about to propose.

I would like to commend the President and his administration. Last fall he recognized the fact that we were disinvesting in our transportation system and advocated a 12-cent gasoline tax, not the 5 cents that was finally passed. It happens that that last 7 cents applied over the next 5 years is about what would be required in order to reach a balanced transportation budget, defining "balance" as being that budget required to avoid any further slippage in our Nation's transportation system.

So, Mr. President, whatever you feel about the terms of this bill, whatever you feel about the great result for a particular State or the sadness of its impact on another State, on a nationwide basis, as the U.S. Senators concerned with the U.S. transportation policy, the basic policy that we are making is a policy of disinvesting in our transportation system, a policy which also states that we are disinvesting in one of the two most fundamental public components to a smaller American economy.

I think that that is where the issue should have been joined rather than on the details of allocation. I believe at least, if we did not join that issue, that we ought to clearly indicate the limitations of what we are about to do.

Thank you.

Mr. MOYNIHAN. Mr. President, may I just join with the Senator from Forida, who is a valued member of our committee, in agreeing with him, but asking if we could not use this quiet moment we have here to recall the terms on which the committee sent this measure to the floor.

There is an introductory statement, which was not a casual one I hope, in which we tried to set this forward. We said in the years since the 1987 act, the Subcommittee on Water Resources, Transportation Infrastructure has held extensive hearings on the transportation needs of this new period and the constraints on those needs.

We say one of these constraints that will be discussed is budgetary. "The U.S. Government for the present and foreseeable future cannot and will not embark on the topic enterprises that came with such seeming ease to Roosevelt and Eisenhower. We have spent our money on other things and are now much in debt, and there you are." We went on to say this imposes two realities to us. The first reality is "with the completion of the interstate system and cutbacks, in the case of transit, the United States has entered a period of general disinvestment in infrastructure." Right there on page 5. We know it, and we do not like it. But we cite it.

Then we say, "a second reality that emerged from our hearings is that the level of Federal investment in infrastructure generally, and in surface transportation specifically, is not likely to rise at any time soon. Rescuing America's 'crumbling infrastructure' has become part of the imagery of American political discourse."

The Senator cited the policy commitment statement as part of our imagery. "For the moment, however, the Federal deficit is a reality and a restraint. Just as engineers live in a world of precision measurement, prudent risk, and the understanding that decisions must be based on what is, rather than on what might be, so legislation concerning public works must be equally realistic."

We then went on to say, "Certainly a case can be made for greatly expanded investment in infrastructure. It is probably still not widely understood just how far we have wandered from our traditional, industrious, improving ways."

Here is a passage I feel very strongly about: "During the early 1980's, as an example, the mighty and ancient United States Army Corps of Engineers designed and supervised more construction in Saudi Arabia than in the United States. In the course of this foreign adventure we built, among other things, 46 mosques. Excellent as a limited exercise, but even mosque building can be carried to excess."

That, sir, is why we called this Surface Transportation Efficiency Act. That is why we said productivity is our goal. I just want to say to the Senator that we do not have any disagreement on the facts, but we had to deal with our constraints.

Mr. SYMMS. Will the Senator yield?

Mr. MOYNIHAN. Yes.

Mr. SYMMS. Mr. President, the Senator from North Carolina has made his way over here. He has a tight time schedule and had an issue he wanted to raise.

Mr. GRAHAM. Mr. President, I just respond briefly that I believe inadequate attention has been given to those paragraphs that the Senator has read and, therefore, an impression has been received by the chief of staff of the President of the United States, and the policy council of the democratic U.S. Senate, two groups that should have some concern and some ability to influence, that we are doing that which we are not doing. We are not, in fact, passing an infrastructure recovery plan; we are not contributing to America's economic strength by this. To the contrary, we are presiding over the decline of the American transportation system.

Second, within that context, with as few resources as we have, we ought to be targeting those resources, in my opinion, in a much more precise way to how to achieve the objectives of efficiency.

I did an analysis of one of the major interstates in my State that would be a candidate for every one of the highway efficiency measures that this bill talks about—signage, entrance control, HOV lanes, all of those items. Frankly, with the amount of dollars that is going to go to my State, it is not going to be a matter that we are not smart enough or committed enough to want to take advantage of that; it is going to be the fact that we are so deprived, financially, that we are not going to be able to take those kinds of initiatives. And so the prospect of greater efficiency in productivity is ephemeral without the resources to make it happen.

So, my concern is that we just state to the American people what it is we are doing, be candid about its implications, be prepared to point to it when we ask next why did America continue to slip in its international economic position, as another example of why we did it, and move on. But let us just not fly under colors that give to the chief of staff of the President, and to our own Democratic Policy Committee, a false impression of what we are fundamentally about.

Mr. HELMS addressed the Chair.

The PRESIDING OFFICER. The Senator from North Carolina.

Mr. HELMS. Mr. President, I have an amendment prepared, which I may or may not offer. Before I begin, let me engage in a little bit of historical reflection.

Every 5 years, we have a highway bill around this place. My thoughts go back to 1983, when I raised some questions about that 1983 bill, which was widely advertised in the press and elsewhere as merely a 5-cents-a-gallon gasoline

tax increase. That's the way it was referred to in the media repeatedly.

Well, I just happened to read that bill particularly, when it came back from conference. You could have written a 5-cents-a-gallon gasoline tax increase on one line on one piece of paper. But I vow to you, Mr. President, that conference document was a foot thick, and I recall that, late that night, I wanted to know what was in this hefty pile of paper that had come back from conference.

I asked one of the pages to do me the favor of going out to the photocopy machine and make me a copy of the conference report. When I got it, I put in a quorum call and I said, I want to read this tonight.

The next day, I began to pursue an effort to try to make sense of this bill, because it was not a highway funding bill; it was a Christmas tree. The State of Massachusetts, for example—and I have nothing against Massachusetts—well, I have a few things against Massachusetts—benefited tremendously under the bill because it was a Tip O'Neill Christmas party.

I remember standing on this floor, and I had seven, eight, colleagues standing with me. But the administration, which had originally opposed that 1983 bill, was suddenly supporting the acceleration of the passage of this conference report. It was a total reversal of position because, at the beginning, Ronald Reagan had said, it would take a palace coup for me to sign this bill."

I recall the President's calling me on a telephone in the Cloakroom and saying, "Jesse, I wish you would let this bill go on through."

I said "Mr. President, I cannot do it in good faith and, besides, I recall your saying, sir, that it would take a palace coup for you to be in a position of signing the bill. What I want to know, Mr. President, is when did the coup occur?"

So I went on—I shall not go into details—but finally one after another of the Senators who had joined with me in opposing the administration—for one reason or another, they departed and I was left alone.

Of course, I was defeated—which is all right. It is not a novelty around this place to be defeated on matters in which I participate.

I will never forget, Mr. President, a headline in the Washington Post on the front page—and bear in mind this was 1983—I recall the headline because I have it framed on the wall in my office. It says "Jesse Helms Has a Problem: He is destined for defeat in '84."

Somehow along the way, the people of North Carolina understood instinctively what I was trying to do and this fellow who was "destined for defeat" was not defeated in 1984 nor was he defeated in 1990.

On this 1991 bill we have had so many meetings we've had clusters of Senators gathering here and gathering there, and being handed a maze of statistics which were hard to decipher. We had many discussions. I remember Senator GRAHAM from Florida making an awful lot of sense in these meetings. He had the same problems that I have with this legislation.

As I have said, I have studied this bill as best I could, along with my associates. One thing became crystal clear and that was that there was at least one provision—more than that actually—providing exorbitant amounts of money to be set aside under the interstate construction program section of the bill.

And where, Mr. President, do you reckon that money goes? It goes to the State of Massachusetts. In fact, out of a total of $7.2 billion provided under the interstate construction program for the next 5 years, the State of Massachusetts gets $2.55 billion, about one-third of all the money for the entire country for interstate construction.

I find this exceedingly interesting, if not dismaying, particularly since I have not heard one syllable of discussion from anybody, the authors of the bill, or anybody else, about what appears to me to be an aberration in the interstate construction program. Bear in mind those figures, a $7.2 billion total for the interstate construction program over the next 5 years and $2.55 billion of that goes to just one State.

Mr. President, I know the hour is late in terms of going to a third reading of this bill, but I think the record ought to be made clear about my apprehension regarding some aspects of it. I do not want to impose on the managers of the bill, but I need some explanations from them for the record. Maybe I will then understand it. But right now I do not. And a number of other Senators have indicated to me that they do not understand it.

I wonder if the managers of the bill will indulge me by responding to some inquiries about the central artery and harbor tunnel project in Boston funded in this bill? First, I seem to recall that in 1987 the Reagan administration's highway bill contained some so-called rehabilitation and maintenance funds for part of this project in Boston.

Can either of the managers tell me whether this entire project, both the harbor tunnel, and the peripheral street improvements augmenting the central artery depression, was included in the Reagan administration's 1987 highway bill as an interstate construction project? Was it or was it not?

Mr. SYMMS. If the Senator will yield, I think the answer to that is, yes.

Mr. HELMS. I do yield for the purpose of answering the question.

Mr. SYMMS. I think the answer is, yes, I believe.

Mr. HELMS. It is my recollection that it was not, and therefore, I believe that the only reason we are stuck with the enormous construction costs of so much of this one project in one State in this bill is because we failed to sustain President Reagan's veto of the 1987 highway bill. Is that correct, or is it not?

Mr. SYMMS. Mr. President, I would say the answer to that is, no; that that was not at issue. What was at issue with President Reagan were demonstration projects.

Mr. HELMS. All right. Is the Senator sure about his answer?

Mr. SYMMS. To answer that, if my recollection is correct, the interstate cost estimate going back to 1982 included the completion of these controversial projects in Massachusetts.

Mr. HELMS. The entire Boston project was included?

Mr. SYMMS. Entirely. And if I could just state it and then, Mr. President, I ask unanimous consent to print my entire statement in the RECORD for the Senators' information on how this has all come about.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 1.)

Mr. SYMMS. Mr. President, it is controversial; the Senator is quite right. It will continue to be controversial. But most of the interstate in this country was built on a 90-10 formula and I would say, Mr. President, that my first experience to recognize what the interstate did to this country was when I was a young lieutenant in 1960 and was assigned from Quantico, VA, to Pensacola, FL. It was difficult for a driver to drive to the South. You could not get there in less than 2 days. Trucks were backed up. There were traffic jams, poor roads, and congestion.

In this Senator's opinion, the building of the Interstate System did more for the Sun Belt and South and the West, my part of the country, than anything else that the Federal Government has done in a long time to help us develop our States. Most of that was built with Federal money, through North Carolina, through South Carolina, through Georgia; 10 percent was paid for by the States.

This Boston project is going to cost $4.7 billion to complete according to the 1989 ICE. The State of Massachusetts is putting up $1.87 billion. So they have put up a much higher proportion than other places. And there is a long record of what happened.

There are two projects—a tunnel to the airport and then a downtown project. And through the evolution of the downtown project, it was decided that it would be more efficient to have it built underground. The Federal Highway Administration said they would not pay for that.

So, through negotiations in 1986 with then Federal Highway Administrator Ray Barnhart, our committee and the transit people in Massachusetts came to a compromise where the State of

Massachusetts would put up, I believe it was, $800 million to pay for the depression of this artery. The tunnel under Boston harbor was considered inadequate at the beginning of the Interstate Program, and it was determined that a four-lane tunnel was needed because of the service to Logan International Airport.

For any of you who have ever been to Boston, you will readily see that the tunnel under the harbor is needed. That was never in controversy, the part to the airport. The controversial portion is the depression of the central artery underneath the city.

Before the Senator has the floor—and before I yield back—I want to say that I am very, very pleased that the Washington Post was incorrect about the Senator's reelection in 1984 and again in 1990. And I certainly appreciate the Senator's concern for the taxpayers and for the country.

But I do believe that if the Senator examines the record of this, he will find that the interstate spending on this bill on the Massachusetts project is no different in Massachusetts than it is in the controversial expensive project in California, the Century Freeway, which will be completed in this bill or those sections of interstate. I think there is one in North Carolina some 99 million dollars' worth that will be completed in the bill.

We are coming to the end of the Interstate System and this happens to be one of the most expensive pieces of highway ever built. But, to not build it, we would have to go back and repeal a section of what has already been agreed to, voted for by Congress, and I just do not think it is practical.

I hope the Senator would not offer the amendment, because then we will have to go back and have amendments on all the other interstates, whether or not we should complete them. I think in general, the Interstate and Defense Highway System has been one of the best Federal projects we have ever seen in terms of opening up commerce, industry, and opportunity and personal freedom for Americans.

Mr. HELMS. Will the Senator yield?

Mr. SYMMS. The Senator has the floor.

Mr. HELMS. The Senator is saying things that are not in dispute. We all recognize the importance of the Interstate System.

Mr. President, I may be correcting an error Senator SYMMS did not make. But if I understood him correctly, he stated that the central artery portion of the Boston Harbor project was in the Reagan bill. I submit that it was not in the Reagan bill. But the RECORD will show whether I misunderstood him or not.

If I did misunderstand him, I apologize to him.

Furthermore, I gathered from what he said that there is a contradiction between his understanding and mine about the bill.

The lower Federal match ratio the Senator from Idaho mentions results only if you count the entire cost of the project, including the federally ineligible parts, as being the amount of money the Federal Government has agreed to match. It may be insignificant in terms to some people, but it means something to me because it involves billions of dollars of the taxpayers' money.

If I can resume my questioning, I ask the Senator—or either manager of the bill—if we approve this $2.55 billion in interstate construction funds for one State, one project, now in this bill, to build the Boston Harbor Tunnel and the six-lane seaport access road, do the managers of the bill have any indication that the State of Massachusetts will later seek future additional Federal funding for the $1 billion additional cost of putting the existing six-lane downtown expressway underground—a project that is currently ineligible for Federal interstate construction funds?

Mr. SYMMS. Mr. President, it is my understanding—the Senator from Massachusetts may want to speak on this—but it is my understanding that the point Senator HELMS is making is this.

First, the Massachusetts project was on the ICE in 1982, the interstate cost estimate. The dispute was whether as part of completing the interstate, Massachusetts could sink the central artery. This is controversial. It has been a dispute. And the Reagan administration said, no, we will not put up Federal funds to sink the artery. You will be allowed to have the money you are entitled to for the completion of the interstate, but not money to sink the artery.

The compromise that was agreed to was that the State of Massachusetts would come up with the extra money needed for the underground interstate. I think that $800 million of State funds was the number Massachusetts came up with to put into the project. That is what the dispute has been about.

I do not know whether I can answer the question whether Massachusetts will come in and ask for more money. But if they do, they will not be entitled to it.

It is my view this will be the last highway bill that goes through that will have interstate construction dollars in it, because this bill completes the interstate.

Mr. MOYNIHAN. Mr. President, might I seek recognition to agree?

The PRESIDING OFFICER. The floor is under the control of the Senator from North Carolina.

Mr. HELMS. I will be glad to yield to the Senator.

Mr. MOYNIHAN. I simply wanted to agree with the statement of my comanager: This is the end of the interstate construction era. The last.

Mr. HELMS. Then this is the last time, at least for that project, that the taxpayers in 49 States are going to be milked to benefit one State? Is that what the Senator is saying?

Mr. SYMMS. Yes, that is correct, Mr. President. But we could turn right around and say the taxpayers of 49 States were milked to build the road that goes from eastern Idaho to the Oregon border. It is the same thing. We built an Interstate and Defense Highway System throughout the country. Because of the extremely high costs of the most congested areas, most of the rest of the roads got built.

The taxpayers from 49 States are going to be milked to pay for the last; the taxpayers from 50 States are going to be milked to spend the last $99 million in North Carolina.

The State of North Carolina has been a donor State; some States have not. The State of Virginia, for example, is a donor State now, but over the cost of the Federal Highway Program, since 1959, Virginia has returned back to the State $1.27 for every $1 the Virginia taxpayers have put in.

Mr. HELMS. The Senator means the Federal Government has returned to Virginia; he said Virginia had returned.

Mr. SYMMS. In other words, the taxpayers of Virginia had paid in $1 of Federal gas taxes for highway construction, and they received back $1.27 over the life of the program.

There are two major interstate construction programs left: Century Freeway in Los Angeles, and the Boston Central Artery and harbor tunnel projects.

I think the Senator from North Carolina would agree, if he went to Boston, that it is in the best interests of the whole Northeastern part of the United States to build a four-lane road to the airport so people can get to and from the international airport in Boston.

That was agreed to by the Reagan administration, that it would be a good investment to complete the road. Because the city grew so much from 1957, when they originally planned a two-lane road on that interstate, it was upgraded to four lanes.

The controversial part, which will be somewhat explained in more detail in the report I will put in the RECORD, is very controversial. It is the Central Artery project in Boston, which was put back in the 1982 ICE, and at that time the Federal Highway Administration refused to pay the extra cost to sink the artery and build the interstate under the city.

Then there was a big compromise. Massachusetts will be coming up with $1.87 billion out of a $4.7 billion project based on the 1989 ICE, which is around 20 to 22 percent. That is a higher percentage of State funding than the rest of the country for most of the interstate, where not over 10 percent of the funds are State funds.

It may not be completely perfect, but that is the agreement that has been made. And I see no choice, as a member of the committee, to complete the project. Then people will be able to drive on up to Maine and have the same privileges they have when they drive through Washington, DC. They can follow the beltway, and up to Baltimore or Richmond, whichever way they are going, as the road was designed to do.

Mr. HELMS. Mr. President, I think the Senator understands, and I hope other Senators will understand, the point of my question. How do we justify to the other 49 States this inordinately expensive project in Massachusetts, when it is agreed, as I understand it, and if I read the Boston Globe and other newspapers correctly—in the decision, Boston's decision, to depress, as they put it, the downtown expressway, which will increase the expressway's capacity only from six lanes to eight lanes? Does the Senator see what I am talking about? Increasing six lanes to eight lanes, at this enormous cost?

That is what the other 49 States are looking at. Believe me, I am not the only Senator who feels this way about it. I may be the only Senator who will stand up here and inquire about it. But I think the record ought to be complete. That is the reason I am putting the Senator through this questioning which may be an ordeal for him.

The claim has been made, I will say to the Senator, that the completion of the Boston Harbor Tunnel project alone will relieve the congestion on the existing six-lane expressway. What bothers me, as I have already indicated is that all this money is going to increase it just two lanes, to make it eight lanes. It is hard for me to accept, even from my friend from Idaho, his suggestion that this is a cost-effective use of Federal funds.

But it is a fait accompli; I understand that. I have been watching these highway bills for some years. I got into a heap of trouble in 1983 because I tried to watch a little too closely when that Christmas tree barreled into the Senate from the conference. I will never forget that, but that is neither here nor there.

However, since the downtown expressway will be increased from six to eight lanes, once it is put underground at an enormous cost, is it not reasonable to assume that the depression of the central artery is more of a highway beautification project than a really needed highway expansion?

Mr. KERRY. Will the Senator be willing to yield for a question?

Mr. HELMS. I will in a minute. I want to accommodate my friend. The only way to make legislative history is to deal on the floor with the managers of the bill. For this part of it, I prefer to do that. As a matter of fact, I will then turn over the floor to the two Massachusetts Senators.

Mr. SYMMS. Mr. President, if I can answer the Senator's question, what we are doing in the committee bill is fulfilling an obligation that was agreed to in 1987.

Mr. HELMS. It does not make it right, Senator.

Mr. SYMMS. I understand that. Let me add this. The portion of the artery which is underground is being paid for by the taxpayers of Massachusetts, and that is why it is not a 90-10 project; it is more like a 78-22 project; $800 million depresses the artery. If it makes it a beautification project, if one wants to call it that, one might do that, but that is being paid for by Massachusetts. What we are paying for with completion of this project and the interstate is a result of 25 or 30 years of monetary inflation, which has increased the cost of highway projects, so that the first highway projects that were built back in the fifties and sixties and the early seventies are much less expensive than the last ones. And also, those controversial projects, whether it has been big congestion in the big cities, have cost more money because the real estate costs more money.

Boston has the inconvenience of traffic going through there every day. They have the problem of trying to bring in the construction crews to work while they are trying to move this massive amount of traffic of people going to work. It is a very difficult, very costly program.

The only other alternative would be to just say we are not going to keep the commitment that was made in the agreement between Congress and the administration and close down the projects. There is one section in my State on Interstate 90 that is just being finished now. It is not open yet, but they are completing it. I would hate to stop that now and not have that completed.

The Senator from North Carolina may well be right, but I think one could make the argument, Mr. President, that maybe the Federal Government should not have built the interstate, if one wants to make that argument. I happen to be one who thinks the interstate, on the whole, is one of the best things that has happened in this country. It opened up the West; it opened up the Sun Belt. It has created enormous opportunities, and personal freedom is expanded by a good road system in the country because people can get in their automobile, drive, and go there.

Mr. HELMS. I have the greatest respect for my friend from Idaho, but he is getting off the beaten path of the point we are talking about. It is a given that everybody thinks the Interstate System is great. I like it in my State and you like it in yours. We are down to the nitty-gritty in my inquiry. One-third of the Interstate construction money in this bill goes to one State.

Mr. SYMMS. That is because the project was not completed.

Mr. HELMS. For whatever reason, for whatever reason—I am not pinning the mistake on the Senator from Idaho or Pat Moynihan or anybody else. I am just trying to revive a historic statement, "I have no light to guide me except the light of the past."

I hope that, if we have another highway bill, it will be a little more accommodating to 49 States and a little less accommodating to one State. That is all I am trying to say. I am seeking to make this clear through legislative history.

I will go down to lunch with the Senator and let him tell me how great the Interstate Highway System is. I have not disputed that. It is good for Idaho; it is good for all. But the question is how did we get into this tangle in the first place? I will remind him that I said earlier that Ronald Reagan, at the outset in 1983, said it would require a coup for him to sign the 1983 bill. Then he suddenly became an advocate of it. I asked him when the coup occurred?

Anyway, since the Boston project would create 15,000 new construction jobs in Boston, I ask either of the managers, is it not a fact that the program is being touted in Massachusetts by official spokesmen as a "jobs program?" Is that not correct?

Mr. SYMMS. Mr. President, I say to the Senator it probably is, but the reason it is touted as a jobs program is because the people who tout it as a jobs program have never read "Human Action" by Ludwig Von Mises. Had they read "Human Action," they would know that building highways is not a jobs program. You have never heard this Senator take the floor, not in 1982, not in 1987, not in 1991, and say this is a jobs program. It is not. It is a highway program.

Mr. HELMS. I do not want to offend my friend. I have read "Human Action." I know about Ludwig Von Mises.

Mr. SYMMS. Ludwig Von Mises would say you can build that tunnel.

Mr. HELMS. But that has nothing to do with what we are talking about. I asked you, are they touting this——

Mr. SYMMS. Yes, they are touting it, but that does not make it right.

Mr. HELMS. That is the answer to my question.

Mr. SYMMS. It is a highway project; it is not a jobs bill. If you did not spend the $2.5——

The PRESIDING OFFICER. The Senate will come to order. The Senator from North Carolina has the floor.

Mr. SYMMS. If the Senator will yield, I will just say——

Mr. HELMS. I have not yielded yet.

Mr. SYMMS. In Boston, they can spend it on building airplanes or something.

The PRESIDING OFFICER. The Senator from North Carolina has the floor.

Mr. HELMS. Mr. President, let me inquire of the Senator from Idaho. If I am going to offend him by asking these questions, I am going to retire from the Chamber.

Mr. SYMMS. The Senator from Idaho is happy to answer the questions. I am not offended.

Mr. HELMS. If it gets too hot, tell me, because we have been friends too long, OK?

Mr. SYMMS. I understand that.

Mr. HELMS. And I am getting to the end of it. Do either of the managers have any indication that Massachusetts will seek Federal assistance to help pay the $4.8 billion cost of mass transit and environmental improvements Massachusetts promised the Boston project's environmental opponents in order to get the environmentalists support for this project, which will cost, by the way, a total of $5.5 billion?

Mr. SYMMS. I have no indication that they will.

Mr. HELMS. What would be your reaction if they did?

Mr. SYMMS. I would oppose it.

Mr. HELMS. Pardon me?

Mr. SYMMS. If they ask for more, I would oppose it.

Mr. HELMS. Now we are getting somewhere, Mr. President. That is exactly what I want for legislative history. How about the Senator from New York, would he feel the same way about it?

Mr. MOYNIHAN. May I say to my dear friend, I missed the question and I would like the Senator to just repeat it.

Mr. HELMS. The point I am making is that Massachusetts' officials promised the environmentalists, who opposed this project in the first place—you know they did—that Massachusetts would make $4.8 billion in mass transit and environmental improvements if the environmentalists would stop opposing the Central Artery and Tunnel project. What I want to know is, if Massachusetts seeks Federal assistance to help pay for these promised mass transit and environmental improvements, is the Senator going to be opposed to it?

Mr. SYMMS. Mr. President, I would only support what they are eligible for. As a matter of fact, I believe right now the Sierra Club has them under lawsuit trying to block this project.

Mr. HELMS. That may put some of us in a position of being in bed with the Sierra Club. I have never been in that position before.

Are the mangers of the bill aware that after promising these improvements, Massachusetts then exempted significant parts of the Boston project from having to comply with the State's wetlands and waterways protection laws?

Is that a fact?

Mr. SYMMS. I do not know the answer to that.

Mr. HELMS. I will tell the Senator that they did.

Mr. SYMMS. The Senator may well know.

Mr. HELMS. Yes. Just two more questions and then we can go to lunch as friends.

Can the managers tell me what the original cost estimate was for this project in 1983, which was about 8 or 9 years ago, and how much that original cost grew between 1983 and 1987, and what the most recent total cost estimate is?

Mr. SYMMS. Mr. President, the answer to that is the cost estimate that I had before 1987 was $1.3 billion. It went up to $3.3 billion after the 1987 Highway Act. Now it is up to $5.4 billion in 1991 ICE.

Mr. HELMS. Five point four billion is correct. I am just making the record.

Mr. SYMMS. The 1991 estimate is 5.4, the 1989 is 4.7.

Mr. HELMS. This is the final one. Is either or both of the managers willing to make any assuring comments to the rest of the States that the Federal Government will not be responsible for future increases in the cost of the Boston project above and beyond the $2.55 billion in this bill? Is this the end of it?

Mr. SYMMS. Not for any interstate construction costs, I certainly will not. That would be outside of what is in our bill. And I think that the Senator from New York and I have tried to make it clear to all our colleagues that this is the last interstate construction bill we can foresee to come before the Congress short of Congress passing a new Interstate Highway Construction Program. But on this subject, this finishes it and I think that is the understanding.

Mr. HELMS. This is it?

Mr. SYMMS. This is it.

Mr. HELMS. Mr. President, I have made the legislative history that I wanted to make and now I will yield the floor so that Senators from Massachusetts can have at me a little bit.

I thank the Chair. I yield the floor.

EXHIBIT 1

INTERSTATE SYSTEM COMPLETION—BOSTON CENTRAL ARTERY/THIRD HARBOR TUNNEL

BACKGROUND AND PROJECT SCOPE

Before 1987 Highway Act: operational improvements to existing Central Artery (I-93) and construction of a 2-lane tunnel (I-90) to Logan Airport.

After 1987 Highway Act: construction of I-90 as a 4-lane toll tunnel and reconstruction of I-93 with new depressed section (High to Causeway Streets) defined as ineligible for Interstate construction funds.

CURRENT STATUS AND SCHEDULE

Approximately $274 million has been obligated; $164 million for preliminary engineering and environmental studies and $110 million for right-of-way acquisition. Some $145 million of this amount has been expended with 50 percent expended on engineering and 50 percent on right-of-way work.

Two supplemental Environmental Impact Statements have been developed. The final EIS signed by the State, for the Haul Road has been submitted for approval by the Federal Highway Administration. The draft Supplemental EIS for the entire project was made available for public comment on May 18, 1990. The comment period closes August 22. Public hearings are scheduled for June 21. The final supplemental EIS for the entire project is anticipated by the end of 1990.

Further requests for authorizations to proceed are expected in the next several months. Requests for $135 million for management, engineering, and environmental activities and final design are anticipated. Some $20 million in added authorizations for right-of-way acquisition are also anticipated.

The Spectacle Island disposal site in Boston Harbor is the preferred alternative site for disposal of some 13½ million cubic yards of excess materials. No final agreement has been reached with the Corps of Engineers or the EPA concerning permit actions. The Corps has requested the consideration of alternative land sites for the disposal. Obtaining necessary permits may take several months after the final supplemental EIS has been approved.

The project appears technically feasible, although extremely complex, due to maintaining traffic and utilities while mitigating environmental and historical impacts.

An optimistic engineering and construction schedule will require 9 years of concentrated effort.

The Sierra Club recently filed a complaint in State court that would require the State to obtain a permit from the State Air Quality Agency before proceeding with construction of the tunnel ventilation buildings. No hearing date is set, but the State is prepared to litigate.

COST-EVALUATION AND PROJECTION

TABLE SHOWING COST EVALUATION

[In billions of dollars]

	Pre-1987 act	Post 1987 act	1989 interstate cost estimate
Interstate construction funds	1.18	2.26	2.83
Other Federal-aid and State funds	.13	1.06	1.87
Total	1.31	3.32	4.70

The bulk of the ultimate cost will remain to be obligated after the existing Highway Act expires (10/1/91).

This project will represent the major cost (over 40% of the U.S. total) of completing the Interstate System in the Highway Reauthorization Bill; while some 25 States will have remaining Interstate projects, most are relatively small.

Based on the 1989 Interstate Cost Estimate (ICE) the nationwide Interstate completion shortfall is $3.2 billion (Federal funds) including $1.2 billion in Massachusetts.

BOSTON CENTRAL ARTERY/THIRD HARBOR TUNNEL

BACKGROUND AND PROJECT SCOPE

The Central Artery (I-93) and the existing tunnels (Sumner and Callahan) in Boston are heavily congested, have substandard geometrics, and need considerable work. The Central Artery/Third Harbor Tunnel (CA/THT) projects would completely reconstruct I-93 from the Southeast Expressway, through the city core, to the I-93/US-1 interchange just north of the Charles River. I-90 will be extended from its east terminus at I-93 to an interchange with US-1A at Logan International Airport.

These projects, except for the portion of I-93 between High Street and Causeway Street, were made eligible for Interstate construction funds by the 1987 Surface Transportation and Uniform Relocation Assistance Act.

The 1991 Interstate Cost Estimate (ICE) submitted to the Congress included $3.870 billion in eligible costs, an increase of $716 million above the 1989 ICE.

CURRENT STATUS

Approximately $765 million has been obligated; $378 million for preliminary engineering and environmental studies, $111 million for right-of-way acquisition, and $276 million for construction.

Two supplemental EISs have been approved. One covers the South Boston Haul Road, a mitigation measure to keep trucks hauling construction materials for the Third Harbor Tunnel off South Boston streets and the second covers the I-90/I-93 projects. A Record of Decision (ROD) for the I-90/I-93 project was approved on May 10, 1991, and publicly announced by the Governor on May 13. The ROD for the Haul Road was previously approved.

The Sierra Club filed suit in Federal District Court under the Clean Air Act, on March 25, 1991. At issue are ventilation buildings on I-90 and I-93.

The city of Cambridge, the Committee for Regional Transportation, and others have filed notices of intent to sue under State environmental requirements. One specific issue motivating the city is Scheme Z, the design alternative selected for crossing the Charles River.

On December 19, 1990, the Conservation Law Foundation (CLF) and the Massachusetts DPW signed a Memorandum of Understanding (MOU) of "Traffic and Air Quality Mitigation" for the CA/THT project.

The agreement to which FHWA is not a party, calls for $1 billion for transit, HOV, rail, parking, and other measures to reduce traffic in the Boston area and improve air quality.

The costs would not be a CA/THT project responsibility, but the Founation and the Massachusetts DPW wanted the FHWA to incorporate the agreement into the ROD and grant conditions.

The FHWA did not agree to do so because the work proposed in the agreement is not project related. While FHWA is not opposed to the specific measures called for, in the agreement, the FHWA will not make the privately negotiated agreement a project responsibility. The agreement is far beyond the scope of the project, imposes unwarranted responsibilities on the FHWA; appears to violate the planning process, some NEPA requirements (such as public hearings and evaluation of impacts) and other provisions of law; and would be difficult and unwieldy, if not impossible, to enforce.

The matter of the MOU is expected to remain controversial.

Design activities are continuing on all portions of the Central Artery/Third Harbor Tunnel.

Subaqueous I-90 tunnel is being designed and is scheduled to go to construction this summer.

The preliminary design at the 100 scale is almost complete and the final design is underway elsewhere on the I-90/I-93 projects.

Massachusetts has a substantial amount of Interstate construction funds available ($1.41 billion as of April 30, 1991). If final design of all I-90 construction projects were expedited to accelerate construction of these projects, I-90 could be opened as early as 1994.

Completion of both projects is not expected until near the year 2000.

The PRESIDING OFFICER. The senior Senator from Massachusetts.

Mr. KENNEDY. Mr. President, first of all, I want to express appreciation to the managers of the bill for their very eloquent and accurate responses to the questions involving a particular construction measure that affects not just Massachusetts but the country. It affects all of our regions. They have responded to the questions that have been raised, and I am grateful to them for their understanding of the importance of the completion of this particular element in the Interstate System.

The funds contained in this bill for Massachusetts are for the Interstate 90 and Interstate 93 project in Boston, also known as the central artery and third harbor tunnel project.

Along with the H-3 project in Hawaii and ongoing projects in California, this project in Massachusetts addresses one of the last remaining significant gaps in the Interstate Highway System.

The completion of the Interstate System is one of the highest priorities and objectives of this highway bill. Closing these remaining gaps is essential to the integrity of the overall system, and there is no justification for denying these funds.

This project is of great importance to the entire New England region. The central artery—I-93—is the most congested and dangerous interstate highway segment in America. Ever since the days of the Ford administration in 1975, the Federal Highway Administration has included this project in its maps and cost estimates for the Interstate System.

The plans include two basic features—widening approximately 4 miles of Interstate 93 through the center of Boston, and building a third harbor tunnel to Logan Airport as part of Interstate 90.

Interstate 93 is one of the primary north-south interstate routes through New England, starting south of Boston in Massachusetts, running north through New Hampshire, and terminating in northern Vermont. It is also the principal route for traveling from Logan Airport to New Hampshire and Vermont.

Interstate 93 is a major commercial thoroughfare between southern and northern New England. But the current congestion results in bumper-to-bumper traffic for nearly 10 hours a day. This congestion is responsible for adding hundreds of millions of dollars annually to the cost of transportation in New England, as well as contributing to lower air quality.

The American Association of State Highway and Transportation Officials estimates that the central artery will save at least 21 million hours of travel time a year, almost three times as much as any of the recently approved large urban interstate projects—I-105 in Los Angeles, I-478 in New York, I-90 in Seattle, I-10 in Phoenix, and I-95 in Baltimore.

The other portion of the project, the third harbor tunnel, involves the completion of the eastern end of Interstate 90, which crosses the country from Seattle and becomes the Massachusetts Turnpike into Boston. Under this project, the turnpike will be extended to Logan Airport, with a connection from the airport to Route 1A north to New Hampshire and Maine along the New England coast.

Anyone who has sat in the two existing harbor tunnels in an effort to get to or from Logan Airport knows the need for an additional tunnel.

A new tunnel is long overdue to meet the needs of the large numbers of business and other visitors who use Logan Airport. It will also serve as an essential commercial link between New England's primary regional and international airport and the rest of the New England economy.

The provision for Massachusetts that is being challenged by the Senator from North Carolina was part of the Bush administration's highway proposal. It was part of the bill reported out by the Committee on Environment and Public Works, and it was also part of the proposal by the Senator from Virginia [Mr. WARNER].

As this broad bipartisan support indicates, there is widespread recognition of the importance of this project to the completion of the Interstate System.

The funds contained in this bill are not a bailout, or a special favor for Massachusetts. They represent funds that have been carried on the interstate cost estimate for this project for more than a decade.

Over the past 10 years, Massachusetts has been working on the design, planning, and organization of this massive project. During that time, Massachusetts has made available to other States, through the Federal Highway Administration's administrative process, funds that with inflation amount to nearly $2.5 billion.

In the last 5 years alone, Massachusetts has made available for reallocation among the States over $1 billion originally earmarked for Massachusetts.

What we are talking about here is a significant part of the Interstate System that has been on the drawing board for many years, and which is finally about to be completed.

Now, after many years of waiting and planning, this project is under way. The Federal Highway Administration issued its record of decision for the project, marking the completion of administrative and environmental review, about 6 weeks ago.

Shortly thereafter, the first major construction contract—for the third harbor tunnel, involving $200 million

for tunnel tube fabrication and installation—was put out for bid and will be awarded this fall. Excavation work has already begun on the project.

The remaining controversies—and in a project of this size there have been many—are being resolved. The State is developing an alternative design for crossing the Charles River, and is vigorously pursuing mass transit and other initiatives to address environmental concerns. I have every confidence that this project will proceed as scheduled.

The funds challenged by the Senator from North Carolina are in this bill because of a compromise reached in the 1987 highway reauthorization statute. Section 138 of that law provided for upgrading Interstate 93 and completing the Interstate 90 gap to Logan Airport.

As a matter of compromise, Massachusetts and the Congress agreed that the cost of the High Street to Causeway Street segment, amounting to about 4,500 feet of roadway with a cost of $1 billion, out of a total $5 billion, would not be eligible for interstate construction funding.

Under the terms of the compromise, Massachusetts will cover roughly 30 percent of the overall project costs out of State and noninterstate funds. It is the balance contained in that congressional compromise that is the subject of the bill before us today and that the Senator from North Carolina proposes to undo.

This compromise was designed to provide for the construction of this remaining interstate gap as quickly and efficiently as possible.

The premise of construction of the Interstate Highway System has always been that as each part of the system was ready, it would be built.

Now we are down to a relatively few remaining miles, but we still have an obligation to honor the commitments that have been made, and to see that the Interstate System is completed.

This project is clearly needed. This stretch of road in Boston has almost four times the national average of accidents, and many, many times the national average of delays, for equivalent urban highways. It is a menace to highway safety, and a serious regional transportation bottleneck.

The project has been on the books for years. The question is whether the Federal Government intends to honor the commitments and keep the promises it has made throughout these years. I urge my colleagues to vote with the committee, vote with the administration, and vote for the completion of the Interstate Highway System—and vote against this amendment.

Very briefly, Mr. President, I want to point out, since the point has been made by the Senator from North Carolina, the justification for the kinds of expenditures that are being included in this legislation. Over the past 10 years Massachusetts has made available to other States about $1.4 billion in interstate construction funds. After accounting for inflation, this amounts to more than the $2.55 billion for the central artery and tunnel project contained in the bill. That is according to the Federal Highway Administrator.

In other words, over the period of the last 10 years when other projects, including projects in North Carolina and all over this Nation were on track, and while the completion of the third harbor tunnel and also the artery was in the planning stage and we were dealing with some of the complex issues of title and acquiring rights of way, the resources that otherwise would have been allocated to Massachusetts were being made available to other parts of the country. When you consider inflation, you find out what was actually turned back by the State of Massachusetts is in excess of what is being invested in this particular project now.

Mr. President, I am not going to take the time of the Senate to make the case that this is the most important and significant bottleneck in all of the Interstate System throughout the country. That has been documented.

I am not going to make the case that there are four times as many accidents within this confined area in Boston than any other part of the country. That has been documented.

I am not going to make the case in terms of the amount of time that is lost each day, some 12 hours a day for those who are utilizing this particular roadway. It is projected to be 17 hours a day by the year 2000, more than any other bottleneck in the country. That has been documented.

I am not going to make the case about completing the chain that links Spokane, WA, with Boston from the East to the West or the chain that comes up from Miami to the Canadian border. They both run through this particular area, which is the most congested and dangerous intersection of the country. That was understood by President Ford going back to 1975, and it has been understood since that time.

So I welcome the comments that have been made by the Senator from North Carolina and the excellent responses which have been given by the Senators from both New York and Idaho.

The final point I would like to make, Mr. President, and I wish my friend from North Carolina were here, is when those 18-wheelers come on out of North Carolina up I-95 ready to sell all those tobacco products to Maine, New Hampshire, and Vermont, I do not think they ought to have to wait in Boston for 10 or 11 hours. If my good friend from North Carolina wants, he may come with me and sit in one of those 18-wheelers, packed to the top with tons of tobacco, cigarettes, headed for Maine or New Hampshire and Vermont. They should not have to wait that long.

I think I am speaking for every one of those tobacco farmers down in North Carolina when I say we want to be able to get their product on the road and we want to get it delivered and delivered on time to all those people up there in the northern tier of States.

If sometime my friend from North Carolina wants, he may join me in one of those 18-wheelers as we go through Boston—First we will have the opportunity to take the central artery. Imagine what this will look like in 5 or 6 years and the rapidity with which all of those trucks in commerce that are coming from North Carolina are able to get through.

So, Mr. President, I appreciate the responses that have been given. This is not just an issue for Boston. As this map indicates, what we are arguing about is the passage into Boston, around Boston, all the way up to the Canadian border: What we are talking about is separating that traffic from other traffic that goes on to Vermont and New Hampshire.

We are burdened; our community is burdened; our city is burdened; our State is burdened. But we welcome the cooperation that has been given to us by members of the appropriate committees in support of this project. There is no intention of coming back for additional resources. That has been the commitment of the State. The State is floating the bonds in order to complete its part of the measure and the legislation has been signed into law recently by our Governor. The various kinds of environmental challenges are being dealt with in a responsible way. There is every expectation that this project will be moving a head on time. Already, Mr. President, the early stirrings of this project are taking place in terms of the initial diggings.

So we look forward to welcoming all of our colleagues from north, south, east, and west to visit Boston, visit New England, visit the northern tier of States on some of the finest interstate highways this country has ever produced.

I thank my colleagues and express my appreciation to them.

Mr. KERRY. Mr. President, I thank my colleague for his comments. I just express some jealousy; all the time I have worked with him, he has never offered me a ride in an 18-wheeler. This is a significant step. I want my colleague from North Carolina to understand the depth of my colleague's support because he was willing to incur the wrath of the nonsmoking lobby. Here he is promoting getting the tobacco up to New Hampshire faster in behalf of this effort, and I think the Senator from North Carolina ought to appreciate that. I hope my colleague does not suffer.

Mr. President, I am not going to take too long either, but I would like to

thank the distinguished Senator from Idaho for his answers which have accurately reflected the history here. I would like to answer a couple of questions, and I wish my colleague from North Carolina were still here.

I had wanted to ask him a question because I am not sure to the degree to which he is aware that this project is not a new project. It does not represent $2.5 billion from scratch that is about to be spent but it represents a project that has been ongoing now for a number of years, a project where there is already a hole in the ground, where there is a significant amount of construction, enormous amount of design that has been undertaken, and significant hundreds of millions of dollars that have already been spent and already been committed in an effort to complete it.

I point out to my colleague from North Carolina that this is not somehow a special assignment for Federal funds to Massachusetts. It is not different from what any other State in the Union has already gotten. It just happen that Massachusetts is the last in line, along with California and Hawaii. Those projects also are in this bill and those projects also represent a completion of the Interstate Highway System.

My colleague from North Carolina said, why did not this happen in 1983? It did not happen in 1983 because it was not designed at that point in time. It was only under the design process then. The early comments had not then been made but it was included from the first year that I arrived here in 1985 and each year succeeding that it has been included in the interstate cost estimate.

So this has always been an anticipated cost which is now finally reaching the moment of expenditure. In each year it has been part of the Highway Transportation Act.

Moreover, in Senator WARNER's bill, substitute, in the Moynihan bill, and in the Bush administration bill, this project was included precisely as it is at this moment.

So it has received broad bipartisan support and I think it would be inappropriate at this point in time to try to upset the 1987 compromise that created this.

Moreover—let me share with my colleague from North Carolina who I hope is listening perhaps in the cloakroom—the first major construction contract for this has already been issued, $200 million construction contract, for the tunnel tube fabrication and installation for the tunnel. That is going to be awarded this fall. The bid is out.

In addition, there is some $300 million that has been made available, $328 million in the interstate highway construction funds already for this project.

But the most important point that I would make to my colleague from North Carolina—he says why is it that there is a $2.6 billion pot suddenly? Why is it being spent now?

I would call to my colleague's attention the fact that the money in this bill is equivalent to the amount that Massachusetts has lapsed to other States over the last 10 years because this project was not ready to go forward. So Massachusetts has been paying in year after year the very battle we have had for the last few days over formula on the floor of the Senate. We have been a donor State. Now is our moment to become a donee State and that should not be questioned.

The amount in this bill is exactly equivalent to the amount of money that has lapsed to other States over the past 10 years when adjusted for inflation. In fact over the past 3 years alone, Massachusetts has made available through the Federal Highway Administration process over $700 million that has gone to other States and been used by those States.

Mr. President, I do not think I need to pick up more than the senior Senator has done on the importance of this project or the history of it.

I thank the distinguished managers of the bill for their help and for their support.

One final comment: Massachusetts reserves the right, just like any other State in the Union, to come back to the Congress for discretionary funds for which we have a right to apply and we reserve the right through the Federal process to apply for any additional funds which may be available through the Federal highway process.

But the Senator from Idaho is correct that this is the end of the interstate highway allocation process, and we do not, obviously, have an ability to augment that at a subsequent point in time.

Mr. SYMMS. Would the Senator agree with me that we all owe a debt of thanks to our distinguished and able senior Senator from North Carolina for not offering the amendment that he had proposed?

Mr. KERRY. I absolutely agree with that. I had a conversation with him this morning. He told me at that time he would not offer that amendment. I am grateful to him for being willing not to do that. I think that is in the best spirit of this. I know he wanted to create a legislative record. He has done so. I just want to make sure from my perspective that that legislative record is complete.

Mr. MOYNIHAN. Mr. President, I ask unanimous consent that a letter from Mr. Gene McCormick, the very able Deputy Administrator of the Federal Highway Administration who is here with us today, with an analysis of amendment 357 be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION,
Washington, DC, June 19, 1991.

Hon. DANIEL P. MOYNIHAN,
U.S. Senate, Washington, DC.

DEAR SENATOR MOYNIHAN: Pursuant to our conversation this morning, please find below my analysis of the relationship between the apportionment formulas in the Graham Amendment No. 357 offered to S. 1204 yesterday and motor fuel consumption.

Within the Graham Amendment, the apportionments of the National Highway and Bridge System Program and of the Urban and Rural and Highway and Bridge Program are equal.

Within the National Highway and Bridge System Program the apportionment is based on the following:

One-ninth each in the ratio which the rural lane miles and rural vehicle miles traveled in each State bears to those of all States;

Two-ninths each in the ratio which the urban lane miles and urban vehicle miles traveled in each State bears to those of all States; and

Three-ninths in the ratio which diesel fuel consumed in each State bears to that consumed in all States.

As a result, three-ninths of this program's funds are apportioned according to vehicle miles traveled, which is directly related to fuel consumption, and three-ninths are directly related to diesel fuel consumption.

Within the Graham Amendment, the Urban and Rural Highway and Bridge System Program funds are apportioned according to the ratio of attributable tax payments to the Highway Trust Fund.

In combination, therefore, about five-sixths of the apportionments from the two major apportioned programs in the Graham Amendment are related to motor fuel consumption.

Sincerely yours,

GENE MCCORMICK,
Deputy Administrator.

GLENWOOD CANYON PROJECT

Mr. WIRTH. It has come to my attention that the Colorado Department of Highways has experienced cost increases and overruns in the amount of $20.50 million for construction of I-70 through Glenwood Canyon. Consequently, the department is seeking additional Federal highway funds to accommodate this additional cost. I ask the distinguished senior Senator from New York, the floor manager of the Surface Transportation Efficiency Act of 1991, Senator MOYNIHAN, if there is a way to address this problem?

Mr. MOYNIHAN. S. 1204 includes a provision that the interstate construction funds shall remain available for obligation until the end of the fiscal year in which they are apportioned. Therefore, there is a possibility that some of these interstate funds could lapse. Based on discussions with the Federal Highway Administration, previous experience shows about $100 to $200 million in interstate funds would lapse in any given fiscal year. The administration would consider these funds to be discretionary and would allocate these funds to those States that have experienced cost increases since the preparation of the 1991 interstate cost estimate and are to be used on eli-

gible projects. The Glenwood Canyon project in Colorado meets these criteria and should be a high priority.

Mr. WIRTH. I thank the Senator for his assistance.

TRANSPORTATION PROJECTS IN LOUISIANA

Mr. BREAUX. I would like to take this time to engage in a discussion on the highway bill with Senator MOYNIHAN. Am I correct in stating that S. 1204 as amended contains no authorizations for special projects, such as demonstration projects?

Mr. MOYNIHAN. Yes, that is correct.

Mr. BREAUX. Under the committee bill Louisiana receives a higher level of funding from which the State can finance transportation projects.

Mr. MOYNIHAN. Yes, this bill provides Louisiana more dollars from the Federal highway trust fund.

Mr. BREAUX. Several of my constituents have contacted me in support of specific transportation projects. Since there are no highway demonstration projects or special projects in S. 1204 as amended, I would like to identify a few of these transportation projects and clarify whether they would be eligible for funding under the Surface Transportation Program or any other program of your bill.

First, the upgrade of U.S. Highway 71, from Kansas City to Shreveport, from a two-lane to a four-lane controlled access highway. This project is also referred to as the I-49 extension. U.S. Highway 71 has had a high number of accidents and it is believed that a four-lane expansion would make the road safer.

Second, the expansion of Highway 28, between Alexandria and Leesville, from a two-lane to four-lane highway. This highway links Fort Polk and England Air Force Base.

Third, the widening of Louisiana Avenue from two to five lanes. The primary entrance to Fort Polk is Louisiana Avenue, which leaves U.S. 171 and extends approximately 3 miles eastward to the entrance of Fort Polk.

Fourth, the construction of frontage roads long I-10 for 6 miles between Ambassador Caffery Parkway and Louisiana Avenue in Lafayette. I-10 suffers from traffic congestion, much of which is caused by local trips. The construction of frontage roads would relieve the congestion due to local trips.

Fifth, the construction of a new pontoon bridge over Bayou D'Inde and reconstruction of Prater Road and Pete Manena Road. The Prater Road pontoon bridge will provide additional access from I-10 to the Rose Bluff area, which is one of the largest industrial areas in Calcasieu Parish.

Sixth, the construction of a four-lane highway connecting the Louisiana/Mississippi border to I-49 in Alexandria. A good deal of this project would consist of expanding LA-10, a State principal highway, from two lanes to four lanes. In other areas, new roads would have to be built. This project would also consist of constructing a four-lane highway from New Roads to Alexandria, a good deal of which could be done by expanding LA-1, a State principal highway. These highways would be connected by the State's new Mississippi River bridge.

Seventh, the construction of a replacement bridge over the Gulf Intercoastal Way. The current Louisa bridge is old and due to the location of the bridge support pilings and the low height of the bridge, several shipping accidents have occurred. The Gulf Intercoastal Way is heavily traveled by transport ships and for safety reasons the bridge should be replaced.

Eighth, extend the Ambassador Caffery Parkway north and south. By extending this primary through-city parkway in Lafayette, an inner loop would be completed. This would allow by-pass routes to alleviate congestion in the area.

Ninth, modify an Interstate 10 overpass to improve drainage over the waterway. The way in which the current overpass was constructed interferes with existing drainage culverts. This has led to flooding and traffic congestion.

Mr. MOYNIHAN. Under S. 1204, as amended, should a State elect to fund its portion of these projects, these projects could be eligible for Federal funds under the Surface Transportation Program or other programs in the bill.

Mr. BREAUX. I express my thanks to Senator MOYNIHAN for participating in this discussion with me.

Mr. MOYNIHAN. Mr. President, I would like to take this opportunity, as my friend has already done, to thank the staff of our committee who are not at the end of their tether, but they have really been through a very hard 2 weeks of night and day work.

I thank the committee staff: David Strauss, Michael Weiss, Roy Kienitz, Kathy Ruffalo, and also Mr. George Schoener, who has been over here from Federal highways, for helping us a lot.

I also thank the minority staff: Jean Lauver and Steve Shimberg. And also our own Rob Connor, and Tim Bernstein, Mark Kadesh, Jay Messer and Andrew Samet.

And I thank the comparable threesome: Taylor Bowlden, Angela Plott, and Trent Clerk from Senator SYMMS' staff who have brought us this far.

So while we have been quite willing to put our own reputations for accuracy in their hands, they have, I would like to think, enhanced them as a consequence. The work of such people is so easily misunderstood because we see them during the day and then we go home. They stay. It is a remarkable achievement that this legislation has come this far. It has come very far, sir, and we are ready to vote. We are ready for third reading. We are ready for final passage.

I see our friend from Alaska is here, and he has a chart which is always illuminating. If he would like to tell us more about it, I am sure we would be very interested to hear. After that, I do hope we can just finish this measure.

The President asked that it be done in 100 days. Well, here we are at 105. Let us get on with it.

Mr. President, I yield the floor.

Mr. STEVENS. Will the Senator yield?

Mr. President, I have no desire to hold up third reading. Is that the case? Are we in third reading yet?

Mr. MOYNIHAN. I regret to say to the Senate no, we are not. We ought to be. Our work is done. The work is done. But there remains some mysterious difficulty which I hope will be resolved, but it has not been. So we are happy to hear from the Senator from Alaska, as we always are.

Mr. STEVENS addressed the Chair.

The PRESIDING OFFICER. The Senator from Alaska.

Mr. STEVENS. Mr. President, I want to make it very plain this Senator does not wish to hold up final passage of the bill. I want to make some comments on the matter of philosophy and policy before the Senate finally votes.

I want to start off first by expressing I think the gratitude of all of us to Senators MOYNIHAN and SYMMS for their hard work on this bill. They have crafted a piece of legislation which obviously meets the overwhelming support of the Senate, and they are entitled to great credit for that.

In spite of their work, however, in reconciling the competing interests of the various States, it is my feeling that this final bill that we are going to vote on now which will set the stage for entering the 21st century is not the kind of bill, not the kind of law, we need to address the needs of the country going into the next century.

I want to particularly call the attention of the Senate to the concept of donor-donee relationship that has been raised here in the debate on this bill.

While I am not sure the managers of the bill would agree, it is my judgment we have once again incorporated into the highway philosophy the donor-donee concept; the theory of the formula really is based on that concept. It is that concept that I find fault with.

I want to say I understand the argument advanced by the Senators from the donor States. They argue that each State should get back from the highway fund the money they pay into it. If our predecessors in the Senate had used that theory with regard to use of taxpayers' funds to construct roads, we would not have any roads west of the Alleghenies.

As a matter of fact, if we examine the Constitution, we will see that the Congress has the duty to provide post offices and post roads. We have been woefully short on that constitutional

responsibility, as far as the West is concerned.

Many areas of the West, and particularly my State, are not really connected to the Interstate Highway System, and yet, as we have just heard, this bill, when finished, will terminate the Interstate Highway System allocation of funds.

Alaska does not even have any interstate highways, although, strangely enough, Hawaii does. We had to go to a device of declaring that some noninterstate highways could be put into the formula, in order to have some assistance in building what amounts to highways of the kind the American public is used to finding throughout the south 48 States.

This bill—and I congratulate the Senator from New York and the Senator from Idaho for it—adopts the status quo as a base. I think, in doing so, they have avoided a great deal of controversy in this last bill, dealing with the Interstate Highway System. A series of amendments now add money and divide them between the donor and donee States in a way entirely unrelated to the base and to the formulas built into the base.

As a Senator from the West, I would like to recall that the formula was originally devised in order to compensate for the fact that the Federal Government and the taxpayers own so much of the West. The formula really gave a tilt toward the federally owned States. In my State, for instance, the Federal Government still owns over 80 percent of the land. If that was a private taxpayer, if there was a private base out there, there would be moneys to help contribute to the extension of the highway system. That has not been possible.

There is nothing like a private enterprise base in the West, compared to the East, primarily because of the continued domination of the Federal Government of the ownership of land west of the Mississippi.

The result of this bill is an inward looking bill. It focuses on what is there on the base and says you can improve and maintain that base, and you have greater flexibility in using your moneys. Again, I congratulate the Senator from New York for that. But there is no concept of being able to expand the highway system into totally unserved areas. It is these underdeveloped areas I wanted to draw the Senate's attention to. We are looking to those areas for our recreation, for new housing areas, and for a new resource base. But we have done nothing to deal with the transportation needs. I think in the next century Americans will pay for that neglect.

It is my judgment that we ought to have built into this a concept of trying to find some way to extend the current highway system. We can declare that the map of the Interstate Highway System, as originally prepared, is completed. It is. When this bill is completed, it is my understanding it will be. That did not include anything in Alaska, and very little in Hawaii, and it did not include many of the areas of the West that are still owned by the Federal Government. What the system really does is penalize the West.

Again, I am not criticizing the Senators from New York and Idaho. I think they have done very well building on this system and completing that system.

But the rural Western States can contribute less to the highway fund, because they have fewer roads; and because they contribute less to the highway fund, it means they will get less in the future. So they cannot have more roads, unless we go back to the Constitution and recognize the needs of the Constitution and the foresight of our forefathers, when they said Congress has the duty to provide post roads.

That is one of the things I want to make the Senate aware of. We are not receiving funds basically because of two things. We do not contribute much into the system and the Federal Government owns all this land of ours.

I have superimposed my State on this map of what we call the "south 48." If you look at it, it touches the east coast and it goes beyond the west coast. It is up above Duluth, and it would, in effect, come down to the level of New Orleans. That is a large area, one-fifth of the size of the United States.

Those red marks in the center and a few roads out here at Nome represent the entire highway system of an area three times the size of Texas.

What is the reason? The reason is that we developed an airline system, an air system. We decided it is not possible to get moneys out of this system now. So we have had a highway system, and we have gone out into the extremes of my State by air. We only have 12,000 miles of road. Texas has 300,000 miles of road.

As a matter of fact, if this State of mine had the same amount of roads as the average of any area in the south 48, as large as it is, it would have 800,000 miles of roads. It has 12,000 miles. It has those few roads because of the impact of the highway allocation system.

We have constantly gone against the concept of recognizing the Federal Government's responsibility to build roads in the areas claimed by it, dominated by it, and as a matter of fact, set aside by it.

Seventy percent of the national parks are in my State; 85 percent of the wildlife refuges; and 60 percent of the wilderness acreage. Those are all owned by the Federal Government and set aside for the Federal Government, and they are not putting up one dime to build the highways through those areas. They look to the amount that is allocated for the State of Alaska to build roads in the non-Federal areas to build the roads in the Federal areas.

This bill would say if you want any roads through the Forest Service, military reservations, parks areas, take it out of the money allocated to the State of Alaska. Theoretically, that should be to build roads in the areas not owned by the largest landowner.

In our State, 70 percent of the towns, villages, and cities can be reached only by air. That is what brings me to my feet today. The Federal Government is now constricting because of, again, a budget consideration, the number of flight service stations in our State. They are going to be collapsed down to three in the whole State. A State the size of Alaska will have only three flight service stations left.

Weather stations are also going to be collapsed down to only three. In other words, the system that we use to travel, the airline system, the air highway system, is collapsing at the same time the highway bill has come to an end, and it is not going to provide any access by land.

The Federal Aviation Administration and National Weather Service were before our Commerce Committee yesterday and said: "We are going to study it." We are becoming a cannot-do Nation. I always thought we were a can-do Nation. There must be some way to solve the transportation problems of the largest area of the United States in terms of a State, and that is the State of Alaska.

We know we have vast oil resources, and the time will come when they will open up. There is no highway access, really, to those. We will get there by air. We could get there by land if Congress saw fit to give us the money to build the roads.

Now, what do we have? We have the opening of the tremendous challenge of the gentleman who is setting in S. 207 right now, the new President-elect of the Russian Federal Republic, Mr. Yeltsin. His dominance extends all the way eastward into the Soviet far-eastern Siberia, right across from my State.

I have had people just this past week come to ask me whether we could find some way to build the railroad connection up through Alaska—there is a railroad into Canada, up by northern Canada—to build it so we could go across the Bering Straits into Siberia, the Soviet far east, all the way to London by railroad.

We are not going to do that. The Federal Government gave up. They were going to sell our railroad and take it to South America until the Congress listened to me and passed a law that allowed the State of Alaska to buy it. We now operate it as a tourist railroad for the basic supply of the interior of Alaska. No railroad connection, no road connection, except through Canada.

The Alaska highway is going to celebrate its 50th anniversary next year.

The Senator from New York was kind enough to accept the amendment. If some States do not use their money, we may be able to go back and improve the portion of the highway that is used by Americans to cross Canada and come to Alaska from the south 48. That road, Mr. President, was built with military funds.

The only connection to my State ever made by highway funds was made with military dollars. Some feel that is the way we should get money now. I thank the Senator for giving the discretion to the Secretary of Transportation to upgrade that road and keep the Canadians from closing it.

In the RECORD of the debate on this bill is a letter from the Canadian Ambassador that says Canada, unfortunately, must notify us that it will close the Alcan Highway unless the American Government keeps its commitment to improve and maintain the Alcan through Canada and the rural portion of Canada, used primarily by American citizens. It was an agreement we made in 1977, and have never yet kept.

Now I think we are witnessing the balkanization of the lower 48 States. I was one who sat up in the gallery and listened to the debate on Alaska statehood and Hawaii statehood, and I am proud of that period of my life.

But I have to tell the Senate, I never envisioned that having become States, Alaska and Hawaii would come into the 21st century with the feeling of having been cutoff from the rest of the Government, cutoff from the other States. And yet, that is what is happening now.

It is not the fault of this committee. It is the fault of the philosophy of the Congress as a whole. We lost the concept of expansion west, expansion north, of trying to build the kinds of roads that are necessary to maintain our total infrastructure.

My problem is this: The Postal Service now tells us that it can no longer pay the subsidy that is required to carry mail in Alaska by air. We have had to call it to the attention of the Postal Service that there are no roads; you cannot have surface transportation. They say: It does not matter; we are not going to pay the subsidy of transporting your mail by air.

This bill pays the subsidy of transporting mail by surface throughout the United States. But it will not pay it in Alaska, and it will not pay it in Hawaii. The real thing I am trying to call the attention of the Senate to is that we fought for statehood; we thought we were equal when we came into the Union.

But now I am saying to my friend, are we really part of this Union? Have we been totally forgotten? Should the Postal Service say: No, we cannot accept the subsidy concept for transporting your mail by air when there are no roads for surface transportation? Should the highway people say: No, it costs too much money to build highways in Alaska, so we are terminating the entire State highway system, even though it never got to Alaska and it never will?

I think the economic future of the West, in particular, is extremely important as we enter the 21st century. The 21st century, Mr. President, will be the century of the Pacific. It will be developing the relationships between our great Nation and the Russian Nation, and the Soviet Union as a whole, if it survives, and the people of China, of the Philippines, of Thailand, of Singapore, of Korea, of Japan, and of all of those emerging nations.

But the future of our economy is in introducing into those areas our technology, our know-how, our ability to go west. That is the future of this country in the 21st century. This bill stops the highway system at our 48 State borders. It is done, and this bill in my opinion, together with the actions planned by the FAA, the Weather Service, and the Post Office, means that Alaska goes backward as the rest of the country goes forward.

I think we have to have the ability to adapt to the changing world. I think we should have the ability to develop the great resources of my State. I think we have to have some way to further the impetus of the free-trade agreement.

Remember, this bill, except for my amendment, which again, the Senator from New York kindly adopted, does not envision reaching out through Canada, reaching through Mexico, to develop the connections that might not be available for our system.

The Senator from Massachusetts was just talking about the 16-wheelers running north. They can run a lot farther north than they do now if they have some roads, and they can run south into Mexico. Before we are into the next century, we will be helping our neighbor to the south to build better roads, so we may have better commerce and exchange with them.

This bill does not envision that. I think the focus of the surface transportation bill should have been on 50 States. And above all, I would urge the Senate to go back and read the Constitution. How can we have post offices and post roads if we stop the concept of expansion of our road system?

It may not matter much to many people what happens in Alaska, but by one vote in this Senate, we decided not too long ago to develop a pipeline to carry Alaska's North Slope oil to markets. That was a tied vote, until it was broken by the Vice President, Spiro Agnew.

The net result of that action is that over 17 years, 25 percent of the crude oil in the United States has come through that one pipeline. It has benefited the rest of the country a great deal more than it has benefited by State. We have stimulated the economy of America in the development of just one small area up at Prudhoe Bay.

I say to the Senate that the demands of our Nation require a unified 50-State policy for transportation. And somehow or other, these dichotomies on the failure of the weather system, the FAA, the Post Office, and now, the highway system say to me the needs of my State have to be corrected, unfortunately. The Senator from New York crafted a bill that can pass, and it will pass, and he is to be credited with that.

The next time around, the Senate is going to face, I believe, a demand from the western federally owned States for a system that extends this road base that exists in the East and in the South and the Southwest, north through the Rocky Mountain States, through some of the Pacific Coast States: Oregon, Washington, and up into my State. I think that is necessary.

I wish to be able to tell the Postal Service: You do not have to pay a subsidy; we do not have to have your subsidy. We will just use the road systems.

We cannot do that. This bill, unfortunately, leaves a great hole in the total fabric of the relationship between my State and the Union. I am saddened by that, Mr. President, and I am saddened that the current budget considerations are such that even my great friends cannot help us out of this dilemma.

Mr. MOYNIHAN. Mr. President, before the Senator from Alaska has to leave the floor, I wish to thank him for a careful exposition of the very special and important problems that are not addressed in this legislation. I think in the next 5-year cycle we must give some very careful thought to that and, to the degree I am involved, we will. And I can guess the Senator from Idaho would do the same. I thank the Senator from Alaska.

Mr. BURNS addressed the Chair.

The PRESIDING OFFICER. The Senator from Montana.

Mr. BURNS. Mr. President, I would like to associate myself with the words spoken by the distinguished Senator from Alaska. It seems that we get up and we talk a lot about the States in the West and the unique problems that we have.

In visiting with Mr. Yeltsin this morning and getting some ideas from him where he thinks that that country is going, if it is going anywhere, we all get to look back a little bit in history. There is a country that last year set all kinds of records in food production, yet they have a starving population. He, himself, admitted this morning that 30 percent or 33 percent of their total food production will be lost after harvest because they cannot move it, they cannot process it, and they cannot distribute it.

All we have to do is look around at some of our areas here in this country and we see a deteriorating infrastructure. Now, if there is a purpose of government, it is maintaining a transportation infrastructure. States on their own just will not go out and build the kind of highways to handle the equipment that we have to move our people and, yes, our commerce. They just will not do that.

Also, another failure of the U.S.S.R. could be they never did have a national bank, they never did have a national currency. It kept them from doing business. Now they are broke and they are hungry and they are coming to the rest of the world for help because they have real reform on their hands. But it will take a long time for those reforms to be reflected in the standard of living in their own country.

This particular piece of legislation, probably the biggest that we will consider this year, has more effect on this country than any other piece of legislation that is being worked on and debated in this body.

I want to thank Senator SYMMS and Senator MOYNIHAN and their staffs for their time and their effort in crafting a bill that not only takes care of what we believe is important, but also addresses the needs, I think, in each and every State. We have to remember that in this body, yes, we represent the State of Montana, we represent the States of Idaho and New York, but basically we are representing a nation here, and we have to be U.S. Senators one time to make sure that this is a union, a republic of States that are so dependent on each other for commerce, security, and just to make a living, and the living standard of every living American. What they have done here has been outstanding.

The concept behind the Byrd amendment, which is included in this bill, that States like Montana with higher gas taxes and lower per capita incomes should receive a level-of-effort bonus under the Federal Aid Highway Program is one that I support. The level-of-effort bonus was first proposed in legislation by my colleague, Senator BAUCUS, the senior Senator from Montana, of which I was an initial cosponsor. I want to recognize the work that he and his staff have done on this bill because they have been the key in making sure that the West, not just Montana, but the West, receives their fair share of that trust fund. As this bill moves forward, we plan to continue to work together to protect the West and Montana's interests.

In most cases, we have large land areas to cover and a small population from which to draw funding. Currently, Montana spends about $354 on its highways for every State resident, placing it ninth among the States in per capita spending on our highways and our transportation. So I am very supportive of the flexibility that was put into this bill. And I think Senator MOYNIHAN was a primary crafter of this flexibility to give the States an opportunity to put that money where it is mostly needed.

In the State of Montana, when the interstate system was built, we deferred a lot of moneys that were to go into our primary arterial highways, our secondary roads, the farm-to-market roads, deferred those dollars to build an interstate. But we also made an agreement with the citizens of Montana that, as soon as that interstate is built, we are going to start taking care of your roads. This gives us the flexibility to do that. That is why it is important to us that we have that flexibility, because now we have deteriorating farm-to-market roads, and that has to be done.

In addition, the leeway that this bill gives States in setting standards for secondary roads is a major step forward, in my opinion. This provision alone will benefit rural States that will be able to stretch their highway dollars further because they will not have to meet costly Federal standards.

I am an old county commissioner. With these Federal dollars that come into a country, we could go out and build a road or plan for a road, and then all at once we look at Federal standards in order to qualify for these matching dollars. Sometimes the cost of that 1 mile of road would go up four times. We just did not have the money. We just did not have the money. So what happens? We do not build the road or we do not maintain the road. We do not widen it or maybe put in some safety features that the road needs. Nonetheless, these standards will let us extend some of those roads in the areas and maintain them where they have never been before.

Bridges. I do not know the number of bridges, but it has to be done. And that also applies to that area of this legislation, too.

Included in this bill are a number of pieces of legislation introduced to promote rural tourism. I want to thank the managers of this bill for accepting those amendments, because tourism in the 48 States becomes more and more important. People want to see the West. We currently have a lot of traffic that pays no taxes in the State of Montana because we do not have a sales tax. So you folks that are looking in on television today, you do not have to pay a sales tax in Montana, so you can go up there and vacation this summer. We need the money. Also go up there and ski in the wintertime. We have some of the great mountains.

But nonetheless, this allows us in tourism to meld some Federal funds with some private foundation funds for the promotion of tourism and especially to attract some of our foreign visitors to this country into the interiors of the country and to show what the country is really all about. A little extra moneys to maintain roads around public and public lands, parks, this type of thing, because that infrastructure is falling apart now. You ought to see the road in Yellowstone Park. They need a little work there, too, and so does the road outside the park looking to there.

This legislation does all that. I am appreciative to the managers and this body, for accepting those provisions I had introduced in legislation and now are in this particular piece of legislation. We must have an adequate infrastructure on which we can build our rural tourism economy and a forum with which to promote rural areas like Montana and the American West.

I want to go back to make one more point, how important this is and why the words of Senator STEVENS of Alaska are important.

In the lower 48 States there is only one palladium mine. It happens to be in Montana.

You say, palladium? We do not hear about that little resource very much; what does it do? Well, it is the primary ingredient in catalytic converters.

If we disregard what the Senator from Alaska says, who has those minerals, and especially strategic minerals, and we do not give him a system by which we can extract and process them, we will be just like our friends in the U.S.S.R., having all of those resources and no capability to take advantage of them for the standard of living of our own people in all of the United States of America. I do not think we want this country to get in that position. I do not think we want to get so parochial that we will overlook one part, or one segment of our economy over another.

Yes, we have special problems in the West, because we have few people and a large land area. In fact you can draw a straight line from Eureka, MT, to Alzeda, MT, and it is further than it is from Chicago to Washington, DC.

In a Lear, that does not take that long; on horseback it takes a little longer. But that is what we talk about, when we move product. We move enough timber out of the State of Montana to build 150,000 homes; 16 billion hamburgers—we move a lot of things over that road. And it is important to the rest of the Nation.

As Alabama is important, and what they produce, we market everywhere. We have a marvelous distribution system. No one in this country sees a hungry day because of a closed grocery store or an empty one, because we have a marvelous system that is mobile—we can make things move.

So I applaud and thank the managers of this bill because I think under the circumstances they have done yeomen work and they are to be congratulated for it. And I support it.

I yield the floor.

The PRESIDING OFFICER. The Senator from New York.

Mr. MOYNIHAN. Mr. President, before the Senator from Montana is necessarily off to other matters, may I thank him on behalf of Senator SYMMS and myself. He could not be more generous or more accurate, in my view. Our day began with the meeting with the newly elected President of the Republic of Russia, Mr. Boris Yeltsin, who is very welcome in the Capitol. One ought not let this day go by without comparing the life that the Soviet system has produced for its people, and the American system for ours.

One of the principle concerns that Mr. Yeltsin has—he said this morning—is that upward of a third of their agricultural produce spoils before it gets to market. It is harvested but not eaten.

As Senator BURNS said so well, one thing you never see in the United States is an empty store, and that has a great deal to do with the people who provision it. That is what this bill is about. We thank the Senator very much and appreciate his support.

Now, Mr. President, once again standing here, our revered chairman is on hand——

The PRESIDING OFFICER. Is there further debate?

Mr. MOYNIHAN. Is there further debate? Mr. President, no one appears. We do not urge anyone. We have had our debate. We cast our vote. We are ready to go to third reading and final passage and move on with the business of the Senate.

We have been here all morning. We have not done a thing since 10 o'clock. Mr. Yeltsin and his companions would begin to wonder whether this democratic system is all that effective.

It never was meant to be efficient but there was meant to be a point where some things get decided and we are ready. I feel I should move to third reading. I do not do so, out of an arrangement which suits us all. We have persons whose responsibility that is. But I see my friend and companion through all this. Perhaps he has a better idea.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. SYMMS. Mr. President, I would say I do not have a better idea than the Senator from New York. I would only say my observation of what goes on in the Senate is that the American people probably get better Government than they deserve, because what we have is most of the Senate in another room with the President of Russia. It is impossible to have a conversation to explain the situation to the two leaders. I have tried to express my concern to Senator MITCHELL and Senator DOLE, that if they would let us go ahead and pass the bill then, if Senator DOLE wishes to offer a motion to instruct the conferees it would be in order and we would have this behind us and he could do that.

But, there seems to be a snag between the President pro tempore and the Senator from Kansas, as to whether they agree on the procedure for this motion. And I have to say to my colleague from New York, under the circumstances, unless one of those leaders want to leave the room in there we cannot do anything other than risk some later retribution from the leaders if we go to third reading, because Senator MITCHELL told me they are not quite ready yet.

Mr. MOYNIHAN. We do not want to deprive any Senator of an opportunity to do something important. But the word "retribution" has been abolished in Siberia. Perhaps not on Capitol Hill. Perhaps we should entertain the thought.

Mr. SYMMS. I hope no other Senator will offer any other amendment.

Mr. MOYNIHAN. No other amendments. We have had a good time here during the 10 days on this bill; We have spent evenings, as the Presiding Officer will attest, saying anybody who has an amendment come forth, please.

Now, no more amendments. Let us reach agreement and do the country's business.

Mr. President, I yield the floor and suggest the absence of a quroum.

The PRESIDING OFFICER. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. DOMENICI. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER (Mr. SANFORD). Without objection, it is so ordered.

Mr. DOMENICI. Mr. President, I take this time to publicly acknowledge and sincerely thank a group of individuals from my State who served as members of a New Mexico Highway Task Force that I established. These dedicated people contributed their time and effort while advising me on highway legislation. The group included: Lou Medrano, chief highway administrator for the New Mexico State Highway Department; Elmore Dean, executive assistant of the State Highway Department; Quentin Ford of the State Highway Commission; Patricia Lundstrom, executive director of Northwest New Mexico Council of Governments; Albert Pierce, executive director of Middle Rio Grande Council of Governments; H.J. "Doc" Weiler, chairman of New Mexico Highway Users Conference; J.R. Hale, president of Associated Contractors of New Mexico; Paul D. Barnes, Curry County commissioner; and Dave Tsosi and Ed Hall representing the Navajo Nation. I should also like to recognize the contribution and cooperation of Rueben Thomas, division administrator of the Federal Highway Administration and the Honorable Dan Silva, chairman of the New Mexico State House Transportation Committee. I would like to express my sincere gratitude toward these fine individuals for their dedicated and diligent efforts. Their advice and counsel was invaluable to me as we considered this legislation.

THE UNIFORM RELOCATION ACT

Mr. NUNN. Mr. President, I rise to support a committee amendment to the highway bill that would provide an exemption to title III of the Uniform Relocation Act of 1970 for the Nation's rural electric and telephone cooperatives.

In 1987, Congress passed, as an amendment to the highway reauthorization, amendments to the Uniform Relocation Act to ensure that all programs funded by Federal dollars followed the same rules in acquiring property from individual property owners. Although the rural cooperatives have no record of disputes with property owners or of the kind of property acquisition practices that the Uniform Act is intended to prevent, the Department of Transportation interpreted the statute in such a way as to bring the co-ops activities under the regulation of the act.

Under the Uniform Relocation Act regulations issued in 1989, the rural electric cooperatives must undertake a number of notification and appraisal procedures which will impose a substantial financial burden on what are nonprofit organizations. According to estimates from several co-ops in the State of Georgia, implementation of these regulations could run as high as $500,000 in the first year.

Our amendment would make it clear that the provisions of the Uniform Relocation Act would apply to rural electric cooperatives only with respect to relocation assistance and not to the routine acquisition of easements and rights-of-ways.

Mr. FORD. If the Senator would yield, I might add that nationwide, the National Rural Electric Cooperative Association estimates that the initial cost of compliance could be as high as $138 million. I do not think anyone involved in drafting the 1987 amendments intended to impose a cost like this.

If the Senator would yield further for a question, is it his understanding that the rural electric cooperatives are the only electric utility companies covered by the Uniform Relocation Act?

Mr. NUNN. That is correct. In fact, the Tennessee Valley Authority already has an exemption under the act providing that only the relocation assistance provisions of the act apply. Our amendment simply extends the same exemption to the co-ops.

Because of the urgency of this matter we are trying to take care of this problem as part of the highway bill. It should be pointed out, however, that

the Governmental Affairs Committee is the committee of jurisdiction over the Uniform Relocation Act. Neither Senator FORD nor I have any intention to disturb in any way the jurisdiction of the Government Affairs Committee.

To make this point absolutely clear, I would ask the Senator from New York and the Senator from Idaho if it is also their understanding that the Governmental Affairs Committee retains jurisdiction over the Uniform Relocation Act.

Mr. MOYNIHAN. I would say to the Senator from Georgia and the Senator from Kentucky that it is my understanding that the inclusion of this amendment in the bill in no way disturbs the jurisdiction of the Governmental Affairs Committee. It is my intention to request that when we go to conference on this bill Governmental Affairs Committee representatives be included on the Uniform Act provisions just as they were in 1987.

Mr. SYMMS. That's also the understanding of the Senator from Idaho.

Mr. NUNN. I thank the Senators. I also thank the leadership of the Governmental Affairs Committee for their cooperation in this matter.

Mr. GLENN. As the chairman of the Committee on Governmental Affairs, I want to ensure that the record is clear as the Senate moves to amend the Uniform Relocation Assistance and Real Property Acquisition Policies Act [Uniform Relocation Act] on the surface transportation bill that it in no way alters the jurisdiction of the Governmental Affairs Committee regarding the act.

I have included in my floor statement accompanying this amendment an outline of the legislative history that asserts the jurisdiction of the Governmental Affairs Committee on this matter.

When the Uniform Relocation Act amendments were included in the surface transportation bill in 1987, those changes had been the subject of Governmental Affairs hearings and committee action. The amendment being offered at this time has not had that same consideration; however, I recognize that several Senators feel that immediate action should be taken on the exemption from title III of the act requested by the rural electric and telephone cooperatives, which are financially assisted by the Rural Electrification Administration [REA].

Therefore, as we move to consider the amendment at this time, I want to reiterate that it is with the full knowledge and agreement that this in no way sets a precedent to preclude the jurisdiction of the Governmental Affairs Committee over the Uniform Relocation Act in the future. In particular, I look forward to the Governmental Affairs Committee's participation as conferees on this provision of S. 1204, as was done in the conference on the 1987 surface transportation bill.

Mr. ROTH. As the ranking minority member of the Committee on Governmental Affairs, I want to join in support of Chairman GLENN's comments clarifying the jurisdiction of the Governmental Affairs Committee over the Uniform Relocation Act. I believe it is important to have a clear understanding on this, and I am pleased this colloquy is mutual agreement.

Mr. GLENN. Mr. President, I support the amendment to the Uniform Relocation Assistance and Real Property Acquisition Policies Act—the Uniform Act—as a floor amendment to S. 1204, the Surface Transportation Efficiency Act of 1991. This amendment was first proposed by the National Rural Electric Cooperative Association and the National Telephone Cooperative Association and is intended to exempt their members statutorily from compliance with title III of the Uniform Act, which governs real property acquisition practices.

The Governmental Affairs Committee, which I chair, is the committee of jurisdiction over the Uniform Act, which was enacted in 1970. The legislative record shows that in the 97th, 98th, and 99th Congresses, following public hearings in the Subcommittee on Intergovernmental Relations chaired by then Chairman DURENBERGER, the Governmental Affairs Committee secured passage of comprehensive amendments to the act, which did not become law.

In Februrary 1987 Senator DURENBERGER attached an amendment to the 1987 surface transportation bill on the Senate floor, stating at that time:

> Because of the early action on the highway legislation in this Congress, we have not referred this amendment to the Governmental Affairs Committee this time. But action in this form—a floor amendment to the highway bill directly—is not intended to disturb in any way the jurisdiction of the Governmental Affairs Committee over these matters. We thank the leadership of that Committee for its assistance in allowing us to handle the matter expeditiously and early in this Congress.

The 1987 highway bill was enacted following a conference which included Governmental Affairs Committee Senators SASSER, LEVIN, and Heinz as conferees on the Uniform Act amendments.

The legislative history shows that the focus of the 1987 amendments was to ensure that all Federal agencies and federally assisted programs followed the same rules in dealing with the individual property owners when acquiring property or displacing persons from their property and relocating them. This includes the rural electric and telephone cooperative associations assisted by discounted loans from the Rural Electrification Administration [REA]. The Tennessee Valley Authority [TVA], was specifically exempted from certain of the act's requirements as part of the 1987 amendments.

The legislative history also shows that a major focus of the 1987 amendments was on the displacement and relocation aspects of the Uniform Act in title II. There was clear consensus that the expanded coverage of the act in 1987 was intended to cover "the displacing activities of private development corporations and public utilities where displacement occurs as a result of a federally funded program or project." The rural cooperative represent that they mainly acquire rights of way and easements, without displacing the property owner. Thus, this amendment would continue to subject the rural cooperative funded by REA to the regulations and procedures which apply to relocation assistance under the act's title II and title I.

The uniform requirements for acquiring real property—including rights of way and easements—are in title III. Therefore, when rural cooperatives negotiate for rights of way or easements, currently the law and regulations require:

First, notify the property owner of their interest in acquiring the property.

Second, appraise the property before negotiations are initiated and invite the owner to accompany the appraiser.

Third, make a written offer to the owner to acquire the property for the full amount believed to be just compensation.

Fourth, give the owner a written statement of the basis for the offer of just compensation.

If negotiations break down, then the rural cooperatives can exercise the power of eminent domain through a condemnation proceeding.

The Department of Transportation is the lead agency for Uniform Act implementations, and wrote regulations in 1989 which specifically exempted certain types of transactions from the requirements of the Uniform Act:

First, voluntary transactions, and

Second, acquisition of easement or right-of-way as a condition of membership in the cooperative.

In addition, appraisals are not required if the property is donated, or the value of the easement or right-of-way is estimated by the co-op to be less than $2,500.

In February 1990 the National Rural Electric Cooperative Association adopted a resolution at its annual meeting urging Congress to enact legislation to exempt electric membership cooperatives from the Uniform Act, on the grounds that "due to their use of Federal loans, (rural cooperatives) are the only sector of the electric industry which must go through a series of costly and time-consuming procedures where the acquisition of real property is concerned."

The rural electric cooperatives have provided the following additional information to the committee in support of

the proposed exemption of REA borrowers from the requirements of title III of the Uniform Act:

First, the 1987 expansion of Uniform Act requirements to cover all federally assisted projects only covers rural electric cooperatives, and not investor-owned and municipally owned utilities, their competitors in the electric industry.

Second, the Tennessee Valley Authority was exempted from the Uniform Acts real property acquisition requirements (title III) as part of the 1987 amendments. TVA is the Government-owned corporation with a self-financing electirc power program. As such, it is the wholesale power supplier for many local municipal and cooperative electric systems serving customers in seven States. It also supplies power to several Federal installations and industries.

Third, in the great majority of cases, the rural electric cooperatives acquire easements and rights of way, not the land itself—unlike highway departments, for example. In general, these are uncomplicated acquisitions.

For these reasons, I support the amendment offered on the floor today which would exempt the Rural Electrification Administration from the requirements of the Uniform Act's title III—thus putting REA in the same position as TVA. I continue to support the basic policy and purpose of the Uniform Act, which subjects all other Federal agencies and recipients of Federal financial assistance to the act's regulations.

Should this amendment be adopted by the Senate, I would request of the floor manager that, as in 1987, Governmental Affairs Committee members be appointed as conferees on those provisions of S. 1204 involving the Uniform Act.

GRAHAM AMENDMENT NO. 357

Mr. DURENBERGER. Mr. President, yesterday I voted against an amendment offered by the distinguished Senator from Florida [Mr. GRAHAM]. The Senator had a good objective behind his amendment, but the way he tried to reach it did more harm than good.

Like a lot of Senators, I am not entirely pleased with the formula which allocates funds to the States not on what their need is but based on what they have spent in the last 5 years. Senator GRAHAM has replaced that with another formula, but I cannot support this amendment because a portion of the formula focuses on tax contributions derived from motor fuel tax revenues.

Mr. President, 20 States, including Minnesota, would be severely penalized if we adopted a highway funding formula that emphasizes motor fuel tax revenues. The reason these States would be penalized is because all of them provide incentives that encourage the use of alternative fuels, including ethanol produced from America's farmers.

For more than a decade, we in Congress have tried to help break our dependence on foreign oil by encouraging alternative fuels such as ethanol. The ethanol market not only serves as an important outlet for our Nation's grain producers, but also plays a vital role in helping many areas of the country meet clean air standards. Because of the importance of encouraging the further development of the ethanol industry, Congress provides a 6-cent-per-gallon tax exemption for ethanol fuels.

Mr. President, it is clear that if we adopt a highway funding formula based on motor fuel tax collections, we would be working at cross-purposes with our national goals of energy independence and clean air because those States that have not encouraged alternative fuels would be the largest gainers.

Forty-four States currently use ethanol in gasoline blends, thereby displacing almost 42 million barrels of oil annually. In addition, last year's Clean Air Act, of which I was a principal author, will help to achieve a reduction of carbon monoxide and ozone depletion in nonattainment areas throughout the country, and that will be achieved by encouraging use of more alternative fuels like ethanol.

Mr. President, it just does not make sense to penalize States that are at the forefront of the alternative fuel market. It points America in exactly the wrong direction as far as clean air and energy independence. For that reason, I voted against the amendment.

I note the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. SYMMS. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

AMENDMENT NO. 361

(Purpose: To indicate the sense of the Senate about the section on gasoline taxes as it relates to state effort)

Mr. SYMMS. Mr. President, I send an amendment to the desk on behalf of Senator DOLE and Senator MITCHELL, and ask for its immediate consideration.

The PRESIDING OFFICER. The clerk will report.

The bill clerk read as follows:

The Senator from Idaho [Mr. SYMMS], for Mr. DOLE (for himself and Mr. MITCHELL), proposes an amendment numbered 361.

Mr. SYMMS. Mr. President, I ask unanimous consent that reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

At the appropriate place, add the following:

It is the sense of the Senate that the conferees on this bill should consider section 159 of title 23, United States Code as it appears in amendment No. 295 as amended so as to determine each State's total apportionments under section 159 of title 23, United States Code, in a way that reflects each State's total effort for highways as described in amendment No. 334, and including each State's ability to finance its total effort for highways, as measured by its per capita disposable income as compared to the average state per capita disposable income, as well as taking into account the effect of such apportionment formula on energy conservation, energy security, and environmental quality.

Mr. SYMMS. Mr. President, starting from this point on in the amendment, this is language that was added by the distinguished President pro tempore and agreed to by him, the entire amendment, with this included.

I will read that part.

* * * including each State's ability to finance its total effort for highways, as measured by its per capita disposable income as compared to the average State per capita disposable income, as well as taking into account the effect of such apportionment formula on energy conservation, energy security, and environmental quality.

The President pro tempore, the majority leader, and the minority leader agreed on that. That was the President pro tempore's language that I read.

Mr. President, I must defer the debate. I think we can accept the amendment. I think, as a conferee on the bill, we certainly will look at and pay attention to what the leadership is asking and what the sense-of-the-Senate amendment calls for.

Mr. MOYNIHAN. Mr. President, I would like very much to repeat and to confirm the statement by the comanager; that we will, indeed, as conferees, pay close heed to this counsel.

Mr. President, if there is no further discussion, I urge adoption of the amendment.

Mr. MCCAIN. Mr. President, I rise in strong support of the pending amendment. At issue is how we will allocate nearly $4.1 billion in highway and transportation moneys. The Senate has voted to distribute that money to States based on the local level of effort to fund highways and transportation infrastructure.

Unless the bill is changed, however, that effort will be measured solely by the size of a State's gas tax. Such a formula, Mr. President, is patently unfair. Many States such as Arizona fund transportation infrastructure from sources other than State gas tax revenues. In my State, for instance, we raise large sums of highway money with bonds and through special sales taxes. The bill as it is currently written would completely ignore those efforts. It seems to me that if we are to allocate money based on level of effort at the State level we should look at the total effort, not just the size of the State gas tax.

My colleagues should also consider whether it would be responsible public

policy to encourage States to raise gas taxes, and use the revenue for nontransportation purposes, in order to leverage additional Federal transportation moneys.

Yes, Mr. President, this amendment means millions of dollars to my State in highway and transportation revenues which we desperately need; but this amendment is also about fairness, equity, and common sense. Again, I strongly urge my colleagues to adopt this amendment.

The PRESIDING OFFICER. Is there further debate on the amendment? If not, the question is on agreeing to the amendment.

The amendment (No. 361) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the amendment was agreed to.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Several Senators addressed the Chair.

The PRESIDING OFFICER. The Senator from Michigan.

ORDER OF PROCEDURE

Mr. RIEGLE. Mr. President, may I ask if it is appropriate to set aside the matter for a moment to make a statement on another issue related to the banking problems?

If there is no objection to doing so, I would like to make a statement of about 10 minutes in length on what issue.

The PRESIDING OFFICER. Is there objection? Without objection, it is so ordered.

Mr. RIEGLE. I thank the Chair. I thank my colleagues.

THE BANKING INDUSTRY

Mr. RIEGLE. Mr. President, a number of people are asking about the condition of the banking system in light of many of the news stories that have been running. So I take the floor now to give a comprehensive assessment of the situation as it exists today from my vantage point, serving as I do as chairman of the Senate Banking Committee.

So I am rising to address one of the most urgent matters on the domestic agenda, the massive and growing problems within our financial system, and the urgent need to shore up the bank insurance fund to prevent its insolvency and a potentially vast taxpayer bailout.

The June 18 edition of the Washington Post reports that Treasury Secretary Brady has suggested that the only way to avoid a taxpayer bailout of the bank insurance fund is to adopt the administration's entire deregulation package of expanded bank powers.

It should be known that the sweeping package includes: One, eliminating the historical separation of banking and commerce; two, eliminating the separation of investment banking and commercial banking, three, allowing banks to get into the insurance business; four, transferring the regulatory authority to a new Treasury bureau; five, eliminating restrictions on interstate branching by banks; and six, providing additional authority for the Federal Deposit Insurance Corporation to borrow in the name of the American taxpayers an estimated $75 billion to cover expected future bank failures that can now not be financed by a nearly insolvent bank insurance fund.

Regardless of the merits of the individual elements of that package, any suggestion that the adoption of the administration's broad proposal will provide an immediate cure for the banking industry or rebuild the bank insurance fund is highly misleading and inaccurate.

Clearly, I believe that deposit insurance reform and recapitalization of the bank insurance fund must be top legislative priorities here in the Senate, and my Senate Banking Committee colleagues and I are now crafting a full legislative package that deals with those issues and related issues.

Looking to the future, strong deposit insurance reforms are crucial if we are to prevent future banking industry problems from ever again growing to the size of today's problems.

But just as clearly, the administration's banking package, S. 173, if adopted today in its entirety, would not resolve today's accumulated problems in the banking system. The administration's plan cannot and will not transform bad loans currently on bank balance sheets into good loans. That plan will not revive and restore to health the banks that are currently unprofitable and economically insolvent, nor will it transform the negative balance of the bank insurance fund to a positive balance. These massive existing problems simply are not susceptible to being erased by a legislative package.

After 22 days of extensive public hearings with the foremost banking experts in our country on the condition of the banking industry and on the problems of our bank insurance fund and need for reforming our system, it is clear that the troubled condition in the banking industry was a long time in the making and will take a long time to resolve. There is no quick and painless remedy available here, and the scale of the existing problems means a long, difficult and painful road ahead. Moreover, if the economy does not strengthen measurably, we could face a banking problem of engulfing magnitude, and we should have no illusions about the grave dangers inherent in that situation.

Let me briefly review the current condition of the banking industry and the current condition of the bank insurance fund.

We must face the prospect that the banking industry today presents two starkly contrasting pictures, one positive and one very negative. On the one hand, the vast majority of banks in this country are healthy, well capitalized, and profitable. The CBO testified on January 29 of this year:

> Almost 11,000 of the 13,000 banks had equity-to-asset ratios of more than 6 percent and reported positive net income. These banks accounted for nearly half of the industry's assets and show every sign of being able to survive the recession we believe is currently under way.

On the other hand, the negative banking industry perspective is that of many deeply troubled and insolvent banks that tend to be very large in size and are experiencing severe problems in their bloated commercial real estate loan portfolios. The General Accounting Office has looked at these large troubled banks and all other banks identified as problem institutions by the regulators. On April 26, just 2 months ago, the Comptroller General testified as follows on the condition of the bank insurance fund:

> We believe that the fund balance is actually significantly lower than the level presented in the unaudited statements. We reached these tentative conclusions after reviewing the financial condition of 368 banks. Collectively these banks have $1.8 trillion in assets, which is about one-half of the industry total. We believe that about 71 of these banks, with total assets of about $69 billion, are already insolvent.

As this analysis shows, even though these severely troubled banks are limited in number, the potential problems created by their insolvency is vast and has overwhelmed the resources of the deposit insurance fund. More ominously, the CBO has testified that the problems at the largest banks are continuing to grow even larger. No one today can accurately predict the full extent of this financial exposure to our system, and the risk to the American taxpayers, who stand, of course, behind the Federal Deposit Insurance System.

So, in effect, we have two quite different banking industries: one composed of a vast number of healthy well-run banks, the other composed of a smaller number of very large, severely troubled banks. But clearly the problems of the large banks are so severe as to cause the BIF to become insolvent, and that is the consensus view of the Government watchdogs at the GAO and CBO, and of the leading analysts in the private sector.

As I have said before, it is not clear exactly how big the problem is today or will become in the future. Even the GAO, with its highly skilled analysts and full access to banking industry data, has problems in identifying with certainty the magnitude of the losses that will confront us.

In that same April 26 hearing, just 2 months ago, the Comptroller General stated:

The early warning system provided by bank call reports is seriously flawed. Because FDIC consistently found that the failed banks we reviewed overstated their asset values, there is no doubt that some banks operating today have underreserved for nonperforming assets.

Then, on March 12, of this year, we had a panel of academic experts testify about the condition of the banking industry and various proposals to reform the system. One of the points they made was that the information being provided by the banks and by the regulators served to mask the true extent of the problems. Historical cost accounting does not enable the banks or their regulators to fully know the current condition of the banks. It offers a perverse meaning to a comment made by SEC Chairman Richard Breeden last year, when he said maybe we should begin bank balance sheets with a formal disclaimer that reads, "Once upon a time," and so forth, in that vein.

What caused the problem for the unhealthy segment of the banking industry? On February 21 of this year, we had a panel of noted banking analysts testify before the Banking Committee. On that day, they told the committee that the banking industry was suffering, along with the rest of the economy, from the huge and excessive buildup in debt over the past decade.

Under the direct eye of the Federal bank regulators, many large banks exploded into real estate lending during the 1980's. Sixty-two percent of all new bank lending in the past 6 years has been for commercial real estate. Today, commercial real estate loans are almost 25 percent of total bank loans. This explosion of high-risk lending is the root of the current crisis—where a glut of commercial real estate has caused huge drops in asset value—wiping out countless billions of dollars of bank loans in these investments.

When the 1980's started, commercial office vacancy rates were at normal levels by historical standards, namely, between 3 and 4 percent. Today, the nationwide vacancy rate for office space approaches 20 percent.

When the banking analysts testified on February 21, Carol Berger, a veteran bank analyst with 16 years experience, said:

You can make the case that banks are going to have to charge off * * * 33 percent of their total real estate loans * * * which is roughly equivalent to all of their equity and reserves. So it could be a very massive problem.

The banking industry currently has reported capital of $235 billion. So what this particular analyst has indicated is that the banking industry may have a problem on its hands that is in the range of $200 billion or more, which would be an amount of losses that is roughly equal to all remaining bank capital.

It is important to review briefly the history of bank powers. When national banks were created, they were forbidden to make commercial real estate loans, and that prohibition continued for decades. Many years ago, when banks were finally allowed to make such loans, the rules at that time required developers to put some of their own equity into these projects to provide a necessary margin of safety. Those investment rules were further relaxed in the 1970's and 1980's. Bill Seidman, FDIC Chairman, testified that the majority of the problem loans that he has now had to deal with are problem commercial real estate loans that would have been illegal 10 years ago and which now have become the principal cause of today's banking system difficulties.

Thus the problems of today, namely the insolvency of the bank insurance fund and the weakness of the largest banks, have been directly tied by the Chairman of the FDIC to earlier deregulation efforts that allowed national banks to expand into a new activity with a new risk profile that has in one short decade imperiled the entire banking system.

It is well to consider this unfortunate history when the Secretary of Treasury now tells us that unless we immediately adopt additional measures to let banks expand to new business activities, that the banking system might be plunged into a crisis.

THE CONDITION OF THE BIF

Let me just briefly comment on the condition of the bank insurance fund.

On April 26, 1991, the GAO concluded it was "highly probable" that the BIF would be insolvent by the end of this year. Since that time, others have increased their estimates of the losses and the magnitude of the pending insolvency of the BIF. The Congress saw this problem coming last year and we originated and enacted a bill that gave the FDIC the ability to increase BIF reserves by raising bank deposit insurance premiums and allowing BIF to borrow money for working capital purposes from the Federal Financing Bank. This law now on the books gave the FDIC the complete authority to charge the banking industry insurance premium rates at whatever level was necessary to restore the insurance fund to solvency.

The banking industry's representatives have repeatedly told the committee that the industry fully expects to pay for its own problems, and the administration has now proposed $75 billion of Federal borrowing from the U.S. taxpayers to handle the bank insurance fund problem.

The administration claims that the banks would, over a period of several years, eventually repay the $75 billion that the bank insurance fund would borrow from the taxpayer. The Comptroller General, and others, have expressed extreme skepticism about the banks ability to repay this $75 billion loan. The $75 billion is composed of $25 billion for actual bank losses, and $50 billion for working capital to finance the Government's holding assets from failed banks until the assets can be sold.

Chairman Seidman has stated that he believes the direct losses for the BIF will most likely be $23.1 billion for 1991 and 1992. Yet, in contrast to that, noted private economists Barth, Litan, and Brumbaugh have estimated that the BIF losses could be as much as $63 billion. No one knows the true size of what these losses may prove to be.

Whatever the true magnitude of these losses, they are already imbedded in our bank's balance sheets. Legislation cannot turn water into wine and no legislation—not my bill, not the administration's bill, not anybody's—can restore value to assets the marketplace has now written down to much lower levels. The glut of commercial office space has caused rents for office space to decline, in some places as much as 50 percent, and legislation cannot change that.

CONCLUSION

Let me now conclude:

Expansion of bank activities and expansion of ownership of banks may result in some increased profitability and higher bank capital, but these goals would only be accomplished over the long run, and it would only be an incremental improvement. One of the leading bankers of our time, John Medlin of First Wachovia Corp. has stated that the profits to be made by the banking industry in the proposed new activities are, in his words, "lunch money." When Mr. Medlin testified in front of our committee last month, he stated that "I would not be one of those who would be passionate in having the full package of powers proposed in the more expansive of the proposals." So there is a serious question as to the inherent profitability of new bank powers and the level of risk associated with these proposed activities and they cannot be remotely seen as a cure-all for the huge problems that have accumulated.

So Congress must carefully analyze the administration's proposal in light of the current situation we face and the past circumstances that have brought us to this point. For myself, like Mr. Medlin, I do not believe that new activities or breaching the barrier between commerce and banking will significantly increase the profitability of banks or begin to fill in the canyon of losses that have already accumulated in the banking industry. These proposals simply cannot provide a sudden explosion of new profits that will repair the massive capital losses that have been incurred by many large

banks. To suggest otherwise is simply to try to deflect attention from the real problems—imbedded loan losses, abuse of regulatory discretion, and an insolvent insurance fund. These unfortunately are the real issues, and they must be dealt with directly and as promptly as possible.

I thank my colleagues for their courtesy in allowing me to make this statement at this time.

SURFACE TRANSPORTATION EFFICIENCY ACT

The Senate continued with consideration of the bill.

The PRESIDING OFFICER. The Senator from Iowa.

Mr. GRASSLEY. Mr. President, the Surface Transportation Efficiency Act, that we are going to be voting on shortly or at least I hope we will be voting on shortly, after discussion and further study of it, clarification as a result of amendments and as a result of debate, is a very good piece of legislation that will move the United States into the post-Interstate Highway System era. I am pleased to be able to vote for this innovative, creative piece of legislation.

The bill authorizes funding to meet the transportation needs of our country as we approach the end of this century. The bill provides flexibility to the States to decide how to best meet these needs.

There are certain parts of the bill with which I am especially pleased; and I wish to discuss three of those:

The first is the formulas. I said at the beginning of this discussion that many of us thought formulas would be the No. 1 fight during consideration of the highway bill, and events have proved those of us who said that very correct. The battle was to insure that each Senator's home State get its fair share.

Mr. President, in my estimation, and in the estimation of the many experts I have been working with from the Iowa Department of Transportation, the State of Iowa has been dealt with fairly under the formulas contained in this legislation.

The second is in reference to the National Highway System. The idea of a National Highway System is critical to maintain the integrity of an efficient transportation system throughout the United States. This bill provides 20 percent of the Surface Transportation Program funds for the National Highway System. I was pleased to be a cosponsor of the amendment which provided for this very important system and I think keeps or makes it certain that the White House will not veto this legislation.

The third and last specific point that I want to make is with regard to a minor part of the bill but important to an agricultural State like mine of Iowa, and that deals with some amendments to the commercial drivers license. An amendment that I cosponsored was adopted that would waive Federal commercial drivers license requirements for vehicles used to transport farm supplies from the farm retailer to the farm and for vehicles used in custom harvesting. This will provide much needed relief to farm communities across the Nation, including my home State of Iowa.

The last provision deals with what we refer to in the Midwest as the Avenue of the Saints.

This bill is very good news for those of us in the Midwest who are supporting a highway that runs from St. Louis, MO, to St. Paul, MN. There are other like avenues that are considered real possibilities between other major cities of the United States. But this legislation opens a way for this highway to be completed. The Surface Transportation Program gives enormous discretion to States and metropolitan planning organizations to make transportation decisions. The Iowa Department of Transportation and Iowa Governor Terry Branstad have publicly stated that the Avenue of the Saints is the No. 1 transportation project for the State of Iowa. This legislation will allow our State to proceed, along with the States of Missouri and Minnesota, in the completion of this project because they will have the discretion to allocate the needed moneys to make the Avenue of the Saints a reality.

The adoption of the National Highway System, of which the Avenue of the Saints is part, gives even more focus to this important highway corridor.

There is one issue, Mr. President, that was debated during the consideration of this bill that really should not have consumed the time of the U.S. Senate. And that was the issue of the renaming of the interstate routes around the Quad Cities in the States of Iowa and Illinois. This was a parochial concern that should be decided by the local parties involved or by a process that has been in place for the last 5 years.

It is my understanding that there may be attempts on the part of some of our colleagues in the House of Representatives to address this issue in their version of the surface transportation legislation. I would note that the U.S. Senate expressed its opinion very strongly on the question. By a vote of 72 ayes to 26 nays, the Senate convincingly pronounced that it is not the role of the U.S. Congress to be the arbiter in these local disputes. It is my expectation and hope that the Senate conferees will strive to uphold the Senate's strongly held position on the local matters.

In closing, I wish to compliment the chairman and ranking member of the full committee, Senators BURDICK and CHAFEE, and the chairman and ranking member of the subcommittee, Senators MOYNIHAN and SYMMS. They have produced a fine bill which I will be happy to support.

I yield the floor.

Mr. MOYNIHAN. Mr. President, speaking on behalf of Senators SYMMS any myself—and he can speak for himself—I thank the Senator from Iowa for his very thoughtful comments and his very substantive comments as well.

Mr. SYMMS. I thank the Senator.

Mr. DOLE. Mr. President, first, I want to thank the distinguished Senator from New Jersey for letting me proceed for a couple of minutes because we have another meeting.

I wanted to thank the mangers of the bill for accepting the amendment that I offered, along with the distinguished majority leader, Senator MITCHELL, which has to do with total effort and the fact that it would be considered by the conferees.

And I thank the chairman of the Appropriations Committee, Senator BYRD, for including additional language in what we had initially proposed. I think it reflects what we would like to determine between now and the time we go to conference. What do we mean? Should we include just gasoline tax?

I will make the argument very quickly. Many States do not use all their gasoline tax for highway construction or maintenance. Many States, including the States I think of everybody on this floor, have additional taxes—toll roads in New York, which is, in effect, a tax. In the State of Kansas we have additional taxes, not gas taxes but other taxes, and sources of revenue that are used for highway construction and maintenance. I do not believe anybody can argue with a straight face that we should not consider the total effort. It should not be just the gas tax. And I also have examples in my statement.

I will just give you one example. Maryland, Oklahoma, Pennsylvania, and Vermont send a part of the money raised by the gasoline taxes to their general funds for use in other programs. Yet under the so-called Byrd amendment, these States are rewarded. They receive so-called reward money. In addition, Iowa, Nevada, Oregon, and Wisconsin give part of their gas taxes to parks and recreation, but they get rewarded under the so-called Byrd proposal.

So the point I wanted to make and what I wanted the record to indicate is that a lot of gas tax money—I do not care what the level of the gas tax is, what the State level is—if it is used for something other than highway construction or maintenance, it should not be counted. It ought to be discounted.

We have money being used for arts, flood control, ports, aeronautics, agriculture, emergency reserves, and wild-

life. They are all good programs, but they are not highway construction or maintenance. And so I want to have the record reflect that.

I am pleased to be joined by the distinguished majority leader.

If we are going to be fair with all States—all States—then we want to look at the total effort each State makes with State revenues on highway construction or maintenance. I do not believe anybody can argue that that is not fair.

So I again thank the managers of the bill for accepting the sense-of-the-Senate amendment, and I would certainly hope that when this matter goes to conference, it will have another opportunity, and we will have an opportunity on the House side and we are going to work with a number of our colleagues on the House side to make certain they consider total effort. It is very important. Anything else, in my view, would not pass the fairness test.

Mr. MOYNIHAN. Mr. President, I thank the Republican leader. Once again he has been a voice of reason and harmony.

We would be finished with this bill now save for the fact that there are apparently some amendments for what purpose we do not fully understand. But you may be sure we will be mindful of this matter in conference. We have said that before and I say it again to the Senator now.

Mr. BRADLEY. Mr. President, I ask unanimous consent to proceed as if in morning business.

The PRESIDING OFFICER. Without objection, it is so ordered.

THE 27TH ANNIVERSARY OF THE 1964 CIVIL RIGHTS ACT

Mr. BRADLEY. Mr. President, today is the 27th anniversary of the passage of the 1964 Civil Rights Act. I can think of no better time to make a few comments on how bankrupt this administration's moral leadership is on the issue of race relations in our country.

Mr. President, I was an intern here in Washington that summer of 1964, and sat in the gallery, right up there in the corner, as the Senate voted overwhelmingly for the passage of the civil rights bill. President Johnson called it "a challenge to all America to transform the command of our laws into the customs of our land."

I remember thinking that this was an example of what government can do that is good and that America was a better place because of that bill. I remember watching some Republicans use their opposition to the bill as the beginning of their so-called southern strategy that election year. And I remember Lyndon Johnson giving a fiery speech of support for the act in New Orleans that fall.

William Manchester writes that Johnson ended that speech in New Orleans by telling of how, when Sam Rayburn first came to the Congress, he had a long talk with an ailing southern Senator who said he wished he felt well enough to take one more trip home.

"I would like to go back down there and make them one more Democratic speech," Johnson quoted the Senator as saying. "I just feel I've got one more in me. Poor old State, they haven't heard a real Democratic speech in 30 years. All they ever hear at election time is nigra, nigra, nigra". The audience gasped, recovered, and gave him a 5-minute standing ovation.

I think of 1964 and I feel that today, in 1991, people have not heard a real Republican speech in over a quarter century. All they ever hear at election time is Willie Horton, Willie Horton, Willie Horton or quotas, quotas, quotas. But the message from the Republican Party is the same just as it was from the memory of Sam Rayburn's Senator. And it is an outrage.

It is an outrage because it was a Republican President, Abraham Lincoln, who asked us to appeal to the better angels of our nature. And many in his party—not all, but many—have instead chosen the calculated pursuit of votes to perpetuate their powers by dividing us along racial lines. It may be smart, short-term politics, but it is destructive to our future and we will all pay for it.

Over the coming weeks, the 1991 Civil Rights Act will come before the Senate. As we consider it, let us remember the courage of those who were here in 1964, the courage of those in both parties who chose moral leadership over racial politics.

Moral leadership, at this critical time, requires that this body and, even more important, our President rise above partisan, divisive politics and unite this country as one nation under God, indivisible, with liberty—liberty—and justice—justice—for all.

I yield the floor.

Mr. MOYNIHAN. Mr. President, I know that I, for one would wish to accord myself with those remarks, having listened to the Senator from New Jersey with great heed and great agreement.

SURFACE TRANSPORTATION EFFICIENCY ACT

The Senate continued with the consideration of the bill.

Mr. MOYNIHAN. Mr. President, there does not appear to be any other Senator seeking to offer an amendment. Senators must know that we will move to third reading of the bill. That is our responsibility. We are sitting here and getting toward our second week, and I would like to ask the floor staff—if they would not be recognizant of the fact that we have no amendments being offered and we would like to go to third reading.

Mr. SYMMS. Mr. President, if the Senator would yield, I know of no other amendments on this side that will be offered. We are prepared to go to third reading. So I think once we get the clearance of the floor staff we are ready to go.

Mr. MOYNIHAN. I would simply say that in our case the Senator from Florida [Mr. GRAHAM] has indicated he has amendments but he has left the floor without any instruction to us.

If he does not return, we would just as soon he let us proceed.

Yesterday we discussed at some length this question of donor and donee States; yesterday, the day before, the day before, the night and the evening and the morning before that.

I have taken the liberty of producing a table of the overall ranking of States by donor and donee status. This is based on the special report of the Tax Foundation called "Federal Tax Burden by State 1991," and "Federal Expenditures by State for Fiscal 1990," from the Economic and Statistics Administration, of the Bureau of the Census.

There is no way to avoid the extraordinary difference between what States have put in overall and what they get out.

I said more than once, if we begin to think about Federal expenditures in this way, then the words "donor" and "donee" will have not been heard for the last time on this Senate floor. It is something I regret. Not that we should not be cognizant of it, in one particular program or the other. But it militates against a sense of the rich complexity of our Federal-State relations, and makes for simplification. It makes for vulgarized judgments about local as against national interests.

Mr. President, we have discussed at great length the fact that the flow of funds into and out of the highway trust fund is not balanced for each State. Some States contribute more to the trust fund than they receive—the so-called donor States—and some receive more than they contribute. As such the highway program is like all Federal programs. But let us not look at this program in a vacuum.

For the past 15 years I have made a study of the Federal Fisc, the balance of payments between the States and the Federal Government. Not surprisingly, I have found that our Federal policies create so-called winners and losers. That is, States that run surpluses and States that run deficits with the Federal Government. In fiscal year 1990, 28 States ran a surplus; 22 suffered a balance-of-payments deficit. Mr. President, over the last decade and a half I have noted large regional disparities in this balance-of-payments calculation. The Middle Atlantic States, which include New York, New Jersey, and Pennsylvania, continue to run the largest balance-of-payments

deficit. While the States in the South and West continue, on balance, to run surpluses. New York, it should be noted, has the worst balance-of-payments deficit with the Federal Government. A deficit of over $21 billion.

Mr. President, it is not surprising that the Fisc is not in balance for each State. That is neither a practical nor efficient goal. But the persistence of regional disparities is troubling.

During this debate over the surface transportation bill too much time has been spent on the allocation formula. We are trying to create a transportation program for the next century—an important and a critical task. But if we must debate this, let us do so in context of the overall Fisc.

Mr. President, I ask unanimous consent that a table from my upcoming Fisc report listing the balance of payments for each State be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

STATES PER CAPITA BALANCE OF PAYMENTS—FISCAL YEAR 1990

[In millions of dollars]

State	Expenditure	Burden	State balance	Per capita balance	Per capita rank
DONOR STATES					
New Jersey	$28,322	$47,543	($19,221)	($2,487)	50
Connecticut	14,739	21,348	6,609	2,011	49
Delaware	2,149	3,403	1,254	1,883	48
New Hampshire	3,559	5,466	1,907	1,719	47
Illinois	36,696	54,247	17,551	1,535	46
New York	70,493	91,683	21,190	1,178	45
Michigan	29,205	38,880	9,675	1,041	44
Nevada	4,144	5,363	1,219	1,014	43
Wisconsin	14,928	18,770	3,842	785	42
Minnesota	15,073	18,151	3,078	704	41
Vermont	1,772	2,166	394	700	40
California	115,802	136,442	20,640	694	39
Indiana	16,915	20,111	3,196	576	38
Ohio	37,920	42,077	4,157	383	37
Pennsylvania	45,424	49,915	4,491	378	36
Georgia	21,149	23,514	2,365	365	35
North Carolina	20,172	22,586	2,414	364	34
Massachusetts	29,778	31,455	1,677	279	33
Texas	58,237	62,704	4,467	236	32
Oregon	9,826	10,416	590	208	31
Florida	51,359	53,834	2,475	191	30
Rhode Island	4,318	4,435	117	116	29
DONEE STATES					
Washington	20,149	20,111	38	8	28
Kansas	9,538	9,488	50	20	27
Iowa	9,962	9,901	61	22	26
Nebraska	6,092	5,672	420	266	25
Tennessee	18,049	16,707	1,342	275	24
Wyoming	1,855	1,650	205	452	23
Colorado	14,586	13,098	1,488	452	22
Maine	4,925	4,331	594	483	21
Oklahoma	11,804	10,107	1,697	540	20
Arkansas	8,250	6,807	1,443	614	19
Alaska	3,227	2,888	339	617	18
Louisiana	15,116	12,479	2,637	625	17
Hawaii	5,461	4,744	717	647	16
Kentucky	13,524	11,138	2,386	647	15
Arizona	15,072	12,479	2,593	708	14
Maryland	27,118	23,617	3,501	732	13
Idaho	3,888	2,991	897	891	12
West Virginia	6,609	4,950	1,659	925	11
South Carolina	13,664	10,313	3,351	961	10
Missouri	24,258	19,285	4,973	972	9
South Dakota	2,863	2,166	697	1,002	8
Utah	6,511	4,744	1,767	1,026	7
Montana	3,345	2,475	870	1,089	6
Alabama	17,261	12,273	4,988	1,235	5
North Dakota	2,910	2,063	847	1,327	4

STATES PER CAPITA BALANCE OF PAYMENTS—FISCAL YEAR 1990—Continued

[In millions of dollars]

State	Expenditure	Burden	State balance	Per capita balance	Per capita rank
Mississippi	10,066	6,188	3,878	1,507	3
Virginia	36,346	26,401	9,945	1,607	2
New Mexico	8,640	4,435	4,205	2,776	1

Sources: "Federal Tax Burden by State 1991." Special Report of the Tax Foundation, March 1991. "Federal Expenditures by State for Fiscal Year 1990." Economics and Statistics Administration, Bureau of the Census, U.S. Department of Commerce.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. SYMMS. Mr. President, I support what the distinguished Senator from New York just said, and repeat that I have been instructed by the Republican leader, the Republican side of the aisle has cleared all amendments. We are prepared to go to third reading.

Before I give back the floor I want to say I have discussed the issue I brought before the Senate the other day when the Byrd amendment was being discussed—that is the obligation ceiling with respect to minimum allocation funds—with both Chairman SASSER and ranking member DOMENICI of the Budget Committee, of which I am a member.

I believe sooner or later this committee and the Budget Committee need to recognize, as the donor-donee State issue continues to be debated and the minimum allocation has been raised up to 85 percent—and it could be raised even further—it will be important that at some point the Senate amend the act so all these funds and all these States are treated equally so as to have a minimum allocation in the overall obligation ceiling in order to have a fair, even distribution of those funds.

Since the inception of the minimum allocation program, which we accepted—and this happened when I was chairman of this committee in 1982 and it has been unique within the Federal Aid Highway Program—the minimum allocation funds can be used on any highway project. The funds have been exempt from the obligation limitation which control spending for almost all other accounts of the highway program. Only minimum allocation and emergency relief funds.

I think that is an issue. I just want the record to show we recognize under the current bill that all States are held harmless. I think there is no problem for this 5 years, but this does need to be addressed.

I talked to Chairman SASSER about it this morning. He agreed he would look at this carefully, and it could even be looked at next year when the budget resolution comes up, to make it fair for all States.

I said this morning—and the Senator from New York and I discussed this—this may be the last national highway bill that passes. If we get this one passed. Because constantly, as States become more sensitive and the hometown politics become more sensitive to how much bacon everybody brings home, it could be we will reach a point where all we can do is just do like the old revenue sharing program, send all the money back home and not have a national highway program.

That would be regrettable, in my view, because we would end up with numerous charges and fees and tolls and what-have-you to drive across State borders. But it could happen if we cannot continue to recognize there is a great virtue and value in a national highway program so all Americans can enjoy the benefits of good roads in all States.

The PRESIDING OFFICER. The Senator from New York.

Mr. MOYNIHAN. Mr. President, I would like completely to agree with the Senator from Idaho, who has been standing guard with me here for a long time.

We may get this bill and we may not. As this fragmentation goes on, we may never get a bill again. The only thing on which I disagree with the Senator—and I think if he thought about it he would not necessarily disagree with me—is that he says the money will go back, as in the form of revenue sharing. I do not think that money will ever leave Washington. It will stay right here.

Mr. SYMMS. Mr. President, that may well be the case. But I meant in the next 5-year cycle. I agree with the Senator from New York, if this bill does not pass, there will just be a big balloon in all the other myriad of programs and the highways and infrastructure would suffer enormously. But I am looking down the road 5 years. This struggle is becoming more difficult for each bill we have had, from 1982 to 1986, 1987——

Mr. MOYNIHAN. I have been here since 1977.

Mr. SYMMS. It is getting harder, not easier, in this body to get a bill through.

I hope there will be no other amendments.

Mr. MOYNIHAN. Mr. President, sharing that hope, I ask unanimous consent to have printed in the RECORD at this point a letter from the mayor of the city of New York. It has to do with a provision in the committee amendment adopted earlier.

There being no objection, the letter was ordered to be printed in the RECORD, as follows:

THE CITY OF NEW YORK,
New York, NY, June 19, 1991.

Hon. DANIEL P. MOYNIHAN,
U.S. Senate,
Washington, DC.

DEAR SENATOR: I write to ask your assistance in obtaining a declaration of non-navigability for Pier A just north of Battery Park City. This has been the subject of discussions between your staff, representatives of the New York City Public Development Corporation and Deputy Mayor Barbara Fife.

This declaration is necessary in order to allow the City of New York to advance its goal of rehabilitating this historic pier, and to ensure public access to the waterfront in an area that is the hub for several national historic landmarks and monuments.

For ten years the City has had a vision of transforming this derelict and dilapidated pier—built in 1886—into a significant public place. The declaration is necessary to put the City and the developer, who was selected through a public process, in a position to obtain financing for the project.

Pier A, when renovated, will be one of the most outstanding public places on the waterfront. It will include restaurants, a Harbor Park Visitors Center which is funded by New York State, transient docking facilities and a public walkway along the pier which will bring New Yorkers, other Americans and visitors from abroad to a sweeping view of New York Harbor and its great national monuments, the Statue of Liberty and Ellis Island.

I feel that it is in the public interest to make this wonderful possibility a reality and hope you will be able to assist us.

Sincerely,

DAVID N. DINKINS,
Mayor.

The PRESIDING OFFICER. The Senator from Florida.

Mr. GRAHAM. Mr. President, I rise for purposes of offering an amendment. Before doing so I would like to raise some concerns about the sense-of-the-Senate amendment which we adopted while most of us were off the floor.

I was assuming we would have an amendment offered by the Senator from Kansas [Mr. DOLE], to deal with the issue of the appropriate measure of effort, whether it should be gasoline alone, as is in the amendment that was adopted, or whether it should be a broader representation.

I gather what we are doing in lieu of that, and maybe one of the managers could comment as to whether I am correct, is we have adopted a sense of the Senate to our own conferees that they should consider the Byrd amendment to be modified so as to reflect each State's total effort for highways as described in amendment No. 334, which was an amendment offered on June 13, of a study of State level of effort, which study is to include income from fuel taxes, toll revenues including bridge and ferry tolls, sales taxes, general fund appropriations, property taxes, bonds and administrative fees, taxes on commercial vehicles, and other appropriate State and local revenue sources; that we are to take all of those into account; and also per capita disposable income, as well as taking into account the effect of such apportionment formula on energy conservation, energy security, and environmental quality.

I might say I find some humor in this amendment because last night we were battered with the accusation that if we included those kinds of factors, such as the amount of fuel consumed, particularly diesel fuel, that represented a retreat from our energy security, that we were turning the world over to the OPEC, and we were about to enter an environmental chamber of horrors.

And now today we have an amendment which is expanding a previously adopted amendment, indicating that most of those are appropriate factors. I note that just for the RECORD, Mr. President.

But my concern is that in the original amendment as developed by Senator DOLE and Senator MITCHELL, when that was put into columns of allocation, the effect was that States like the Presiding Officer's and mine, who thought we did not have a dog in that fight because we were not getting any money anyway, and it could be a pure matter of policy, what we found out is that we did have a dog in that fight because by changing who the beneficiaries were under the level of effort formula, we changed the playing field for the application of minimum allocation. And the effect was that the donor States became significant losers; we had to make further donations.

So I guess my question to the managers is: "Are they going to interpret this sense of the Senate as a directive that they must adopt a set of calculations that changes the donor-donee relationship in such a way that the donors get to contribute even more toward the donee States' highway system?"

I wonder if one of the managers will comment as to how they interpret this sense-of-the-Senate resolution that we just adopted, and as conferees, knowing that they both will be conferees, will they consider themselves to be so guided?

Mr. SYMMS. Mr. President, will the Senator yield for an answer?

Mr. GRAHAM. I yield.

Mr. SYMMS. The Republican leader and the majority leader have offered a sense-of-the-Senate resolution which asks that the conferees should consider, and then the President pro tempore amended it off the floor, so it is included in their amendments to read:

* * * each State's ability to finance its total effort for highways, as measured by its per capita disposable income as compared to the average State per capita disposable income, as well as taking into account the effect of such apportionment formula on energy conservation, energy security, and environmental quality.

The charts they ran last night when they were considering having this as an amendment would have added $70 million to Florida's apportionment if their amendment had been agreed to. That is their estimate.

I am not the author of the amendment. The majority leader and the Republican leader are not on the floor to defend the question. But I am doing the best I can to answer the question of the Senator.

Mr. GRAHAM. As I understand the numbers, and I have just received them, and I will use for purposes of example the State of the Presiding Officer, a State which has long donated substantial funds—his State is a State that does not participate—excuse me. I strike that statement, because the Senator from North Carolina does, in fact, participate under the allocation of incentive funds.

Mr. SYMMS. Will the Senator yield? Maybe I can elaborate on that answer a little bit.

Mr. President, I think what I am trying to say is that is one assumption. This sense of the Senate does not pin the committee down or the conferees down to any particular assumption or formula. But we can assume many things have many formulas.

All I can say is, as one who will be a conferee on this, that we will try to look out for all States in the country the best we can to see that there is a fair and equitable apportionment of the funds.

The Senator from Florida has made it very clear that he does not believe, as his colleague from Florida has stated, also, that the apportionment formula treats Florida as fairly as they believe they should be treated. I respect that. I recognize they feel that way. We will try to do nothing in the Senate that would end up having them treated any worse than they are being treated. Or at least they will be treated as well as, I should say, as they are treated in this bill. I think that is what the conferees will try to do.

I do not see that the sense-of-the-Senate resolution offered by Senator DOLE and Senator MITCHELL says anything other than the fact that Senators should consider a State's effort, and I referred to it earlier this morning before this was agreed to as the Byrd-Dole position.

Senator BYRD made it clear he wanted to try to reward States that had a higher level of effort fixing their roads than other States. That is the general statement. I see the distinguished President pro tempore is on the floor. He wanted to reward the States who made a higher level of effort to fix their roads and infrastructure, considering also their level of per capita income.

It is clearly stated in this sense-of-the-Senate resolution, which I just read, in the Byrd language that is added to the Dole-Mitchell language. But it is sense-of-the-Senate language, I say to my colleague.

Mr. GRAHAM. What concerns me is how the conferees are going to take this demand that they have just received. It says:

It is the sense of the Senate that the conferees on this bill should consider section 159 of title 23, United States Code, as it appears in amendment 295—

The Byrd amendment—

as amended so as to determine each State's total apportionments under section 159 of title 23 U.S.C. in a way that reflects each

State's total effort for highways as described in Amendment No. 334.

Here is amendment 334. Amendment 334, which was adopted on the 13th of June, states, and it is a study of a level of effort amendment; what should be studied. What should be studied is income for fuel taxes, toll revenues, including bridges, ferry tolls, sales taxes, general fund appropriations, property taxes, bonds, administrative fees, taxes on commercial vehicles, and other appropriate State and local revenue sources, as the Director of the Bureau deems appropriate.

So I assume that in lieu of the single factor of gasoline, which was in the Byrd amendment, that now we have adopted the list of items which are in Amendment 334.

If that is not correct, could someone explain what this language means?

Mr. BYRD. Will the Senator yield?

Mr. GRAHAM. Yes.

Mr. BYRD. Mr. President, the Byrd amendment had two parts to its gasoline tax element. One dealt with the gasoline tax of a particular State and whether it was above or below the average gasoline tax paid throughout the country; namely, 17.43 cents. But it also tied in the element of per capita disposable income so that the two factors together would assure States that were making an effort, of the totality of the effort, which would include the per capita disposable income. Some States are richer than others, and those that are not as rich are really making a more supreme effort, on balance, if they do so in light of the fact their per capita disposable income is lower than the national average, which is $14,303.

Let me get right to the point of the Senator's question. A sense-of-the-Senate resolution is not legally binding. It is nothing more than advisory in nature. It expresses a sense of the Senate. It can be totally disregarded. Even if this were an instruction to Senate conferees—which it is not—Senate conferees are not bound to obey the instructions of the Senate in that regard.

It asks the conferees, or it says that they should "consider." That is all it does. It is a sense of the Senate which can be totally disregarded. I am not talking just about this particular resolution, but any sense-of-the-Senate resolution can be totally disregarded. It has no binding effect whatsoever legally or otherwise.

Even if it were an instruction, even if someone moved to instruct the conferees of the Senate, which motion would be open to amendment in two degrees, the conferees could go to the conference and throw those instructions on the floor and say the heck with them.

They are not bound to listen to the Senate's instructions. They might be inclined to consider them, as I think they ought to. They ought to consider them. But having considered them, they might say, well, we have considered them and that is it.

So if the Senator is concerned about the sense-of-the-Senate resolution, my response on that point will stand in the RECORD in explanation of any sense-of-the-Senate resolution. My explanation with respect to instructions to conferees—which are not included here—will stand in the RECORD as covering all instructions to conferees by the Senate at any time.

Mr. SYMMS. Mr. President, if the Senator will yield.

Mr. GRAHAM. If I could just comment maybe in the nature of a further question, and then I will yield to either the Senator from West Virginia or the Senator from Idaho, the language "should consider" is not a general statement that the conferees should take this into account. What the language is, is it should consider the Byrd amendment, as amended. In other words, they go to conference with the Byrd amendment, which should be considered to have been amended.

Mr. BYRD. It was amended. The Byrd amendment was amended.

Mr. GRAHAM. But "so as to determine each State's total portion under section 159 in a way that reflects each State's total effort for highways as described in amendment 334." The Senate never voted to amend the Byrd amendment in a manner consistent with the set of items contained in amendment 334. We never amended the gasoline only provision to include total revenues, including fuel taxes, bridge and ferry tolls, sales taxes, general fund appropriations, et cetera. And the consequence of sending our conferees to the conference with a directive that they should consider——

Mr. BYRD. It is not directing. It does not direct the conferees to do anything.

Mr. GRAHAM. Could we consider this to be a nullity? What is the meaning of having adopted this sense of the Senate?

Mr. BYRD. I have just explained it. It does not direct them. Read it.

Mr. GRAHAM. It says it is the sense of the Senate that the conferees on this bill should consider section 159 as amended.

Mr. BYRD. Right. That is not a directive. There is a great deal of difference in the word "consider" and the word "direct", and even if the word "direct" were in this sense-of-the-Senate resolution, it would not bind the Senate conferees.

Mr. GRAHAM. It is the opinion of the sponsor of the underlying amendment that this is a nullity? It means a substantial amount of money. For instance, the Presiding Officer's State under the amendment as it was voted on in the Senate, as opposed to the language that this sense of the Senate seems to require the conferees to consider, means a difference to the State of North Carolina of $163 million. So if this is a nullity, if it is just a statement of good feelings, a means of not offering a specific amendment, then let us describe it as such and have the understanding that the managers who will be leading the Senate conference will so consider it.

Mr. SYMMS. If the Senator will yield, let me make an attempt at that.

Mr. President, the way I will look at this as a conferee is that I will consider the language in the sense-of-the-Senate resolution that is principally authored by the majority leader, by the minority leader, and by the distinguished President pro tempore and chairman of the Appropriations Committee. Now, Senators are going to consider this language. That is what they are going to do, consider it.

No. 2, as a Member of the Senate, I would have to say that no Floridian should feel that the Senator from Florida has not made his level best effort, along with his able colleague, Senator MACK, to make a case for the State of Florida. I believe the Senator is ahead right now with those of us who will be conferees, that we have heard the Senator very loud and clear for 10 days. I do not know what more Senators can say. But I would implore and appeal to my colleague that we understand his concern. His colleague has made a similar case. The President pro tempore has added language to the Dole amendment, which is a sense of the Senate which says we should consider. We will consider it. I repeat, we will consider what the distinguished President pro tempore, the distinguished majority leader, and the distinguished minority leader have said to us. We are not bound by anything. But we also are not going to go to conference and ignore the very able case that the Senator from Florida and others, Senator WARNER and Senator BENTSEN, have made with respect to minimum allocation States. We understand that. That is the way the conference process works.

I think the Senator is ahead right now is what I am telling him. I think that we should move this bill. It is time now to go ahead with the bill, go to third reading, agree to a time certain that we can vote on this, as soon as possible, and be done with it. The Senator's interests and his State's interests will be well served by that. He has made a very able case. No Floridian should ever say that BOB GRAHAM and CONNIE MACK did not make the case for the State of Florida on the floor of the Senate. I think my colleagues will agree with that.

Mr. GRAHAM. Mr. President, who has the floor?

The PRESIDING OFFICER. The Senator from Florida has the floor.

Mr. GRAHAM. I am going to take those words as reassurance that we are

not, by a casually adopted sense of the Senate, about to change relationships that were the subject of a week or more of intense negotiations. I am pleased that the Senator from West Virginia as well as the managers of the bill have made comments to that effect.

AMENDMENT NO. 362

(Purpose: To increase the obligation ceilings contained in S. 1204 to match the increased funding approved in the Byrd amendment)

Mr. GRAHAM. Mr. President, I am now ready to offer an amendment which goes to the relationship between the amendment as offered by the Senator from West Virginia, our Senate President pro tempore, and the basic bill as it came from the committee. I and others have used the analogy of the tail and the dog. We had the dog that came out of the committee, a bulldog without a tail, and since that dog has been here, we have added a long Irish setter's tail to this bulldog. We have, however, not completely integrated the Irish setter's tail onto the bulldog because we have continued to carry over some of the concepts of the original bill into our new tailed dog.

One of those that concerns me is the obligation ceiling. On page 8 of the bill as reported by committee, line 16, we have section 104, which is the general obligation ceiling, which states: "Notwithstanding any other provision of law, the total of all obligations for Federal aid highway programs shall not exceed," and then a number is stipulated in each year from 1992 to 1996, inclusive. Those numbers reflect the level of expected spending under the bill as it was reported by the committee. Since that time we have added approximately $8.2 billion to the total level of spending. So I would propose that, in recognition of that and to maintain consistency, we amend those obligation ceilings in the 4 affected years, that is, in fiscal years 1993 through 1996, to reflect the balance that would be required to fund the amendment of Senator BYRD as well as the base bill as reported by the committee.

To that end, I send an amendment to the desk.

The PRESIDING OFFICER. The clerk will report the amendment.

The legislative clerk read as follows:

The Senator from Florida [Mr. GRAHAM] proposes as amendment numbered 362.

Mr. GRAHAM. Mr. President, I ask unanimous consent that reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

On page 8, line 21, strike "$15,940,000,000" and insert "$16,721,000,000".

On page 8, line 22, strike "$16,840,000,000" and insert "$18,726,000,000".

On page 8, line 23, strike "$18,410,000,000" and insert "$20,687,000,000".

On page 8, line 24, strike "$20,190,000,000" and insert "$23,467,000,000".

Mr. GRAHAM. Mr. President, I will withhold any further comment until later. The basic purpose of this amendment is to amend the obligation ceilings to be consistent with the new level of appropriation as has been authorized by virtue of the amendment previously adopted by the President pro tempore.

Mr. BYRD addressed the Chair.

The PRESIDING OFFICER. The Senator from West Virginia.

Mr. BYRD. Mr. President, I will not detain the Senate more than a very few minutes.

First, let me be sure that the distinguished Senator from Florida, Mr. GRAHAM, understands the meaning of the words in the sense-of-the-Senate resolution—the words "amendment No. 295 as amended." Let me explain this way.

I offered an amendment in the first degree, and a second-degree amendment which was modified a number of times, and then was agreed upon as modified, by rollcall vote. That was the second-degree amendment. Although technically not being a substitute, in essence it really had the effect of being a substitute for the first-degree amendment, and virtually wiped it out. But there still remained the parliamentary necessity of voting on the first-degree amendment as amended by the second-degree amendment. The yeas or nays were vitiated by the majority leader, and we did it by a voice vote.

So we agreed to the Byrd amendment as amended. That was the Byrd amendment No. 1, as amended by the Byrd amendment as modified, No. 2. So that is what those words mean, if they were giving the Senator any problem.

Mr. GRAHAM. Will the Senator yield for a brief question?

Mr. BYRD. Absolutely.

Mr. GRAHAM. Would the sentence read as the Senator from West Virginia thinks it should read if there were commas inserted after the "No. 295" and after the word "amended," so that that was clearly related back to amendment No. 295, and not intended to start a new thought?

Mr. BYRD. I would have no objection to a comma after the word "amended", No. 295 as amended, comma. But I do not think a comma would be needed after the number 295. I do not think a comma following 295 is required. But in any event, even without the commas, I think the language is perfectly clear. If anybody has any doubt, they can read what I have just said. That is precisely the case.

As to changing the obligation ceilings, I would also point out that the Appropriations Committee will decide what obligation ceilings it can meet, based on the outlays that will be available.

The Appropriations Committee may not be able to reach these figures, even as they are presently set forth in the bill. The Senate Appropriations Committee may not be able to meet them because the outlays simply may not be available. That often happens.

As far as I am concerned, I do not particularly recommend that we adopt this amendment, although I do not think it will make any difference one way or the other because in any event the outlays, in the final analysis, are going to govern the Appropriations Committee's decisions and actions in this respect.

The PRESIDING OFFICER. Is there further debate on the amendment?

Mr. SYMMS addressed the Chair.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. SYMMS. I think the distinguished chairman of the Appropriations Committee has really explained it correctly. I do not know for sure whether there is any opposition from the ranking member on our committee and the other members of the committee on our side.

This came to us. This is the first I have seen it. I think in effect this has no impact. I think that is essentially what the Senator from West Virginia has said. It has zero impact on the bill. For some they may look upon it, and, say, well it raises the obligation limitation. I would prefer if we did not offer any more amendments, and not have any more amendments on the bill at this late hour. But I guess I would like to note the absence of a quorum, and then consult with the leadership to be sure that they agree with my analysis of this. Then we may have no objection to it.

Mr. BYRD. I suggest we go ahead and accept the amendment. As I have already explained it, if the outlays are not there, we will not be able to meet those ceilings. We will not even be able to meet the obligation ceilings that are in this bill if the outlays are not forthcoming. But in the event the outlays are there over the next 4 years, a higher ceiling, as far as this Senator is concerned, would be all right. I just have some difficulty in believing that we are going to be able to reach those ceilings.

Mr. SYMMS. Mr. President, in view of the fact it has no budgetary impact—is what the Senator from West Virginia is actually stating, unless we have the money—it will not be appropriated, it will have no impact, and does not disrupt anything. I guess there is no opposition to the amendment.

The PRESIDING OFFICER. Is there further debate on the amendment? If not, the question is on agreeing to the amendment of the Senator from Florida.

The amendment (No. 362) was agreed to.

Mr. GRAHAM. Mr. President, as I indicated earlier, my purpose is to try to make the shepherd's tail a firmer part of our bulldog's body. We have just taken maybe a symbolic, but I think

more than symbolic, step to that objective because at least we are not concluding action on this bill with a statement that the maximum amount that can be expended is less than would be necessary in order to fully meet our commitments under both the Moynihan-Symms provision as it came from committee, and the Byrd amendment, as amended, which we have added on the floor.

Now the numbers provide to us the latitude to fully—now, Mr. President, I am clearly moving to a more serious and substantive matter. That is that I want to obliterate this distinction between the tail and the dog, and the comments made by the Senator from West Virginia make my case; that is, the high degree of apprehension, concern, as to whether we are going to be able to fully fund this program.

The way the bill is currently structured, the dog is fully fed. The dog for instance in the year 1996 will get $20.2 billion fully fed under the program before the tail, which in that year will be approximately $3.3 billion, gets the least morsel.

So those States that have a lot riding on that tail, who are particularly the minimum allocation States, almost 40 percent of the States in the Nation, are subject to having their expectations as well as their tail cut off.

So, Mr. President, I have an amendment which would graft, in the firmest possible way, the tail to the dog. It is an amendment which alters language that is currently in the bill that states that the funding under the Byrd amendment would be in a separate and secondary category, and that the funding in the base bill would be fed fully first.

The change necessary to accomplish this is really a three-word change. At section 159(d)(1)(A) of the Byrd amendment, the language appears that funding will occur other than for the Byrd amendment. I would strike the words, "other than," and insert the word, "including", which would then place the Byrd language in parity with the balance of the bill.

The consequence of that, Mr. President, is that if we do not have $23.1 billion for the program in fiscal year 1996, every part of the dog is going to have to suffer—the nose will suffer, the ears will suffer, the feet, as well as the tail. They will all suffer on a proportionate basis. Therefore, those States that have the vast majority of their Federal highway funds in the front end of the dog will be treated the same way as those of us who have a disproportionate amount of our highways at the rear of the dog.

Mr. President, I have discussed this matter with the Parliamentarian. It is possible to offer this amendment. It will require a rather extensive amendment, many hundreds of words, as opposed to three words, in order to accomplish that fact.

I am going to ask unanimous consent to be able to offer the short form amendment, which I would be pleased, before offering, to distribute to the managers. If I can get agreement to offer this in this short form version, I will do so. If not, I will offer it in the longer version.

Mr. MOYNIHAN addressed the Chair.

The PRESIDING OFFICER. Does the Senator from Florida yield the floor?

Mr. GRAHAM. No, but I will yield to the Senator from New York for any questions or comments.

Mr. MOYNIHAN. Mr. President, I have no comment.

Mr. GRAHAM. Mr. President, I ask unanimous consent to be able to offer the amendment in the form which I now send to the desk.

Mr. MOYNIHAN. Reserving the right to object, Mr. President, I object.

The PRESIDING OFFICER. The Senator from New York has raised objection. The objection is heard.

Mr. GRAHAM. Then, Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. MOYNIHAN. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. MOYNIHAN. Mr. President, while we are working this out—and I want the Senator from Florida to know that I am doing this—a question arose yesterday on this business of the dog. The Senator was going to change the way in which the funds were allocated on the basis of the FAST program, if he will recall. On repeated occasions, the Senator from Florida assured the Senate that consumption of petroleum only related to one-third of the outlays provided in that measure.

He said:

> We do not have in this legislation what the administration had, which is that 70 percent of the formula would be on motor fuel use. The only factor that we have in here that relates to consumption is one-third * * *

Again, I am trying to speak to the difficulties of this. He said, responding to comments that it was higher:

> The most consistent criticism that has been made about our proposal is that it would, in some bizarre way, encourage fuel consumption because fuel consumption is a factor in the formula. Where is it a factor in the formula? One-third of the formula for distributing the National Highway System money is diesel fuel.

And that is it.

Later referring to this question as a false issue, he said:

> The fact is I think that the Senator from New York has confused this amendment with the administration's proposal. It is correct that the administration under its national highway program would have used motor fuel usage to allocate 70 percent, that would have been 70 percent of the allocation factor. That is not a factor in our national highway program. Our national highway program is * * * one-third diesel * * *

And again, that third term arises.

I want to be clear that nobody is in any way to blame when the confusion arises, because we have such a weak basic data set here. This is all new to so many people.

But, sir, I have a letter here from Gene McCormick, the Deputy Administrator of the Federal Highway Administration, who is the one official in town of the Department of Transportation, and he says, "Pursuant to our conversation"—I called him this morning and said, "What is it? I cannot leave it unresolved that I said one thing and the Senator from Florida said another thing." I believe the Senator from Florida felt that this had been a misrepresentation on the part of the manager of the bill.

So, Mr. McCormick writes:

> Pursaunt to our conversation this morning, please find below my analysis of the relationship between the apportionment formulas in the Graham amendment No. 357 offered to S. 1204 yesterday and motor fuel consumption.

I will not go through the endless detail as I could.

"In combination, therefore, about five-sixths of the apportionments from two major apportioned programs in the Graham amendment are related to motor fuel consumption," which would be 83 percent.

This was done in the spirit that we have of saying that to the Federal Highway Administration, "You be the arbiters here."

Mr. GRAHAM. Mr. President, will the Senator yield?

Mr. MOYNIHAN. I am happy to yield.

First, I ask unanimous consent that these be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION,
Washington, DC, June 19, 1991.

Hon. DANIEL P. MOYNIHAN,
U.S. Senate,
Washington, DC.

DEAR SENATOR MOYNIHAN: Pursuant to our conversation this morning, please find below my analysis of the relationship between the apportionment formulas in the Graham Amendment #357 offered to S. 1204 yesterday and motor fuel consumption.

Within the Graham Amendment, the apportionments of the National Highway and Bridge System Program and of the Urban and Rural and Highway and Bridge Program are equal.

Within the National Highway and Bridge System Program the apportionment is based on the following:

One-ninth each in the ratio which the rural lane miles and rural vehicle miles traveled in each State bears to those of all States;

Two-ninths each in the ratio which the urban lane miles and urban vehicle miles traveled in each State bears to those of all States; and

Three-ninths in the ratio which diesel fuel consumed in each State bears to that consumed in all States.

As a result, three-ninths of this program's funds are apportioned according to vehicle miles traveled, which is directly related to fuel consumption, and three-ninths are directly related to diesel fuel consumption.

Within the Graham Amendment, the Urban and Rural Highway and Bridge System Program funds are apportioned according to the ratio of attributable tax payments to the Highway Trust Fund.

In combination, therefore, about five-sixths of the apportionments from the two major apportioned programs in the Graham Amendment are related to motor fuel consumption.

Sincerely yours,

GENE MCCORMICK,
Deputy Administrator.

[From the CONGRESSIONAL RECORD, June 18, 1991]

Mr. GRAHAM. No. 2 is the false issue that this approach is going to be promoting fuel consumption. The fact is I think that the Senator from New York has confused this amendment with the administration's proposal. It is correct that the administration under its national highway program would have used motor fuel usage to allocate 70 percent, that would have been 70 percent of the allocation factor. That is not a factor in our national highway program. Our national highway program is one-third lane miles, one-third vehicle miles traveled, and one-third diesel fuel, I underscore diesel fuel used, and that it weights urban lane miles and urban vehicle miles traveled twice representing the greater cost of providing highways in an urban setting.

* * * * *

Mr. GRAHAM. The most consistent criticism that has been made about our proposal is that it would, in some bizarre way, encourage fuel consumption because fuel consumption is a factor in the formula. Where is it a factor in the formula? One-third of the formula for distributing the National Highway System money is diesel fuel. Why do we use diesel fuel? Because that is the most direct proxy, as recommended by the General Accounting Office, as well as State highway officials, for truck traffic.

* * * * *

Mr. GRAHAM. We do not have in this legislation what the administration had, which is that 70 percent of the formula would be on motor fuel use. The only factor that we have in here that relates to consumption is one-third of the National Highway Act would be on diesel fuel, and the reason that we have diesel fuel is because that is the most relevant proxy to truck traffic . . .

Mr. MOYNIHAN. There will be one little factual matter that will be resolved before we are through.

The PRESIDING OFFICER. Does the Senator from New York yield the floor?

Mr. MOYNIHAN. Yes.

The PRESIDING OFFICER. The Senator from Florida is recognized.

Mr. GRAHAM. First, I reject the basic premise upon which this fact is offered, the premise that because you use a factor which relates most directly to highway usage—and clearly one of those factors is the amount of fuel purchased—the only purpose of purchasing the fuel being to drive your car or drive your truck and, therefore, if you are trying to assess how much use is being made of the highways one of the clearest ways to do it, other than have a legion of counters out at every corner clicking off the mileage by vehicle, is to calculate the amount of fuel consumed within that particular jurisdiction.

I would imagine the Senator's State of New York—I know my State of Florida—allocates funds to its cities and counties with a factor of the amount of fuel consumed within that local jurisdiction as a factor.

Mr. MOYNIHAN. We do not.

Mr. GRAHAM. New York may be aberrant and may not do so.

Mr. MOYNIHAN. Does the Senator mean in returning State gasoline funds?

Mr. GRAHAM. Returning State gasoline funds.

It is a formula which the General Accounting Office recognized and recommended and which the State highways officials recognized and recommended.

The assumption of some of those who have discussed this in a negative way is it creates the perverse incentive that a State would want to go out and put up big billboards that say "drive your heavy trucks across my highways so you will buy more diesel fuel within my State."

The fact is, one large truck does as much damage to the highways as 9,600 standard passenger vehicles. So a State would have to be engaging in something approaching lunancy to be advocating more trucks in order to get more diesel fuel, since it is those very trucks which are contributing primarily toward the maintenance problems of the bridges and the highways.

So I start with the premise that this is a totally fatuous argument that there is a relationship between States' incentive to encourage more consumption and the use of that consumption as a relevant rational factor in attempting to assess highway maintenance and needs.

Having said that, the amendment I offered last night, which is the amendment called the Federal Aid Surface Transportation Act, or FAST, an amendment developed by State highway officials—it was not developed within the beltway, so I guess that means it is suspect: it cannot be wise if we did not do it, somebody else had an idea, somebody else knew something—and was a rational way to meet a national transportation need. They should not have been so presumptious, but they were.

What was their formula? They divided the funds after having provided for the completion of the Interstate System into essentially two accounts. One was a national highway account which would provide the funding for almost 4,000 miles of interstate, plus an additional amount to bring the National Highway System up to a range of 150,000 to 180,000 miles.

How would funds be allocated in order to maintain and expand the capacity of that National Highway System? One-third would be on lane miles, the number of miles you actually have out there that people are using. That would seem to be a rational factor. One-third is on vehicle miles traveled, another rational factor. The other one-third, which the proposal of the Senator from New York does not touch—and we can have a debate as to whether it is appropriate—is diesel fuel.

One-third of the allocation of the funds for the National Highway System would be on the amount of diesel fuel sold within your State. Why is that factor there? Because diesel fuel is the best proxy available for the amount of commercial truck traffic which has all those implications to the Highway System that I have just alluded to.

So it is, in my opinion, a rational factor. It is a factor which is not going to encourage States to put up those big billboards and say: "Bring your Kenworths here; we want to sell you more diesel fuel." It is a formula that would assist us in allocating funds to the 50 States, the District of Columbia, and Puerto Rico in somewhat of a rational formula.

The other half of the funds under this proposal is the urban rural road and bridge program. It is intended to allow the States to meet their needs on the remainder of its highway system. We currently have approximately 850,000 miles of Federal aid highway in America. We are going to put roughly one-sixth of that on the National Highway System. This would allow you to use the balance of this money, an equal amount on the other five-sixths of what is now the Federal-aid Highway System.

How do we propose to allocate that? We propose to do it in relationship to your contributions to the highway trust fund. You are a State that sells a lot of tires, on which there is a Federal tax that goes into the Federal highway trust fund. If you sell diesel fuel, gasoline, other things upon which there is a Federal tax that goes into the trust fund, you get back whatever your contribution was on the assumption that there is a relationship between what you contribute in those things that are used on the Highway System and what you get back in terms of your ability to support that five-sixth of the Federal-aid Highway System that would no longer be on National Highway System.

In lieu of that formula, if you think it is rational everything in the world has to be compared with an alternative, everything has to be judged not just absolutely but also relatively. So what we are proposing is as the alternative to that.

Here is what we are going to do. We are going to take the formula by which funds were distributed from 1987 to

1991, calculate how much funds each State got under that formula. Then we are going to subtract various items that are intended to eliminate abnormalities. One of those, for instance, is interstate construction.

If you happen to be a State like mine—and I had been parochial—which was relatively late in completing its Interstate System, one of the largest projects that has been under construction during this period has been Highway 595 in Broward County, FL.

If you happen to be one of those States which has been dumping a disproportionate amount of Federal funds into completing the interstate, you are going to have a bigger than normal subtract factor. But that is the way the formula works.

After you arrive at this amount that you are credited for 1987 to 1991, then you get the same percentage in 1992 to 1996 as you got in that previous 5-year period.

You can say that sounds pretty fair, you get for the next 5 years what you got for the last 5 years with these adjustments.

Let us go back and let us look at what was the formula by which we distributed this money from 1987 to 1991 and let us ask which is more rational, the formula I just described, which focuses on factors that relate directly to highway usage, relate directly to the type of impact various types of users are likely to have on the system. Here is the formula that distributed the money from 1987 to 1991 and will be used to distribute the money from 1992 to 1996.

We are going to use them on Interstate 4-R. We distributed money based on lane miles and vehicle miles traveled. That sounds fairly rational.

For the primary road system we did it on the area of the State. So if you happen to be a big State like Alaska, you got a big factor in terms of your allocation of those primary funds regardless of whether there were vehicles that were out there in proportional numbers to use.

We did it on postal route mileage, a 1916 factor. We took the number of postal miles in 1916 and we are going to use those to distribute Federal funds in 1996.

For the secondary roads we again used area and we used population. What population are we going to use, Mr. President?

Are we going to use the population of the census of 1990? We are talking about fiscal years 1992 to 1996, so we are certainly going to use the 1990 census, if not some even more current adjustment. But, no; that is not what we are going to use. We are going to use the 1980 census.

Mr. President, I know that you share my sense of shock and appall at the very fact that we would tell the American people that in 1996 we are going to be distributing over $20 billion of their money based on a 1980 census. Under the urban provision, the only factor in the current law and the one that we are carrying forward is urban population. So again we will be riveting in the 1980 urban population for purposes of distribution in 1996.

And under bridges, we have cost of deficient bridges, which means that those States that had the worst bridge situation and the highest cost to fix their bridges get a reward, a big bonus. And that is what we have been doing over the past 5 years is rewarding exactly those States. Some States, Mr. President, have gotten two and three times more for their bridge program than they contributed to the fund because they had allowed their bridges to deteriorate. I do not think that is the right kind of incentive.

Now, if the senior Senator from New York, the manager of this bill, wants to debate the relative rationality, fairness, equity, and just plain common sense of the FAST approach as developed by State highway officials outside the beltway as against this approach that says the way to allocate money is the 1916 postal route number and a 1980 census number, I will stay here until we hear John Philip Sousa strike up "Stars and Stripes Forever" on the Fourth of July.

I would look forward with great anticipation and expectation of humor, literature, great eloquence, but very few numbers to support the principle that the approach that is recommended by the committee is a more sensible way to assess national highway needs than that which is recommended by most of the States' highway leadership.

So, Mr. President, with that response, I suggest the absence of a quorum. When I return, I intend to offer, in some form, the amendment that I discussed a few moments ago.

I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. MITCHELL. Madam President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER (Ms. MIKULSKI). Without objection, it is so ordered.

UNANIMOUS-CONSENT AGREEMENT

Mr. MITCHELL. Madam President, I ask unanimous consent that Senator GRAHAM of Florida be recognized to offer an amendment regarding parity between the funds allocated under S. 1204 and the Byrd amendment No. 296, as modified; that there be 2 hours for debate on that amendment, 90 minutes under the control of Senator GRAHAM and 30 minutes under the control of Senator MOYNIHAN; that upon the completion of the debate on that amendment it be laid aside and Senator GRAHAM of Florida be recognized to offer an amendment regarding parity between maintenance and capacity enhancement; that there be 1 hour for debate on that amendment, 45 minutes under the control of Senator GRAHAM and 15 minutes under the control of Senator MOYNIHAN; that the amendments be in order notwithstanding the fact they may be amending previously amended language; that no second-degree amendments or amendments to possible language proposed to be stricken be in order; that if and only if both of these two amendments are tabled or defeated than no further amendments or motions to recommit be in order to the bill; and that upon the tabling or defeat of the second Graham amendment, if both amendments are tabled or defeated, the Senate, without any intervening action or debate, proceed to third reading and final passage of the bill; and that upon completion of all debate the Senate vote on or in relation to the first Graham amendment, that vote to be followed without any intervening action with a vote on or in relation to the second Graham amendment.

The PRESIDING OFFICER. Is there objection to the unanimous-consent request propounded by the majority leader?

Without objection, it is so ordered.

Mr. MITCHELL. Madam President, if I might now state for the information of Senators, at approximately 7:35 there will be at least two votes, one on each of the two Graham amendments. If both of those amendments are tabled or defeated, then immediately following the tabling or defeat of the second of the two amendments the Senate will vote on final passage of the bill. If either or both of those amendments are not tabled or are passed, then the bill will be open for further amendment and we will continue in deliberation on the bill.

Therefore, to accommodate their schedules, Senators should be aware that at approximately 7:35, or 3 hours from now, there will be at least two rollcall votes on or in relation to the Graham amendments and possibly three rollcall votes, the latter to include final passage in the event of two Graham amendments are tabled or defeated.

Madam President, I thank my colleagues, the Senator from Florida, the distinguished manager, the Senator from New York, and the Senator from Idaho.

Mr. SYMMS. Madam President, may we ask for the yeas and nays on final passage? I have had Senators ask that, just so it is ordered.

The PRESIDING OFFICER. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

The PRESIDING OFFICER. The Chair recognizes Senator GRAHAM of Florida.

AMENDMENT NO. 363

(Purpose: To provide a proportionate distribution of Federal highway obligation authority among all programs authorized under S. 1204)

Mr. GRAHAM. Madam President, I send an amendment to the desk and ask for its immediate consideration.

The PRESIDING OFFICER. The clerk will report.

The assistant legislative clerk read as follows:

The Senator from Florida [Mr. GRAHAM] proposes an amendment numbered 363.

On page 6 of amendment No. 295 (as amended) on line 8, in section (d)(1)(A), strike the words "other than" and insert instead "including".

The PRESIDING OFFICER. The Senator may proceed. Under the agreement, the Senator has 90 minutes and the opponents have 30 minutes.

Mr. GRAHAM. Madam President, the purpose of the amendment I have just sent to the desk is to bring the Byrd amendment, as adopted during the consideration of this legislation, into a parity position with the formulas for distribution that were contained in the Moynihan-Symms provisions as the bill was reported from committee.

We are proposing to distribute through this legislation a total of approximately $113 billion in surface transportation funds over the time period 1992 to 1996. As the bill came out of committee, we were distributing $105 billion. That additional $8 billion was added by the Byrd amendment on the floor.

As that language is currently constructed, the Byrd amendment is secondary to full funding of the basic bill; that is to say, the basic bill would have to be funded 100 percent before any funds were available for the Byrd amendment.

Senator BYRD earlier this afternoon agreed to, and the Senate adopted, an amendment which raised the obligation levels in the base bill to reflect the levels necessitated by the Byrd amendment.

For instance, in the original bill, the obligation ceiling for 1996, the last year this legislation was funded, was approximately $20.2 billion. The Byrd amendment added $3.3 billion. So we amended that $20.2 billion up to a total of $23.5 billion to reflect the fact we have authorized through the Byrd amendment that additional level of spending.

The amendment I am now offering would further knit the Byrd amendment and the basic bill together by providing that should there be something less than the full amount available to be distributed it would be a proportionate reduction from all of the programs in this legislation.

That contrast, as I indicated, to the current provision, which is to fully fund the base bill, and only after you have fully funded the base bill does any money go to the Byrd amendment.

So in 1996, for instance, if the Congress were to appropriate $20.2 billion for transportation, all of that $20.2 billion would go into the formulas of the Moynihan-Symms bill. Zero would go to the Byrd provision. If we appropriated $21.2, 100 percent, or $20.2 would go into the base bill, and that last $1 billion would go to the Byrd provision, divided equally between the incentive portion and the minimum States allocation. That is the way the bill is now.

What I would provide is if, in 1996, for instance, we appropriated $21.2, that all of the programs in surface transportation would be treated in parity.

Why is this important, Mr. President? It is important because the basis upon which approximately 40 percent of the States of the Nation are going to be given some degree of equity under this legislation is that they will receive this enhanced minimum allocation through the Byrd amendment.

For instance, Mr. President, in the case of the Presiding Officer's State, over this period, the State of Illinois would receive $164 million in the Byrd amendment, as minimum allocation, bringing Illinois up to some higher level of equity.

If, however, the current bill stays in its form, and if the Byrd amendment is not fully funded, then Illinois will take a very serious reduction in its expected $164 million. I do not know the numbers as well for the Presiding Officer's State as I do for my own, but I know that because of another feature, which is that the Byrd amendment is very heavily backloaded, no Byrd money is expended in fiscal year 1992. It is all expended in 1993, 1994, 1995, and 1996.

In 1993, for instance, the total of the Byrd amendment is approximately $780 million. That is what the Byrd amendment is worth in 1993. But 4 years later, in 1996, the Byrd amendment is $3.3 billion.

In my State, Mr. President, that means that of all the highway funds that we are going to receive in fiscal year 1996, about 20 to 30 percent of them will be the Byrd amendment minimum allocation provision. And that same high level of dependence on the Byrd amendment is going to be true for other donor States, such as the State of the Presiding Officer.

My question is: If we are trying to fund a national transportation system, having already voted for the Byrd amendment as an appropriate part of that system, and having recognized that there should be some minimum level of funding that all States can depend upon and plan upon, why should we not bring the Byrd amendment up to equal dignity with everything else that we are going to be funding in this transportation bill?

Politically, the effect of that is going to be that in 1996, there will be 50 States and 100 Senators who will have an interest in the level of funding of the transportation bill, because everybody is going to be equally affected by any shortfalls.

Conversely, if we have the structure that is in the bill now, and the base bill, the Moynihan-Symms provision, gets fully funded, and the Byrd bill can get zero funding, we are going to have only essentially the donor States, approximately 40 percent of the States in the Nation, who are going to have an active interest in getting that last $3.3 billion into the transportation program.

So I think both in terms of fairness, treating everybody equally, in terms of rationality, we have said that we believe that the principles of the Byrd amendment are an appropriate part of the national transportation system. And in terms of assessing the likelihood that what we have all voted for will in fact become reality, I am strongly of the opinion, Mr. President, that we should adopt this amendment, make the Byrd amendment have the same structure as any other distribution formula within this bill.

And then we can go back home, whether it is to Springfield or to Tallahassee, and say with greater assurance that this is what you can expect, citizens; this is what your transportation department can anticipate and plan for over the next 5 years.

Without this amendment, I believe there is a very high degree of vulnerability as to whether those representations of a minimum allocation to every State will become reality.

Thank you, Mr. President.

The PRESIDING OFFICER (Mr. DIXON). The Senator from Florida yields the floor.

Who yields time?

If no time is yielded by either side, the time will be deducted proportionately between the proponents and the opponents.

May the Chair clarify, it is the intention of the Chair to deduct the time on the basis of the distribution of time, so that the proponents or advocates of the amendment will be having their time reduced in a 3-to-1 ratio to the opponents, because of the 90-30 time distribution. I want that clearly understood by the proponents.

Mr. SYMMS addressed the Chair.

The PRESIDING OFFICER (Mr. FOWLER). The Senator from Idaho.

Mr. SYMMS. Mr. President, it is my understanding that the proponent of the amendment is prepared to yield back his time and then we can go on the next amendment.

Mr. President, I will speak to this amendment very briefly, and then I shall yield back the time that is reserved for Senator MOYNIHAN and myself.

This amendment, if adopted, would fundamentally undercut the hold-harmless provisions that the majority leader and the minority leader and

Senator BYRD worked out with respect to the Byrd amendment, so it would completely change the apportionment formula. In some cases States would be greatly harmed, in other cases they may not be harmed, but it is possible that even some of the donor States could lose money under this amendment under the original formula of the bill where they are guaranteed the 85-percent minimum.

Second, Mr. President, if this amendment were adopted, then the agreement would be off. There would be no vote at 7:30 or earlier.

I might say to my colleagues who are watching this, as we start yielding this time back, Senators should look to their clocks and the staffs should look to the clocks and see how much time we yield off and start deducting it from 7:30, because we will be moving closer to a time to vote unless there is some reason the leadership will not be able to vote earlier.

But having said that, it is my understanding that Senator MOYNIHAN and I will have 15 minutes on the next amendment and I will reserve that time until we discuss it with the leadership.

I have just been informed that the distinguished President pro tempore would like to speak in opposition to this amendment, so I need to reserve some time for him.

The PRESIDING OFFICER. Will the Senator from Idaho and the Senator from Florida inform the Chair as to how much time has just been yielded back from the unanimous consent agreement?

Mr. SYMMS. At this point, I would say, Mr. President, that no time has been yielded back. I might inquire of the Chair: How much time remains on each side?

The PRESIDING OFFICER. If no time has been yielded back, it is my understanding, if we agree to one amendment——

Mr. SYMMS. No amendment has been agreed to.

The PRESIDING OFFICER. I meant set-aside one amendment for discussion, that the time had been yielded back. But since that is not the case, the Senator from Florida has 69 minutes remaining and the Senator from Idaho has 21 minutes remaining.

The Chair is clear. I thank both Senators. No time has been yielded back off the agreement and as it stands, as of now, we are under the unanimous consent agreement.

Mr. SYMMS. Mr. President, there must be some error. At the time we started out with a 3-to-1 ratio. The opposition has used very little time and the clock has been running supposedly on a 3-to-1 ratio and the proponents spoke only briefly, maybe 5 minutes or more. So we should be closer to a 3-to-1 ratio of time left over.

The PRESIDING OFFICER. I thank the Senator and have instructed the clerk to go from the new math to the old math. I am confident we will straighten that out momentarily.

Mr. SYMMS. I have been advised that Senator MITCHELL, Senator DOLE, and Senator BYRD would like 5 minutes each to speak in opposition to the pending Graham amendment, and maybe we should keep 5 minutes for Senator MOYNIHAN if he needs it.

Mr. President, I might just suggest to the distinguished author of the amendment that maybe he could just start talking on the second amendment. He has a lot of time here now. It will not matter at the end and we will not have to lay an amendment aside that way.

The PRESIDING OFFICER. Let us get our clock right here.

The Chair understands a mistake was made. The original agreement was 90 minutes for the Senator from Florida, 30 minutes for the Senators from Idaho and New York. We will work that out. In the meantime, the Chair recognizes the Senator from Florida.

Mr. GRAHAM. Mr. President, I ask unanimous consent to lay aside the first amendment for purposes of commencing debate on the second amendment, reserving what time is remaining on the first amendment for use when we return to it.

In explanation, there were three, possibly four, persons who have indicated a desire, as hard as it is to believe, to speak in opposition to the amendment I have offered.

The PRESIDING OFFICER. Is there an objection to laying aside the first amendment?

Mr. SYMMS. If the Senator will just withhold that for a moment. What I urge him to do is go ahead and start speaking about the second amendment because he has a 3-to-1 ratio of time and I think the distinguished President pro tempore may be on the way to the floor to speak in opposition to the first amendment. Rather than laying it aside, he can start speaking on the second amendment as though we had done so.

Mr. GRAHAM. Mr. President, the reason I am reluctant to do that is because I think the first amendment is likely to engender more debate than the second. I do not want to be using up my first-amendment time on my second-amendment discussion. So I prefer to lay the first amendment aside and take up the second amendment.

Mr. SYMMS. Mr. President, as long as it is understood by the Presiding Officer there will be 5 minutes reserved for Senator BYRD, 5 minutes for Senator MITCHELL, 5 minutes for Senator DOLE, and 5 minutes for the managers on the first amendment, we would have no objection to temporarily laying it aside and going to the second amendment.

The PRESIDING OFFICER. The Chair says to the Senator from Idaho, under that agreement, the Chair cannot make that decision. The time is controlled by the Senator from Idaho or his designee.

Mr. SYMMS. That is fine, if I reserve my 20 minutes that I have on the first amendment, understanding that we can temporarily set the first amendment aside and go to the second amendment.

The PRESIDING OFFICER. It is the understanding of the Chair, I say to all the participants, that the allotted time, 90 minutes for the Senator from Florida, 30 minutes for the Senator from Idaho, is not divided by amendments. And, therefore, there should be sufficient time under the request that had been made for any and all parties who wish to speak to speak.

Mr. SYMMS. I make a further parliamentary inquiry, Mr. President. It is my understanding there are two amendments: The first amendment has 90 minutes and 30 minutes set aside; the second amendment has 45 minutes and 15, or 1 hour set aside. There were 3 hours to start with. As long as it is understood here we keep the time running on a 3-to-1 ratio with 3 hours of total time on the two amendments, I do not think there is a problem. But I want to reserve some time for the opposition. I am not prepared to yield any time back at this point until we can yield all time back and go to a vote.

The PRESIDING OFFICER. The Senator is correct. The Chair agrees time will be running, taking time off proportionately.

Mr. SYMMS. I yield the floor.

The PRESIDING OFFICER. The Senator from Florida.

Mr. GRAHAM. My original purpose was to ask unanimous consent to set aside the first amendment for purposes of taking up the second amendment; during the course of the debate on the second amendment, to have the time stayed on the first amendment. Is that——

The PRESIDING OFFICER. The Chair understands the request, but it will require—is there an objection?

Mr. GRAHAM. I ask unanimous consent we set aside the first amendment, staying the time of the first amendment for purposes of taking up the second amendment.

Mr. SYMMS. No objection.

The PRESIDING OFFICER. There is no objection. The request is granted.

AMENDMENT NO. 364

(Purpose: To provide a proportionate distribution of federal highway obligation authority among all programs authorized under S. 1204)

Mr. GRAHAM. Mr. President, I send an amendment to the desk and ask for its immediate consideration.

The PRESIDING OFFICER. The clerk will report.

The legislative clerk read as follows:

The Senator from Florida [Mr. GRAHAM] proposes an amendment numbered 364.

Mr. GRAHAM. Mr. President, I ask unanimous consent that reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

SEC. 106. SURFACE TRANSPORTATION PROGRAM.

Strike lines 14 through 25, page 23, and insert:

Transportation Program funds"; and by striking "75" in two places and inserting instead "80".

SEC. 108. BRIDGE PROGRAM.

Insert a period after "80 per centum" on line 5, page 28 and strike the remainder of lines 5 through 25, page 28.

Mr. GRAHAM. Mr. President, this is a very straightforward amendment. Under the current law, there are various proportions of Federal-State sharing of Federal aid highway construction and rehabilitation. For instance, the basic interstate program is 90 percent Federal, 10 percent State; the primary, secondary and urban program is 75 percent Federal, 25 percent State; and the bridge program, 80 percent Federal, 20 percent State.

In all those categories, there is no further distinction made between expenditures on maintenance, reconstruction, rehabilitation and the additional capacity.

Under the bill as submitted by the committee, such a distinction is made. For surface transportation programs, the basic part of the bill under which approximately half of the Federal money is allocated, if you use the funds for maintenance or rehabilitation, you can match, at 80 percent Federal, 20 percent State. However, if you use your money for capacity enhancement, it is 75 percent Federal, 25 percent State.

I underscore, this amendment has nothing to do with changing the allocations among States. We are talking here in terms of a State which has its allotment as generated by the formulas on which we have spent so much time over the past several days. We have been discussing that State's flexibility of using that for maintenance and rehabilitation as opposed to new capacity addition.

The argument is made we should discriminate against new capacity because we do not want to encourage the construction of new highways; that new highways are a bad public policy; that we should be encouraging other forms of transportation expenditures. In some ways that has an appeal. If you were in a State that essentially was a stable State, in terms of its population and economy, and you were then challenged to make the decision as to how should you shape your future in terms of allocation of funds, maybe a State would reach the judgment that it was in its best interests to concentrate on preserving the highway system that it currently has, using its funds through a different pattern of expenditure. But that is not the circumstance for a significant number of States in this Nation.

My State of Florida every day receives almost 900 people. In the last 10 years, in excess of 3 million Americans have made the decision to also be Floridians. They came for a variety of reasons: some came seeking freedom; some came seeking better economic opportunities; some came seeking a quality of life in retirement. But, for whatever reason, they came.

I can assure the Presiding Officer that zero percent of the people who came to Florida came because they liked the smell of asphalt; because they were attracted by the desire to look at, feel, and see new highways under construction.

The highways have been constructed in order to meet their needs, not to induce them to come in the first instance.

To me, Mr. President, if we are trying to pass a bill which talks about efficiency and talks about flexibility and talks about treating States fairly and giving to States greater control over their destiny, then to have a Federal formula that says growth States are going to be discriminated against because they will not be able to meet the inherent expected demands for transportation services on the highways of those States that are growing because they will have a discriminatory allocation formula, I believe that all of those laudable premises begin to crumble.

So, Mr. President, my amendment is a straightforward one. It essentially returns to the philosophy of the current law and that is, there should not be such discrimination against a State which elects to use its own Federal allocation for new capacity additions as well as using it for maintenance.

Mr. President, we are so disinvesting in America's transportation system under this legislation, we are leaving such enormous needs in the maintenance of the existing system, as well as the additional capacity for growth in all of our States, but particularly in those States experiencing unusual accelerations in population and economic growth, that this is just an additional thorn in the side of our efforts to secure a rational balance of a national surface transportation system.

Mr. President, I urge the adoption of this, I think, very rational and appropriate amendment, particularly on behalf of those States who have the responsibility of meeting the needs of Americans who have elected to become citizens of those growth States.

Thank you, Mr. President.

The PRESIDING OFFICER. As stated before, if no one yields time, the time will run proportionately, deducted from both sides.

The Chair, in his capacity as a Senator from the State of Georgia, suggests the absence of a quorum. The clerk will call the role.

The legislative clerk proceeded to call the roll.

Mr. GRAHAM. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. (Mr. LIEBERMAN). Without objection, it is so ordered.

Mr. GRAHAM. Mr. President, in an effort to try to move this to as early a conclusion as possible, I am prepared on the amendment No. 2 to the amendment that is currently before us to yield back all but 15 minutes of the time remaining to me; and on the amendment No. 1, which is the amendment that has been laid aside, to yield back all but 20 minutes on amendment No. 1, if the proponents of the bill, the opponents of these amendments, will yield back a proportionate amount as an inducement for those who have indicated they wish to speak to come and do so.

Maybe if we yield back time, they shall come.

Mr. SYMMS addressed the Chair.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. SYMMS. I see my distinguished colleague from New York is back on the floor, the floor manager. I do not mean to speak on his behalf.

Mr. MOYNIHAN. Do.

Mr. SYMMS. When the Senator was off the floor, we had agreed that all we need on this side is 5 minutes for Senator BYRD, 5 minutes for Senator DOLE, 5 minutes for Senator MITCHELL, and 5 minutes for the two managers of the bill, and we are willing to yield back all the rest of our time.

But we do need to reserve that much time. And they need—those Senators—if they are within earshot, to be allowed that time to speak on the bill. Then we are ready to go to a vote. It will be the intention of the managers of the bill to move to table the first Graham amendment first, and the second Graham amendment second, and go to final passage.

Mr. MOYNIHAN. Does the Senator want to help us with the calculations? How much time would he want us to yield? Or we are prepared to yield all but that time.

Mr. SYMMS. We are prepared to yield all the time but that. We would make the unanimous-consent agreement to reserve that much time, I would think.

Mr. GRAHAM. I am prepared to yield back all but 15 minutes on the second amendment; 20 minutes on the first amendment. I understand the Senators want a total of 20 minutes on the first amendment.

Mr. MOYNIHAN. Twenty-five.

Mr. SYMMS. Twenty-five minutes total time is all we need for both amendments.

Mr. GRAHAM. Both amendments. I ask unanimous consent that the——

Mr. MOYNIHAN addressed the Chair.

The PRESIDING OFFICER. Will the Senator withhold?

Mr. MOYNIHAN. Mr. President, perhaps the assistant floor manager would make the unanimous-consent request.

Mr. FOWLER. I thank the distinguished chairman of the committee. Let me make sure that I understood the request of the Senator from Florida and the Senator from Idaho.

My understanding is that further need for debate on both amendments would be 60 minutes; 15 minutes reserved for the Senator from Florida for the second amendment, and 20 minutes for the Senator from Florida for the third amendment.

Mr. GRAHAM. First amendment.

Mr. FOWLER. First amendment, and that a total of 25 minutes be reserved for the Senator from Idaho and the Senator from New York, which would include 5 minutes for Senator MITCHELL, 5 minutes for Senator DOLE, 5 minutes for——

Mr. SYMMS. Or thereabouts. We will have it all in a block. Those Senators requested time. That is our expectation. They have requested 5 minutes each, and if we reserve that much time, that is all we should need.

Mr. FOWLER. Mr. President, I ask unanimous consent that the agreement be modified; that all time under all amendments be considered at an end at 6:45; that the time will be proportioned 15 minutes to the Senator from Florida for his amendment No. 2; 20 minutes for the Senator from Florida for his amendment No. 1; and that 25 to 30 minutes remaining time be reserved for the chairman of the committee, Mr. MOYNIHAN, and Mr. SYMMS, the Senator from Idaho, that time not to exceed 30 minutes, at which time all time under the agreement will be deemed to have concluded and that the votes will occur beginning at 6:45 seriatim under the rules of the previous agreement of the majority leader.

The PRESIDING OFFICER. Is there objection? Hearing none, that will be the order.

Mr. FOWLER. I thank all Senators for their cooperation.

The PRESIDING OFFICER. Who yields time?

Who yields time?

If no one yields time, time will run from both sides proportionately.

Mr. KERREY addressed the Chair.

The PRESIDING OFFICER. The Chair recognizes the Senator from Nebraska.

Mr. KERREY. Mr. President, I ask unanimous consent that I be allowed to speak for 10 minutes as in morning business, with 3 minutes to be charged to the Senator from Idaho and 7 minutes to the second amendment that has been offered by the Senator from Florida.

The PRESIDING OFFICER. Without objection, it is so ordered.

AMERICA'S PATIENTS ARE PATIENT NO LONGER

Mr. KERREY. Mr. President, this morning's newspapers carried some good news for a change, and it is good news that will affect 74 million Americans. The papers reported that the Blue Cross/Blue Shield Association has offered to provide insurance for periodic tests to detect cancer, heart disease, and other diseases, even for subscribers who have no symptoms of illness.

Mr. President, it is important to point out that Blue Cross/Blue Shield's actions will obviously not affect those who have no insurance. It will not affect those 35 million Americans who are uninsured, and it will only affect those Americans who have insurance whose employers will offer this preventive care.

The story is good news because only 41 percent of insured adults are not covered for preventive exams; only 20 percent of the women who should be getting routine mammography currently do so. It is good news, because Blue Cross/Blue Shield is the Nation's largest private health insurer, which means this action will benefit the Blues' 73 million subscribers, and it may also benefit all the subscribers of other insurers, who will very likely follow the Blues' lead. It is good news because, as Dr. Paul Griner, chair of the board of regents of the American College of Physicians noted in the New York Times this morning, the extra spending for these tests should result in "'improved productivity of employees, greater longevity, and improved quality of life' for millions of Americans."

So upon reading this story, Mr. President, I decided simply to come to the floor today and congratulate the Blue Cross/Blue Shield Association and its new president, Bernard Tresnowski, for this act of corporate statesmanship, or as the Times quite correctly described it, an act of "enlightened self-interest."

That was my first reaction, Mr. President. I must confess, however, that as the day has progressed, I have had second and third reactions to this story as well. For as impressed as I am with Blue Cross/Blue Shield's action, I feel my anger welling up about a system of financing health care that gave us long, deadly decades of inaction.

All of us, Mr. President, know friends, and some relatives as well, who have had diseases detected too late for treatment to be of any benefit. There is great sadness, knowing that for a relatively small amount of money and a relatively small amount of effort, the detection could have prevented the tragedy of early death.

After all, Mr. President, this policy change is not a result of some recent scientific finding. The fact that early testing can save lives is not something that came out of the National Institutes of Health a few weeks ago. We have not just discovered that we can raise the effectiveness of treatment and lower its cost if we succeed in getting an early diagnosis of breast cancer, or cervical cancer, or coronary artery disease.

No, we have known that for some time. Indeed, while it is good news that Blue Cross/Blue Shield has now formulated guidelines on what preventive tests Americans should have, a task force presented a similar set of guidelines to Health and Human Services Secretary Louis Sullivan over 2 years ago. And so the question comes to mind: Why is our health care system just now responding to that information?

The reason, Mr. President, is that we have a system of financing health care that provides all the wrong incentives if our public policy goals include, as they do, preventing disease, controlling cost, and improving the quality of people's lives.

Tempted as I am to do so, I find it hard to fault Blue Cross/Blue Shield for not having taken this action earlier. I am a businessman myself, Mr. President, and so I know that insurers, like all good businesses, must serve the bottom line. And for all its merits, early testing has very little to recommend itself to the bottom line of a private insurance company.

There is a problem with testing, you see. It adds to an insurer's costs. But the benefits of any given test may not show up for years. For healthy people whose tests forever come back negative, there are, in a sense, no benefits. And worst of all, from a business perspective, if a subscriber switches insurance companies, insurance company B may reap the benefits of a test paid for by insurance company A. That is why insurance companies have not opted to cover preventive tests, even though doing so only requires charging subscribers what Blue Cross/Blue Shield now describes as a nominal amount of about $7.50 a month.

In that light, the statement about Blue Cross/Blue Shield acting out of enlightened self-interest looks very different. It suggests, accurately, that no fee-for-service insurer would ever pay for testing out of pure economic self-interest. Which is about as definitive proof as you could ever ask for that the incentives of our system of financing health care are at direct odds with the health care goals of the American public.

The American public believes we must stop the explosion of health care costs that is taking too much money out of our paychecks, our savings, our public budgets, and our corporate profits. Yet our system of financing health care has no incentives to provide cost-saving services like testing.

The American public believes every one of our citizens deserves to have a

basic level of health care coverage. Yet our system of financing health care gives insurers every incentive to skim the healthiest patients and dump those with high health risks onto the rolls of Medicaid or into the ranks of the uninsured.

The American public believes that health insurance should cover those services and procedures that the public wants and needs. But as a representative of the health insurance industry was quoted this morning in the Times as saying: "Major employers call the shots. They decide what benefits to include * * *.

Mr. President, we have a choice in this country about the future of our health care system. It is not the choice White House Chief of Staff, John Sununu, has recently suggested by way of excusing the President's failure to offer any kind of health care reform program. Mr. Sununu has suggested our choice is one between free enterprise health care or socialized medicine. Mr. Sununu's motto seems to be: "Socialized transport, yes; socialized medicine, no."

But Mr. Sununu has it wrong. Our real choice is whether we will have a system of financing health care that is responsive to public goals or one that is not. Our choice is whether we will have a system that is cost effective or just costly. Our choice is whether the first priority of our system of financing medical care will be public health or private wealth.

Mr. President, Blue Cross/Blue Shield is to be applauded for its initiative. But there is little to applaud in a system of financing health care that makes us wait helplessly for insurers to do what we have known for years they should do. The Blues have taken a laudable step. But how long will we have to wait for other insurers to follow suit? How long will we have to wait before insurers exempt testing and other preventive services from deductibles and copayments that deter people from using them? How long will we have to wait for these same tests to be made available to the millions who do not happen to be covered by private insurance?

Mr. President, I think most of us are tired of waiting. I think America's patients are patient no longer. I think it is time we enacted the comprehensive reform we need rather than waiting for whatever incremental improvements we get.

Mr. President, I thank the distinguished Senator from Idaho and the distinguished Senator from Florida for yielding me this time.

Mr. President, I ask unanimous consent that the New York Times article be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[From the New York Times, June 19, 1991]

BIG INSURER OFFERS MEDICAL SCREENING AS PART OF POLICY

(By Robert Pear)

WASHINGTON, June 18.—In a departure from longstanding practice in the health insurance industry, which has emphasized the treatment and cure of disease without paying for much preventive care, Blue Cross and Blue Shield offered today to provide insurance for periodic tests to detect medical problems in people with no symptoms of an ailment.

The Blue Cross and Blue Shield Association issued guidelines for a lifetime schedule of medical tests to detect adult diseases, including cancer and heart disease, and said it would offer coverage for these services. The United States Public Health Service expressed support for the guidelines.

Other private insurers have expressed a willingness to cover preventive services and are expected to use the guidelines.

AN ECONOMIC INVESTMENT

The screening tests would add to overall national spending on health care at a time when the soaring costs of medicine have prompted a flurry of proposals in Congress for fundamental change in the nation's health-care system. But the concern about cost usually focuses on exotic high-technology procedures, not on simple screening tests, and Blue Cross officials described the coverage of preventive care as an investment that would yield economic gains, including higher productivity for workers.

The new coverage is envisioned as an expansion of existing policies. Blue Cross said it could cover the costs of insurance for preventive and screening services by charging additional premiums of about $90 a year for a family and $36 a year for an individual.

GROWING PUBLIC DEMAND

The guidelines come in response to a nationwide consensus of health policy experts that insurers should cover more preventive services. That idea is backed not only by the Public Health Service but by the 70,000-member American College of Physicians. The college developed the guidelines over several years in cooperation with the Blue Cross and Blue Shield system, which is the nation's largest private health insurer, covering 73 million Americans.

Health economists suggested that Blue Cross was also motivated by a sense of enlightened self-interest, because there appears to be a growing demand among employers and consumers for insurance to cover screening and preventive care, including health education and counseling to stop smoking.

The screening schedule specifies who should be tested when for high blood pressure, heart disease, cholesterol, diabetes, thyroid problems, osteoporosis and cancer of the breast, colon, cervix and lung.

Equally important, the guidelines say certain techniques, like exercise stress testing and tests for thyroid disease, are not recommended as routine screening procedures for people with no symptoms.

Dr. Paul F. Griner, chairman of the board of regents of the American College of Physicians, said that screening—the search for specific health problems in a person who has no known signs or symptoms—"has enormous medical value in finding disease early, when it can be treated most successfully and most economically.

In the last year, many private insurers have quietly cut back coverage of small groups of beneficiaries on which they say they have lost money. But Pam Kelch, a spokeswoman for Blue Cross and Blue Shield, said the medical tests included in the new benefits package would not be used to screen out people found to have costly diseases or high risk of developing such illnesses.

Bernard R. Tresnowski, president of Blue Cross and Blue Shield, said the group's 73 local plans around the country could offer coverage of the recommended screening tests for "a nominal amount" about $7.50 a month for a family whose insurance coverage now typically costs $200 to $300 a month.

Dr. David M. Eddy, professor of health policy management at Duke University, who edited the guidelines, estimated that national spending on health care would increase by $2 billion to $3 billion a year if all adults complied with the screening recommendation.

"IMPROVED PRODUCTIVITY"

But Dr. Griner said the extra spending would result in "improved productivity of employees, greater longevity and improved quality of life" for millions of people. The United States spends more than $660 billion a year on health care, and the amount has doubled in the last eight years.

The guidelines are not rigid standards, but doctors who ignored them could expose themselves to an increased risk of lawsuits for failure to detect cancer or other diseases.

Dr. Griner, who is also the chief executive officer of Strong Memorial Hospital in Rochester, said that 80 percent of the women who should be getting routine mammography were not receiving it.

To detect breast cancer, the guidelines say that women 40 years old and over should receive an annual examination of the breasts by a doctor or a specially trained nurse. In addition, the guidelines recommend annual mammography for women 40 and older who have a personal history of breast cancer or have a sister or mother with the disease. For women with no such history or risk, the guidelines call for annual mammograms starting at age 50.

Under the model benefit package for preventive services, Blue Cross would not pay for routine physical examinations, but would cover many procedures commonly performed in such examinations.

The 73 independent nonprofit Blue Cross and Blue Shield plans will be strongly encouraged but not required to offer the additional coverage. They operate 89 health maintenance organizations providing care for 4.6 million people. Routine exams and screening tests are already included in the services of such prepaid group plans. The new coverage is being offered to people who receive health care through traditional fee-for-service arrangements.

Joel E. Miller, director of professional services for the Health Insurance Association of America, which represents more than 300 commercial insurers, said some of them were beginning to offer similar benefits. But he said: "Major employers call the shots. They decide what benefits to include in their health insurance packages. There needs to be a marketing and education campaign to convince employers that these benefits should be included."

Medicare, the Federal health insurance program for the elderly, is slowly adding coverage for a few selected screening tests, like mammograms. Medicaid, the Federal-state program for poor people, already covers screening for many children and coverage of other services generally depends on state decisions.

Dr. J. Michael McGinnis, Deputy Assistant Secretary of Health and Human Services,

hailed today's announcement by Blue Cross and the College of Physicians. "Historically, lack of financing has been a barrier to the delivery of clinical preventive services," he said. "A recent survey of insurance coverage for preventive services revealed that overall only 41 percent of insured adults were covered for preventive exams, and only 69 percent of preventive diagnostic tests were covered by these insurance policies."

Dr. McGinnis said the move by Blue Cross illustrates a growing recognition that preventive services must play a more prominent role in health care. "They are no longer to be considered distant cousins of diagnostic and curative services," he said.

The guidelines address these diseases, among others:

Cervical cancer. A Pap smear is recommended every three years, beginning at the age of 20, for women who have an average risk of cervical cancer, and every one to two years for women at high risk.

Colon-Rectal cancer. Annual screening for blood in the stool is recommended for people 50 and older. Examination of the colon with a fiber-optic tube known as a sigmoidoscope is recommended every three to five years for people 50 and over.

Coronary artery disease. Cholesterol tests are recommended at least once in early adulthood and then at intervals of about five years.

High blood pressure. Screening is recommended every one or two years for adults with blood pressure below 140/85. People with higher blood pressure should be checked annually.

Dr. McGinnis said that the development of a model package of benefits by Blue Cross was a significant step, but only a beginning.

SURFACE TRANSPORTATION EFFICIENCY ACT

The Senate continued with the consideration of the bill.

The PRESIDING OFFICER. Who yields time?

Mr. MOYNIHAN. Mr. President, I suggest the absence of a quorum.

Mr. SYMMS. Mr. President, I ask unanimous consent that the time be counted on a 3-to-1 proportional basis.

The PRESIDING OFFICER. Without objection, it is so ordered.

The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. DURENBERGER. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER (Mr. BRYAN). Without objection, it is so ordered.

AMENDMENT NO. 364

Mr. DURENBERGER. Mr. President, I wish to take approximately 3 minutes on the amendment, and I understand the managers of the bill will yield time.

Mr. MOYNIHAN. I happy to yield that time.

The PRESIDING OFFICER. The Senator from Minnesota is recognized for 3 minutes charged to the Senator from New York.

Mr. DURENBERGER. Mr. President, it has been a long and difficult journey to this point. The managers of the bill, the distinguished Senator from New York [Mr. MOYNIHAN] and the senior Senator from Idaho [Mr. SYMMS] deserve much credit for their tireless efforts in moving this bill forward. The President of the United States, President George Bush, also deserves credit for laying out an excellent blueprint for the Senate to work from, and for doing his part to keep us within budget and on schedule. This bill, a work product of many hands, will help move America into a new century.

As a Minnesota Senator, I have been ably assisted in this bill by Gov. Arne Carlson and his Transportation Commissioner John Riley. Dozens of ideas that came to me from MN/DOT are now part of this bill. Minnesota and America will profit from this mutually beneficial cooperation between two levels of government. Minnesota's preference, and my own, was the President's original bill, but through detailed communication and hard work, we have made this a workable bill for the transportation needs of Minnesotans. This special relationship, which has benefited me and my State on the last two surface transportation bills to come before this body, will continue into the future.

Mr. President, this is the most important transportation legislation that has been considered in the Senate since the Congress authorized the construction of the Interstate Highway System during the administration of President Dwight Eisenhower. Today we look back at the visionary creators of the Interstate System with admiration and respect, and I stand here today, Mr. President, to predict that generations will view the authors of this legislation, and particularly my colleague from New York and my colleague from Idaho, with that same, if not even greater, esteem, for this legislation will serve as the foundation for this Nation's transportation network well into the next century.

With the Interstate System nearing completion, we now must turn to upgrading and maintaining the quality of the entire arterial network of highways and feeder routes that serve to move people and commerce in unparalleled efficiency. This legislation will enable the Federal Government to target those key highways that fit within the contours of the National System, while providing States and localities unprecedented flexibility in meeting local transportation needs.

Mr. President, I am pleased to have participated in what is a step toward ensuring that Congress accomplishes a timely reauthorization of the highway program. I commend the committee leadership for accomplishing the difficult task of drafting a bill that is responsive to a variety of interests.

The origin and maintenance of transportation systems are dependent on the Government. Government intervention is needed to design feasible routes, to cover the expense of building public highways, and to develop harbors and waterways. Adequate transportation is needed to create national unity.

In this respect, I commend the leadership for producing a true surface transportation bill. I support the increase in flexibility to apply highway trust funds for multimodal uses. I am pleased that my amendment for a National Highway System was accepted by the Senate. The National Highway System will offer a focus and a defined Federal role in any surface transportation program. It is appropriate to ensure that a minimal portion of the highway trust fund be spent on the rehabilitation of highways which are most critical to interstate travel and commerce. I trust that such miles designated by the States and the Secretary will reflect both a national purpose and individual State priorities.

The Interstate System has been the major accomplishment of the partnership between the Federal Government and the States in the Federal-aid highway program. It has changed the way we travel and improved our ability to move goods in interstate commerce. But it was planned more than 40 years ago. New population and production centers have since grown up, and our travel patterns have changed. The National Highway System will reflect those changes. We cannot rely solely on a system designed primarily in the 1940's to carry us into the 21st century.

The administration is to be commended for proposing a National Highway System and having worked with the States over the last couple of years to create an illustrative map. Secretary Skinner, Tom Larson, Administrator of the Federal Highway Administration and their staffs also deserve credit for working with the Senate to find a program that could be responsive to all States. I look forward to 1993 when the final National Highway System emerges and is reported back to this body of Government. In the meantime, my amendment providing for a National Highway System and designating an interim NHS will ensure a necessary foundation to maintain the existing system we have been in since 1806 when Thomas Jefferson signed the first Federal highway program into law.

SPENDING PRIORITIES

I regret that S. 1204 continues to favor maintenance of the highway system over highway construction. I am extremely supportive of compliance with the Clean Air Act. However, I believe that in the spirit of flexibility it should be left up to the State and local governments to make decisions unique to their areas. For example, Minnesota has expended many dollars and years in responsibly planning its portion of the Federal Interstate. Those plans have

included the knowledge that extra lanes would be needed in certain corridors. After all those years of planning, S. 1204 penalizes my State for needing capacity improvements.

Also, the Surface Transportation Efficiency Act favors urbanized areas at the expense of rural areas. Spending is directed based on population rather than transportation needs or needs based factors. In a bill that promotes flexibility, this is an attempt by the Federal Government to micromanage transportation allocation and investment decisions. Historically, Minnesota has been successful in assuring that funds are equally distributed between rural and urban areas. It concerns me that we, the Federal Government, are stepping in to tell them where to distribute those funds. However, it is my continuing belief that the funds should be distributed fairly and equitably between metropolitan and nonmetropolitan areas.

Furthermore, I am extremely concerned that a discretionary bridge program for high cost bridges is absent. it is disturbing to think that Minnesota will receive $23.5 million in fiscal year 1992 under the Bridge Program in S. 1204, yet it will not be enough to meet the State's needs. At face value, $23.5 million appears to be adequate funding. However, in comparison with State needs totaling $100 million per year, $60 million for state trunk highway bridges and $40 million for local bridges, I am concerned that high cost bridges will be put on hold to better accommodate less expensive bridge projects. For example, Minnesota is currently working on a bridge which will cost over $50 million. Obviously, the State portion of that one bridge is going to consume a large portion of the annual bridge allocation. Considering the current state of repair our Nation's bridges are in, I don't think it's wise to force States into an all or nothing situation.

A discretionary bridge account would allow budget buster bridges to compete on a national basis for Federal funds in addition to the State's total annual allocation. Almost every State has benefited from the discretionary bridge program since its inception. New York heads the list having received over $327 million. My State has received a mere $50 million. However, the point is that one bridge doesn't have to drain the system and thus dictate State choices. I believe we should return the discretionary bridge program to the surface transportation program.

RURAL TRANSPORTATION

This surface transportation program addresses the transportation needs of rural America. The statewide distribution formula ensures that rural areas receive fair and equitable access to funds. My amendment for a National Highway System incorporated in this bill provides rural access to local, regional, and national markets with the inclusion of the principal arterials system.

As the population in rural America ages and as we see increasing consolidation of public institutions like schools and medical facilities, rural transit systems are becoming a necessity. This bill gives those programs both funding and flexibility. It doubles the funding level for section 18 transit funds designated for nonurban areas that can be spent on both capital and operating costs. The bill also allows for a significantly higher amount of funds eligible for transfer from the highway trust fund account for transit capital costs.

AMERICANS WITH DISABILITIES ACT

The bill increases flexibility among existing transit programs to allow rural transit entities to address the specific needs of their service area especially in regards to compliance with the transportation portion of the Americans With Disabilities Act which I am proud to have been the chief Republican coauthor of last year. Capital discretionary funds can be used to meet the requirements of ADA. In addition, equipment purchased under the elderly and handicapped program will be allowed to be leased to public transit entities. I have included specific committee report language that ensures flexibility in use of Surface Transportation Program funds for capital expenses incurred in meeting the Federal goal to make mass transit accessible to people with disabilities.

MINNESOTA PROJECTS

As a member of the Senate Finance Committee, I had the privilege of being involved in the crafting of the landmark 1982 Surface Transportation Assistance Act. Among the provisions of interest to Minnesota was an authorization of the Third Avenue North distributor project, which consisted of three parking garages and associated ramps, bus bays, and pedestrian walkways all linked into Minnesota Interstate HOV lanes. In addition, Congress approved an increase in the ethanol exemption which was extremely advantageous for Minnesota farmers and the environment.

Excited at the opportunity to be directly involved in the setting of national transportation policy, in 1983 I sought and obtained a seat on the Senate Environment and Public Works Committee. Over the course of the next 3 years I met with constituents, county commissioners, and others with an interest in improving our Nation's infrastructure in an effort to craft a national transportation policy to guide our Nation. While the Surface Transportation Assistance and Uniform Relocation Assistance Act of 1987 was not entirely reflective of what constituted sound public policy, it did address pressing national and Minnesota needs. Specifically, I was pleased to initiate an authorization for the Bloomington Ferry Bridge replacement project, and working with Minnesota's House delegation members, a new interchange on I-35 near Pine City, a railroad grade separation project near Moorhead, and numerous other improvement projects in Minnesota. Needless to say, Congressmen JIM OBERSTAR and Arlan Stangeland played key roles in making these projects realities.

Currently, my State has a number of projects needing Federal funds of which the Bloomington Ferry Bridge is the highest priority. It was awarded money through the discretionary bridge program last year. However, without the continuation of this program, construction plans are on hold. In addition to this bridge project, there are a number of highway projects in Minnesota seeking Federal funding.

Highway 610 in the Twin Cities is in need of $43 million between 1992-94 for the design and construction of a four lane freeway connecting two interstates. The need for this program was established over 20 years ago and maintains strong local support. The design would utilize the highway corridor for a high voltage power line corridor, cold weather pavement, and utilize a storm water runoff to recharge a depleted underground water aquifer. Also, it would offer a unique opportunity to work within an intermodal transportation system and promote IVHS technology, not to mention the effect of the surrounding economy.

Highway 212 in Minnesota is also in need of $11 million to ensure completion of this project that has been a goal of State and local officials since 1953. This project would provide southwestern Minnesota with a four-lane road. Currently, it is the only region of my State not connected to the Twin Cities by a four-lane road. The present congestion, safety, and access problems would be addressed by the completion of this project.

Also, Blue Earth County in Minnesota has requested Federal funds to initiate a 10-mile segment connecting two highways which are identified on the administration's illustrative map of a National Highway System. This project would spur economic and social benefits in the region, as well as aid in congestion, air pollution, and energy consumption for the southeastern area of Minnesota.

In addition to the projects I have discussed, there are others that I and my Minnesota colleagues will be pursuing to secure the authorization of funds in the final surface transportation package. I would like to see a portion of the increased budget authority used for both a discretionary bridge program and specific projects important to our States. At least these programs would place the States in competition to fund those that are important on the national scene, as opposed to programs

that will only benefit a few States under specific circumstances.

SAFETY

Likewise, I am concerned that S. 1204 as reported failed to articulate a Federal purpose in safety. It is my belief that we as lawmakers should provide safe roads for the public. I am pleased that the leadership incorporated my provisions to include a standard to define where pavement markings are necessary and to establish a minimum maintenance level of retroreflectivity—level of brightness reflected back to the driver when a light hits it—for pavement markings and signs. This will provide a safer driving environment and be especially beneficial to older drivers.

Unfortunately, I feel that S. 1204 as reported abandoned safety initiatives by grouping them in a large pot of eligible projects. Although, the many eligible projects are worthy of Federal funds, I feel a greater priority is needed for safety. We have completed the Interstate System, but we have not completed our goal of providing safer roads. I thank my colleagues for supporting my amendment retaining the Hazard Elimination Program. This is crucial to ensuring that hazards continue to be located and repaired. Also, my amendment makes hazard elimination projects eligible under the seat belt and helmet safety provision at 100 percent Federal funding. I look forward to addressing the need for funding this and the Rail-Highway Grade Crossing Program at a later time.

The Rail-Highway Grade Crossing Program is imperative to ensuring that drivers are protected. Highway-railroad motor vehicle accidents at public crossings decreased 54 percent between 1975-90. This demonstrates a strong success record for this particular program.

The result of neglecting safety programs can be interpreted as outright long-term care health costs and lost productivity of an injured individual and of the major care giver which typically is a family member. Approximately one-third—3.5 million in 1987—of the long-term care population is under age 65, most of whom live in the community. It is crucial to realize that these programs strive to prevent unnecessary death and injury by locating and repairing hazardous situations.

Minnesota currently has 5,413 rail-highway grade crossings; 95 percent of those are on local roads—county State aid roads, city streets, municipal State aid highways and streets—and 5 percent are located on trunk highways. This is significant when you consider that some States with dedicated transportation funding sources, including Minnesota, are limited by State constitutions to spend such funds only on trunk highways. This means that 95 percent of grade crossing matches in Minnesota must be met by small local governments. At this level the difference between a 10 or a 20 percent match is substantial. For example, a $100,000 signal system would cost a local community of a few hundred people $10,000 under the current program and increase to $20,000 under S. 1204. This would consume the greater part of their annual budget.

In the current biennium, Minnesota has $6.9 million in Federal money obligated for railroad grade safety improvements. This includes projects to improve surfaces and add warning devices. The State will pursue 97 crossing improvements with this money.

Most grade crossings are in rural areas where large scale separation is not an affordable option. Cities typically choose to construct bridges to eliminate crossings all together. In addition, trains typically travel at nonscheduled intervals and at faster speeds—79 m.p.h. in comparison with in-city travel at 15-30 m.p.h.—in rural areas.

Minnesota continues to have a great need for a rail-highway grade crossing program. In the State, 65 percent of rail-highway grade crossings have cross bucks only, 13 percent have stop signs, and 23 percent have active signals. Although Minnesota has one of the lowest fatality rates in the country, it is experiencing an upward trend in serious train-vehicle accidents. A good share of accidents are alcohol related and involve vehicles running into trains as opposed to attempts to outrun trains. This leads one to believe that the primary cause is a lack of effective warning devices. In 1978, Minnesota saw 390 train-vehicle accidents. In 1989, this number decreased to 130 accidents. However, the number of fatalities has climbed upward from 4 in 1987 to 17 in 1990.

The decrease in accidents can be attributed to strong public education campaigns which have made drivers aware of grade crossing dangers. Unfortunately, drivers are becoming complacent. Furthermore, rail abandonments have encouraged this complacency.

Currently, MN/DOT is undertaking a pilot program to apply retroreflective material to crossbucks on both sides of the track. This would create a strobe light appearance to motorists when a train is in the crossing and the headlights hit between train cars. Hopefully such innovations will encourage other States to seriously examine ways to address train-vehicle deaths.

SAFETY BELTS AND MOTORCYCLE HELMETS

Mr. President, the goals of section 122 in the Surface Transportation Efficiency Act are laudable—the reduction of the number of fatalities and crippling injuries which occur on our Nation's roadways. In 1989, over 45,000 lives were lost in motor vehicle accidents and over 3 million people were injured. The consequences of these deaths and injuries cost our country approximately $74 billion each year. These losses are generated by a combination of lost lives, productivity, medical and rehabilitation expenses, and insurance and litigation costs.

The proponents of the safety belt and helmet provisions expect that this legislation will significantly reduce those losses which befall unbelted motorists and unhelmeted motorcyclists. The intent is to provide "a carrot and stick" mechanism of manipulating the disbursement of Federal highway funds in order to coerce States into adopting mandatory seat belt and helmet laws.

I believe there is merit in using Federal funds for highway safety research, to encourage States to improve traffic safety via greater education efforts, and by stimulating innovative programs designed to reduce the number of high risk motorists. However, I have serious reservations about using Federal "blackmail" to force States into enacting mandatory seat belt and motorcycle helmet laws. The only reason I did not offer an amendment to strike this provision from the bill was that it provides Federal funds at 100 percent Federal share for safety projects if a State has not passed both seat belt and helmet laws. As I have stated before, this bill lacks a clear Federal role in safety. Unfortunately, this provision is the only source of strong Federal support for safety projects at the State level.

The record in Minnesota seems to contradict the evidence that mandatory helmet laws are the best way to increase traffic safety of motorcyclists. During the period, 1968-77, when Minnesota had a mandatory traffic safety law, fatalities per 10,000 registered vehicles went up every year. In contrast, during subsequent years in which Minnesota has not required adult operators and passengers to wear helmets, the fatality rate has plummeted and is now at an all-time low.

Why did this occur? I believe that Minnesota motorcyclists and lawmakers realized that there is no substitute for continued ongoing traffic safety education and tough licensing provisions. Minnesota motorcyclists encouraged the State legislature to enact tough licensing standards. They have also implemented comprehensive rider education programs and public awareness programs which have won national recognition and served as a model which other States have emulated.

The Minnesota Motorcycle Riders Association and ABATE of Minnesota implemented "Dial-A-Ride," a program utilizing volunteers to keep impaired riders off the road. It offers a workable alternative by transporting an impaired rider and his bike to his home or to a motel, if needed. The program operates from May 1 to October 21, the primary season to operate a motorcycle in Minnesota. The program has

widely distributed posters that prominently display the phone number to call to use its service.

In closing, I would like to encourage my colleagues to closely examine why Minnesota has been able to drastically lower the fatality rate of its motorists to one of the lowest in the Nation. I think they will find it is because Minnesotans know that there is no panacea or easy fix. Minnesotans know that it takes persistent effort in a broad array of traffic safety initiatives to significantly reduce roadway fatalities.

Minnesota motorists and motorcyclists have shown that they have a strong commitment to improving traffic safety. They have requested, supported, and prodded the Minnesota Legislature to honestly and competently meet their demands for safer roadways. They do it because in Minnesota good behavior is rewarded—not because someone in Washington said that they "had to do it."

Mr. President, I would caution that reliance on Federal mandates to traffic safety, such as those embodied in S. 1204, may be counter-productive in the long run. I have little doubt that it will stir up considerable resentment and provoke strong protest. It seems to me that a wiser course of action would be to enlist cooperative support and to harness the creative energies of concerned citizens to work together with the goal of decreasing the number of serious traffic accidents. Consequently, I believe that this legislation needs to be refocused to solicit teamwork, rather than provoke conflict between government and citizens, both of whom share a common goal of improved traffic safety.

RECREATIONAL TRAILS

Mr. President, as former chairman of the Hennepin County Parks and Reserve District, and as former chairman of the Metropolitan Parks and Open Space Commission in my State of Minnesota, I have considerable experience in the recreational trails business. Unfortunately, Mr. President, of late it seems increasingly difficult for my interest in my State's recreational trails to be coincidental with my commitment to the environment.

Mr. President, my State has a significant number of trails—trails that are enjoyed by various groups of sports enthusiasts. I have long believed that it is important for all of these groups to be fairly represented in funding and access questions regarding their right to trails. I believe that the compromise reached on the National Recreational Trails Act accomplishes that.

Mr. President, I believe that when considering all our States' trail needs, it is important to continue to build a partnership between the States and the Federal Government. I believe that this package strengthens this relationship, as well as takes important steps toward increasing flexibility in trails funding needs.

VISUAL POLLUTION CONTROL

Mr. President, I have many times before stood here and articulated my support of devolution. I do not support unnecessary Federal Government intrusion in State issues.

This section of the Surface Transportation Efficiency Act of 1991 basically was intended to do two things: First, it would have allowed States to decide if they want to remove nonconforming billboards. Second, it would have allowed States to decide how they want to compensate billboard owners when removing nonconforming billboards.

Current law dictates that States must remove nonconforming billboards. Obviously, that hasn't been very successful. There are still a large number of nonconforming billboards. Nonconforming does not mean illegal. Therefore, the Federal Government should not dictate that they come down.

The Federal Government should not require the States to pay more in the way of "just compensation" than the fifth amendment requires. Yet the cash compensation requirement in existing law does just that. It is the State's zoning that makes a billboard nonconforming rather than conforming. Under this bill, it is the State that will decide if it wants a nonconforming billboard to be removed. The State law should and will determine how the billboard owner will be compensated. That brings me to the second major aspect that was included in the highway bill before it was struck out during floor debate.

S. 1204 merely eliminated the withholding of highway funds from States that choose to remove billboards with amortization. In addition, this bill provides adequate funding to States to provide cash compensation, if they so choose. It is my understanding that several States' constitutions approve of amortization and use it to eliminate other types of nonconforming land uses. Some of the uses include junkyards, trailer parks, grocery stores, dog kennels, auto storage, and trash balers. The amortization periods in these cases ranged from 1-7 years. Also, several States are opposed to the concept of amortization and their respective State constitutions articulate that oppostion.

Opponents to this bill argue that amortization is unconstitutional under the United States Constitution. But, the legislative branch of government is not here to decide the constitutionality of anything. If a constitutional right is being violated by State law, the aggrieved party has a remedy in the courts.

While Congress should probably not waste its time and effort passing laws that are clearly unconstitutional, private citizens do not need a Federal statute to protect a constitutional right. They can protect their own rights through the legal system, because the courts will not allow the States to take a person's property in violation of the fifth amendment. I regret that this highway bill once again does not address the concerns of visual pollution.

INTELLIGENT VEHICLE HIGHWAY SYSTEMS [IVHS]

Finally, I am pleased that the intelligent Vehicle-Highway Systems Act offered by Senator LAUTENBERG and myself has been incorporated into S. 1204. I especially thank Senators MOYNIHAN and LAUTENBERG for their strong support of the promotion and application of this technology.

IVHS has four important benefits. It optimizes our transportation resources by moving more people per road and tax dollar. Our roads will be safer because congestion and accidents can and will be prevented. We will be more productive because workers will spend less of their workday on the freeway. And finally, a more efficient highway system means fewer gallons of gasoline burned and fewer tons of air pollutants to deal with. This puts technology to work for the people. Minnesota is already a national leader in highway technology through its Guidestar Program. I am thrilled that the Federal Government is ready to commit resources to advance the implementation of this technology.

In order to one day fully realize the benefits this technology has to offer our travelers, we must first commit ourselves in the advancement of the technology, its practical use in field testing, and an evaluation process that allows us to learn the benefits and any possible drawbacks before major deployment decisions are made.

As we finish building our Interstate System, we find that we can no longer build our way out of congestion. However, the technology currently exists in the area of Intelligent Vehicle-Highway Systems that can contribute substantially to reducing congestion, while promoting increased safety and capacity, environmental concerns, and air quality. Therefore, Senator LAUTENBERG and I introduced legislation which would insure adequate funding for research, development, and testing of IVHS technology.

Currently, the United States lags far behind Europe and Japan in its efforts. It will take substantial investment to match those initiatives and begin to realize the safety and efficiency benefits of IVHS in this country.

Minnesota has already taken a bold step forward to play a leading role in the implementation of IVHS technology with its Guidestar Program. The goals of the Guidestar Program are utilize advanced technology to combat growing congestion and to improve safety on all Guidestar corridors. Minnesota has been successfully using ad-

vanced technology in traffic management programs for several years. The results of these efforts show accident reductions of 30 percent and speed increases of 25 percent for specific freeways. Overall, Minnesota has had the lowest fatality rate in the Nation for several years and will continue to promote a further reduction in Minnesota fatalities with new Guidestar initiatives. Because of Minnesota's commitment to IVHS technology, the country will reap the rewards of studying a complete application of IVHS technology in a metropolitan area within the next few years.

Real-life implementation is the key to realizing how we can all benefit from IVHS technology. To best achieve well-informed decisions in the future application of this technology, we must encourage and facilitate more projects such as Minnesota's Guidestar Program. Therefore, a clear Federal role is imperative to ensure that an integrated system ultimately emerges.

MAGNETIC LEVITATION TRAVEL

Mr. President, from my first days in this body, I have been intrigued by the potential for the use of magnetic field technology to create trains which exceed our current expectations by several orders of magnitude. Because Japan and Europe have implemented this technology, most people don't know that this idea was originated by Americans in the 1960's. Minnesota is considering a future mag-lev connection between the Twin Cities and Chicago. I am gratified that because of the leadership of Senator MOYNIHAN, this promising technology will become a reality by 1996 with a 30-mile prototype system.

CONCLUSION

Mr. President, a coordinated, efficient, and future-oriented transportation system is one of the cornerstones of our economic strength. The electron may travel 186,000 miles in a second, but moving goods and people across the surface of this planet will continue to be a national priority.

The Federal Government must be more than a cashier in surface transportation, receiving gas taxes and doling them back to the States. The National Government should pursue national purposes on behalf of all Americans:

A National Highway System which serves all highways users whether they are in Mankato, MN; Miami, FL; or Barstow, CA;

Using technology to bring us the highway of the future which move more people and goods more quickly, cleanly, and safely than we can even imagine today.

Making safety our No. 1 priority, by funding lifesaving improvements before regular construction or maintenance.

I am proud to have improved this bill in all three respects and believe we have a bill we can send on to our colleagues in the House with enthusiasm.

Economic vitality is a key to many of the freedoms and values we cherish. This bill will help America into a new century.

Mr. MOYNIHAN. Mr. President, we thank our colleague. If I might be so bold, the day may come when they name it for DAVID DURENBERGER.

Mr. DURENBERGER. Mr. President, I thank my colleague from New York. I yield the floor.

Mr. MITCHELL. Mr. President, I ask the distinguished manager whether he would yield to me time to speak in opposition to the pending amendment.

Mr. MOYNIHAN. Of course. We yield the majority leader such time as he requires.

Mr. MITCHELL. Mr. President, I urge my colleagues to reject the amendment offered by my colleague from Florida, Senator GRAHAM. The word "fairness" has been used repeatedly during this debate. But with all due respect, Mr. President, if this amendment is adopted, the greatest unfairness yet to have been suggested with respect to this bill will be caused; not by intention, because I know and respect my colleague and know he would not intentionally cause unfairness. But that would be the effect.

Permit me to explain that.

Mr. President, when this bill was reported out of committee to the Senate floor it provided for the allocation of $88 billion for highway construction maintenance over a 5-year period. That was the amount in the Senate budget resolution. As a result of the fact that the Senate receded to the House in the conference, there became available an additional $8.2 billion for distribution.

Much of the discussion and debate that has occurred in the nearly 2 weeks we have been on this bill has been over how to allocate the additional $8.2 billion. The original proposal would have taken $5.4 billion of it and allocated it under a formula which reflects the amount of gas tax and per capita income in each State and left $2.8 billion to be distributed to the so-called donor States to try to accommodate their concern over what they regarded as insufficient allocations under the regular formula.

One of those donor States is Florida. And as the Senator from Florida knows, at several meetings, I urged the amount to be allocated of the $8.2 billion devoted to donor States should be increased to half of $8.2 billion; so that of the $8.2 billion allocated, half under the formula that deals with gas tax and per capita income and half allocated to donor States as they choose. That was done.

Under the combination of those 2 formulas, 42 States received increases out of the additional $8.2 billion; 8 States received nothing out of the additonal $8.2 billion. Three of the eight States are Kansas, represented by the distinguished Republican leader; New York, represented by the manager of the bill; and Maine, which I represent.

We accepted that for two reasons. First, because we felt our States were reasonably fairly treated under the basic formula. And we understood that the $8.2 billion cushion was to go toward accommodating the concerns of those States who did not feel they were as fairly treated under the basic formula. Second, in a spirit of compromise, in an effort to move this bill forward; all of us in leadership positions and having a responsibility to the institution as a whole and to the Nation as a whole to move legislation forward.

Mr. President, this amendment, if adopted, would say if the additional $8.2 billion is not fully available during the 5-year period, then the eight States which receive nothing of the additional $8.2 billion should then receive a cut below the amount they would otherwise receive under the basic bill.

Mr. President, I submit that is unfair. That produces the result that no one could want or intend. That says that 8 States, which alone among the 50 receive no additional funds from the $8.2 billion so-called cushion will, if the full $8.2 billion is for some reason not available during that period, have to take cuts so others will receive a higher proportion out of the cushion.

I do not appeal to anyone's parochial interest in this. I appeal to everyone's sense of fairness. It is one thing to ask a relatively small number of Senators to accept a formula that provides their States with no portion of the additional funds. And it was difficult to accept. But I will speak for myself. I did so because, again, I felt our State was fairly treated under the basic formula.

But now, to say that in this circumstance, our State should actually receive a cut below that which they would have received under the basic bill, I think is just simply downright unfair. And I hope that Senators will join in defeating this amendment.

I would like to make one final point, Mr. President, as Senators think about this. Even if a State receives extra funds out of the $8.2 billion allocation, either through the formula that relates to gas tax and per capita income or minimum allocation or both, if this amendment is passed that State could still receive a net reduction in funds, because it effectively does away with the hold-harmless provision that is in the bill.

The reason that could happen is simple. If a State does not receive as much back from the $8.2 billion in additional funds as it loses if a reduction occurs in the obligation ceiling to accommodate the full $8.2 billion, then even States that would otherwise appear to be gaining funds will be net losers if this amendment is adopted. The hold-

harmless does not just protect the 8 States, it protects all 50 States, including the 42 that receive benefits under the additional funding.

That obviously would not apply to all of the 42. Those which receive very large sums out of the $8.2 billion would not run much of a risk. But those who receive relatively moderate amounts run the risk that if the hold-harmless is gone, it is gone for them, too.

So I say to Senators, if they do not want to heed the appeal of just fairness, as I hope they will, that they will consider their own self-interest. They may well be representing a State whose funds will be cut if this amendment is adopted, and if the eventuality to which the Senator's amendment addresses itself does occur.

So, Mr. President, I thank my colleagues for their attention. We hope to finish this bill soon, and I hope our colleagues will join in tabling this amendment.

One final consideration: Under the unanimous-consent agreement, if this amendment is tabled and defeated and the second Graham one is, we finish the bill tonight. If this amendment is agreed to, Mr. President, we are going to see a lot more formulas, and a lot more votes on this floor, because this will have created a situation that is simply not acceptable to many of us; certainly myself.

I will let the Republican leader and the distinguished manager and others speak for themselves.

I thank my colleagues.

The PRESIDING OFFICER. Who yields time?

Mr. MOYNIHAN. Mr. President, we yield the Republican leader such time as he requires, such as is available.

Mr. DOLE. How much time would that be?

The PRESIDING OFFICER. That is 6 minutes and 5 seconds.

Mr. DOLE. That will be more than enough, Mr. President. First, I want to subscribe to the argument just made by the distinguished majority leader. And then, second, to what he said at the end of his statement.

If this amendment should be adopted, then we are just beginning to work on the highway bill.

Mr. MOYNIHAN. No.

Mr. DOLE. I have learned a few things in the last few days, and one is charts are charts, and we can get plenty of them. I have worked with the distinguished majority leader and the distinguished chairman of the Committee on Appropriations to try to draw up a fair formula for dividing the level of effort, $4.1 billion pool contained in the Byrd amendment.

I learned an important fact: That any Sentor can get any kind of chart. We can sort of cook the books. If we give the right information to the people downtown, they will give us the right numbers—or the wrong numbers. I want to just review, sort of, the arithmetic.

Under the formula of the chairman of the Appropriations Committee, 33 States received a part of the $8.2 billion total; in other words, he had 66 votes. My original formula gave more money to only 18 States, so I only had 36 votes. I was 30 short.

However, with the able assistance of an overworked master of numbers at the Federal Highway Administration, we found a way to change this formula, and by this morning I had 54 votes and the distinguished chairman of the Appropriations Committee had 46 votes.

Mr. BYRD. I do not believe that.

Mr. DOLE. He probably had more. All right; that is what the numbers said. I threw in another few, just knowing the chairman of the Appropriations Committee had been working very diligently. And he had my vote yesterday, too.

But the point I would make is it is not how many numbers or how many votes. The charts can be made. And, as I recall, we were told at the outset of this highway bill we just found $8.2 billion lying under a rug somewhere. I do not know where it was. It is free money and we ought to spend it on highways.

I have been all over the building, and I cannot find quite where the money was hidden. But I did notice that my State did not get one dime of all this free money. I think the Senator from Maine noticed the same thing. So we began to ask questions. If it is not free money, if there really was not a rug that big, then do not take any more from the zero States, which is what I understand the amendment of the distinguished Senator from Florida would do. And let me commend him for his tenacity.

We pleaded: Do not make us less than zero. So we adopted a hold-harmless provision. It would be pretty hard to get less than zero. We were not willing to accept less than zero.

As I recall, the distinguished Senator from Florida was at least present during those negotiations. I did not know of any objection to that suggestion. I do not think the amendment was debated at length on the floor. It was adopted. Now we want to go back and come up with some more charts.

Again, I do not fault the Senator from Florida. Certainly, he has that right.

Let me say, the reason we did not pursue the so-called Dole amendment this morning on total effort—well, there were a couple of reasons. First, although I had the numbers, I was not certain I had the votes. I have dealt with the distinguished Senator from West Virginia before, and he is a very accurate counter. Always just give him a few because of who he is, I would throw in a few votes. So I would have to go back and get some more numbers.

I did not think 46 to 54 was enough of a margin, so I wanted to go back and at least have a 2-to-1 margin. Then even with the normal erosion you would normally get from the chairman of the Appropriations Committee, I could still eke out a victory.

But it seemed to me the best course to follow was to just suggest, as we did in the sense-of-the-Senate resolution, that the conferees consider total effort plus a couple of additions made by the distinguished chairman of the Appropriations Committee. That is why I think it is good to point out, if this amendment is adopted, we are all going to go back to the charts again. We will draw up another chart. Somebody will have another amendment. For those Senators who are looking just at the dollars, they may decide this is a little better amendment than the last one. And this could go on for some time.

It seemed to me this morning we finally had to bring this to a halt. I know the managers have been trying to do that for several days. I think they were correct. I think the Senator from West Virginia was. As I said yesterday, I agreed with half of his amendment. It was just the other half I did not agree with. I voted for the half I agreed with. There was not any chance to vote against the half I did not agree with.

I suggest we ought to dispose of this amendment or be prepared for a lot of discussion and a lot more debate, and a number of more amendments. I think many of us are prepared to do that. We think we have had our debate.

I commend the managers. I commend the Senator from Florida for, as I said, his tenacity and willingness to stick with it. But it seems to me we have reached the point we ought to move on; we ought to pass this bill and go on to the crime bill yet this evening or sometime tomorrow morning.

Mr. MOYNIHAN. Mr. President, how much time have we remaining?

The PRESIDING OFFICER. The Senator from New York should be made aware that the time allocated under the time agreement, allocated to him, has expired.

Mr. MOYNIHAN. Mr. President, I ask unanimous consent we might allow 5 minutes for the Senator from West Virginia to speak to this matter.

The PRESIDING OFFICER. Is there objection?

No objection being heard, the request of the Senator from New York for an additional 5 minutes for the Senator from West Virginia is agreed to.

Mr. BYRD. Mr. President, I thank the distinguished Senator from New York [Mr. MOYNIHAN] for arranging for me to have this time.

I am opposed to this amendment. I am not 98 percent opposed. I am not 99-percent opposed. I am 100-percent opposed.

I recognize the right of the distinguished Senator from Florida to offer the amendment. I admire him for his tenacity. I congratulate him for his efforts to amend the bill to his liking.

I have to say to the Senator that, as the Senator who led the fight at the summit—I do not think anybody on this floor will challenge that statement here on the floor or off the floor; I would daresay the Members of the House who were present at the summit will agree—I led the fight for infrastructure, and with the support of some of my colleagues on both sides of the Hill, we carried that fight. We did not get everything we wanted, but we got a lot more than the administration representatives were at first prepared to give. The stakes in this matter are as high for me as they are for the Senator from Florida. I am as dedicated to the infrastructure of this country as is any man or woman living in this country.

I also realize, as a former majority leader of this Senate, that there has to be compromise. I recognize the need to move on to other legislation. In that spirit, I have tried to guide myself throughout. In the initial negotiations that took place concerning my original amendment, or amendments, I was asked by the majority leader to come to his office. When I reached the office, there were other Senators there: Senator BENTSEN; Senator MOYNIHAN was there; Senator BURDICK, I believe, was there. Certainly they were among other Senators who were there. But there were Senators from the donor States there. My State is not a donor State.

The amendments that I first offered, as has already been explained here, did not deal with the donor States' problem. That does not need any further explanation. But when I heard the case of the donor States, as related by Senator BENTSEN, Senator WARNER, and others, I immediately recognized that something needed to be done. I felt that my amendment benefited 33 States. I felt that I could probably get 66 votes or more, or even if less, certainly a majority. But I also recognized the fact that the donor States were willing to make a fight. I heard Senator WARNER say, "We will fight on the beaches, we will fight in the air, we will fight here, we will fight there," and I think JOHN WARNER meant that. Just for purely practical, political reasons, I recognized the need to modify my amendment.

But on the basis of fairness, which goes deeper with me, on the basis of fairness and reasonableness, I saw the justice of their case. Having lived now close to 74 years, I have reached certain conclusions in my life long before this. One is, you have to give and take in this life; you cannot have it all your way. And having worked 22 years in the leadership in this Senate, I long ago learned that one has to take into consideration the needs of his colleagues. I adopted that spirit as we discussed these matters. The majority leader, having called the meeting, asked me to consider splitting the $8.2 billion. I said, let me think about that.

The PRESIDING OFFICER. The Chair informs the Senator from West Virginia that the 5 minutes heretofore requested has expired.

Mr. MOYNIHAN. I ask unanimous consent 2 additional minutes be allowed.

The PRESIDING OFFICER. Without objection, it is so ordered. The Senator has the floor.

Mr. BYRD. I said I cannot hold this piece of paper up right now and accept it. I need to study it. I will certainly study it. I came back and said, OK, we split.

Then the next request was on the basis that we protect the States, that we guarantee to those States which are in the bill and which were not benefited by these two amendments, the donor amendment and the level-of-effort amendment, that they be held harmless. And that was a fair request. So I agreed to include that.

The Senator from Florida has explained his amendment. I would like to say that the level-of-effort program is just as important to my State as the donor program is to Florida. I will make every effort to provide as high an obligation ceiling as possible when the transportation appropriations bills are considered.

As I stated this morning, no one can provide guarantees as to what the funding levels might be in future years. We do not know what the economy and other factors are going to be like. The level-of-effort program is on the same footing as the additional donor State program. As the Senator from Florida knows, if sufficient obligational authority is not provided to fully fund each of these programs in future years, a proportionate reduction will be made in both. I have as much at stake, as I have said, in seeing that they are funded as does the Senator from Florida. But I know of no way to provide a guarantee as to what a future obligational ceiling will be.

The Senator knows my strong commitment to infrastructure. And he knows that it is very important to me and that I believe it is very important to the Nation. While I understand the concerns of the Senator from Florida, I oppose his amendment. The hold-harmless provision is the underpinning of the amendment which I offered. It is the underpinning. Because not all States benefit from my amendment, it was agreed among the negotiators that the hold-harmless provision is a critical element of the amendment. If this provision were to be amended, then the Senator from Florida must know that he will threaten to take down the entire amendment and the entire agreement.

Mr. President, I urge Senators to oppose this amendment. If it is agreed to, we will not finish this bill this week; we will not finish this bill next week, and we will be back on it after the July 4 break, and I do not know when or whether we will finish action on the bill.

But we need to get on with the bill. We have two appropriations bills on the calendar right now that are important to all the States. The energy and water appropriations bill certainly is. The other is the legislative appropriations bill. They are both important bills.

I was talking to the majority leader earlier today and expressed the hope—I know his problems in scheduling—I expressed the hope that we will get those appropriation bills passed before the July 4 break. But if this amendment carries, we will not get them passed, and the Senator from Florida will be bringing down this bill, and I will nickname him Sampson in the future if he brings down the temple crashing around our ears. He does it, of course, not with the intention of killing the bill, but that would be the effect.

I hope that Senators will vote the amendment down by a vote to table it. I urge Senators to vote to table it. Hear me. If this amendment were to carry, the agreement is broken, the underpinning is gone, and the Senate will go home for the break without having passed this bill.

The PRESIDING OFFICER. The time allocated has expired. The Senator from Florida is recognized. Senator GRAHAM has 17 minutes left.

Mr. GRAHAM. Mr. President, am I correct the time for the opponents of the amendments has expired?

The PRESIDING OFFICER. The Senator is correct.

Mr. GRAHAM. Mr. President, I would like to take a few moments to close on my amendment, but before I do so I would like to extend my appreciation to some people who have been very helpful to me and to this process over the past several weeks.

First, Miss Juliana Walsh of my staff and Mr. Mike Niedhart, who is a student at the University of South Florida, who has been working as an intern specifically on the transportation issue. Also, Mr. President, three representatives of the Florida Department of Transportation who have been assigned at the direction of our Secretary of Transportation, Mr. Ben Watts: Mr. Doug Callaway, Mr. David Lee, and Mr. Bill Taylor. I would like to express my appreciation to all of them, although I wish to absolve them from any of the responsibility for the dire, even biblical, consequences which may happen should this idea be of sufficient merit to justify a majority vote by the Senate. I am really quite surprised that this idea is considered to be of such moment. To me it is relatively modest and straightforward.

What the current structure of our Surface Transportation Act has be-

come is a dog which arrived here weighing $105 billion, a dog that we will call donkey. It is still a dog, but the manager of this bill, the senior Senator from New York, wishes to refer to it as a donkey. This dog arrived at $105 billion. It was a dog that many of us found very distasteful because it was carrying forward into 1996 many of the very features that had caused us to be so irritated, to find so many fleas for the many years in which it has existed. We scratched and we found that in this $105 billion dog was the 1980 census to be used through the year 1996 as a factor in the distribution of Federal funds. I know the Presiding Officer would find that a difficult fact to explain to the citizens of the State.

We also found, as we scratched this dog, that we were using the 1916—1916, that is not a mistake, Mr. President—postal road formula as another significant factor in the allocation of Federal funds through the year 1996. So that many of us were disturbed about this.

Frankly, we were also disturbed because we looked back over the past many years, and in the case of States like North Carolina for 30 or 40 years they had been very significant donors, that is, they had shipped large amounts of money to Washington and received significantly less in return. We thought this would be the time—new departure, new direction, new post-interstate era—that we would have a formula which would reflect some new reality and fairness. We were disappointed with the dog.

So the dog came to the Senate floor. Some of us thought, let us change the dog. Let us offer some amendments that will be within this $105 billion and make this dog more attractive.

We did not find much receptivity. We have had a hard time getting anybody who would come to the kennel and talk to us about changing the dog. But then someone came forward with the idea, hey, let us put a tail on this dog. This old, mangy critter, old and blind in one eye, let us make it look better by putting on a fancy tail. And it was not an inexpensive tail either. It was a tail that was going to cost $8.2 billion. Not very many people have seen tails of that quality. And so that was going to be hung onto the dog in order to make the overall animal balanced.

The tail was divided in half. The right half of the tail was to be distributed based on a concept of State effort and poverty. If you had more and you had less, you received more Federal funds. The other half of the tail was to be distributed to those States that have over the years and under this bill been donor States, that is, they have shipped money. Not to make us whole, Mr. President. We would like to ask for that, but that is not going to happen. But at least let us have some minimum expectation. That was what the second half of the tail was all about.

But a funny thing happened in the process of putting this tail and dog together. That is, instead of having a good plastic surgeon who could fully secure the tail to the dog, we found that we had an amateur.

That word "amateur" is inappropriate because it assumes that the person did not know what he was doing. In fact, it was rather skillful, it was pure professional, but his job was somewhat like the children's game where you are blindfolded and you have a tail and you go stick it on the dog, which we will call donkey. And so it was just stuck on like velcro. It was not, as with the plastic surgeon, fully attached.

And so that is where we are today. Should we bring in the plastic surgeon, which this amendment will do, and fully attach the tail to the dog or should we continue to have the velcro tail?

Why should we bring in the plastic surgeon? I would suggest the following reasons. One, no State loses under this amendment if we fund the program as fully as we have said we are going to fund the program. When over 90 Senators voted for Senator BYRD's amendment, they did so in the expectation that we would have the full amount, we would have the dog and we would have the fancy tail. And what we want to do is assure the fullest support not only tonight but through 1996 for a national transportation program as an important part of meeting our infrastructure needs. We ought to have everybody wanting to be part of fully funding that program. That is exactly what this amendment will do. Every State will get exactly, to the penny, what they have expected if every State comes together. This amendment says when we all get the full amount of money, we will all get individually what we want.

The bill itself says that if we get less than the full amount of money, there are going to be some of us dogs who are not going to get very much porridge at all if this dog eats porridge.

Second, fairness becomes a function of looking at the animal. Clearly, the $105 billion dog that came from the committee was not a fair dog. It had tremendous mistakes. It had 40 percent of the States in the Nation, more than 40 percent in fact, in the minimum allocation category. That is to say, they did not even get what was considered to be the basic diet. They had to get a special supplement to be brought up to basic adequacy. It is hard to argue that a formula that puts 40 percent of the States in America in a minimum allocation pool is a very fair formula for distribution.

I would like to suggest this. If any one of those States, any one of those eight States that did not participate in the amendment of the Senator from West Virginia would like to change positions with the State of Florida, we will be glad to take their position. We will take their position after they get zero money under the amendment of the Senator from West Virginia.

I do not see very many coming forward and suggesting that they would like to make that trade.

Mr. BYRD. I would certainly be happy to exchange West Virginia's money for Florida's money.

Mr. GRAHAM. If we could on a proportional basis. If we could on the basis——

Mr. BYRD. That is an addendum.

Mr. GRAHAM. Of a contribution——

Mr. BYRD. Now he is adding a codicil.

Mr. GRAHAM. If we could on the basis of contribution, we would be happy to undertake the same dollars in an attempt to meet the needs of our folks that the Senator is going to provide, very appropriately, for the citizens of West Virginia.

Finally, Mr. President, we are going to put a lot of our States at very great risk. I see the Senator from Illinois has just arrived on the floor. I happened to have run a calculation for the State of Illinois. Illinois is going to receive, if the Byrd amendment is fully funded, $164 million over the 5-year period from the minimum allocation portion of the Byrd amendment.

That $164 million will represent more than 5 percent of all the transportation funds that the State of Illinois would get in the next 5 years. So the State of Illinois will be at significant risk if the Byrd amendment is not fully funded. Illinois is not in as bad a shape as its neighbor Indiana which has 11.4 percent of its total highway funds represented by the minimum allocation funds in the Byrd amendment.

So we have a significant number of States with a very high proportion of their total transportation funds at risk unless we can assure that everybody gets their expectation by fully funding the legislation.

The Moynihan-Symms dog and Senator BYRD's beautiful tail, that is all that my first amendment seeks to do. It is just fundamental fairness, the United States of America united toward the common goal of fully funding Senator BYRD's amendment.

I do not want to see anyone pull that Velcro tail away from our dog which I fear will be a very great temptation particularly when we get to 1996 when we are going to be distributing $3.3 billion, and, of that, $2.8 billion will go out in that 1 year alone. There will be tremendous political pressure to use that $3.3 billion for some other purpose than seeing that these relatively few, 40 percent, of the donor States that have that little bit of Ken-L-Ration necessary to sustain their transportation well-being.

Mr. President, that concludes my comments on amendment No. 1.

Just to briefly mention amendment No. 2 which no one has spoken to, so I assume it is accepted, and I would——

Mr. BYRD. Mr. President, will the Senator yield on amendment No. 1?

Mr. GRAHAM. I yield. Mr. President; how much time do I have?

The PRESIDING OFFICER. The Senator has 4 minutes 30 seconds.

Mr. GRAHAM. I would like to reserve my 4 minutes 30 seconds for some brief comments on amendment No. 2. With that, I ask unanimous consent for that.

I will yield.

The PRESIDING OFFICER. If there is no objection to the unanimous-consent request——

Mr. SYMMS addressed the Chair.

The PRESIDING OFFICER. The Senator from Idaho.

If there is no objection, the unanimous-consent agreement propounded by the Senator from Florida is agreed to, and the——

Mr. SYMMS. Reserving the right to object. I will not object, but we have had some requests that we do not allow this to be extended much longer than the time that is allotted. If we are not talking about yielding for more than 1 minute, I do not think there is any objection. If we go beyond that, we will object.

Mr. BYRD. Mr. President, I thank the Senator for his willingness to yield. I do not have any question.

Mr. GRAHAM. Mr. President, the second amendment, on which there has been absolutely no comment, and I will say should have no effect in terms of causing this bill to be open for other amendments because it relates strictly to what happens within a State rather than the allocation among States.

What this says is that we would essentially maintain the status quo in terms of a State's flexibility to use its funds as between maintenance and new capacity. Under the current law, a State can use its highway funds and its bridge funds interchangeably between maintaining an existing facility or building a new facility as it deems is most appropriate to its needs.

Under this bill, for the first time, there will be a distinction. You will get 80 percent Federal participation, or to put it another way, a State would have to come up with 20 percent in order to draw down 80 percent for maintenance. But a State would have to come up with 25 percent to draw down 75 percent if it is a new capacity addition.

Frankly, for States like mine, growth States that have the need to be able to provide transportation for folks from West Virginia, Illinois, New Jersey, New York, and Idaho who are coming, that is very serious, and I think the policy takes an irrational position. It has absolutely no effect on allocation among the States. It is strictly a matter of should a State which has the need to provide new capacity, additional lanes, of a highway or to build a new bridge in order to serve an expanding population, should they be discouraged from doing that, because they would get a less advantageous match. More State funds would be required in order to draw down the same amount of Federal funds.

No one has spoken against that amendment. I hope that indicates that there will be a receptivity to that amendment which is internal to States, in terms of their ability to access the Federal funds. It will not add $1 to what a State has available to it from the Federal Government. It will just affect the ability of the State to access for maintenance as opposed to accessing for new capacity.

Those are the two amendments, Mr. President.

If no one else wishes to speak, I am prepared to yield back the remainder of my time.

Mr. LEVIN. Mr. President, I have received assurances from Chairman BYRD that he will work hard and to the very best of his ability for full funding of this bill for its 5-year duration, including the Byrd-Bentsen amendment. Those assurances of the distinguished chairman are more valuable than the passage of an amendment which may or may not survive conference, and I thank him for them.

Mr. BYRD. I was happy to provide those assurances to Senator LEVIN, because that is my intent. I also commend Senator LEVIN for the strong and successful efforts he made, along with Senators BENTSEN, WARNER, METZENBAUM, BOND, and others on behalf of those States such as Michigan which have contributed more over the years to the highway trust fund than they have received back.

Mr. President, I thank the distinguished Senator, and I want to express appreciation for his contribution to the effort. He has discussed in the course of our debate these matters with me a number of times, and always was very interested in what the impact would be on his State of Michigan. I found him to be understanding, highly dedicated to his own State, and to the interests of the Nation. I wish to thank him very much.

Mr. LEVIN. Mr. President, over the past days, Senators from the donor and donee States have worked hard and in good faith to try to reach an agreement which would allow us to reauthorize the highway program and to provide some greater measure of fairness to the donor States. I believe that the Byrd-Mitchell-Bentsen amendment passed yesterday represents such an agreement.

For my State of Michigan it means a substantial improvement in the rate of return from the highway trust fund if the program is fully funded. Whereas over the past 5 years Michigan has averaged 83 cents on the dollar, the bill in its current form would raise that to 99 cents on the dollar, if fully funded.

The Graham amendment, if approved, could result in the collapse of this effort to achieve a greater measure of fairness. It's been made clear during the debate by the chairman of the Appropriations Committee and others that the adoption of this amendment would result in a filibuster against the entire bill. That would not be to the benefit of States like Michigan for which the status quo is unacceptable.

In addition, under the terms of the Byrd-Mitchell-Bentsen amendment itself, there is a good chance that the highway bill will be fully funded because both donor and donee States benefit from that amendment. Key to full funding is the support of the chairman of the Appropriations Committee, and I put faith in his representations to me that he will do his best to fully fund the entire highway bill, including the Byrd-Bentsen amendment, which substantially benefits not only the State of Michigan, but the State of West Virginia as well.

I will, therefore, vote to table the Graham amendment.

Mr. MOYNIHAN addressed the Chair.

The PRESIDING OFFICER. The Senator from New York.

Mr. MOYNIHAN. Mr. President, on behalf of Senators MITCHELL, DOLE, BYRD, SYMMS, and MOYNIHAN, I move to table the amendment, and I ask for the yeas and nays.

The PRESIDING OFFICER. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

The PRESIDING OFFICER. The question is on agreeing to the motion of the Senator from New York to lay on the table the amendment of the Senator from Florida.

On this question, the yeas and nays have been ordered, and the clerk will call the roll.

The legislative clerk called the roll.

Mr. FORD. I announce that the Senator from Arizona [Mr. DECONCINI] is necessarily absent.

I also announce that the Senator from Arkansas [Mr. PRYOR] is absent because of illness.

The PRESIDING OFFICER (Mr. KOHL). Are there any other Senators in the Chamber who desire to vote?

The result was announced—yeas 81, nays 17, as follows:

[Rollcall Vote No. 99 Leg.]

YEAS—81

Adams	Cochran	Grassley
Akaka	Cohen	Harkin
Baucus	Conrad	Hatch
Bentsen	Craig	Hatfield
Biden	Cranston	Inouye
Bingaman	D'Amato	Jeffords
Bond	Danforth	Johnston
Boren	Daschle	Kassebaum
Bradley	Dixon	Kennedy
Breaux	Dodd	Kerrey
Brown	Dole	Kerry
Bryan	Domenici	Lautenberg
Bumpers	Durenberger	Leahy
Burdick	Exon	Levin
Burns	Ford	Lieberman
Byrd	Garn	Lott
Chafee	Gore	Lugar
Coats	Gorton	McCain

McConnell	Riegle	Smith
Mikulski	Rockefeller	Specter
Mitchell	Roth	Stevens
Moynihan	Rudman	Symms
Murkowski	Sarbanes	Wallop
Packwood	Sasser	Warner
Pell	Seymour	Wellstone
Pressler	Simon	Wirth
Reid	Simpson	Wofford

NAYS—17

Fowler	Hollings	Nunn
Glenn	Kasten	Robb
Graham	Kohl	Sanford
Gramm	Mack	Shelby
Heflin	Metzenbaum	Thurmond
Helms	Nickles	

NOT VOTING—2

DeConcini	Pryor

So the motion to lay on the table the amendment (No. 363) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Mr. MOYNIHAN. Mr. President, the majority leader is seeking recognition, and we need order.

The PRESIDING OFFICER. Order in the Senate.

Mr. MITCHELL. Mr. President, I ask unanimous consent that the next vote be a 10-minute vote.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. LIEBERMAN. Mr. President, the Senator from Florida has proposed cutting the State matching share for projects that expand highway capacity from 25 percent to 20 percent, which is the same percentage as the maintenance and rehabilitation projects.

There are serious problems with this proposal. First, the Federal Highway Administration strongly opposes it. FHWA is concerned about stretching available Federal funds for a larger number of projects, and this amendment would move in the opposite direction.

Second, the committee bill is simply continuing the existing matching ratios that are in current law for the great bulk of Federal-aid road projects. The committee bill funds the remaining pieces of the Interstate System at a 90–10 Federal-State ratio, the same ratio as has prevailed for decades. And the rest of the road system—our primary, secondary, and urban systems—are now funded at 75–25, the same percentage as proposed by the committee. The proposed amendment would change that ratio; it is not a return to existing law, it is change in it.

Finally, the committee made a judgment based on the fact that we have a huge problem with deteriorating roads in the United States. The Office of Technology Assessment tells us that half our noninterstate roads are deteriorating or deteriorated. Half. We have a huge Federal investment in that system. The committee decided to give States a modest incentive to maintain our existing roads by upping the maintenance and rehabilitation percentage to an 80–20 ratio. It was the right policy decision. We see the Nation's infrastructure rotting around us. It is a major long-term detriment to our national economy and competitiveness. For too long Federal transportation policy has ignored the needs of maintenance and rehabilitation; it is time to change that policy. The committee bill attempts to do just that. It deserves our support.

AMENDMENT NO. 364

Mr. MOYNIHAN. Mr. President, on behalf of Senators MITCHELL, DOLE, BYRD, SYMMS, and MOYNIHAN, I move to table the amendment and ask for the yeas and nays.

The PRESIDING OFFICER. Is there a sufficient second?

There is a sufficient second.

The yeas and nays were ordered.

The PRESIDING OFFICER. The question is on agreeing to the motion of the Senator from New York to lay on the table the amendment of the Senator from Florida.

On this question, the yeas and nays have been ordered, and the clerk will call the roll.

The bill clerk called the roll.

Mr. FORD. I announce that the Senator from Arizona [Mr. DECONCINI] is necessarily absent.

I also announce that the Senator from Arkansas [Mr. PRYOR] is absent because of illness.

The PRESIDING OFFICER. Are there any other Senators in the Chamber desiring to vote?

The result was announced—yeas 72, nays 26, as follows:

[Rollcall Vote No. 100 Leg.]

YEAS—72

Adams	Exon	Metzenbaum
Akaka	Garn	Mikulski
Baucus	Glenn	Mitchell
Bentsen	Gore	Moynihan
Biden	Gorton	Murkowski
Boren	Gramm	Nickles
Bradley	Grassley	Pell
Breaux	Harkin	Pressler
Brown	Hatch	Riegle
Burdick	Hatfield	Rockefeller
Burns	Inouye	Roth
Byrd	Jeffords	Rudman
Chafee	Johnston	Sarbanes
Cochran	Kassebaum	Sasser
Conrad	Kennedy	Simon
Craig	Kerrey	Simpson
Cranston	Kerry	Smith
D'Amato	Kohl	Specter
Daschle	Lautenberg	Stevens
Dixon	Leahy	Symms
Dodd	Levin	Wallop
Dole	Lieberman	Wellstone
Domenici	Lott	Wirth
Durenberger	McCain	Wofford

NAYS—26

Bingaman	Graham	Packwood
Bond	Heflin	Reid
Bryan	Helms	Robb
Bumpers	Hollings	Sanford
Coats	Kasten	Seymour
Cohen	Lugar	Shelby
Danforth	Mack	Thurmond
Ford	McConnell	Warner
Fowler	Nunn	

NOT VOTING—2

DeConcini	Pryor

So the motion to lay on the table the amendment (No. 364) was agreed to.

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the motion was agreed to.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

TRIBUTE TO MANAGERS OF THE BILL: SENIOR SENATOR FROM NEW YORK, SENATOR MOYNIHAN, AND SENIOR SENATOR FROM IDAHO, SENATOR SYMMS

Mr. DOLE. This has been a long, trying 2 weeks, but through it all, they managed the bill with good humor, fairness, and a steady hand. This is a complicated bill that sets a revolutionary course for our Nation's transportation policy. The headlines and votes may have been about money and dividing the pie among the 50 States, but this bill is much more significant than many people realize. We owe a large debt of gratitude to Senators SYMMS, MOYNIHAN, CHAFEE, and BURDICK for getting us to this point.

LEVEL OF EFFORT/HIGHWAY SPENDING

Mr. MITCHELL. Mr. President, looking at a State's overall level of effort on highway spending is important if a fair and equitable formula to allocate bonus money is to be contained in any conference report on this legislation.

As my colleague the minority leader has already mentioned, the gas tax alone is not always indicative of a State's effort. Some States choose to appropriate State spending for highways, others raise funds for highways from sales taxes or vehicle registration, as well as trucking fees.

In fact, some States use their gas taxes for other purposes: Reducing the State deficit or other spending not related to highways. Therefore, I believe that looking at total State effort on behalf of highway funding is a better measure than simply the gas tax alone in conjunction with per capita income.

Another reservation that I have about the Byrd formula adopted by this Chamber yesterday is that States may easily game the outcome. The formula awards high gas tax levels, but does not require that the gas tax be used for highway spending.

Therefore, a State could increase its gas tax to trigger the bonus funds and reduce other taxes so that the net amount of money raised would be the same. In fact, funding on highways could even decline.

For Maine, about 20 percent of the funds spent for highways are derived from vehicle registration costs. Less than half of the State's funding comes from gas taxes.

It is important for the conferees to find an appropriate measure reflecting total State effort on a per capita basis so that one State's efforts can be compared to another State's efforts and that the overall level of effort by the State be rewarded.

Mr. DOLE. Mr. President, I am proud to say that we have made an important step toward enacting a key piece of the President's domestic agenda today. March 16, President Bush gave the Congress a challenge: Enact needed highway legislation in 100 days. While we are a bit short of sending a final product to the President's desk for his signature, I am proud to say the Senate has met this challenge in good faith.

With the enactment of this vitally important legislation, the Nation will move dramatically forward to meet current and future needs with regard to our transportation system.

I believe this legislation provides the necessary elements for a broad national consensus: Fairness, flexibility, and adequate funding.

FAIRNESS

States, and particularly my State of Kansas, come much closer to receiving a fair distribution of funds. In the past we have seen a wide disparity between so-called donor and donee States. This bill narrows this gap. The bill also recognizes the needs of both rural and urban areas. Particular care and attention has been paid to each of the 50 States who have a wide variety of needs and different approaches to achieving their own goals.

FLEXIBILITY

A key element in the bill is a reduction in the number of categories for project funding. I am particularly pleased by this. Under the legislation, the four new, simplified categories will provide greater resources and flexibility for States like Kansas to bring resources to bear on unique State problems. And, because of my amendment, one key element of this bill is the flexibility it provides to the Kansas Department of Transportation to shift funds to higher priority categories, giving Kansas more say in how we meet our own particular needs without having them dictated from Washington.

In Kansas, this will be particularly helpful. Recently enacted State highway construction legislation will be effectively supplemented by the flexible funding portions of this bill.

FUNDING

The highway bill also reflects a new commitment to adequate funding of highway programs. Overall 5-year spending under the bill will be nearly $93 billion. For Kansas this means just over $1 billion. Kansans will receive $178 million in fiscal year 1992, up from $135 million in fiscal year 1991. Over the 5-year period, Kansans will receive $1.05 for every Kansas tax dollar spent—a vast improvement over the 1987 highway bill where Kansans received $688 million over 5 years and slightly over 85 cents on the dollar. I think Kansans will agree this is a major improvement over previous years, and increases Kansas highway funding significantly, representing a direct and tangible benefit for Kansas taxpayers.

NATIONAL HIGHWAY SYSTEM

Mr. President, I am also extremely pleased that the President's National Highway System concept is included in the bill. As my colleagues know, the National Highway System is an important step toward focusing the Federal investment on a select, integrated network which will ensure a productive and nationally efficient system. In Kansas, this will initially include roughly several thousand miles of roadway that will be a part of the National Highway System.

KANSAS AMENDMENTS

Mr. President, in addition, Kansas should benefit from several amendments I sponsored and were included in the bill.

COMMERCIAL DRIVERS LICENSE

Under this legislation, Kansas farmers, custom harvesters, retail farm supply vehicle drivers, and livestock feed drivers will be relieved of needless Washington redtape imposed by commercial drivers license requirements that, if left in effect, threaten agricultural producers with increased transportation costs and other impediments to production. This is the third time the Senate has passed this waiver in the past 2 years. It is my sincere hope that the House will act expeditiously to include this language as well.

HOMEBOUND MEALS

I am also pleased that another amendment of mine was adopted that will be of great benefit to Kansans who are homebound and receive meal service. Homebound meal service providers will be able to coordinate on a regular basis with section 18 service providers. This flexible cooperation agreement should be a great improvement in service for homebound meal recipients in Kansas and will make more efficient use of vehicles used for other transportation purposes.

ETHANOL

Mr. President, the Senate has also adopted another amendment of mine that should serve to eliminate a marketing practice that is of concern to me and that could effectively take ethanol-blended gasoline out of the marketplace.

I recently learned that a major oil company, that has a pipeline running through Kansas, was unfairly taking advantage of an Environmental Protection Agency standard that precludes adding ethanol to gasoline that already contains two percent MTBE. This marketing practice effectively prevents ethanol from competing with other gasoline and gasoline blends.

I contacted representatives of the American Petroleum Institute to see if this problem could be worked out without legislation. Unfortunately, we were told that API was not in a position to do anything, therefore making this amendment necessary.

This amendment simply says that if oil companies want to include MTBE in gasoline that is shipped within the common carrier pipeline network, they must blend enough MTBE to be in full compliance with the Clean Air Act.

Mr. President, Congress intended that the Clean Air Act provide incentives and requirements that will produce a variety of competing alternative fuels in the domestic market. Once you mix MTBE into gasoline, you cannot add other clean fuel blends such as ethanol. It is important for American domestic energy security, and for the American farmer and taxpayer, that ethanol blended gasoline be allowed to compete in the clean fuels marketplace in the United States.

LEVEL OF EFFORT BONUS

Mr. President, two important amendments of mine were included in the Senate version of the highway bill that effectively meet the President's goals that States should spend more of their own resources on their own highways. My approach has been to find ways to give States incentives to do more themselves with their own resources to finance their highway programs.

LEVEL OF EFFORT STUDY

Three months after the final highway bill is enacted, my amendment will require the Secretary of Transportation and the Director of the Bureau of Transportation Statistics to undertake a comprehensive study of the most appropriate and accurate way to calculate State level of effort in funding surface transportation programs.

The distinguished chairman of the Appropriations Committee has already made an important contribution with his amendment to the highway bill. Indeed States that pay more themselves should get credit for it. I believe that this study will further improve upon this important policy goal.

DOLE-MITCHELL LEVEL OF EFFORT AMENDMENT

In addition, Mr. President, to further improve upon the concept under the Byrd approach, the distinguished majority leader and myself offered, and the Senate accepted, an amendment that directs the Senate conferees to consider each States total effort for highways within the bridge program, interstate maintenance program, and surface transportation program before final passage of the bill.

Mr. President, at the heart of the so-called level of effort debate is a lot of statistical information, endless charts and constantly changing ways to calculate State highway financing contributions. My approach has been simple: First, let's see what States actually contribute to their State highway spending programs from all sources. The earlier approach had been to tie level of effort bonuses only to State gasoline tax revenues. However, the flaw here was twofold.

Since States utilize a variety of different sources of revenue to finance

highway programs, and Kansas is no exception, State gasoline taxes make up only a portion of what we spend on highways. To limit the level of effort to gasoline taxes alone penalizes States that have a broad-based State highway financing program, and invites gaming of the system through artificial increases in State gasoline tax revenues to take advantage of the Federal bonus program with no guarantee that the State will have dedicated these gas tax revenues to their own highway programs.

Second, it is well documented that many States use gasoline tax revenues for other important State spending priorities such as agriculture, environment, aeronautics, wildlife preservation, and many other categories. In order to calculate the true level of effort that a State is making toward highway spending and reward it appropriately, we need to know where State gas tax revenues are actually being spent and make this a part of the calculation.

CONCLUSION

Mr. President, I believe this is a good legislative package. I urge my colleagues to support the bill.

AMENDMENT NO. 333

Mr. SIMPSON. Mr. President, on Thursday, June 13, this body adopted without discussion, an amendment to S. 1204. Amendment No. 333 imposes a clean gasoline requirement upon U.S. refiners who transport gasoline products in common carrier pipelines.

The amendment was accepted by unanimous consent while I was not present on the floor. Upon closer scrutiny, I have some serious concerns that I would like to place on the record. I would like to reserve the opportunity to discuss the matter in more detail with the sponsors of the amendment. I have no reason at all to believe that the intent of the amendment was not in the best interests of our domestic refining industry. But I am very concerned about how the amendment would impact this industry, and the American consumer, upon its implementation.

It is my understanding that the amendment would severely restrict the types of gasoline allowed in common carrier pipelines to the following formulation: those that can be used as blend stock for waivered fuel or fuel additives; or legally waivered fuel or fuel additives. Gasohol is the only fuel which qualifies under these restrictions. Although I do appreciate the importance of gasohol as an alternative fuel, MTBE-blended gasoline is equally as important and under this amendment I am very concerned that it possibly could be interpreted to specifically disallow MTBE or other oxygenates—other than ethanol—to be added as a fuel blend to a product, later to be carried by a common carrier pipeline.

MTBE is often used to meet the requirements of the Clean Air Act for reformulated gasoline or oxygenated gasoline for CO nonattainment areas. This amendment could well prohibit the transport by common carrier of gasoline blended with MTBE or other oxygenates, reducing movement of product to transport by truck or the alternative of adding the blend at the terminal. I am informed by refiners that the restrictions that this could cause could ultimately be so severe that gasoline shortages could occur. I have no doubt whatever that this is surely not the intention of the amendment's authors, but it may surely be a result of this amendment if changes are not made.

We fought this similar battle in the Clean Air Act. I know there is room for compromise here, while still meeting all of the environmental standards that we have set up for ourselves. As a continued detailed assessment of the impact of this amendment is determined, I would wish to reserve the right to revisit this issue in conference if it is not resolved prior to that time.

THE NATIONAL RECREATIONAL TRAILS TRUST FUND ACT

Mr. SEYMOUR. Mr. President, as written, the National Recreational Trails Trust Fund Act would provide that the moneys returned to various States be administered by an existing recreational trail committee. If a State has two such committees with similar charters, is it your intention that these moneys be administered by the existing body within a State which already has spending jurisdiction over State gas tax revenues from nonhighway recreational use.

Mr. SYMMS. The Senator's interpretation of the intent of the legislation is fully accurate.

Mr. SASSER. Mr. President, I wish to take a few moments to offer some observations about the surface transportation reauthorization legislation that is presently before the Senate. I have listened very carefully to the remarks of many of may colleagues on this subject. While we may have varying points of view about what should be in the final bill, I think we all agree that it is important that we pass a bill.

Mr. President, I view this reauthorization process as both a unique opportunity and critical challenge. The Interstate System is close to completion. Our first concern will necessarily be to improve and maintain the Federal investment in the 43,000 mile interstate network. Yet, we can now begin to broaden our transportation perspective with a view towards future transportation needs of the year 2000, it is absolutely imperative that we, in this reauthorization bill, take a very careful assessment of the state of America's infrastructure today, in 1991.

There have been various studies and estimates relating to the state of this Nation's annual infrastructure needs. Including the entire infrastructure stock, those needs are well in excess of $40 billion annually just to maintain the current system.

That is the challenge that is before us. While we will certainly look ahead to critical research and innovative technology, such as the intelligent vehicle highway system, we must, nonetheless, face the realities of the roads and bridges and mass transit systems throughout the Nation and in our individual States as they exist today.

Mr. President, although we in Tennessee are very proud of our cities, Tennessee is a primarily rural State. We are a donor State. Since 1957, Tennessee has contributed some $4.9 billion into the highway trust fund. In fiscal year 1989, Tennessee contributed $337 million into the highway trust fund. Tennessee's return on that contribution was 74 cents on the dollar. In addition, Tennessee presently has one of the highest gas taxes in the Nation at 21 cents.

The Tennessee Department of Transportation estimates that Tennessee will need some $12 billion over the next 10–20 years just to maintain the current system. Currently, the State department of transportation spends $180 million annually just to maintain our roads.

However, Mr. President, much work remains to be done. Tennessee's most critical need is to increase capacity on the primary system. In 1986, Tennessee undertook an ambitious road program. Based upon that program, 387 miles remain to be constructed.

It is important, therefore, that the flexibility of States to address their individual problems must be recognized in reauthorizing surface transportation legislation. It is important that the bill we are about to adopt will indeed provide that degree of flexibility that State and local governments must have if we are to turn the tide on the deterioration of our vital national infrastructure.

Mr. President, I had hoped that we might have made more fundamental changes in the donor State situation. However, the Byrd amendment does, at least, attempt to restore some degree of equity to the situation faced by Tennessee and other donor States. Equally important, the Byrd amendment, which was overwhelmingly adopted, recognizes the special effort that Tennessee and other States with high gas taxes have taken to address their individual transportation needs.

At the beginning of my remarks, I stated that approval of this particular reauthorization bill provides this Nation with a unique opportunity and a critical challenge. Above all, I believe that this reauthorization bill will set the framework for the future. The degree to which we meet that future challenge of providing safe, efficient,

and innovative transportation alternatives will depend vitally upon the transportation decisions that will be made over the next 5 years as a result of this reauthorization bill. In that larger sense, Mr. President, our work has just begun.

Mr. SIMPSON. I rise today in support of the bill. I commend the herculean efforts of Senators MOYNIHAN, SYMMS, BURDICK, and CHAFEE to bring to the full Senate this sound and reasonable bill. I also want to thank the always patient majority leader and our fine Republican leader for their excellent work on this legislation.

Congress will not have succeeded in presenting the bill to the President within the 100-day goal, and that is regrettable. I urge the House to act expeditiously. It has not been an easy or smooth road to bring this bill to final passage in the Senate. There are many tough surface transportation policy questions which have been addressed by the authors of this bill in a positive, progressive, and thoughtful manner.

This is always an interesting piece of legislation. It is the kind of bill which requires us to be members of a national legislature, looking after the interests of our national infrastructure. All of us realize the challenges we face. Prior to bringing this bill to the floor, members of the Environment Committee carefully studied our transportation policy and our national needs as we approach the 21st century: What efficiencies can be derived by different modes of transportation? What are the best means to improve productivity? What impacts will our decisions have on GNP and trade? We all came to this debate with the full intention of addressing these important concerns critical to our Nation's future. The way we do our work on this bill is a weighty, national responsibility. This $120 billion legislation will fund and guide the direction of this Nation's surface transportation activities for the next 5 years.

But in the last few days of this bill's consideration, the debate became very parochial. We are all here, in part, to represent the needs of our States. We have all battled it out since last Thursday over a new pot of $8.2 billion that may or may not eventually be appropriated for highway projects. It has been somewhat unpleasant and frustrating at times.

But what we have finally settled on is a good bill. I don't want us to lose sight of that. It would authorize $90 billion for highways, and perhaps another $8.2 billion, over the next 5 years. It spends $20 billion on mass transit needs. This is very adequate to meet the needs of all affected States; 46 of 50 States receive a significant increase in funding over the average amounts they received in the last 5 years. The bill provides important flexibility for all States to meet their own unique needs. If they have urban congestion problems, moneys can be spent on important relief techniques. If an area suffers from pollution and noncompliance with the Clean Air Act, moneys are available to address and help rectify those problems. If a State has lots of wide open spaces and plenty of miles of highways that need to be maintained—moneys are available. States which have bridges which are in disrepair are able to use their moneys to fix these bridges or build new ones. The bill recognizes the mass transit needs of some States. Mass transit is a foreign concept in Wyoming unless you're talking about the spring hauling of cattle up to their summer pastures. However, I won't argue for 1 minute that urbanized areas are not in desperate need of funds to meet their unique needs, and I am pleased that this bill provides that funding.

I am pleased at the way this bill appropriately reflects our national surface transportation policy. I also want to express my statisfaction at how Wyoming is treated in this bill. We receive $602 million over the next 5 years, which is a 44-percent increase in funding over the previous 5 years. The bill contains an important provision for Wyoming which permanently increases our truck weight allowance in order to keep us competitive with all our surrounding States. Without this provision, we would lose companies, jobs, and revenues. The bill grants valuable planning authority to our State officials, and directs funding to the upkeep and maintenance of our highway system—a system which will be determined by our State officials. It includes an increase in moneys for important road and transportation projects on public lands, including national parks, forests, and Bureau of Land Management properties.

There are some controversial provisions which affect important industries in very different ways. Wyoming will most certainly experience a conflict between our railroad and trucking industries. But controversies and compromises are an anticipated component of the legislative process.

I have heard the concerns of my colleagues from the States who pay more into the highway trust fund than they receive. These States are facing increasing needs to meet high growth, and I can appreciate the efforts of their Senators. I also fully understand the needs of colleagues from States such as mine who receive more money out of the trust fund than they put in. If we in Wyoming, with a total population of 453,588, were limited to receiving only the amount of money we contributed—I can assure you we would have some very, very poor roads for you folks to use when you come out to see the Grand Tetons and Yellowstone National Park. We all have legitimate concerns and pressing needs. But we are not 50 separate countries, self-contained and isolated. We are 50 very interconnected, very interdependent States which share commerce, trade, and tourism. Our surface transportation policy could not survive if we did not recognize this interdependence in this legislation.

This bill does not leave one area of the country underfunded. To the contrary, it is a good, fair, generous and appropriate bill. It reflects a balanced recognition that each State has unique problems, and that our national highways must be maintained and supported. This bill isn't perfect. I've never seen one that was. It is very sound, and I urge my colleagues to support it.

I do want to thank Senator MOYNIHAN for his wisdom and his continual dedication to the improvement of this Nation's infrastructure. On his staff, I specifically thank Roy Kienitz, Rob Connor and Andrew Samet for their long hours and assistance to me and to my staff. I thank Senator SYMMS for his dogged determination and commonsense and urging others to rise above parochial interests and pursue a balanced national transportation policy. His staff members, Taylor, Bowlden, Angela Plott, and Trent Clark also have my deep appreciation. Senators BURDICK and CHAFEE have diligently watched over the process and have been such a great help to us all. I thank Mike Weiss and David Strauss of Senator BURDICK'S staff, and Jean Lauver and Steve Shimberg with Senator CHAFEE. A very capable bunch. And to my fine "staffer" Laurie Goodman who really earned her spurs on this one. She did splendid work for me. To her and to all * * * a job well done.

Mr. LIEBERMAN. Mr. President, as we come—at last—to the vote on final passage of S. 1204, the Surface Transportation Efficiency Act, I want to focus again on why I believe this bill will be so constructive for America's future.

Before I do so, let me extend my thanks to the staff of the Environment and Public Works Committee and the personal staff of the floor managers who have done an outstanding job throughout this process. In particular, I would like to thank: Roy Kienitz, Andrew Samet, Rob Connor, Mike Weiss, Jean Lauver, George Shaner, Nadine Hamilton, and Taylor Bowlden. Their efforts have been truly monumental and represent the best in public service.

Let me now turn to the legislation.

First, S. 1204 places a strong new emphasis on maintaining the highway system we have now built. According to a recent Office of Technology Assessment study, one-third of the Nation's noninterstate highways are in deteriorated or deteriorating condition. Approximately half of our bridges are structurally deficient or functionally obsolete. The bill addresses these

problems directly by creating a funding incentive for maintenance over new construction to assure that our maintenance priorities are addressed. In doing so, it reverses the existing procedure. The bill assures that our huge investment in the Interstate System will be protected by a separate interstate maintenance and rehabilitation program funded at more than $14 billion over the next 5 years. And there is a major new bridge rehabilitation program with substantial additional funding totaling over $13 billion over the next 5 years.

Second, S. 1204 allows the States substantial flexibility in tackling their own transportation problems as they see them. The current highway laws limit this flexibility; the new bill opens up new options for the States. Over half of the funds in this bill—over $45 billion—will be available to the States in a new surface transportation flexible funding program. States will be able to set their own priorities here, whether it is building new roads, funding mass transit programs or constructing high occupancy vehicle lanes.

Third, S. 1204 provides for much closer coordination between our efforts to tackle clean air and conserve our energy and our efforts to move our people. Unfortunately, these programs in past decades have often been working at cross purposes. This bill requires that transportation and clean air planning come together. And it creates a new congestion mitigation and air quality improvement program that will provide $5 billion in funding for transportation solutions to these problems. My State has severe air pollution problems and this new program will be of substantial assistance to us. The bill also creates a new transportation enhancement program that will enable us to use our road programs to promote scenic highways and historic preservation.

Fourth, S. 1204 unifies the Federal and local matching shares for all but one of the components of the highway program. The Federal Government will pay 80 percent of the cost of transportation programs and the States will pay 20 percent. In the past, the matches varied greatly, skewing State transportation priorities based on the match the States had to put up. This new approach will allow States to set their own priorities based on need.

Fifth, S. 1204 will put people to work building and maintaining bridges and roads and constructing mass transit systems and equipment. And, once those roads and bridges and systems are built or improved, it will put more people to work in the businesses that will always grow when infrastructure is improved. S. 1204 is one of the most effective things this Congress can do to help America out of recession and onto the higher road of long-term economic growth.

Overall, this is a remarkable bill. It takes major new steps toward making our highway network more user friendly. It attempts to assure that the huge Federal investment in our highways is protected by placing a new emphasis on maintenance and rehabilitation. It provides new initiatives for urban congestion relief. It promotes greater compatibility between our transportation system and environmental needs. And it will create hundreds of thousands of jobs.

I am also pleased to say that this bill is helpful to Connecticut in its efforts to continue to improve its transportation system. The following chart indicates Connecticut's share of the program under the proposed administration bill, under S. 965 and S. 1204, as well as our State's apportionments during the past 5 years.

CONNECTICUT'S SHARE OF HIGHWAY APPORTIONMENTS UNDER S. 610 (THE ADMINISTRATION BILL), S. 965 (THE MOYNIHAN-SYMMS BILL AS INTRODUCED), AND S. 1204 (THE MOYNIHAN-SYMMS BILL AS REPORTED BY COMMITTEE AS AMENDED AT SEC. 106(b))

[In millions of dollars unless noted]

	Fiscal year—					Total (billions)
	1992	1993	1994	1995	1996	
S. 610, the administration bill	214.8	210.7	16.0	230.9	213.4	1.08
S. 965 (the Moynihan-Symms bill as introduced)	294.6	297.5	312.0	336.7	332.0	1.57
S. 1204 (the Moynihan-Symms bill as amended at sec. 106(b) and reported by committee)	322.6	325.6	341.7	368.0	353.7	.....
Plus additional funds from Byrd amendment	0	4.0	9.8	11.8	16.2	.....
Total	322.6	329.6	351.5	379.8	369.9	1.75
From fiscal year 1987–91 under the previous highway legislation[1]	273.2	281.3	265.0	321.8	345.5	1.48

[1] FHWA, "Highway Statistics" issued in years 1986–89, from tables FA–4; 1991 data from FHWA, "Table T–1991" provided to the Environment and Public Works Committee. Note: tables do not include one-time only discretionary awards to state to meet special needs.

Source of data: Federal Highway Administration data provided to the Environment and Public Committee unless otherwise noted.

S. 1204 is good for Connecticut and every other State. I urge my colleagues to support it.

Mr. DODD. Mr. President, I rise in support of S. 1204, the Surface Transportation Efficiency Act and thank my colleagues Senators BURDICK, CHAFEE, MOYNIHAN, SYMMS, CRANSTON, D'AMATO, and BYRD for their tireless efforts in bringing the highway and transit portions together in such a way that provides for greater flexibility and increased funding.

Mr. President, at the beginning of this process Congress was faced with a unique opportunity to fashion and shape transportation policy so that it assists this Nation in achieving the very important goals of mobility, congestion management, facilitation of economic growth, energy conservation, and environmental protection. I believe that we have made the first step in accomplishing that goal.

Mr. President, while I am still concerned that the bill may encourage the view that the most important Federal interest is the Interstate System and that there appears to be a shift of authority and control over the transportation programs from State transportation agencies to metropolitan planning organizations, these concerns are not fatal.

It is my hope, however, that we all understand that the National Highway System extends beyond the interstate network. There are bridges and roads that are not considered a part of the National Highway System, in mine and other States, that are crumbling and in desperate need of repair, yet, may be ignored.

These sections of our system of roads also need attention if we are to maintain and promote economic efficiency, increase productivity and be competitive in the global economy. Based on these factors alone Mr. President, it is clear to me that we need a Federal aid system which goes beyond the traditional notion of the Interstate System.

Laying aside these concerns, I support this bill because it makes a significant first step in a number of key areas and addresses many of the concerns that I have expressed over the years.

First, it increases the level of funding for transportation to $118 billion. This represents a 13-percent increase in funding over President Bush's highway proposal.

This means more than $323 million a year will flow into Connecticut under the highway program and more than $27 million a year for transit. At a time when cities like Bridgeport, New Haven, and Hartford are struggling to secure financing to continue providing the most basic services, this new funding will provide a welcome shot in the arm.

Second, we have taken a significant first step toward ensuring that our crumbling roads and bridges as well as our rail systems are maintained. S. 1204 as drafted combines increased flexibility and funding in such a way that assists in the accomplishment of vital transportation goals.

Third, the bill takes a significant step toward meeting the new demands and challenges of the recently passed Clean Air and Americans With Disabilities Acts.

Fourth, transferability between highway and transit modes, equalization of the Federal match requirements and funding flexibility are important elements of a sensible transportation policy that promotes Connecticut's, indeed, the Nation's, environmental and energy conservation goals. S. 1204 provides for all three which in my opinion allows Connecticut a large degree of discretion and flexibility in determin-

ing where and how to spend scarce Federal dollars in a manner which will promote our clean air, congestion management, and energy conservation goals.

Fifth, the transit portion of S. 1204 creates formula programs which, in turn, create predictable streams of financing for projects. This enables States and localities to better plan, implement, manage, and operate transit projects. For Connecticut this means adequate funding levels each year to carry on basic services. We will no longer have to compete against other States for scarce resources. This guaranteed a funding stream of at least $27 million a year for the next 5 years will assist the State to fund bus programs for the elderly and physically challenged and provide rail and other transit service for the citizens of Connecticut.

Mr. President, I would be remiss if I did not give you some sense of how important this bill is to Connecticut.

Mr. President, Connecticut is unique in that it is one of the few States that actually owns a part of the rail system running through it. More specifically Connecticut owns a section of the Northeast corridor which, as you know, carries everything from people to produce up and down the entire Eastern United States. The section of track that we own is old and very difficult to maintain and operate. S. 1204's new and improved Rail Modernization Program will be an invaluable tool in helping Connecticut maintain this section of track.

Finally, Mr. President I am pleased that we have chosen not to accept the administration's provisions restricting operating assistance for small systems. Recently in Bridgeport, CT, I held a hearing on the UMTA portion of S. 1204. When panelists were asked about the effect that the administration's changes in operating assistance would have on smaller urban areas, there was overwhelming agreement that for these systems, operating assistance may compose up to 80 percent of their budgets and that acceptance of those provisions, would, in time, force smaller jurisdictions to raise fares or cut services as their deficits mount.

Mr. President I was warned that the result would certainly be that the physically challenged, elderly and middle income persons would not have access to the most basic services. I am pleased that we did not let this happen.

And finally Mr. President, I am pleased that we could produce a bill that will truly assist us in accomplishing our energy and environmental conservation goals.

Mr. KOHL. Mr. President, as we move toward completion of this bill, let me make a couple of final observations about the bill, and about the first of the two Graham amendments in particular.

First, I want to commend the managers of the bill for bringing to the floor a bill that makes so many sensible changes in our Federal transportation policy—in flexibility, in transit, in planning. While I wish those sensible changes had been broadened to include a sensible revision in the way Federal funds are allocated to States, the managers of the bill have certainly given those of us from donor States a fair chance to be heard on this issue.

Second, I would also like to take a moment to complement the efforts of the Senator from Florida [Mr. GRAHAM]. No Senator has been more forceful and more vocal in this formula fight than Senator GRAHAM. As one who represents a donor State, I want to thank the Senator from Florida for all of his work on behalf of his State, my State, and all the donor States.

Mr. President, I support the first of the two Graham amendments. From a donor State's perspective, the Byrd amendment—while providing us with the possibility of additional funds over the life of this bill—offers us no assurances. Wisconsin is protected under the Byrd amendment only to the degree that appropriations for it are made available. While I have tremendous respect for the distinguished chairman of the Appropriations Committee, and believe that he will do all he can to fully fund this level of appropriations, there are simply too many competing demands before the Appropriations Committee for any of us to take that for granted.

Furthermore, Mr. President, the level of benefits to donor States under the Byrd amendment could change significantly from year to year. Many donor States now benefit under the level of effort portion of the Byrd amendment. But, if States race to increase their gas tax, that may not continue to be the case. Should we find ourselves in a situation where fewer donor States benefit under the level of effort provision, more donor States will have to be taken care of under the allocation portion of the Byrd amendment—meaning that each donor State would receive less money as a result.

Mr. President, I would love to go back to Wisconsin and assure people that the Byrd amendment will bring an additional $222 million to the State over the next 5 years. But I cannot say that in good faith because of all the variables involved.

The amendment being offered by the Senator from Florida attempts to give donor States a greater degree of assurance that the Byrd provision will be funded. It does not require that the Byrd amendment be fully funded. It simply ensures that there will be funds made available for the Byrd amendment. Given that the Byrd amendment benefits donor and donee States alike, I find the amendment extremely fair indeed.

Mr. President, several of my colleagues have indicated that if the amendment offered by the Senator from Florida is adopted, then there will be many more amendments offered on this bill. I can only say that I would welcome that event. From the perspective of a donor State, there is plenty of room for improvement on this bill.

I yield the floor.

Mr. SANFORD. Mr. President, I rise somewhat hesitantly to express my support for final passage of S. 1204, the Surface Transportation Efficiency Act of 1991. I hesitate because I believe the bill is not quite ready for passage, it is not complete as it does not include a fair and equitable formula, or at the very least language authorizing the use of 1990 census figures in distributing highway funds. The failure of the Senate to include a fair formula in this highway bill is regretable.

Before debate began, a number of other Senators and I from donor States formed a coalition whose purpose was to change the current highway funding formula to one which would reflect highway use and maintenance needs. Our coalition threw our support behind the Federal-aid surface transportation [FAST] bill and the funding formula contained in that bill. Using such factors as vehicle miles traveled, diesel fuel consumption, and lane miles, we would focus our formula on a State's needs in the Federal-Aid Highway Program. States within the Amercian Association of State Highway and Transportation Officials [AASHTO] devised the formula based upon formula factors that were recommended by AASHTO. These same factors were also recommended by the General Accounting Office in its report on highway funding in 1986.

Our coalition's initiative was not solely to bring back more money to our States, although that would indeed happen. Our main concern was to see that a formula that was fair and equitable in its distribution was adopted. Under the FAST formula my State of North Carolina would remain a donor State, but it would rise from receiving 73 cents on the dollar to receiving 95 cents on the dollar.

It became clear during the debate on the bill that the donee States did not want an equitable formula. The donee States currently receive more than their fair share of the highway trust fund and they recognize that any change of the status quo will prohibit them from benefiting from the tax paid in from other States. As the arguments rose from the opposing sides, we saw equity pitted against greed. States trying to get a fair share of their contribution ran counter to other States not willing to share their excess receipts.

Mr. President, I must say that I am disappointed in our inability to address properly the formula problem. The points I made during my statements on the floor regarding a fair formula were

undisputed by the chairman of the Transportation Subcommittee. Yet, the managers of the bill would not enter into good faith negotiations on a formula.

This bill does include new language establishing a level of effort bonus program for States which have a higher than the national average gas tax. The State's gas tax is balanced against the State's per capita income. For States like North Carolina, which has the fifth highest gas tax and a per capita income far below the national average, this level of effort bonus will provide us with an additional $400 million over the next 5 years. This is an idea that I have been supportive of since I came to the Senate and I was happy that I was able to vote on this issue. I am somewhat skeptical, however, as to whether the extra moneys authorized for this program will actually be appropriated. As the language was drafted, the donee States saw to it to include a hold harmless provision which essentially would not allow any funding to go into this new program until all of the current programs were funded. So, if there's any leftover highway money at the end of each fiscal year, the level of effort program will get its funding. I do not feel that that is a very responsible way to handle funding such a progressive new program.

Although I am disappointed that a new formula is not included in this legislation, I am pleased about the fact that an amendment I drafted authorizing the GAO to study the highway funding formula was agreed to. In 3 years, the GAO is to deliver to Congress their recommendations on a fair formula. This formula should form the basis of the 1996 highway reauthorization debate. I will see to it at that time that this formula debate is carried forward and that equity prevails.

I would like to urge my colleagues to consider very carefully the issues of fairness and equity that I and other members of the FAST coalition brought to the floor. As this bill moves to conference with the House, I will again be asking support for a fair and equitable formula. The vote on the Graham amendment on the FAST formula proved that there is considerable support for an equitable formula in the Senate. It is my intent to keep pushing for fairness until it is achieved.

Mr. GLENN. Mr. President, I rise today to support final passage of S. 1204, the Surface Transportation Efficiency Act of 1991.

Mr. President, I opposed the original version of this legislation as reported from committee. Without the modifying amendments adopted on the floor, I would have voted against it. During the past few weeks, I have attended numerous meetings and worked many hours to achieve equity for Ohio in the allocation of highway dollars. Without changes in the way Federal transportation funds are distributed, the States with the worst problems will continue to have the least money available to rectify those problems.

I strongly supported and voted for passage of Senator BYRD's amendment to distribute unspent money from the highway trust fund. This amendment will allow Ohio taxpayers for the first time to receive a dollar-for-dollar return on highway dollars sent to Washington. For too many years, Ohioans have carried the burden of paying high gas taxes, subsidizing new construction in other States, while transportation needs go unmet in our own State.

Mr. President, although Senator BYRD's amendment will provide equity for donor States by spending out money from the highway trust fund, the basic formulas underlying the apportionment of highway funds remain unchanged in the reauthorization bill. These outdated and unfair formulas resulted in Ohio receiving about 80 cents of each highway tax dollar for many years.

Mr. President, three decades ago, when the Federal Highway Program was initiated, it was necessary for our national commerce, transportation, and defense needs for certain wealthier States to contribute to interstate construction in larger, less populated States. For these reasons, formulas were established to support this construction, which was in the national interest. Now, however, the National Interstate System is some 98 percent completed; yet, the bill reported by the committee retains the same antiquated formulas. Unfortunately, the amendment to revise these formulas was not successful; however, I and my colleagues representing the donor States will continue to work toward this objective.

The Surface Transportation Efficiency Act is a far-reaching and forward looking measure. For the first time, greater flexibility and increased local input in the allocation of Federal transportation funds will be allowed. This flexibility will enable my State to direct these funds to mass transit and rail needs as well as other transportation projects. As a long time supporter of mass transit, I am pleased that Cleveland, Toledo, Columbus, and other cities in Ohio can now target Federal funds to their greatest transportation needs.

Mr. President, this legislation also contains provisions controlling the expansion of the use of longer and heavier combination vehicles. A very large number of Ohioans have contacted me to express their fears about sharing the highway with these vehicles, and I support the inclusion of the limitation in this bill.

Although I believe greater progress could have been made, I am satisfied that the bill as modified is a positive step. Therefore, I support the passage of S. 1204 and urge my colleagues to join me in voting for it.

Mr. KERREY. Mr. President, today I want to express my support for the Surface Transportation Efficiency Act of 1991. I also want to commend Senator MOYNIHAN, who has crafted an innovative solution to address our country's transportation infrastructure problems. His solution recognizes that the various regions of the country have differing needs and problems. Each State and qualifying metropolitan area will be granted a large degree of flexibility in the expenditure of its highway funds. As a former Governor, I appreciate the fact that each State's Governor will have a strong voice in setting the transportation priorities within his or her State. This approach frees us from fixed programs that do not have the flexibility to respond to changing needs.

This bill is of great value to all States because of the continuing importance of highways and byways to our Nation's economy and to everyday life. However, this legislation is at the same time more than just a highway bill, as it accommodates the diversity of transportation needs in a postinterstate construction era. Highways will continue to be an important part of such a system, particularly in Nebraska and other rural areas, but this bill also addresses mass transit, rail, magnetic levitation, and other innovative alternatives.

Listening to the debate this week, I have heard many Senators either criticize or praise the distribution formulas in this legislation. Every State would like to receive more. I know Nebraska would like to see more highway funds because our State has great needs. However, we also have to recognize that there is no perfect balance if at the same time we want to guarantee a national transportation infrastructure. Therefore, I want to commend the committee on its efforts to balance scarce resources.

I look forward to working with Senator EXON, Nebraska's Governor Nelson and others in the State to implement a transportation program that meets Nebraska's changing and growing needs.

RECYCLING ABANDONED MANUFACTURING FACILITIES

Mr. MOYNIHAN. Mr. President, I am pleased to cosponsor this amendment offered by the committee on behalf of the junior Senator from Vermont. The amendment requires the Department of Transportation to conduct a 1-year study on the obstacles to and the plausibility of reusing abandoned manufacturing facilities and sites.

From steel mills in the Monongahela Valley and textile mills in New England and the Old South to machine shops along the Great Lakes and mining operations in the West, abandoned manufacturing facilities represent wasted resources and diminished com-

munities. But they could underpin regional economic rebirth.

In most instances, these facilities are linked already to the necessary transportation infrastructure. Reusing them will reduce industrial sprawl and the need for new, expensive infrastructure projects.

Mr. President, it so happens that Senator JEFFORDS and I are cochairman of the Northeast-Midwest Senate Coalition. The amendment we are offering dovetails with efforts the nonpartisan, nonprofit Northeast-Midwest Institute has undertaken to research and promote industrial reuse. The institute convened a conference on the subject just last Friday, June 14, in Chicago. It is an exciting project, with important ramifications for our older, Frost Belt States, but for the rest of the Nation, as well.

Charles Bartsch and Carol Andress, two senior policy analysts at the Northeast-Midwest Institute, have written two particularly cogent articles about the promises and problems of industrial reuse for the Northeast-Midwest Economic Review. I ask unanimous consent that the articles, "Recycling Buildings" and "Common Ground" be printed in the RECORD following my remarks.

There being no objection, the articles were ordered to be printed in the RECORD, as follows:

RECYCLING BUILDINGS

(By Carol Andress, Charles Bartsch, and Lynn Bock)

In many of the nation's older cities, both large and small, countless aging industrial and manufacturing structures sit virtually abandoned. They offer vivid testimony to the many economic changes that have taken place in our technologies and world markets. The situation is particularly visible within the major "rust belt" manufacturing concentrations like Cleveland's and Chicago's industrial waterways, Pittsburgh's Monongahela Valley, New England's old textile centers and Ohio's factory towns—Akron, Lima and Youngstown—each with their closed steel mills, machine shops, refineries, chemical plants and factories.

In addition to their historical and architectural value, many of these buildings and complexes embody resources that could be recycled. These structures have the potential to house today's emerging technologies and manufacturing methods, restoring not only the building and its environment but also the jobs and vitality of the community that surrounds them.

This point is an important one, Communiites were built around these once thriving industrial sites because people's economic security depended on the jobs created by them; reusing them could provide an anchor for efforts to bring back economic vitality to these areas.

The reuse potential of older, outmoded industrial complexes, however, involves much more than simply the physical problems of historic preservation. The issues that influence the reuse of industrial buildings are very complex. In addition to the exceedingly difficult technical, physical and economic problems of retrofitting older buildings to house new processes, there are very serious environmental difficulties. Refineries, factories and other heavy industrial uses—especially those that began operating in the early part of the century—were not gentle on the land. In fact, these operations often resulted in toxic contamination of the surrounding air, water and land.

Addressing this decades-old contamination presents unique problems and uncertainties that further complicate restoration efforts. The extent of environmental contamination is often unknown, making it difficult to estimate the resources and time needed for cleanup. Additional costs and delays resulting from cleanup and regulatory procedures can significantly reduce the attractiveness of a site or structure. Undefined risks and potential liabilities associated with environmental contamination also make lenders unwilling to finance projects. Furthermore, contaminated sites often carry a negative public image that can be difficult to change, causing problems even after restoration when the property is sold or leased.

These obsolete and rusting hulks also send a not-too-subtle message of failure. Industrial and business developers see dereliction and despair. Local officials and civic leaders, often oblivious to the possibilities, see the challenges as too great, Better to bulldoze or, as is most often the case, forget these unused complexes and build elsewhere. This attitude supports industrial sprawl and leaves communities with visible images of economic and physical decay. It also encourages abandonment of important historic and physical resources and, most importantly, allows environmental contamination to continue unchecked.

The circumstances in influencing industrial site conversions and reuse have changed substantially—and often for the worse—in recent years. Because so little literature now exists that takes these changes into consideration, policymakers and practitioners have a great need for a solid research effort to reflect the new realities of industrial property reuse.

A number of areas require research and analysis:

The magnitude of the problem. The difficulties with reusing old industrial sites have already been defined in broad terms, but it needs to be determined how widespread they are, the costs they would entail and to what extent the economic development potential of older industrial facilities is impeded by those difficulties. This research would document the magnitude of the problems and the implications for the environmental and economic vitality of "rust belt" communities.

The most serious obstacles to reuse. Although each project will probably encounter its own unique problems, most rehabilitation efforts face many of the same difficulties. These might include:

Environmental dilemmas of workplace cleanup—including those which affect project financing and marketability;

Lack of clearly specified procedure for assessing risks and prescribing a definitive course of action for cleanup;

Lenthy, complicated and poorly coordinated processes for environmental review and cleanup certification;

Facility adaptation and siting obstacles that deter the introduction of new technologies or operations to old buildings.

Developers and financiers contend that these problems unnecessarily increase the amount of time and cost of a cleanup, and make reuse of older industrial sites less economically feasible. In addition, these problems have forced a growing number of jurisdictions to re-evaluate their role as economic development catalyst in older neighborhoods formerly dominated by manufacturing concerns. Real or suspected environmental problems—and their accompanying risks and liabilities—have made local leaders reluctant to proceed with many redevelopment projects.

Examples of successful industrial reuse projects. This research would analyze state and local initiatives that may have been tapped, how adaptive reuse of facilities was planned and carried out, how compliance with regulatory processes and reviews was achieved, how difficulties in the actual cleanup were overcome, the types of marketing strategies that best served the project, and other factors. These examples could serve as useful models for other jurisdictions.

The problems associated with industrial reuse are daunting, and solutions will be diverse and complex. These might include:

Devising a rational environmental review process with clearly defined steps and timetables that could win acceptance by government and the public—one which could help turn environmental risks and unknowns into certainties;

Adopting tax code or other incentives—especially those linked to the property rather than the owner—that would encourage cleanup of older, contaminated facilities and new investment in them;

Adopting initiatives to reduce lenders' risk or exposure;

Encouraging consistency in cleanup standards; and

Providing government agencies with the necessary resources to build capacity to carry out their mission in a responsible and timely manner and work constructively with private developers, the public and local government in their efforts to spark reuse of old industrial structures.

The federal government has an important role to play in addressing this issue, the Community Development Block Grant program could be part of its answer. The program is the best and most useful source of federal funding to encourage the renovation of older and historically significant structures. CDBG resources can be used to finance the rehabilitation of privately owned buildings and sites, covering specific costs related to labor, materials and construction or renovation. They also can pay for services such as counseling, preparation of work specifications, loan processing and inspections. Therefore, block grant funds are particularly well-suited to the "new generation" of industrial site reuse projects, which require a much stronger focus on environmental concerns. The wide range of eligible uses and the ability to use CDBG funds for grants, loans, loan guarantees and technical assistance makes the program a highly versatile way to stimulate private investments.

Clearly, using CDBG resources to spur the development of deteriorated, often contaminated sites would be appropriate. In addition to creating new economic opportunities for low- and moderate-income and economically disadvantaged persons, such a use would help eliminate blight by helping correct conditions detrimental to public health and safety.

In order to contribute to a better understanding of this complex issue, draw public attention to the problem, and develop broad-based support for its resolution, the Northeast-Midwest Institute plans to conduct research, hold a conference, and issue reports

and related materials to a wide audience. The project will explore potential solutions such as financial and tax incentives to stimulate private investment, programs to address cleanup issues, processes that turn environmental risks into certainties, and economic development strategies that incorporate existing physical assets to promote community revitalization.

The conference will bring together preservationists, state and local economic and industrial development officials, private-sector facilities and siting managers, financiers, real estate agents, developers and brokers, owners of obsolete or derelict facilities (corporations, lending institutions, governmental bodies), community development corporations, labor unions, planners, environmentalists, elected officials and other public policymakers.

A successful and well-publicized conference will go a long way toward gaining public attention and awareness of this issue. But more is needed. Consequently, the Institute envisions this project—the conference, the research that leads up to it, the publications and news media attention that comes out of it—as part of a longer range strategy to encourage policies and initiatives that deal constructively with environmental, financial, and preservation problems that inhibit industrial reuse.

COMMON GROUND

(By Charles Bartsch and Carol Andress)

Across the United States, cities and towns of all sizes are sprinkled—and sometimes deluged—with abandoned industrial sites, reminders of the changing nature of national and regional economies. Factories, mills and machine shops that once housed thriving operations lie underused or empty.

Returning these sites to productive use does more than create jobs and tax revenues; it produces social, environmental, and aesthetic benefits.

But despite the redevelopment potential of these sites and the desire to get on with the task, serious obstacles impede progress. Chief among these is environmental contamination of the land and buildings on these sites. Uncertainties about the costs of cleanup, liabilities and the means to identify and remove contamination, coupled with declining public-sector support for development programs, dissuade many developers from undertaking cleanup and renovation. Recent judicial rulings about the extent of liabilities further cloud the situation.

In many situations, though, public and private leaders can frame strategies to make sure that the benefits of reuse outweigh the problems. To further that process, the Northeast-Midwest Institute is convening a "New Life for Old Buildings" conference in Chicago.

The conference is designed to inform businesses and communities on how these difficulties can be overcome in an economically viable manner that brings long-term benefits to the community and the environment. In bringing together diverse vantage points on this issue, the Institute hopes to draw attention to the connections among economic development, environmental restoration and site preservation.

The actual number of underused or abandoned industrial complexes is difficult to tally. The problems that typically plague these facilities, such as structural deterioration and environmental contamination, are virtually impossible to quantify and compare. What is certain, however, is that communities that allow such properties to remain inactive lose the tax revenue and jobs generated by thriving operations and suffer from continued contamination.

Developers have converted industrial complexes from San Francisco to Boston to Akron into hotels, retail centers, museums and festival markets. In Jersey City, N.J., for example, developers saved the Dixon/Ticonderoga pencil factory, giving it new life as an apartment complex.

However, the economic future of site reuse cannot depend solely on residential or commercial adaptations; a "boutiquing" strategy is not the best base on which to revive a local economy. Ideally, some of today's emerging technologies and manufacturing enterprises could be accommodated in older facilities, bringing back jobs and providing the resources needed to restore the buildings and property.

Older facilities in inner cities can provide affordable space for new and small enterprises that cannot pay for space in newly constructed suburban business parks or high-rent commercial areas. Some old factory sites have been successfully revamped as small-business incubators. Large, often architecturally significant structures can become anchors for other redevelopment efforts.

For example, the New Jersey Economic Development Authority redeveloped a 106-acre tract in Elizabeth, site of Singer's largest sewing machine factory. After cleanup and improvements to the structures, the property was subdivided and sold. The site now houses nine new companies employing over 1,500 persons.

FACTORS INHIBITING REUSE

It is well known that factories, steel mills and other industrial facilities pollute the land, water and air; they have for decades. What is new is public awareness of the health and environmental risks and recognition that pollutants must be cleaned up.

The existence of serious contamination at many sites and a trend toward stricter environmental laws deters efforts to reuse old industrial sites. Under the Comprehensive Environmental Response, Compensation, and Liability Act—the Superfund law—enacted in 1980, present owners are responsible for the costs of cleanup even if they did not cause the pollution. Because of these liabilities, prospective purchasers usually require that the property be cleaned up before they buy or lease it. Unfortunately, cleanup is rarely easy or inexpensive, and it triggers a web of technical and legal tangles.

Cleanup adds to the costs of the redevelopment project—depending on the extent and type of contamination, sometimes millions of dollars. Cleanup also requires time, delaying project completion by months and even years.

Nevertheless, the contamination must be addressed. However, well-intentioned developers face a host of uncertainties that complicate clean-up efforts.

UNCERTAIN LIABILITIES

Uncertainty about environmental liabilities also affects a firm's ability to secure financing for a project. At issue is the extent to which lenders, as potential owners or operators of a facility, are liable for the costs of cleanup should they assume title through foreclosure.

Concerns about the impact of lender liabilities on real estate transactions and loans to small businesses have prompted recent congressional proposals to broaden the CERCLA exemptions for lenders. According to testimony in support of these proposals, liabilities are affecting both loans for purchase of potentially polluted property and investment in businesses that may occupy the site in the future. Companies that buy reclaimed factories are finding it nearly impossible to obtain financing if their only collateral is the property itself.

However, making the lender liable in some instances serves a valuable role in ensuring that contamination is identified and cleaned up and that borrowers stay clean. The lender's stick is quick and direct: If the property is not cleaned, no money is loaned. An exemption that is too broad may encourage bad lending practices and discourage private-sector cleanups. Clarification of liabilities, rather than exemption, may be sufficient to calm lenders' fears.

Testifying before Congress, Environmental Protection Agency officials have emphasized that the agency does not want "to discourage unduly the redevelopment of old industrial property." EPA recognizes that CERCLA liability needs to be "as certain and predictable as possible."

To that end, EPA has drafted guidance for lenders on the definition of "participation in management." It remains to be seen whether the guidance, currently undergoing review by the Office of Management and Budget, sufficiently balances lenders' concerns with the need to ensure adequate cleanup.

UNCERTAIN PROCESS

There is considerable confusion among public and private leaders over the process for identifying and cleaning up contamination. In fact, the process gets more complicated every year as environmental laws are amended, regulations are modified, and courts reinterpret their applications. As one leading economic development official recently noted, most projects formerly did not involve lawyers until settlement; now the lawyer is often the first person on site.

Investors, public-sector development officials and project developers also are nervous about the lack of guidance on how to protect themselves from liabilities. Prospective owners may protect themselves under the "innocent landowner defense" added to CERCLA by Congress in 1986. To demonstrate their innocence, a property owner (or in the case of a lender, a potential property owner) must conduct "all appropriate inquiry" prior to acquiring the property. To date, however, neither EPA nor the courts has established guidelines that define "all appropriate inquiry." Instead, EPA has stated it will determine what is appropriate on a case-by-case basis.

Developers also fear that even when they clean a property to today's standards, they have no assurance it is enough; what is considered clean today may not be tomorrow. During the last 10 years, environmental laws have been enacted and amended and standards imposed, only to be changed in light of new pollution detection technologies and health concerns.

Such uncertainties affect cost projections for a site. New requirements could force developers to revise their cleanup plans midstream in the project. New detection systems could lead to discovery of previously unknown contamination that developers, as current owners, would be required to clean up.

Underused or abandoned industrial facilities are a national concern. They can be

found everywhere—in the nation's "rust-belt," southern textile and manufacturing centers, and mining centers in the West. They are evidence of significant changes in technology and world markets.

Writing in "Urban Land," real estate investor Robert Sheridan writes that "old factories offer significant investment opportunities" and that "reuse of the best from the past" can be economically worthwhile. But if industrial site reuse is to succeed in achieving its full potential as an economic recovery and growth initiative, then a national strategy for reuse must be framed that addresses investor and developer concerns in a way that is environmentally responsible.

No community benefits when entangled liabilities for a site actually allow contamination to worsen by preventing cleanup and reuse. No business or worker benefits when lender fears thwart investment in facility modernization or cleanup. No local, state or regional economy gains when sites remain dormant, existing infrastructure goes unused and nearby neighborhoods suffer from ongoing distress.

The increasing interplay between the economic and environmental arenas is emerging as one of the most prominent development issues of the 1990s. The obstacles to revitalizing old industrial facilities are formidable, but not insurmountable. The benefits can be considerable.

Mr. JEFFORDS. Mr. President, I rise at the present time to make one important point about my support for S. 1204, and to ask Senator MOYNIHAN whether he would be willing to respond to a question about the intent of this legislation.

Mr. President, as this body well knows, the Nation presently faces a challenge of great magnitude, a challenge that must be met in order to preserve for future generations the tangible evidence of the greatest conflict ever waged on American soil and arguably the most important, most defining event in American history—the Civil War. At the present time the sites where some of the great battles of this war were fought are virtually disappearing under housing developments, industrial parks, office complexes, and highways. For example, just 30 minutes from this Capitol, the site where the Battle of Chantilly was waged in late summer, 1862, and where two heroic Union generals, Philip Kearny and Isaac Stevens, fell, today lies buried beneath row upon row of townhouses. Similar fates have met the sites of the battles of Selma in Alabama, Peachtree Creek in Georgia, Franklin in Tennessee, Rich Mountain in West Virginia, and many others.

Perhaps more importantly, even a greater number of battlefields are today endangered by development. For example, on rolling land not 2 hours southwest of this Capitol, the site of the most significant cavalry battle of the war, at Brandy Station, now lies threatened by planned development in the form of housing and an industrial park. This is so, despite the fact that this battlefield has been designated as eligible for listing on the National Register of Historic Sites. The sites of several battles in the lower Shenandoah Valley face a similar threat, as do many others.

In recognition of the threat facing these important sites, the Congress last year created the Civil War Sites Advisory Commission and charged it with the responsibility of identifying threatened Civil War sites and assisting in developing a national policy to save these endangered places for the benefit of future generations. The members of the panel have recently been appointed and are ready to begin their work.

Nevertheless, the march of development continues, in many cases with the aid of highway funds allocated to the States by the Federal Government. In these cases, funds provided through the Federal Highway Assistance Act—to build new roads into undeveloped areas, and to widen those extant to carry additional traffic—encourages this development and in many cases makes it possible. So, the truth is, on one hand the Nation has recognized that these historic sites must be preserved, while on the other it has encouraged their demise through the Federal Highway Assistance Act. This conflict must end.

To this end, it is my belief and understanding that the metropolitan and statewide planning processes required under S. 1204 include, as a core element, consideration of the impact of any potential or proposed highway projects on the Civil War battlefield sites that are listed or eligible for listing on the National Register of Historic Places.

By this I mean more than the cases where a highway is actually planned to run across such a battlefield—in such instances section 4(f) of the act already provides that that highway may not be built unless there is no feasible or prudent alternative to doing so. Instead, I refer to cases where the highway project may or may not be located on the battlefield site, but may be expected to encourage, increase, or accelerate development on that site, and where that development is of such a nature or magnitude that it may cause a significant loss or destruction of the historic qualities of that site. It is these sites that need and deserve protection from the effects of highway development, and it is these sites that should not be destroyed with the assistance of Federal highway funds.

Based on these concerns, I would like to ask the distinguished floor manager the following questions: Is it correct that the intent of this bill is to foster coordinated, comprehensive metropolitan and statewide planning processes, and such plans, as developed, should expressly include consideration of the overall social, economic and environmental effects of transportation decisions?

Mr. MOYNIHAN. Yes. Deliberate, comprehensive planning is to be an important part of transportation policies.

Mr. JEFFORDS. If such effects include, for example, the potential to encourage, increase, or accelerate development on nearby Civil War battlefields, should the planning process consider alternatives which would minimize adverse development effects similar to environmental reviews under the National Environmental Policy Act [NEPA]?

Mr. MOYNIHAN. The State planning process should reveal all aspects of specific transportation initiatives so that all parties have a full understanding of the implications of their choices.

Mr. JEFFORDS. It is the Senator's feeling that the Secretary shall consider the sufficiency of such planning in determining whether States and local governments are in compliance with the act?

Mr. MOYNIHAN. The Secretary of Transportation is indeed required to assure that each metropolitan planning organization is carrying out its responsibilities under the act.

Mr. JEFFORDS. I thank the distinguished floor manager.

Mr. BIDEN. When the 102d Congress convened in January, extending and rewriting Federal highway programs was high on the legislative agenda. With today's passage of the bill, the Senate keeps with the wishes of many States that highway legislation not become bogged down, as has happened in years past, at a tremendous cost of transportation planning.

The public knows the highway bill for the funding it provides for construction and maintenance of the massive interstate road system. But under the leadership of Senator MOYNIHAN, the Senate really never considered what could strictly be called a highway bill. Instead, the focus, rightly in my view, shifted from highway pavement to the people driving on it. Much more attention will be paid to improving the means by which our Nation moves about, not just on longer trips that take us onto the Interstate System, but also on our daily trips on primary and secondary highways.

The shift in focus was evident from the start. In 1987, the highway bill was termed the Surface Transportation Act. The title of the bill before the Senate this year adds one word—efficiency—but that one addition represents the transition that the Senate is supporting through this bill.

For decades, effective highway transportation meant building enough lanes to stay ahead of the numbers of cars that wanted to clog them. But we have passed the point of diminishing returns on that approach. In parts of Delaware, other Northeast States, and even portions of the West, we have reached the limit of benefits that highway lane additions can provide. New concrete is in-

creasingly difficult to find room for, is increasingly expensive, and has too often proven to have a short lifespan of effectiveness.

We have found that commuters abhor a vacuum on the highway, and they will rush to fill them when they appear. Construction of ever wider highways too often means only broader and more impressive traffic jams, not relief from them.

As the details of this bill make clear, we must find ways to move our citizens more efficiently, and that demands flexibility. There is no single answer to traffic and transportation problems; solutions that work for one area of Delaware will not work in other parts of the State. Variance in solutions among the States is even greater. No Federal legislation could hope to establish a fixed formula that would work for all.

The bill before us attempts to balance those conflicting interests, and a dozen others. Tremendous discretion is granted to each of the States, yet limits are included so our national system of interconnected highways remains intact and effective. Highway expansion can be funded in those areas where it is truly needed, but incentives for States to make more effective use of existing resources are included. One fundamental purpose of the bill is to make car travel—the largest single source of air pollution in the country—more comfortable, but it also has strong provisions that reflect requirements of the Clean Air Act amendments passed last year.

As we moved toward debate on this bill, the defining event, signaling the need for a break from past policies, is the impending completion of the 44,000-mile Interstate Highway System. While that event could be viewed simply as a turning point from construction to maintenance, it also parallels a development on the local level I described earlier—the recognition that new lanes have to be viewed as a declining solution to traffic problems.

The difficulty of reorienting a program as massive as the highway program proved to be of secondary difficulty to allocating the funds to put the new approach to work. It was this fight that threatened to turn our National Highway System into 50 highway systems that simply abut each other. Flexibility is important, but it cannot make up for the overall shortage of funds that States feel they are victims of. Indeed, every State is truly short of highway funds. However, retreat to a balkanized funding system is not the way to assure a strong National Highway System.

We in Delaware are well aware of the costs of a good transportation system. Last year, one of the most discussed issues in my State was the need to construct a new bridge over the Chesapeake and Delaware Canal near the town of St. Georges. This bridge is the main connector for north-south traffic in the State and the Delmarva Peninsula. Replacing the St. Georges Bridge is estimated to cost $115 million.

This was Delaware's advance example of the cost of a good, reliable transportation system. The $115 million of the St. Georges Bridge represents 2 years of total Federal highway funding for Delaware. But as large as this single cost is, the issue cannot be ignored. The cost of inaction is much higher.

Because of certain long-held responsibilities of the Federal Government, Delawareans will not be faced with the choice of economic strangulation of the southern portion of the State or a huge financial burden to build a new bridge. But in many less obvious ways, that choice is one faced by Delaware and every other State each year. Transportation planners must either seek expanded funds to invest in improved transportation conditions or certain sectors of the economy will suffer delays and deteriorating conditions. Too often, there is not enough to fend off economic harm.

Our Nation's transportation needs are astounding. Highway system requirements are measured not in billions or tens of billions of dollars, but nearly half a trillion dollars in maintenance expenses over the next decade and a half.

This bill calls for over $110 billion in highway spending during the next 5 years. The figure is huge, but it is only one-third of what Federal officials estimate is needed during that time. But as Delaware recognized with the St. Georges Bridge, inaction is no solution.

For the result of inaction is immobility. As an example, Americans spend over 2 billion hours stuck in traffic every year. To put that total in more practical terms, it is wasted time for salesmen, truckers, repairmen, delivery vehicles, and hundreds of other types of workers across the Nation. Those delays cost our Nation over $35 billion annually in lost productivity.

So when talk turns to the monstrous size of the 1991 Surface Transportation Efficiency Act—and the numbers truly are imposing—it must be kept in mind that no one believes they approach what our Nation needs. This bill increases the flexibility of how transportation funds can be spent, but that flexibility cannot fill the chasm between resources and demands.

Reconciling the conflict between costs and benefits of transportation programs may well prove to be the next big hurdle to clear in maintaining our transportation infrastructure system. The public is conscious of the role of good transportation in everyday life, yet appears unable to connect that to the broader perspective of the cost of the program and the inescapable need to maintain a good transportation system. That is why many may be stunned by the size of this program, yet frustrated by traffic tieups, potholed roads, and detours.

I commend the Senator from New York for his leadership in reforming Federal highway and transportation programs to reflect changing conditions and the lessons we have learned from earlier programs. I hope we can continue the pace of action on this important bill so Delaware, like every other State, can start to plan with confidence its future efforts to fix traffic problems.

Mr. MCCONNELL. Mr. President, when I spoke on the highway bill last Wednesday, I indicated my reluctance to support a bill that was inherently unfair to donor States like Kentucky. However, with the adoption of the Byrd-Mitchell-Bentsen compromise amendment, which I strongly supported, this legislation now provides my State with additional highway funding.

With the new funding allocations and the changes that have been made in the bill over the last couple of days, I believe that I can now support this bill. It is estimated that Kentucky, over the life of this legislation, will be able to receive an additional $147 million and by 1996 will be getting back $1 for every dollar contributed to the trust fund because of the bonus apportionment.

However, I would like to make it clear that I am very concerned that we still have the same flawed allocation formulas. The Byrd-Mitchell-Bentsen compromise simply gives donor States a bonus which will raise funding to a more equitable level. For this reason, I voted yesterday for Senator GRAHAM's FAST amendment which would have changed the funding formulas in the Moynihan bill. Although this amendment was defeated by a vote of 57 to 41, I believe this sends a strong message to the House of Representatives that a number of States are concerned about the old formulas.

In closing, I will vote for this bill warts and all. While the basic problem for donor States still exists, I am pleased that Kentucky will be receiving a more reasonable return on its tax dollars. It is my hope that, when the Senate goes into conference with the House, changes will be made to make the highway bill even stronger for our entire country. I will closely monitor the highway bill as it moves through Congress and will reserve the right to reconsider my position if the final product is not a balanced bill for Kentucky and the Nation.

Mr. MACK. Mr. President, this fight is over fair share. During this week and the last, the Senate has been working on a nearly $120 billion transportation package. We will reauthorize our surface transportation programs for another 5 years and embark on the beginning of the postinterstate era.

Yet while we start a new chapter in American transportation, we are not

completely leaving the past. We will be allocating the majority of this nearly $120 billion through outdated means. Formulas that were partially written before the construction of our Interstate System will allocate billions over the next five years. Formulas that many of my colleagues here agree, do not fairly apportion funds from the highway trust fund. This is why I must cast my vote in opposition to final passage of the Surface Transportation Efficiency Act of 1991.

Florida is one of the leading donor States. Between 1986 and 1990, Florida contributed $788 million more than it received from the highway trust fund. $788 Million! According to the Florida Department of Transportation, our average return on each dollar contributed fell to an all-time low in 1990 of 53 cents. Florida's average return since the inception of the highway trust fund in 1956 is 80 cents per dollar contributed. Floridians had been hoping the highway roberry of the last 35 years would be corrected during this reauthorization.

The Senate has failed in this respect. We had an opportunity to create a new funding formula. An equitable formula. A fair formula for all 50 States. Yet we are taking the easy way out by not addressing the issue of a new formula.

Instead, we will allocate funds by taking the average return to each State from 1987 through 1991 and use it as a base for distributing funds for 1992 through 1996. According to the Senate Environment and Public Works Committee, Florida has the lowest average return for the 5-year period used as a base in the committee's bill. Florida's return ranks 50th, at 77 cents per dollar contributed.

We will be legislating the status quo, perpetuating our outdated allocation formulas for another five years. By doing this, we guarantee to be revisiting this issue once again in 1996.

The fight is over Florida's fair share. It is wrong to expect Florida taxpayers to foot the bill for highway needs of other States when we have our priorities. Thousands of people are moving to Florida every week to live in our sunshine and admire our State's natural beauty. Yet, the Federal bureaucracy refuses to understand that we need to improve our highways to keep pace with our tremendous growth.

The Byrd amendment does not correct the current situation. While it may placate some of the donor States, it will not solve the current problems in the formula system. The Byrd amendment, as in the Moynihan bill, only delays the Senate from tackling the donor State issue. The Byrd amendment only bribes us with our own money, using gas tax dollars as leverage for adoption of the amendment.

In summary, the Byrd level of effort amendment: First, fails to recognize the total level of effort being expended in each State; and second, fails to recognize the increasingly complex State transportation financing mechanisms now in place.

The minimum allocation compromise which has been added to the Byrd amendment does not address the formula question at all. Simply adding $4.1 billion to minimum allocation States does not solve the fundamental problem at hand. I am skeptical of this paper promise to Florida and other States. No one can guarantee that most of the money authorized for fiscal years 1995 and 1996 will be available.

The Byrd amendment guarantees we will once again be at this problem, with the same battle lines drawn, at the next reauthorization of our transportation programs.

The best acknowledgement of the failure of the present system is the need for the minimum allocation system. Over $1 billion is distributed annually under the 85 percent minimum allocation system to make up for the current failure in our distribution formula. Minimum allocation could be abolished entirely if a fairer formula was adopted.

We had the opportunity to vote on a new and more equitable funding formula. The FAST [Federal-aid surface transportation] proposal, as every member of the Senate knows, will provide for a more equitable return for all States based on modern factors such as lane miles, vehicle miles traveled, and diesel fuel use. By eliminating the use of rural postal miles and intercity mail route mileage in the current highway formula, we can legislate a fair formula, equitable to all fifty States.

Forty-one Senators voted for FAST last night. Forty-one Senators, through their vote, said they wanted a fairer formula to distribute highway funds.

FAST would have provided a new formula to distribute funds on a more equitable basis, using the extensiveness of our highways (lane miles), the intensity of use of our highways (vehicle miles traveled), and commercial truck travel (diesel consumption) as the primary formula for the distribution of highway funds.

The Moynihan bill, through its 5-year average return for each State from the highway trust fund from 1987 to 1991, does not address the need to create a new and more equitable formula. FAST created this needed formula.

Once FAST had been defeated, I offered an amendment to S. 1204 to authorize the use of the most recent census data when distributing base apportionments of the Surface Transportation Efficiency Act.

Under S. 1204, each State's base apportionments in accordance with the Surface Transportation Program would be equal to the State's average return from 1987–1991. But due to a quirk in the law, we would essentially be distributing funds to States through fiscal year 1996 based on those States' population in 1980.

According to the Federal Highway Administration, 15 percent of current highway formulas are based on population figures. These population figures are from the decennial census only, and are only updated every 10 years. Using population estimates prepared every 2 years by the Census Bureau, we can be more accurate in allocating highway funds than by only using decennial census data.

My amendment simply would have ordered the Secretary of Transportation to use the 1988 estimates and 1990 census to determine the population of States for the base years 1987–91 and use that information when distributing base apportionments.

The amendment did not change the proposed distribution formula. It merely allocated funding to the States to take into account demographic changes which are already estimated by the Census Bureau every 2 years. Approximately $80 million would be affected under my amendment, a very small amount when compared to the nearly $120 billion authorized in the bill.

My amendment to S. 1204 was one of fairness. Thirty-four Senators joined me in favor of the amendment, but 63 voted to prevent current census data from being used to distribute funds under the Moynihan bill.

Mr. President, the Senate has failed here tonight. We could have corrected the inequities of the present system. The Senate chose not to act. I can only hope the House will not run from this responsibility and will act to change our outdated highway funding formulas. If the House does not act, I will urge the President to veto the transportation bill when it reaches his desk.

Mr. SEYMOUR. Mr. President, it has been almost two full weeks since the majority leader brought S. 1204, the Surface Transportation Efficiency Act, to the floor. I rise today to lend some of my observations to this debate, and to discuss my views from a California perspective.

But first, Mr. President, I want to recognize the managers of the bill, Senators MOYNIHAN and SYMMS, and Senators BURDICK and CHAFEE, the distinguished chairman and ranking member of the Environment and Public Works Committee, for their hard work and dedication to our Nation's transportation infrastructure. Having observed the proceedings on this Floor over the past several days, I permit myself to say that they and the Senate leadership have been faced with the herculean task of sheparding this bill through the Senate, and they are owed great credit for their perserverance and effort to balance our Nation's transportation needs.

The bill before us addresses a broad range of issues vital to the health of

our Nation's transportation and economic infrastructure, and integrates a much-needed flexibility to the process.

Mr. President, anyone who has observed this debate has witnessed the emergence of a common theme: our Nation's transportation policy stands at a crossroads.

The work this Nation set out to accomplish when President Eisenhower called for the creation of an interstate highway system is largely completed. This program, the genesis of our modern transportation system, stretches across our Nation's landscape uniting a vast network of roads and bridges, linking our States and communities, our international borders and ports of entry, and our centers of commerce.

With this task—this first phase—completed, we now undertake the next phase in the process: making the current system work to its maximum potential. Let's start moving people, but not just across State lines or over vast distances. Rather, we must focus our attention and priorities to the growing needs of congested communities, and put the choice of how we are going to address these problems back into the hands of the local decisionmakers, the States and local governments.

I know that every member in this Chamber has had the opportunity at least once in his or her Senate career to visit California. Our gridlock is legend, and I am sure many members have had the opportunity to experience it firsthand. We see it daily right here in the Nation's Capital. In California, our work force spends a growing portion of their day in traffic, hindering productivity and contributing to decreasing air quality. During peak hours, some 6,000 miles of California's main roads are at a virtual standstill. And this situation is repeated in numerous States. No major urban center is immune from gridlock and its associated consequences.

The time is ripe for a new focus in our transportation policy, and the bill before us takes America down that road. I applaud the very substantive effort that has been made here to produce a bill that will help us put a dent in gridlock, and get the tools to move people into the hands of the people that can make the best decisions. The flexibility S. 1204 provides to the States and local planners will be instrumental to helping California address its growing transportation needs.

However, Mr. President, the new focus contemplated in this bill falls short of providing new and sensitive direction in the distribution of transportation dollars. Instead, the bill relies on an underlying formula which was implemented for the purposes of constructing the interstate system.

I am disappointed this bill to change California's role as a donor State. As a nation-State of 30 million residents and growing—we grew by some 26 percent during the 1980's—California can ill-afford a funding formula that will allow current allocation policies to continue.

Absent the Byrd language, S. 2104 makes no progress in this area. That is why I voted for the Byrd-Mitchell-Bentsen compromise. It promises to California—should it be fully funded—up to $959 million over the lifetime of this bill. California sorely needs this funding assistance, and I am sure of Senator BYRD'S commitment to seeing that this aspect of the bill receives full funding during the appropriations process.

I and other Senators representing the donor States would have preferred a wholesale departure from the committee's funding formulas. In my view, any serious attempt to take the country into the postinterstate phase must implement a postinterstate funding formula. If we are serious about changing the face of transportation policy, we must close the gap between donor States and recipient States and move toward a more equitable allocation of funding.

I share the very deep concerns our esteemed colleagues Senator BENTSEN, WARNER, GRAHAM, and BOND and others have expressed during the past few days. As a donor State, California has contributed some $5.2 billion more into the trust fund than we have received back. In the period from 1988 to 89, we contributed more than $400 million to recipient States.

In short, Californians are seeing one-way traffic in funding, and that traffic is leaving our State.

Mr. President, California recognizes its National responsibility. As a large State, we are prepared to lend a helping hand to the smaller, less populous States. Every donor State would prefer a dollar-for-dollar return, but this is an unrealistic expectation. We do not contest this fact. But the time has come to give us back a larger portion of our contributions so that we and the other donor States can indeed move into the postinterstate era and take care of our infrastructure problems back home.

We only ask for our fair share. Given Chairman BYRD'S leadership, I anticipate additional funds that California and the donor States so desperately need will be forthcoming in the outyears.

It makes no sense that those States where the growth rates are highest and congestion is the worst must continue to be held hostage to such a large imbalance in funding.

Quite simply, Mr. President, the donor States have sounded out the message that the status quo is no longer acceptable. The fact that the Graham amendment secured 41 votes is ample evidence of this. Our needs are too great. And these needs will go wanting if we cannot expect a more fair and equitable funding formula.

We have made progress during this debate, and it can be said that the Senate has worked its will. But I sincerely hope our colleagues in the House will employ a more equitable formula so that a final conference agreement will indeed build upon the progress made by the donor States during this debate.

A NEW ROAD IN TRANSPORTATION POLICY

Mr. LAUTENBERG. Mr. President, I rise in strong support of the passage of the Surface Transportation Efficiency Act of 1991.

In doing so, I want to again commend the leadership of my good friend from New York, Senator MOYNIHAN. By shepherding this bill through the committee and now through consideration by the full Senate, he has accomplished a monumental task. It has been with the leadership and assistance of our distinguished committee chairman, Senator BURDICK, that this has been possible. I also want to give credit to the Republican manager, Senator SYMMS for his efforts, and to Senator CHAFEE, the committee's ranking minority member.

This is legislation that we can all be proud of. It is no mere extension of the same old highway bills that this Nation has seen for the last 35 years. It is innovative. It is creative. And, it is responsive to the diverse needs of every region of this country.

As I said when we took up consideraton of the legislation 2 weeks ago, the cornerstone of the bill is its flexibility. That flexibility is essential if we are going to give States the tools they need to address their transportation needs, and meet national goals. I say that because, if there is one thing that is becoming more and more evident over the course of developing the concepts behind this legislation, its that local actions and national goals are inextricably linked.

Providing better mass transit in New Jersey is not just for the benefit of Newark, Trenton, Camden, or the Hudson waterfront. It helps improve the productivity of a vast work force. It helps our State, and our region, work toward compliance with clean air goals. Those are national goals and, the Nation benefits when we achieve them. But we must achieve them on the local level.

NATIONAL HIGHWAY SYSTEM

One change made to this bill during floor consideration is the addition of a set-aside of funding for a national highway system. I had some concerns about this, because it is, on its face, contradictory to the underlying flexibility of this bill. I take a back seat to no one in supporting an efficient, well-maintained system of roads for our Nation. We need a national system of roads.

Whether we give it a name or not, there effectively is and will be a national highway system. That is because every State, every region, has a vital economic interest in maintaining a core system of highways.

And, in the bill reported by the committee, we had already accounted for this; $14 billion is set aside for maintenance of the Interstate System, the backbone of any national highway system. Beyond that, we would have left it up to the States to maintain their crucial roads.

Now, some fear that States will run amok with new found authority, this flexibility. They fear that primary roads will be neglected. But, Mr. President, that is just not a realistic fear. Even in a State like New Jersey, where more transit is needed, the State will not—and it realistically cannot—ignore these major arteries, upon which so much of its economy is based.

So, Mr. President, I would say that, in effect, we already do have, and will continue to have, a national highway system. But, to have set aside a major share of the surface transportation program [STP] funds, as some proposed with the administration's encouragement, for a system to be designated at some point in the future by the Department of Transportation, would have flown in the face of the most progressive policy aspect of this bill: its flexibility, and in turn, the ability of States to use that flexibility to most effectively meet their transportation needs.

It is ironic: time after time, we hear the administration call for less big Government. "Let the States decide," they say. "States know best what they need," they say.

Well, in this bill, we agree. We would let State and local governments have the choice, the flexibility to use their funds as they see fit. And now, the administration does not seem to trust the States anymore. It wants to make the decisions here in Washington, not out in the States.

Well, I am ready to trust New Jersey. The other members of our committee trust their States. And, this trust, this flexibility, is at the core of our bill.

Our bill recognizes that transportation needs around the country are different: Idaho is different from New York; North Dakota is different from New Jersey. Well, even northern New Jersey is different from southern New Jersey.

The flexibility in our bill is the key to addressing those differences. Requiring a substantial set-aside of the STP would significantly reduce that flexibility. It would take away the flexibility that is so desperately needed by States like New Jersey to meet its clean air goals; goals that the President endorsed just last year.

I could not support that. If we are going to give States flexibility, and I think all of us here want to, we need to give them enough flexibility to let them do the job that needs doing.

The proposal ultimately adopted by the Senate, which sets aside 17.5 percent of STP funds, retains that flexibility, while meeting concerns that States would ignore their principal arterials. It does not undermine the goals of this bill.

LONGER COMBINATION VEHICLES

I am also pleased to note that the Senate adopted an amendment by Senator EXON and myself freezing the allowable lengths of longer combination vehicles, or LCV's. This amendment complements the provision I sponsored in the committee-reported bill freezing the use of LCV's, based on weight.

With these two provisions, we have closed off any more interstates to LCV's. If this amendment becomes law, and I believe that there is strong support for it in the House, the average driver in New Jersey, Connecticut, Maryland, and the many other States not now allowing LCV's, will not have to face the prospect of sharing the road with a truck weighing 70 tons and measuring well over 100 feet long.

INTELLIGENT VEHICLE AND HIGHWAY SYSTEMS

As I noted in my opening statement, this bill also contains my legislation to authorize a comprehensive Federal program on intelligent vehicle-highway systems [IVHS]. As borne out by a recent GAO report, I believe that IVHS holds tremendous promise for easing traffic congestion, and associated problems. As I have discussed here on the floor with the distinguished manager, it can help to significantly improve the productivity of our highway systems. And, it can add capacity to our existing systems, without having to pour more concrete. I am pleased that the Senate is approving my IVHS provision, and am pleased at the prospect of seeing IVHS incorporated as an integral part of our Nation's surface transportation systems.

Mr. President, there are two other provisions in the Environment and Public Works Committee portion of this bill that I sponsored, and want to note here.

NON-FEDERAL TOLL FACILITIES

First, section 123 allows States to be credited with expenditures on non-Federal toll facilities in meeting their Federal match requirements.

A number of States have constructed, without Federal assistance, transportation facilities that contribute significantly to the Nation's interstate commerce network. Although these facilities, such as the New Jersey Turnpike, are essential to interstate commerce, funds committed to build, maintain, or improve such facilities are currently not considered as part of a State's non-Federal capital spending for matching share requirements. Revenues generated for capital purposes through tolls or the fare box on those facilities may, in some cases, exceed the revenues generated by the State through its motor fuel taxes. In the case of New Jersey, the State raises approximately $425 million annually in tolls on its three major toll roads: the New Jersey Turnpike, the Garden State Parkway, and the Atlantic City Expressway.

This section would, in an effort to promote innovative financing of infrastructure improvements, allow States to use that spending in meeting non-Federal match requirements. It would not make additional Federal funds, above those for which the State would otherwise be eligible, available; the intent is to take into account more of a State's non-Federal transportation efforts than has to date been recognized, and allow States like New Jersey to make more effective, coordinated use of its resources.

PEDESTRIAN PARKS BRIDGES

The second provision is a less far reaching, but important change in current law. It amends the definition of a "park road," to include a pedestrian bridge. The reason for doing this is to allow such a bridge, that would connect the newly renovated Ellis Island Immigration Museum with Liberty State Park in Jersey City, NJ, to be funded under the Federal Parks Road Program. Under the current program, the Federal Highway Administration does not normally allow pedestrian bridges to be funded with this money. But, in this case, there is no alternative means of reaching Ellis Island, except by ferry. That system has, to date, been too expensive and too inconvenient to adequately serve the many Americans who want to revisit their heritage at Ellis Island. With this provision, a pedestrian bridge could be built with Federal funding.

Mr. President, this bill now also contains titles from the Commerce Committee and Banking Committee. I would like to make note of a few provisions in those titles.

DRUNK DRIVING

Over the years, I have worked with my colleagues on the Commerce Committee on important highway safety legislation. A focus of my efforts has been on combating drunk driving. We have made significant progress in that battle. But, more than 20,000 people continue to die each year in alcohol-related crashes. We have to do more to curb that senseless slaughter on our highways.

The Commerce Committee reported, as part of its contribution to its package, legislation to reauthorize and modify the section 410 program, which I authored in 1988. This program can have significant, lasting impacts on our national efforts to reduce drunk driving. Among the changes the Committee made to the program was to take into account the actual performance of a State in reducing drunk driving when awarding incentive grants. I sought this change, and support its inclusion. It represents an important advance that may help keep States like New Jersey heading in the right direction in fighting drunk driving.

MASS TRANSIT

Mr. President, I also want to commend Senator CRANSTON and his colleagues on the Banking Committee for their efforts to bring before this body a strong transit bill.

States like New Jersey depend on transit. It is an absolutely essential component of our transportation network.

We need to not only maintain, but also expand, our transit systems. Unfortunately, current policies of the Urban Mass Transportation Administration [UMTA] have actively discouraged the development of more transit capacity. The combination of the flexibility of the highway title of this bill and the changes contained in the transit title will help change this.

Among the major hurdles that areas seeking to build new transit systems have faced has been an UMTA policy of allowing only one new start per corridor. I do not believe that this is a wise policy. And, for the last few years, as chairman of the Transportation Appropriations Subcommittee, I have included a provision in the annual transportation bill to prevent UMTA from formalizing that policy into regulation. This has enabled two important projects in New Jersey to get underway: One that will connect Newark International Airport with downtown Newark and Elizabeth, NJ; and another to provide needed transit along the Hudson River waterfront. I am pleased to note that the Banking Committee included a comparable provision in the bill we are approving here today.

The transit title also makes other important changes in the criteria used to evaluate transit new starts. These changes would mean that more realistic factors are used in considering new systems. They will help level the field between transit and roads. A key provision would exempt new starts from burdensome administrative reviews when the projects are needed to carry out State implementation plans to meet clean air goals. This is essential for New Jersey, which finds itself in nonattainment of clean air standards, and will look to transit to help come into compliance.

SENIORS AND DISABLED TRANSPORTATION

This legislation also includes several provisions that were included in a bill I introduced earlier in the 102d Congress designed to improve transportation for senior citizens and disabled Americans.

When I introduced S. 1067, the Elderly and Handicapped Transportation Act, I noted that the section 16(B)(2) program, which provides capital funds for specialized transit to nonprofit organizations who provide transportation to seniors and the disabled, was underfunded and needed to be expanded. I think that members of the Banking Committee also recognized that the $35 million ceiling, that existed for the last 5 years, was creating situations where over 50 percent of the applicants for section 16(B)(2) were denied. This was the case for nonprofit organizations in New Jersey.

The transit title of this bill would almost double the amount of funds available under the section 16(B)(2) program for nonprofits to receive vehicles. While my bill called for higher authorization levels, I applaud the committee's effort to increase the program. This legislation also allows nonprofits to lease their vehicles to public agencies while they are not being used, in order to offset the rising costs of operating section 16(B)(2) vehicles. This was also a component of my legislation.

This new legislation will finally address a growing problem in our country. This problem is the lack of adequate transportation services for our Nation's senior citizens and disabled persons. While this program has been capped over the last 5 years, the need for such services has grown dramatically, especially among our senior citizens. The number of people over 60 years old will greatly increase over the next 20 years. Over half of all seniors in a recent Gallup Poll cited the lack of transportation services as a major obstacle in obtaining medical care. Mr. President, this legislation will allow our Nation's seniors and disabled access to vital social services.

In conclusion, Mr. President, in the package before us, we have a comprehensive surface transportation bill. It is a plan that can take this country through the 1990's and beyond, into the next century. I urge my colleagues to support it.

Mr. JEFFORDS. Mr. President, I wish to express my strong support for S. 1204, the Surface Transportation Efficiency Act of 1991. The leadership of the Environment and Public Works Committee—Senators BURDICK, CHAFEE, MOYNIHAN, and SYMMS—deserve credit for having devised a creative and effective program to address our changing transportation needs.

This bill provides more Federal money to address our pressing transportation infrastructure demands. It provides States greater flexibility to decide the best use of such funds, and it sets fair and reasonable matching formulas. Of particular interest to Vermont, the bill provides additional funds for bridges, including rural bridges.

In addition, the bill includes important new initiatives in mass transit, vehicle safety, and infrastructure preservation. As its title infers, it relies on the more efficient use of our existing system rather than increasing the size of the system. While Americans will continue to cherish the solitary pleasures of their automobile, this bill encourages HOV [high occupancy vehicle] lanes, buses, trains, and bikeways.

As expected, our floor debate has focused on funding formulas and how we will choose to divide gasoline tax revenues dedicated to the highway trust fund. It is important to realize that this bill spends the maximum amount of money available, consistent with current trust fund surpluses, projected receipts, and overall budget cap agreements.

As with other Federal programs, there will be States that fare better than others. But it is the integrity of the National System that is important. Money is one issue—and it will be settled in the end. Policy is another matter, and in this regard S. 1204 takes great strides.

Mr. President, this bill overhauls the current transportation category system to give States greater flexibility in programming transportation funds. This is appropriate; Vermont's transportation needs are as different from those of California as night is to day. Each State has different needs; each should have flexibility to choose its devices to satisfy these needs.

There are certain national objectives to be kept in mind, however. We depend on our transportation system to move people between destinations, whether it be for work or play. We also depend on this system to move goods to market, for the benefit of producers and consumers. From the beginning of this debate, the administration and Congress have agreed that all available Federal transportation funds, within the constraints of last year's budget agreement, should be spent for transportation purposes.

S. 1024 contains many policy changes that encourage the development of a safer and more efficient surface transportation system. For example, I support provisions of the bill to freeze the current size limits on large trucks. It is not at all clear that these vehicles pay their share of highway taxes. In adddition, I have concerns about the safety and environmental implications related to congestion and air pollution. While I respect and appreciate the people in the trucking industry, I am not convinced that bigger trucks are in the best interest of Vermont's truckers and note the opposition of the Teamsters Union.

On another matter, I was disappointed with the deletion of provisions related to visual pollution control—billboards. I continue to believe that this issue is misunderstood. Courts have consistently supported the constitutionality of the use of amortization to compensate billboard owners for the removal of nonconforming billboards. On the policy side, I support a moratorium on new billboards along Federal highways, and do not believe that we should clear-cut trees in order to preserve the vista of a billboard.

Be that as it may, the Senate voted to delete the billboard control section. I hope my friends in the House of Representatives will fare better. Vermont,

having banned such signs 20 years ago, continues to provide a haven for those seeking refuge from the cornicopia of commerce lining our roads.

The comprehensive planning provisions of the bill are also a very important component. Many people, when they think of planning, refer to big cities, interstate loops, and interconnecting rail and air facilities. This bill builds upon requirements of current law requiring metropolitan areas above 50,000 in population to undertake careful planning operations. Such plans must be particularly mindful of the recently passed Clean Air Act amendments, so that transportation policies will be coordinated with efforts to reduce air pollution.

Equally important, the bill strengthens requirements for States to undertake statewide planning processes, including consideration for rural areas. For States such as Vermont, with changing rural populations, thoughtful transportation planning in these areas is an important consideration. I am pleased that an amendment by Senator LEAHY and myself was accepted, which specifically requires involvement of locally elected officials in the State planning process. The bill also allows State planning funds to be distributed to localities, as the States deem appropriate.

While roads and bridges constitute the primary means of travel, the bill also commits funds for transportation enhancement activities which include a broad range of uses. Safety programs are an important component, including education programs, rescue efforts and rail-highway grade crossings. These are vital functions, for which the bill sets no specific minimums or maximum funding. I would hope that States move to increase, rather than decrease, funding levels in these important areas.

The bill recognizes that trucks and cars are not the only way to get between points A and B. S. 1204 provides an opportunity to fund projects to serve the world's most popular form of transportation—the human-powered bicycle. Greenways and bikepaths are defined as transportation enhancement activities and are included for funding under the bill. Vermont has made good use of past funds—Federal, State and private—and I support these efforts. Greenways and bikepaths provide opportunities for transportation and recreation in both urban and rural areas, and I hope that State and urban planning processes will fully appreciate such benefits.

In Vermont, for instance, our Trails and Greenways Council assists localities in designing and funding these linear parks, with the hope of interconnecting communities throughout the State. From the lakeside city of Burlington, to the mountainside town of Stowe, bikepaths and greenways are used and enjoyed by both residents and visitors alike.

Other permissible uses of funds, within certain constraints, include carpool projects, scenic and historic easements, removal of billboards, preservation of historic structures, archaeological planning, and mitigation of water pollution due to highway runoffs.

Part B of the bill establishes a "national recreational trails trust fund," into which gas tax receipts from nonhighway users will flow. Through State recreational trails advisory committees, these funds will then be available for State recreational trails. The program encourages cooperation between hikers and bikers, skiers and snowmobilers, walkers and runners.

I want to thank Senator SYMMS for the hard work that he has invested in making this program workable for all concerned. The Trails Act returns nonhighway funds to nonhighway uses, and fosters cooperation between users. The needs are great, and this dedicated trust fund, in addition to other existing funding mechanisms, will help to fulfill them.

But the bulk of the money provided by the bill, as it should, will be used toward our growing national transportation needs. In Vermont, as with other States, that equates to roads and bridges.

This bill provides $105 billion in funding over the next 5 years for transportation purposes. Recognizing the fiscal difficulty States are facing, the bill sets matching ratios that will enable these States to use these Federal funds, without undo risk of losing spending authority because of an inability to raise comparable State revenues.

Earlier this year, I met with various Vermont State officials, who expressed a consistent transportation need: bridges, including scores of rural bridges. This bill allows an amount up to 35 percent to be available for use on any public bridge identified in the State bridge management system. Additional amounts may also be provided for bridges from the Surface Transportation Program.

Many of our rural bridges are critical to our State economy and way of life. Meanwhile, many are located in areas in which the citizens are unable to afford the total cost of extreme rehabilitations or replacement. This bill, with its higher funding amounts and greater flexibility, provides an opportunity to address these critical bridge needs.

Mr. President, once again I congratulate the leaders of the Environment and Public Works Committee for their efforts in developing this creative and Comprehensive Transportation Program.

Surface transportation is an important part of our American way of life. We've come to enjoy our freedoms, but we've also recognized our limitations. This bill puts us on the road toward greater opportunities.

Mr. MITCHELL. Mr. President, during the last 10 days, in fact, over the last month, but particularly during the last 10 days, a number of individuals at the Federal Highway Administration have worked endlessly, throughout the night and through a number of weekends, to ensure that Members of the U.S. Senate had the information they requested.

All of us have heard numerous references to charts that have been produced by the Federal Highway Administration. The charts and tables, the legislative language, and the general information provided by these individuals at the Federal Highway Administration have been prepared in an efficient and accurate manner.

I would like to take a moment and express my appreciation for the efforts put forth by: Bud Wright, Jack Basso, Bruce Swinford, Patty McAleer, Debra Johnson, Susan Lauffer, Jim Wiese, Frank Calhoun, Kathy Collins, as well as the efforts by Galen Reaser and Gene McCormick to ensure that all requests were fulfilled and coordinated.

This has been a long 2 weeks, but it would have been longer had these individuals not been so ready and willing to work a significant number of extra hours.

HAPPY BIRTHDAY, SENATOR BURDICK

Mr. MITCHELL. Mr. President, if I may have the attention of the Senate, one happy result of the fact that it took nearly 2 weeks to complete this bill is that we are about to pass it on the day that is also the birthday of the distinguished chairman of the full committee, our beloved colleague, QUENTIN BURDICK.

[Applause, Senators rising.]

Mr. MITCHELL. Mr. President, the vote that will now occur is the most tangible evidence of the respect of our distinguished colleague by the Members of this body.

Mr. DOLE. Will the majority leader yield?

Mr. MITCHELL. Certainly.

ORDER OF PROCEDURE

Mr. DOLE. I have had a number of inquiries on the program for tomorrow. A number of Members on this side wonder whether there might be any opportunity to take up the energy and water appropriations bill tomorrow. Is that possible?

Mr. MITCHELL. Mr. President, I will certainly consider that. But as my colleague knows, the President has made a number of statements in the past several weeks criticizing us for not taking up and passing the crime bill.

I have been trying very hard to get to the crime bill. Of course, were I to accede to that request of your colleagues, why, then, it would further delay action on the crime bill; thereby, I fear, inducing another speech from the President.

Mr. DOLE. If I can assure my colleague there will be no more speeches from the President?

Mr. CHAFEE. Ever?

Mr. DOLE. Not ever, no.

Mr. MITCHELL. Then that is something we can talk about and I would be pleased to consider that, Mr. President.

The PRESIDING OFFICER. If there be no further debate, the question is on the engrossment and third reading of the bill.

The bill was ordered to be engrossed for a third reading and was read the third time.

The PRESIDING OFFICER. The bill, having been read the third time, the question is, Shall it pass? On this question the yeas and nays have been ordered and the clerk will call the roll.

The legislative clerk called the roll.

Mr. FORD. I announce that the Senator from Arizona [Mr. DECONCINI] is necessarily absent.

I also announce that the Senator from Arkansas [Mr. PRYOR] is absent because of illness.

The PRESIDING OFFICER. Are there any other Senators in the Chamber who desire to vote?

The result was announced, yeas 91, nays 7, as follows:

[Rollcall Vote No. 101 Leg.]

YEAS—91

Adams	Ford	Moynihan
Akaka	Fowler	Murkowski
Baucus	Garn	Nickles
Bentsen	Glenn	Nunn
Biden	Gore	Packwood
Bingaman	Gorton	Pell
Boren	Gramm	Pressler
Bradley	Grassley	Reid
Breaux	Harkin	Riegle
Brown	Hatch	Robb
Bryan	Hatfield	Rockefeller
Bumpers	Helms	Rudman
Burdick	Hollings	Sanford
Burns	Inouye	Sarbanes
Byrd	Jeffords	Sasser
Chafee	Johnston	Seymour
Coats	Kassebaum	Shelby
Cochran	Kennedy	Simon
Cohen	Kerrey	Simpson
Conrad	Kerry	Smith
Craig	Lautenberg	Specter
Cranston	Leahy	Stevens
D'Amato	Levin	Symms
Danforth	Lieberman	Thurmond
Daschle	Lott	Wallop
Dixon	Lugar	Warner
Dodd	McCain	Wellstone
Dole	McConnell	Wirth
Domenici	Metzenbaum	Wofford
Durenberger	Mikulski	
Exon	Mitchell	

NAYS—7

Bond	Kasten	Roth
Graham	Kohl	
Heflin	Mack	

NOT VOTING—2

DeConcini	Pryor

So, the bill (S. 1204), as amended, was passed.

(The text of S. 1204, the Surface Transportation Efficiency Act, will appear in a future edition of the RECORD.)

Mr. MOYNIHAN. Mr. President, I move to reconsider the vote by which the bill, as amended, was passed.

Mr. SYMMS. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

MORNING BUSINESS

Mr. MOYNIHAN. Mr. President, I ask unanimous consent that there be a period for morning business, with Senators permitted to speak therein.

The PRESIDING OFFICER. Without objection, it is so ordered.

THE LAST SOVIET TROOPS LEAVING HUNGARY

Mr. DODD. Mr. President, I rise to ask for special recognition to take note of a historic occasion. Today, the last occupying Soviet troops left the territory of the Republic of Hungary.

Mr. President, I belong to the generation that has had as one of its earliest memories of world events the Hungarian Revolution of 1956. I was but a young man of 12, but I recall the awe, the admiration, and ultimately the horror with which the American people watched the life and death struggle of a small nation against a foreign oppressor 25 times its size.

It is a historic fact that before the Soviets, Hungary was also occupied by Nazi Germany, so it is the first time in more than 47 years, almost half a century, that Hungary has no foreign occupying forces on its territory.

I am sure all of my colleagues join me in rejoicing over this event. I also take this opportunity to send my best wishes to the people of Hungary for their efforts to preserve freedom, to solidify their democratic system and to achieve long deserved economic prosperity.

Mr. President, Hungary is experiencing some hard times as it converts its economy to a free-market system. I visited that country on two occasions, and I was always impressed by the talent, industry, and spirited nature of the people of that Nation. I trust that with the assistance of their friends, including the people of the United States, Hungarians will find the patience and fortitude they need to complete their historic road to join the ranks of free and prosperous nations.

Mr. President, I yield the floor.

Mr. LEVIN. Mr. President, first, let me commend my friend from Connecticut for remembering the very critical day, which is now a period which is hopefully passing into history.

He, like I, was raised very much a part of the Hungarian Revolution in 1956. We cheered those freedom fighters and, we, in Michigan, as a matter of fact, received thousands of those freedom fighters, those who were able to escape. Those who were left there were, in effect, prisoners.

Over the years, many of us around the world have helped to do everything we possibly could to bring about the freedom of Hungary. That freedom has now been achieved. I think it is remarkable, and it is also important that my friend do what he did here this evening, which is to remember these events.

Mr. DODD. I thank my colleague for that point.

I happened to turn 47 a couple weeks ago. Two weeks after my birthday, 47 years ago, the Nazis occupied Hungary. Today, the last Soviet troops left. It is a remarkable event and probably will not be terribly well noted in too many places but an historic event of significant proportions.

I thank my colleague from Michigan.

The PRESIDING OFFICER. The Senator from California is recognized.

Mr. CRANSTON. I thank the Chair.

(The remarks of Mr. CRANSTON pertaining to the introduction of Senate Joint Resolution 165 are located in today's RECORD under "Statements on Introduced Bills and Joint Resolutions.")

EQUITY ANALYSIS OF 1990 FARM LEGISLATION

Mr. DOLE. Mr. President, the Department of Agriculture has recently completed an equity analysis of 1990 farm legislation. Specifically, the report analyzes the impact which the Food, Agriculture, Conservation, and Trade Act of 1990 and the Omnibus Budget Reconciliation Act of 1990 will have upon farmers on a commodity by commodity basis. Several quantitative measures are used to compare changes in relative support among commodities. I ask unanimous consent that the entire text of the report be included in the RECORD following my remarks.

There being no objection, the summary was ordered to be printed in the RECORD, as follows:

EQUITY ANALYSIS OF 1990 FARM LEGISLATION

SUMMARY

Concern with differing levels of government support was an issue raised in the Senate-passed version of the 1990 Farm Bill. This paper assesses how commodity program changes required by the Food, Agriculture, Conservation, and Trade (FACT) Act of 1990 and the Omnibus Budget Reconciliation Act of 1990 affect relative levels of support among commodities.

Several quantitative measures are presented with some being more dependent than others on future farm program parameters, commodity prices, program participation, and acreage adjustments in response to changes in market returns and farm programs. The following measures are used to compare changes in relative support among commodities:

Government payments or support per unit of production,

Gross farm income,

Commodity Credit Corporation (CCC) outlays, and

An aggregate measure of government support.

These measures are estimated for each commodity sector or market and not for an individual farm.

Estimates of farm income, CCC outlays, and government payments under the 1990

FACT Act and the Reconciliation Act are based on the Department's forecasts for the President's FY 1992 Budget. These forecasts were based on future supply, demand, and price prospects as estimated in November 1990.

To evaluate the effects of legislative changes in farm programs, the forecasts of farm income, government payments, CCC outlays, and other farm sector variables were projected assuming continuation of the 1985 Farm Bill and then compared with projections under the 1990 FACT Act and Reconciliation Act. Extension of the 1985 Farm Bill is not straightforward, however. A case in point is whether continuation of the 1985 Farm Bill means that the minimum support price for manufacturing milk is frozen at the 1990 level or allowed to decline by $0.50 per hundredweight if projected purchases exceed 5 billion pounds. The attached analysis assumes that further reductions in the minimum support price would be permitted under extension of the 1985 Farm Bill.

The 1990 FACT Act greatly increased farmers' planting flexibility. At this stage, it is impossible to know how farmers and markets will react to this increased flexibility. Any projections of acreage shifts would be extremely uncertain. In addition, increased flexibility could provide benefits to some groups of farmers in one year and others in another year, depending on how relative market returns for various crops change from one year to the next. For these reasons, this analysis does not attempt to estimate how the evaluation measures will change in response to the increased planting flexibility provided by the 1990 FACT Act.

The measures used to evaluate the fairness and equity of the 1990 FACT Act and Omnibus Reconciliation Act generally support the following conclusions:

The level of support declined the most for corn, sorghum, upland cotton, and wheat. The level of support declined significantly but to a lesser extent for rice as the new legislation did not affect marketing loan payments.

Most measures indicate that the level of support for soybeans did not change dramatically under the 1990 FACT Act and Reconciliation Act. Normally, loan rates are up and the level of support could rise significantly if prices fall below the minimum effective loan rate established by the 1990 FACT Act. However, the incomes of traditional soybean producers could fall if the new legislation leads to a sizeable increase in soybean acreage.

The level of support did not change significantly for oats, sugar, peanuts, tobacco, and wool and mohair.

The level of support rose moderately for barley.

The level of support increased significantly for milk and honey.

The 1990 FACT Act increased the level of support to producers of minor oilseeds. However, insufficient data exists for quantifying these impacts.

Measures of fairness and equity are highly sensitive to a wide variety of assumptions. In addition, the measures presented in the following paper are by no means exhaustive. Alternative measures and assumptions could possibly yield different interpretations of the fairness and equity of the 1990 FACT Act and Omnibus Reconciliation Act.

This paper assesses how commodity program changes required by the Food, Agriculture, Conservation, and Trade Act of 1990 (1990 FACT Act) and the Omnibus Budget Reconciliation Act of 1990 (1990 Reconciliation act) affect relative levels of support among commodities. Concern with differing levels of support was an issue raised in the Senate-passed version of the Farm Bill, which included a sense-of-the-Senate resolution stating:

"* * * it is the sense of the Senate that the budget process unfairly penalizes producers of commodities supported primarily by Treasury payments relative to producers of commodities supported primarily by consumers.

Further, it is the sense of the Senate that whatever outlay reductions required by the budget process for Treasury payment supported commodities should be shared equitably between such commodities. In addition, there should be equitable reductions in support mechanisms for commodities supported by consumers relative to Treasury supported payment commodities."

There are numerous measures that could be used to evaluate equity among commodities. Different measures could lead to different conclusions regarding equity. This analysis uses alternative measures to evaluate the 1990 acts during the life of the 1990 FACT Act, 1991–1995. Quantification of each evaluation measure depends on many assumptions. These assumptions include how the 1990 FACT Act will be administered over the next 5 years (for example, acreage reduction levels), program participation rates, what crops farmers will plant on flexible acres, commodity prices, competitor response to U.S. market developments, and so on. Any such assumptions are subject to error, and changes in them could alter conclusions regarding changes in relative support among commodities.

Measures contingent on projections of the future compound the difficulty of assessing the fairness and equity of the 1990 FACT Act and Reconciliation Act. For that reason, several quantitative measures are presented in this analysis with some being more dependent on future farm programs, prices, participation levels, and acreage shifts than others. The following evaluation measures are used to estimate the effects of program changes on a commodity sector or market:

Government payments or support per unit of production,

Gross farm income,

Commodity Credit Corporation (CCC) outlays, and

In aggregate measure of government support.

The evaluation measures are calculated for corn, sorghum, barley, oats, wheat, upland cotton, rice, soybeans, sugar, peanuts, tobacco, honey, wool and mohair, and dairy. Lack of data prevented determining these same measures for minor oilseeds.

Prior to the 1990 FACT Act, price support loans for minor oilseeds were not available. The 1990 FACT Act mandated marketing loans for minor oilseeds. This provision will likely have a positive impact on minor oilseed production and producer incomes, while raising farm program outlays.

In the analysis that follows, the combined effects of the 1990 FACT Act and Reconciliation Act are estimated by comparing changes in the above evaluation measures. Estimates of farm income, CCC outlays, and government payments under the 1990 FACT Act and the Reconciliation Act are based on the Department's forecasts for the President's FY 1992 Budget. These forecasts were based on future supply, demand, and price prospects as estimated in November 1990.

To evaluate the effects of legislative changes in farm programs, the forecasts of farm income, government payments, CCC outlays, and other farm sector variables were projected assuming continuation of the 1985 Farm Bill and then compared with the projections under the 1990 FACT Act and Reconciliation Act. Extension of the 1985 Farm Bill is not straightforward, however. A case in point is whether continuation of the 1985 Farm Bill means that the support price for manufacturing milk is frozen or allowed to decline by $0.50 per hundredweight if projected purchases exceed 5 billion pounds. In this analysis, it is assumed that extension of the 1985 Farm Bill would permit further reductions in the support price. It is further assumed that commodity export programs, such as the Export Enhancement Program (EEP), PL. 480, and credit programs would not be substantially different under the 1990 FACT Act and Reconciliation Act and extension of the 1985 Farm Bill.

The 1990 FACT Act greatly increased farmers' planting flexibility. At this stage, it is impossible to know how farmers and markets will react to this increased flexibility. In addition, increased flexibility could provide benefits to some groups of farmers in one year and others in another year, depending on how relative market returns for various crops change from one year to the next. For these reasons, this analysis does not attempt to estimate how the evaluation measures will change in response to the increased planting flexibility provided by the 1990 FACT Act.

In the discussion that follows on each evaluation measure, the term "1990 Farm Bill" is used to cover the combined provisions of both the FACT Act and the Omnibus Reconciliation Act.

Measure 1—Government payments per acre: One measure of equity and fairness is the change in government payments onder the 1990 Acts. Under the 1985 Farm Bill, barley deficiency payment rates were based on the average price of all barley. The 1990 Acts determines deficiency payment rates based on the price of feed barley alone, effectively raising deficiency payments to barley producers. The mandated assessment on malting barley producers, the reduction in payment acres, and the adjustment in the 5-month price used to compute deficiency payments are insufficient to offset the payment increase. No reduction in oats payments occurs after the 1993/94 marketing year, because market prices are expected to exceed the target price.

For nonprogram crops, honey, wool and mohair, and dairy this measure is estimated by taking the change in the support price or payment rate for each community under the 1990 Farm Bill. These estimates include adjustments for producer assessments. Higher support prices more than offset producer assessments under the 1990 Farm Bill for soybeans, honey, and milk, raising the per unit level of government support for these commodities. Producer assessments result in a slight reduction in the level of government support for tobacco, wool and mohair, and peanuts. There was no significant change in the level of government support to sugar producers under the 1990 Farm Bill.

Measure 2—Gross farm income: A second measure of equity and fairness is the effect of the 1990 Farm Bill on gross farm income for the commodity (market receipts plus government payments). Table 2 indicates that for corn, sorghum, rice, upland cotton, and wheat the 1990 Farm Bill is expected to reduce gross farm incomes by 3–5 percent, while the 1990 Farm Bill is expected to have no impact on oat producers' incomes and a positive impact on barley producers' in-

comes. The gross income of barley producers increase, because of the change in the method of computing barley deficiency payments under the 1990 Farm Bill. The incomes of oats producers are not likely to be significantly affected by the 1990 Farm Bill, since market prices are expected to be near the target price and the 1990 Farm Bill requires that the acreage reduction program (ARP) for oats be set at zero.

The 1990 Farm Bill could have quite different impacts on the gross incomes of soybean producers depending on how farmers react to the planting flexibility provisions of the 1990 Farm Bill. If there is very little shift of acreage into soybeans, soybean producers' incomes could drop less than 1 percent under the 1990 Farm Bill. But, if soybean acreage increases dramatically, greater reductions in soybean producers' incomes could occur.

The 1990 Farm Bill is expected to have little to no impact on the gross incomes of sugar, peanut, wool and mohair, and tobacco producers. For these commodities, the 1990 Farm Bill imposed assessments, but either these assessments do not directly apply to producers or the assessment levels are not large enough to significantly affect the incomes of these producers.

The 1990 Farm Bill is expected to substantially increase the gross incomes of honey and dairy producers. The 1990 Farm Bill established the minimum support price for manufacturing milk at $10.10 per hundredweight, while extension of the 1985 Farm Bill would have mandated annual reductions of $0.50 per hundredweight if projected purchases exceed 5 billion pounds milk equivalent. Under the 1990 Farm Bill, the support level for honey was frozen at the 1990 level of 53.8 cents per pound, while extension of the 1985 Farm Bill would have allowed annual reductions of up to 5 percent per year. For both of these commodities, the 1990 Farm Bill mandated producer assessments, but these assessments are projected to be more than offset by higher support levels, causing the gross incomes of these producers to be higher under the 1990 Farm Bill.

Measure 3—CCC outlays: A third measure of equity and fairness is the effect of the 1990 Farm Bill on net CCC outlays for income and price support and related activities. Table 3 indicates that CCC outlays are 20–30 percent lower each year for corn, sorghum, upland cotton, and wheat under the 1990 Farm Bill, compared with an extension of the 1985 Act. Rice outlays do not drop as much (15 percent lower) because the 1990 Farm Bill did not affect marketing loan payments. On the other hand, barley outlays increase in all years and oats outlays remain unchanged by the 1990 Farm Bill. Barley outlays increase, because the 1990 Farm Bill determines deficiency payment rates based on the price of feed barley alone, rather than all barley. The 1990 Farm Bill is not expected to change outlays significantly for oats, since prices are forecast to be near the target price and the 1990 Farm Bill requires that the ARP for oats be set at zero.

Assessments imposed on marketings of sugar, peanuts, and tobacco by the 1990 Farm Bill will result in government receipts that more than exceed projected outlays for those commodities under continuation of the 1985 Farm Bill. Generally, outlays for those crops have been near zero or negative in some years. Assessments lead to a slight reduction in outlays for wool and mohair.

Outlays for honey and dairy increase sharply under the 1990 Farm Bill despite assessments. For both dairy and honey, the large increase in outlays is due to the increase in the level of support expected under the 1990 Farm Bill, compared with a continuation of the 1985 Act.

Soybean outlays are projected to decline under the 1990 Farm Bill. The 1990 Farm Bill increased the minimum soybean loan rate from $4.50 to $5.02 and imposed a 2-percent origination fee on soybean 9-month loans. In addition, the 1990 Farm Bill mandated a marketing loan program for soybeans. World market prices are projected to exceed the minimum soybean loan rate of $5.02 per bushel and, therefore, no marketing loan payments are projected. However, past experience indicates that the soybean market is extremely volatile and the possibility of large payments in the future cannot be ruled out. If world soybean prices decline sufficiently, the 1990 Farm Bill will lead to higher soybean outlays than under extension of the 1985 Farm Bill.

Measure 4—An aggregate measure of support: CCC outlay changes as a measure of equity and fairness fail to consider that some commodities are supported through direct payments while others are supported through support prices and import controls. Table 4 provides estimates of the proportion of gross income that is due to government programs under the 1985 Farm Bill and 1990 Farm Bill. For program crops, wool and mohair, and honey, this table gives estimates of the proportion of gross farm income accounted for by direct payments (including Conservation Reserve Program payments), or direct payments divided by total gross income. For commodities that are supported through internal support prices and import controls, such as sugar, peanuts, and dairy, government program support is determined by multiplying total marketings by the difference between the projected U.S. price and the projected world price and dividing the result by total gross income. No attempt was made to estimate the effects of export programs, such as the EEP on the level of direct payments or farm income.

The level of support provided under the 1990 Farm Bill declines for most program crops. Exceptions include barley and oats. The level of support provided to barley producers increases under the 1990 Farm Bill, again, because of the change in the method used to compute deficiency payments. The level of support to rice producers declines about 10 percent, but remains near 40 percent under the 1990 Farm Bill, the highest level of support provided to a program crop followed by wheat. The lowest level of support provided to a program crop is upland cotton with slightly over 10 percent of gross farm income coming from direct payments.

For nonprogram crops, honey, and dairy, the level of support under the 1990 Farm Bill either changes little or increases. The proportion of farm income accounted for by government programs declines less than 1 percent for peanuts, wool and mohair, and sugar and is projected to be near 60 percent for wool and mohair, over 50 percent for sugar, and about 45 percent for peanuts under the 1990 Farm Bill. The 1990 Farm Bill raised support prices for milk and honey, causing the level of support provided to these commodities to increase. About 10 percent of honey producers' incomes and about 20 percent of dairy producers' income are projected to come from government programs under the 1990 Farm Bill.

Government programs are not expected to account for a significant portion of the incomes of soybean producers. However, past experience indicates that market conditions are extremely volatile and, therefore, it is very likely that over the life of the 1990 Farm Bill some government support will be provided to these producers.

The aggregate measure of support for tobacco is set at zero under both the 1985 Farm Bill and 1990 Farm Bill. Under both bills, no import controls exist and producer assessments are authorized to offset the cost of supporting tobacco prices.

General conclusions: Several measures are presented to illustrate the equity and fairness of the 1990 legislation. These measures include estimates of the effects of the 1990 FACT Act and Reconciliation Act on the level of support per unit of production, gross farm income, CCC outlays, and aggregate support for selected commodities. Relative to the 1985 Farm Bill, this analysis supports the following conclusions regarding the 1990 legislation:

The level of support declined the most for corn, sorghum, upland cotton, and wheat. The level of support also declined significantly for rice but to a lesser extent, as the 1990 legislation did not affect marketing loan payments.

Most measures indicate that the level of support for soybeans did not change dramatically under the 1900 FACT Act. The level of support could raise significantly if prices fall below the minimum effective loan rate established by the 1990 FACT Act. However, the incomes of traditional soybean producers could fall if the 1990 FACT Act leads to a sizeable increase in soybean acreage.

The level of support did not change significantly for oats, sugar, peanuts, tobacco, and wool and mohair.

The level of support rose moderately for barley.

The level of support increased signficantly for milk and honey.

The 1990 FACT Act increased the level of support to producers of minor oilseeds. However, insufficient data exists for quantifying these impacts.

This analysis depends on a large number of assumptions and forecasts. Future forecasts of commodities prices and outlays have in the past been quite inaccurate. Farm program provisions under the 1990 FACT Act and Reconciliation Act and under continuation of the 1985 Farm Bill are very different and are subject to wide interpretation. In addtition, it is unclear how farmers and markets will react to the increased planting flexibility provided by the 1990 FACT Act, which this analysis does not attempt to capture. Alternative measures and assumptions could possibly yield different interpretations of the fairness and equity of the 1990 FACT Act and Reconciliation Act.

TABLE 1.—ESTIMATED CHANGE IN DIRECT PAYMENTS OR LEVEL OF GOVERNMENT SUPPORT

Commodity	Marketing years—					Average 1991–95
	1991–92	1992–93	1993–94	1994–95	1995–96	
	dollars per acre					
Corn	−10	−9	−9	−13	−12	−11
	[1] −16.2	−16.2	−15.8	−29.5	−31.3	−21.8
Sorghum	−5	−5	−5	−6	−6	−5
	−16.2	−16.2	−15.8	−26.1	−27.5	−20.4
Barley	2	1	1	1	1	1
	16.6	7.8	13.3	10.9	16.8	13.1
Oats	−1	−1	0	0	0	−1
	−10.5	−10.5	−10.5	.....	.....	−6.3
Wheat	−6	−10	−8	−10	−10	−9
	−12.5	−19.4	−17.1	−23.1	−22.7	−19.0
Upland cotton	−9	−12	−12	−12	−11	−11
	−15.8	−16.7	−17.6	−17.6	−17.1	−17.0
Rice	−28	−27	−27	−26	−25	−27
	−12.6	−11.6	−11.7	−11.5	−11.2	−11.7
Soybeans	14	14	14	14	15	14
	9.3	9.3	9.3	9.3	9.3	9.3
Sugar	0	0	0	0	0	0
	0	0	0	0	0	0
Peanuts	−3	−3	−3	−3	−4	−3
	−0.5	−0.5	−0.5	−0.5	−0.5	−0.5
Tobacco	−16	−16	−17	−17	−17	−17
	−0.5	−0.5	−0.5	−0.5	−0.5	−0.5
	Dollars per hundredweight					
Honey	2	5	7	9	11	7
	3.9	9.3	15.1	21.1	27.5	15.4
Wool and mohair	−2	−2	−2	−2	−2	−2
	−1.0	−1.0	−1.0	−1.0	−1.0	−1.0
Dairy[2]	.33	.77	.86	1.19	1.36	.90
	3.4	8.3	9.5	13.6	15.8	10.1

[1] Percent change.
[2] Marketing years 1990–91, 1991–92, 1992–93, 1993–94, and 1994–95, respectively.

TABLE 2.—ESTIMATED CHANGE IN GROSS FARM INCOME

[In millions of dollars]

Commodity	Marketing years—					Total 1991–95
	1991–92	1992–93	1993–94	1994–95	1995–96	
Corn	−688	−726	−687	−895	−762	−3,758
	−[1]3.1	−3.2	−3.0	−3.8	−3.2	−3.3
Sorghum	−66	−69	−63	−75	−58	−331
	−3.8	−3.8	−3.4	−4.0	−3.1	−3.6
Barley	17	7	11	7	8	50
	1.6	0.6	1.0	0.6	0.7	0.9
Oats	0	0	0	0	0	0
	0	0	0	0	0	0
Wheat	−326	−602	−497	−642	−674	−2,741
	−3.6	−6.4	−5.2	−6.5	−6.6	−5.7
Upland cotton	−121	−191	−180	−160	−168	−820
	−1.9	−3.1	−2.9	−2.6	−2.6	−2.6
Rice	−121	−109	−107	−105	−104	−546
	−5.8	−5.4	−5.3	−5.1	−4.9	−5.3
Soybeans	−91	−116	−101	−99	−82	−489
	−0.8	−0.9	−0.8	−0.8	−0.6	−0.8
Sugar	0	0	0	0	0	0
	0	0	0	0	0	0
Peanuts	−6	−6	−6	−7	−7	−32
	−0.4	−0.4	−0.4	−0.4	−0.4	−0.4
Honey	4	9	13	12	11	49
	3.8	8.4	13.1	12.0	10.6	9.6
Wool and mohair	−2	−2	−2	−2	−2	−10
	−0.6	−0.6	−0.6	−0.6	−0.6	−0.6
Tobacco	−12	−12	−13	−13	−13	−60
	−0.4	−0.4	−0.4	−0.4	−0.4	−0.4
Dairy[2]	445	860	1,137	1,617	1,938	5,997
	2.7	5.3	7.1	10.2	12.2	7.5

[1] Percent change.
[2] Marketing years 1990–91, 1991–92, 1992–93, 1993–94, and 1994–95, respectively.

TABLE 3.—ESTIMATED CHANGE IN CCC OUTLAYS

Commodity	Marketing years—					Total 1991–95
	1991–92	1992–93	1993–94	1994–95	1995–96	
	Million dollars					
Corn	−598	−597	−679	−921	−767	−3,562
	[1] −18.3	−18.8	−20.5	−34.9	−35.6	−25.6
Sorghum	−58	−57	−62	−77	−59	−313
	−18.6	−19.1	−20.4	−30.8	−31.2	−24.0
Barley	17	7	11	7	8	50
	16.6	7.8	13.3	10.9	16.8	13.1
Oats	0	0	0	0	0	0
	0	0	0	0	0	0
Wheat	−279	−609	−532	−657	−687	−2,764
	−10.0	−20.5	−19.3	−25.1	−25.3	−20.0
Upland cotton	−146	−231	−193	−151	−176	−897
	−14.7	−25.3	−23.6	−21.6	−22.6	−21.6
Rice	−138	−129	−125	−124	−123	−639
	−14.8	−15.1	−14.9	−14.7	−14.4	−14.8
Soybeans	4	−16	−25	−25	−6	−68
	[2]	.....	.....	.....	.....	.....
Sugar	−26	−27	−28	−28	−28	−137
	[2]	.....	.....	.....	.....	.....

TABLE 3.—ESTIMATED CHANGE IN CCC OUTLAYS

Commodity	Marketing years—					Total 1991–95
	1991–92	1992–93	1993–94	1994–95	1995–96	
Peanuts	−11	−12	−12	−13	−13	−61
	−144.9	−307.8	−302.4	−293.2	−270.0	−263.7
Honey	4	9	13	13	12	51
	16.9	52.1	115.0	116.5	115.1	83.1
Wool and mohair	−2	−2	−2	−2	−2	−10
	−1.0	−1.0	−1.0	−1.0	−1.0	−1.0
Tobacco	−24	−25	−25	−26	−27	−127
	(2)					
Dairy[3]	29	50	113	185	324	701
	4.6	14.6	31.9	65.0	198.2	62.9

[1] Percent change.
[2] Percentage change not computed because baseline level of CCC outlays projected to be zero or negative.
[3] Marketing years 1990–91, 1991–92, 1992–93, 1993–94, and 1994–95, respectively.

TABLE 4.—PROPORTION OF GROSS INCOME DERIVED FROM GOVERNMENT PROGRAMS

[Aggregate measure of support]

Commodity	Marketing years—					Average 1991–95
	1991–92	1992–93	1993–94	1994–95	1995–96	
	Percent					
Corn:						
1990 farm bill	13.2	12.9	12.9	9.0	7.2	11.0
1985 farm bill	15.9	15.5	15.5	12.5	10.1	13.9
Difference	−17.0	−16.8	−16.8	−28.0	−28.7	−20.9
Sorghum:						
1990 farm bill	21.5	20.5	19.7	15.8	13.8	18.3
1985 farm bill	24.5	23.6	22.5	19.2	16.6	21.3
Difference	−12.1	−13.1	−12.4	−17.7	−16.9	−14.1
Barley:						
1990 farm bill	22.7	21.9	20.4	18.2	16.6	20.0
1985 farm bill	21.5	21.4	19.6	17.7	16.1	19.3
Difference	−5.6	−2.3	−4.1	−2.8	−3.1	−3.6
Oats:						
1990 farm bill	16.4	16.0	15.9	14.3	14.9	15.5
1985 farm bill	16.4	16.0	15.9	14.3	14.9	15.5
Difference	0	0	0	0	0	0
Wheat:						
1990 farm bill	34.5	33.0	31.3	27.8	27.4	30.8
1985 farm bill	36.9	37.6	35.2	32.7	32.3	34.9
Difference	−6.5	−12.2	−11.1	−15.0	−15.2	−11.7
Upland cotton:						
1990 farm bill	10.2	11.8	10.6	10.1	10.2	10.6
1985 farm bill	12.0	14.8	13.5	12.5	12.8	13.1
Difference	−15.0	−20.3	−21.5	−19.2	−20.3	−19.1
Rice:						
1990 farm bill	40.6	38.2	37.5	36.9	36.3	37.9
1985 farm bill	44.9	42.6	41.7	41.0	40.3	42.1
Difference	−9.6	−10.3	−10.1	−10.0	−9.9	−10.0
Soybeans:						
1990 farm bill	1.0	1.1	1.2	1.4	1.5	1.2
1985 farm bill	1.3	1.4	1.5	1.6	1.7	1.5
Difference	−23.1	−21.4	−20.0	−12.5	−11.8	−17.8
Sugar:[1]						
1990 farm bill	55.0	55.0	54.0	53.0	52.0	53.8
1985 farm bill	55.0	55.0	54.0	53.0	52.0	53.8
Difference	0	0	0	0	0	0
Peanuts:[1]						
1990 farm bill	35.7	45.2	44.9	45.5	45.2	43.3
1985 farm bill	35.9	45.5	45.2	45.8	45.8	43.6
Difference	−0.8	−0.5	−0.6	−0.6	−0.6	−0.6
Honey:						
1990 farm bill	16.3	12.5	11.3	10.4	9.6	12.0
1985 farm bill	13.3	5.0	0	0	0	3.7
Difference	22.6	150.0				324.3
Wool and Mohair:						
1990 farm bill	61.5	61.4	60.2	59.3	58.8	60.2
1985 farm bill	61.7	61.6	60.4	59.5	59.0	60.4
Difference	−0.4	−0.4	−0.4	−0.4	−0.4	−0.4
Tobacco:						
1990 farm bill	0	0	0	0	0	0
1985 farm bill	0	0	0	0	0	0
Difference						
Dairy:[2 3]						
1990 farm bill	20.7	20.5	20.6	20.3	20.5	20.5
1985 farm bill	18.6	16.0	14.4	11.5	11.1	14.3
Difference	11.3	28.1	43.1	76.5	84.7	43.4

[1] U.S. farm price set equal to projected world price.
[2] U.S. price for manufacturing milk set equal to projected world price.
[3] Marketing years 1990–91, 1991–92, 1992–93, 1993–94, and 1994–95, respectively.

DEFENSE AND SPACE TALKS

Mr. DOLE. Mr. President, arms control is back in the headlines. Problems related to the conventional forces in Europe treaty [CFE] appear to have been resolved—making way for ratification—and the START negotiations are back on the front burner.

In my view, comprehensive agreements like the INF Treaty and the CFE Treaty are important and have their place. But, I also believe that in the area of arms control there are other initiatives and confidence and security-building measures [CSBM's] that can play a very useful role, particularly in promoting stability between the United States and the Soviet Union.

A good example of such initiatives can be seen in the defense and space talks [DST], where our chief negotiator, Ambassador Dave Smith, has been working on an accord on predictability measures. The purpose of the U.S. proposed predictability measures accord is to increase openness in each side's efforts and programs related to strategic ballistic missile defense—in order to reduce suspicion and avert future technological surprise. While the U.S. strategic defense initiative [SDI] is conducted very openly, Soviet stra-

tegic defense activities are still shrouded in secrecy.

I would like to bring to the Senate's attention an article written by Ambassador Smith, published in Jane's Defence Weekly, which discusses United States negotiating efforts to build on Soviet acceptance of several United States predictability concepts, such as annual data exchanges, experts' meetings and observations of field tests.

I ask unanimous consent that Ambassador Smith's article be placed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[From Jane's Defence Weekly, June 1, 1991]

TOWARDS A NEW OPENNESS

Technology has helped the outside world peer over the high wall of secrecy which has surrounded the Soviet Union. In the realm of arms control, satellites and other national technical means (NTMs) have played a vital role in monitoring agreements such as the 1987 Intermediate-range Nuclear Forces (INF) Treaty. Such NTMs will also be indispensable for verifying the Conventional Forces in Europe Treaty signed last year, and the future Strategic Arms Reduction Treaty.

The Super Powers have found considerable value in confidence building measures (CBMs) which enhance security through greater military openness and better communications and understanding.

In 1955 U.S. Secretary of State John Foster Dulles summed up the challenge of disarmament. He doubted it could work with a powerful but untrusted country such as the Soviet Union. Yet, Dulles observed, respect for world opinion required disarmament efforts. Through the post-war era, U.S. and other Western arms negotiators have been trying to meet the challenge by seeking sound, verifiable and durable accords.

U.S.-Soviet CBMs started under President John Kennedy. The 1962 Cuban missile crisis emphasized the value of prompt communications between U.S. and Soviet leaders, and led to the establishment of the hotline between them.

The 1971 Accidents Measures Agreement provides for immediate notice of accidental or unauthorized use of nuclear weapons and for detection of unidentified objects which could create a risk of nuclear war.

The 1973 Agreement on the Prevention of Nuclear War obliges consultations any time that relations between countries appear to involve the risk of nuclear war.

In 1987 the Nuclear Risk Reduction Centres were set up. The centres trade real-time data between Washington and Moscow to implement the INF Treaty and other accords.

The 1988 Ballistic Missile Launch Notification Agreement mandates prior notice of any test launch of a strategic ballistic missile.

Multilateral confidence-building took a major step forward with the 1986 Stockholm Document on Confidence and Security Building Measures in Europe. Advance notification and observation of certain military exercises, forecasts of such events and on-site inspections substituted openness and understanding for the suspicion of earlier years.

Since 1986, the nations that comprise the Conference on Security and Cooperation in Europe (CSCE) have improved and added to the Stockholm Document. At the November summit in Paris they endorsed the Vienna Document of 1990, which superseded Stockholm. New CBMs were added, such as military information exchange, risk reduction and conflict prevention. Increased military-to-military contacts were also accepted.

In the Geneva Defense and Space Talks, an offshoot of the CSCE talks, which have since 1985 focused on the future of the 1972 Anti-Ballistic Missile (ABM) Treaty and space-based defenses, the USA seeks to expand on all of these gains—through an accord on wide-ranging predictability measures. Our goal is to reduce suspicion and avert future technological surprise. This would be achieved by opening an early and wide window into each country's programs in the field of strategic ballistic missile defense.

The U.S. Strategic Defense Initiative (SDI) is already conducted very openly. In contrast, extensive comparable Soviet activities remain shrouded but we believe an opportunity lies before us.

Three years ago the Soviets accepted several U.S. predictability concepts such as annual data exchanges, meetings of experts and observations of field tests.

In December 1989, at Secretary of State James Baker's invitation, Soviet scientists visited two U.S. laboratories engaged in SDI research. Soon after, the Soviets accepted our idea for a 'visits to laboratories' predictability measure.

Momentum on predictability measures should be maintained. However, we are concerned about the hidden meaning of a new pamphlet. Openness and Espionage, written by the Deputy Chairman of the Soviet State Technical Commission, Maj Gen Nikolay Brusnitsyn. This tract may be preparing public ground for a renewed digging-in of Soviet heels.

At first glance, Brusnitsyn supports a climate of improved U.S.-Soviet relations. He says that military openness by itself builds confidence and lessens chances of overestimating the other side's potential. But Brusnitsyn also makes clear that he does not believe in the intrinsic value of openness and espionage belongs more to the 1955 world described by Dulles.

First, Brusnitsyn reduces confidence-building to verifying specific provisions of agreements. NTMs are sufficient for this, he says. Second, beyond NTMs, only a narrow exchange of data would be justified. It would exclude data on weapons characteristics, the structure of deployed forces, and the concentration of arms in a military theatre. Indeed, Brunsitsyn alleges, any exchange beyond what is stipulated by an accord would constitute "intelligence gathering". Had it been Soviet policy in 1986, the Brusnitsyn doctrine would have prevented conclusion of the Stockholm Document. We hope such 'old thinking' does not overtake efforts to gain agreement on defence and space predictability measures in 1991.

At the UN last September former Soviet Foreign Minister Shevardnadze, called for wide-ranging CBMs and cooperative security structures. We are convinced that greater Soviet openness can open a pathway toward achieving these worthwhile goals.

THE HIV RESEARCH PROGRAM IN THE DEPARTMENT OF THE ARMY

Mr. STEVENS. Mr. President, the AIDS epidemic has garnered much in terms of headlines. I would like to call the attention of the Senate to the work that the Department of the Army has been doing for 5 years. That work started here in the Senate when we initiated the money to put the Department of the Army to work to carry out its historical role in innovation. They had dealt with malaria, with development of gamma globulin, and other very serious problems in the medical field.

But since its inception, the Army's HIV research program has focused on the development of the vaccines for the prevention against and treatment of HIV infection. There is a high degree of cooperation between the Army's program and that of the Department of Health and Human Services, and the Army's focus on basic research has enabled HHS to diversify its efforts.

Since fiscal year 1988, the Army's budget for AIDS research totalling nearly $150 million, has funded a safety and immunization study of an HIV envelope-derived protein product—gp160—in volunteers with early HIV infection.

The findings of the Army study indicate that the concept of vaccine therapy is a feasible strategy to pursue in the treatment of early-stage HIV infection. The vaccine appears to have no side effects other than occasional tenderness, swelling, or hardening under the skin at the site of inoculation. In light of these promising results, Army scientists at the Walter Reed Army Institute of Research have initiated further evaluation to assess the clinical efficacy of the vaccine.

I ask unanimous consent to have printed in the RECORD the New England Journal of Medicine article of June 13, 1991, which publishes the results of the Army's work.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

[From the New England Journal of Medicine, June 13, 1991]

A PHASE I EVALUATION OF THE SAFETY AND IMMUNOGENICITY OF VACCINATION WITH RECOMBINANT GP160 IN PATIENTS WITH EARLY HUMAN IMMUNODEFICIENCY VIRUS INFECTION

(By Robert R. Redfield, M.D., Deborah L. Birx, M.D., Nzeera Ketter, M.D., Edmund Tramont, M.D., Victoria Polonis, Ph.D., Charles Davis, M.D., John F. Brundage, M.D., Gale Smith, Ph.D., Steven Johnson, M.D., Arnold Fowler, Ph.D., Thomas Wierzba, M.S., Avigdor Shafferman, Ph.D., Franklin Volvovitz, Charles Oster, M.D., Donald S. Burke, M.D., and the Military Medical Consortium for Applied Retroviral Research)

ABSTRACT

Background.—Despite multiple antiviral humoral and cellular immune responses, infection with the human immunodeficiency virus (HIV) results in a progressively debilitating disease. We hypothesized that a more effective immune response could be generated by post-infection vaccination with HIV-specific antigens.

Methods.—We performed a phase I trial of the safety and immunogenicity of a vaccine prepared from molecularly cloned envelope protein, gp160, in 30 volunteer subjects with HIV infection in Walter Reed stage 1 or 2. The vaccine was administered either on days 0, 30, and 120 or on days 0, 30, 60, 120, 150, and 180. HIV-specific humoral and cellular im-

mune responses were measured; local and systemic reactions to vaccination, including general measures of immune function, were monitored.

Results.—In 19 of the 30 subjects both humoral and cellular immunity to HIV envelope proteins increased in response to vaccination with gp160. Seroconversion to selected envelope epitopes was observed, as were new T-cell proliferative responses to gp160. Response was associated with the CD4 cell count determined before vaccination (13 of 16 subjects [81 percent] with >600 cells per milliliter responded, as compared with 6 of 14 [43 percent] with ≤600 cells per milliliter; P = 0.07) and with the number of injections administered (87 percent of subjects randomly assigned to receive six injections responded, as compared with 40 percent of those assigned to three injections; P = 0.02). Local reactions at the site of injection were mild. There were no adverse systemic reactions, including diminution of general in vitro or in vivo cellular immune function. After 10 months of follow-up, the mean CD4 count had not decreased in the 19 subjects who responded, but it had decreased by 7.3 percent in the 11 who did not respond.

Infection with human immunodeficiency virus type 1 (HIV) causes chronic progressive immunologic dysfunction.[1,2] Although the precise mechanisms of HIV-induced immune defects remain to be elucidated, the development of immunologic dysfunction as a result of HIV infection is well documented.[1-8] Longitudinal studies of HIV-infected cohorts have demonstrated a predictable rate of decline in the CD4 cell count and a relation between the CD4 cell count and survival.[3,4,9-12] Accordingly, HIV infection can be clinically classified into distinct prognostic stages on the basis of increasing degrees of immunologic dysfunction.[13]

Conclusions.—This gp160 vaccine is safe and immunogenic in volunteer patients with early HIV infection. Although it is too early to know whether this approach will be clinically useful, further scientific and therapeutic evaluation of HIV-specific vaccine therapy is warranted. Similar vaccines may prove to be effective for other chronic infections. (N Engl J Med 1991; 324: 1677–84.)

Immune responses to HIV antigens are elicited during natural infection, and these may be important in regulating viral replication. Both humoral mechanisms (i.e., neutralization antibody, viral-receptor—blocking antibody, and antibody-dependent cytotoxicity) and cellular mechanisms (i.e., natural-killer-cell activity, HIV antigen—specific T-cell proliferative responses, and cytotoxic T-cell responses) have been reported.[14-26] Yet, despite these immune responses, HIV infection results in a progressive, debilitating disease of the immune system. The burden of HIV in vivo has been shown to increase in the later stages of infection[21-23]; some investigators have deduced that this is a consequence of viral-directed events such as changes in viral regulatory proteins or changes in viral cytopathogenicity.[24,25]

An alternative hypothesis is that both the prolonged clinical course of HIV infection and the progressive increase in the expression of HIV in vivo in the late stages of disease may be direct consequences of the effectiveness of the immune response to HIV in its early stages.[26-28] In short, as the antiviral immunity gradually weakens, poor control of in vivo viral replication results.[28] To test this hypothesis, we explored the possibility of augmenting HIV-specific immunity in infected persons by active immunization with an HIV-protein product, gp160. This product has recently been shown to be safe and immunogenic in healthy adults without HIV infection.[29] The objective of the present phase I trial was to evaluate the safety and immunogenicity of active immunization with recombinant gp160 in volunteers with early HIV infection and to determine the feasibility of using this intervention to modify the immune response to HIV in subjects with chronic infection.

METHODS

A more detailed description of our methods is available from the National Auxiliary Publications Service.*

Selection of Subjects

Thirty volunteer subjects with HIV infection were recruited from among Department of Defense health care beneficiaries. The nature of the trial was explained in detail to each subject, and written informed consent was obtained. Only seropositive patients in an early stage of HIV infection, defined as Walter Reed stage 1 or 2 (a CD4 cell count of not less than 400 per milliliter for more than three months, with or without lymphadenopathy),[13] were eligible for enrollment. The subjects also had to be between 18 and 50 years old, have a normal complete blood count, have no evidence of end-organ disease, have not abused alcohol or drugs over the preceding 12 months, and have not received antiretroviral or immunomodulatory drugs. All the subjects underwent a two-month base-line evaluation before randomization. None received any antiretroviral or immunomodulatory drug during the trial.

Vaccine Product and Immunization Schedule

The test vaccine was a noninfectious subunit glycoprotein derived from human T-cell lymphotropic virus Type III, gp160 VaxSyn HIV-1, MicroGeneSys, Meriden, Conn.), a baculovirus-expressed recombinant protein produced in the cells of lepidopteran insects, biochemically purified, and adsorbed to aluminum phosphate for final formulation.[29] Three doses of gp160 were used: 40, 160, and 640 μg. Both the 40-μg and 160-μg doses were injected in a volume of 1 ml; the 640-μg dose was given as 320 μg per milliliter in a volume of 2 ml.

The 30 subjects were assigned to six vaccination groups of 5 subjects each. Two immunization schedules were investigated: schedule A, with vaccination on days 0, 30, and 120, and scheudle B, with vaccination on days 0, 30, 60, 120, 150, and 180. Three of the six groups received different doses of vaccine accoding to schedule A, and the other three groups received different doses according to schedule B (Table 1). All vaccinations were administered by intramuscular injections into the deltoid muscle. The duration of the trial was 10 months—i.e., a 2-month base-line evaluation and an 8-month follow-up evaluation after the initial vaccination.

Assessment of Safety

Each subject was interviewed and examined on days 0, 1, 2, 3, 15, and 30 after each injection. They were asked whether they had had fever, chills, nausea, vomiting, arthralgia, myalgia, malaise, urticaria, wheezing, dizziness, or headache and were examined for local reactions at the site of injection, including erythema, swelling, itching, pain and tenderness, skin discoloration, skin breakdown, any change in regional lymphadenopathy, any change in the function of the extremity into which the vaccine had been injected, and the formation of any subcutaneous nodules at the site of injection. The complete blood count, serum biochemical determinations, coagulation-profile assessment, and urinalysis were performed monthly.

In vitro cellular immune function was assessed by determining the T-cell phenotype (total-lymphoycite, GD4 cell, and CD8 cell phenotypes)[30,31] and the T-cell proliferative response to mitogens (pokeweed and concavalin A) and control antigens (*Candida albicans* and tetanus).[31] In vitro cellular immune function was assessed by skin testing for delayed hypersensitivity to control antigens (mumps, tetanus toxoids, *C. albicans*, and trichophyton).

Quantitative viral culture of peripheral-blood mononuclear cells and plasma,[22] DNA polymerase-chain-reaction testing,[32] and measurements of serum p24 antigen levels were performed to monitor the HIV viral load in vivo.

Assessment of Immunogenicity

Antibodies directed against whole HIV proteins were measured with both recombinant viral gene products gp160, p66, and p24 (MicroGeneSys) and whole viral lysate of prototype HIV strain MN by dot blotting and Western blotting techniques.[33] Antibody responses to specific envelope epitopes were also measured (Table 2).

Neutralization activity was measured against three prototype HIV isolates (IIIB, RF, and MN) in a syncytium inhibition assay.[47] HIV-specific cellural responses were measured by standard lymphocyte-proliferation-essay techniques with use of gp160, p24, and baculoviral-expression-system control protein.[31] A detailed description of the methods of assessing safety and immunogenicity is available elsewhere.*

Definition of Response

The subjects were classified as responding to vaccination if they had a reproducible selective increase in both a cellular and a humoral immune response against HIV envelope-specific epitopes that was temporally associated with the series of vaccinations. Vaccine-induced humoral immunity was indicated by seroconversion to HIV envelope-specific epitopes, a secondary booster immune response to envelope-specific epitopes, or both. Vaccine-induced cellular immunity was indicated by the development of a new, reproducible, temporally associated proliferative response to gp160.

Subjects with neither a humoral nor a cellural proliferative response, or only a humoral or only a cellular proliferative response, to gp160 epitopes or HIV envelope epitopes were classified as not having resonded to the vaccination.

TABLE 1—IMMUNIZATION SCHEDULE

Schedule and group no.	Study day					
	0	30	60	120	150	180
μg of gp 160/ml						
Schedule A:						
1	40	40	.....	40	.....	.....
3	160	160	.....	160	.....	
5	640	640	.....	640	.....	
Schedule B:						
2	40	40	40	160	160	160
4	160	160	160	640	640	640

Footnotes at end of article.

*See NAPS document no. 04868 for eight pages of supplementary material. Order from NAPS c/o Microfiche Publications, P.O. Box 3513, Grand Central Station, New York, NY 10163-3513. Remit in advance (in U.S. funds only) $7.75 for photocopies or $4 for microfiche. Outside the U.S. and Canada add postage of $4.50 ($1.50 for microfiche postage). There is an invoicing charge of $15 on orders not prepaid. This charge includes purchase order.

TABLE 1—IMMUNIZATION SCHEDULE—Continued

Schedule and group no.	Study day					
	0	30	60	120	150	180
6	640	640	640	640	640	640

Statistical Analysis

Proportions were compared by Fisher's exact test (two-sided). Changes in cellular immune responses were summarized as the magnitude of changes (fold change) in the lymphocyte-stimulation index. The fold change for each subject was calculated by dividing the mean of the values for the index that were measured after the last vaccination by the mean of the values for the index at base line. Differences between subgroups in cellular immune responses were assessed by comparing the distributions of fold changes by the Wilcoxon rank-sum test. Changes in the number of CD4 T lymphocytes were compared between subgroups of subjects and with the change expected on the basis of experience with the natural history of HIV infection. Comparisons between subgroups were based on the mean of the percent changes in CD4 cell counts at the end of the follow-up period, as compared with the means at base line. At each time point, the number of CD4 T lymphocytes was calculated as the mean of seven values (the median was determined according to the time point).

RESULTS

Demographic and Base-Line Clinical Characteristics

Twenty-six of the 30 subjects were men, and 4 were women. Fourteen were non-Hispanic whites, 13 were black, and 3 were Hispanic. Their mean age was 29 years (range, 18 to 49). At enrollment 8 subjects had HIV infection in Walter Reed stage 1, and 22 had infection in stage 2. The base-line mean CD4 cell count was 668 per milliliter (range, 388 to 1639). The mean time between initial diagnosis and study entry was 24 months (range, 3 to 49).

Vaccine-Induced Humoral Responses

All 30 subjects completed the 340-day trial. Nineteen (63 percent) had a vaccine-induced augmentation of both HIV gp160-specific humoral and cellular immune responses and thus were classified as "vaccine responders." Of the 11 subjects classified as "nonresponders," 4 had only a humoral or a cellular immune response and 7 had no detectable response; all 7 without a response had received only three doses of vaccine (schedule A). No subject had changes in antibody binding to HIV polymerase (p66) or structural (p26) gene products or to the non-HIV control antigen tetanus. No antibody to the baculoviral lepidopteran-cell control protein developed in any subject.

Increases in the level of envelope antibody (gp160) were detected in 13 subjects on Western blotting with the whole-virus lysate HIV-MN. These changes were related to the immunization schedule. Three of 15 subjects (20 percent) assigned to schedule A and 10 of 15 (67 percent) assigned to schedule B had an increase in the level of antibody to envelope proteins (P=0.025 by Fisher's exact test, two-tailed). All 13 subjects also seroconverted to specific envelope epitopes. Conversely, of the 10 subjects who did not sero-convert to any envelope-specific epitope, none had an increase in envelope-antibody levels on Western blotting. The remaining seven subjects who seroconverted to specific envelope epitopes had no change in whole-virus envelope antibody on Western blotting. No changes in antibody directed against non-HIV envelope proteins were observed in any subject.

Fourteen of 15 subjects (93 percent) assigned to schedule B (six doses) had an increase in total gp160 antibody, as opposed to only 7 of 15 (47 percent) assigned to schedule A (three doses) (P=0.01 by Fisher's exact test, two-tailed) (Table 2). The range of the prevalence of 11 of the 12 gp160-specific epitopes selected for study (Table 2), from before to after vaccination, was as follows: epitope 49, 27 to 70 percent; epitope 88, 28 to 52 percent; epitope 106, 50 to 87 percent; epitope 241, 0 to 14 percent; epitope 254, 0 to 13 percent epitope 300, 47 to 77 percent; epitope 308, 42 to 69 percent; epitope 342, 0 to 27 percent; epitope 422, 3 to 10 percent; epitope 448C, 73 to 87 percent; and epitope 735, 17 to 33 percent (Fig. 1). Vaccine-induced seroconversion was noted to all the specific epitopes, except epitope 582 (Table 2). Antibodies (seroconversion) directed against epitopes 241, 254, and 342 were detected only after vaccination (Table 2).

Secondary immune responses to epitopes 88, 106, 300, 308, 448C, and 582 were elicited (Table 2). The prevalence of antibody directed against epitope 582 was 100 percent before vaccination, and only one subject (3 percent) had a secondary immune response.

The pattern of vaccine-induced HIV antibody to envelope epitopes was variable (Table 2). Primary antibody responses (seroconversion) to at least one epitope occurred in 20 subjects—14 of 15 assigned to schedule B and 6 of 15 assigned to schedule A (P=0.005 by Fisher's exact test, two-tailed). Furthermore, of all the epitopes studied, subjects assigned to schedule A serconverted to only 15 of 110 (14 percent) of the potential epitopes to which they had no antibodies before vaccination, whereas subjects assigned to schedule B seroconverted to 60 of 129 potential epitopes (47 percent) (P<0.0001 by Fisher's exact test, two-tailed). Seroconversion to three or more envelope epitopes occurred in 9 subjects (60 percent) assigned to schedule B but in only 2 (13 percent) of those assigned to schedule A (P=0.02 by Fisher's exact test, two-tailed).

[Charts and table 2 are not reproducible in this article for the Record.]

Serum neutralization activity against three distinct strains (HIV-IIB, HIV-MN, and HIV-RF) was determined on days 0, 90, and 195 in seven subjects. Four of five responders had increasing neutralizing activity to one or more isolates, as compared with neither of two nonresponders. Furthermore, the responders as a group, unlike the nonresponders, had an increase in the percentage of inhibition at a given dilution of serum required to inhibit syncytium formation against each prototype isolate tested.

Vaccine-induced Cellular Responses

In 21 of 30 subjects (70 percent), a new T-cell proliferative response to gp160 developed after vaccination (Table 2). Figure 2 shows the time course of proliferative responses to gp160, p24, and a baculovirus control protein in four typical vaccine responders. In all subjects, the gp160-induced proliferation increased, in that the mean lymphocyte-stimulation index rose from 3 at base line to 10 (a value calculated from the mean of four values determined after the last immunization). In contract, no change was noted in the proliferative responses directed against HIV p24 protein or the control baculorvirus protein. Vaccine-induced changes in the mean lymphocyte-stimulation index for all subjects, for subjects grouped according to degree of response, and for subjects grouped according to immunization schedule are shown in Figure 3. The change in proliferative response to gp160 in the vaccine responders was significantly different from that in the nonresponders (P<0.001 by Wilcoxon test, onetailed). The proliferative responses induced by the six injections of gp160 according to schedule B were greater than those induced by the three injections according to schedule A (Fig. 3) (P<0.10 by Wilcoxon test, one-tailed).

Nineteen of the 21 subjects who had proliferative responses to gp160 also had a humoral response (the 19 responders). The maximal mean lymphocyte-stimulation index observed among all 19 responders in response to gp160 was 50.1. However, in each responder the index was variable (range of peak values, 3 to 171) (Table 2), as was the temporal relation between vaccination and the magnitude and duration of the cellular responses to gp160 (Fig. 2).

Predictors of Immune Responsiveness

Despite the limited size of the sample in this trial, several factors were demonstrated to be associated with vaccine-induced immunogenicity. Six of 15 (40 percent) of the subjects assigned to schedule A responded, as compared with 13 of 15 (87 percent) of those assigned to schedule B (P = 0.02 by Fisher's exact test, two-tailed) (Table 2). Of the 16 subjects with a mean base-line CD4 count greater than 600 per milliliter, 13 (81 percent) were responders, as opposed to 6 of 14 (43 percent) whose mean CD4 count at entry was 600 or fewer cells per milliliter (P = 0.07 by Fisher's exact test, two-tailed). Multiple immunizations improved immunogenicity, even among patients with base-line CD4 counts of 600 or fewer cells per milliliter; five of six subjects with such counts assigned to schedule B (six injections) were responders, as compared with only one of eight assigned to schedule A (three injections) (P = 0.03 by Fisher's exact test, two-tailed; Table 3).

Toxicity

No evidence of systemic toxicity was observed, but local reactions were noted in 87 percent of the subjects (13 in each vaccination group). These reactions included induration, tenderness, and transient subcutaneous nodule formation at the injection site; an increase in regional adenopathy was rarely noted. No subject refused a booster injection. No difference in the frequency of local reactions was observed in relation to primary immunization, booster injection, or vaccine dosage.

No evidence of an adverse effect on the immune system was demonstrated, as measured in vitro by mitogen-specific and antigen-specific proliferative responses, in vivo by responses to delayed-hypersensitivity skin testing, or by acceleration of quantitative CD4 cell depletion. At base line the mean CD4 cell count was 716 in the responders and 605 in the nonresponders; from study day 180 to day 240 the mean count was 714 and 561, respectively. During the course of the 240-day trial, the net change in the mean CD4 cell count among the responders was a decrease of 0.2 percent, whereas among the nonresponders it was a decrease of 7.3 percent (Fig. 4). Vaccine-induced immunogenicity to HIV was not associated with evidence of an accelerated decline in the CD4 count of any subject throughout the entire course of the trial.

TABLE 3.—IMMUNE RESPONSIVENESS TO VACCINATION, ACCORDING TO IMMUNIZATION SCHEDULE AND BASE-LINE CD4 COUNT.

Schedule and CD4 count	All subjects number	Responders		Nonresponders	
		Number	Percent	Number	Percent
Schedule A:					
>600	7	5	71	2	29
500–600	5	1	20	4	80
<500	3	0	.....	3	100
Subtotal	15	6	40	9	60
Schedule B:					
>600	9	8	89	1	11
500–600	2	2	100	0	.....
<500	4	3	75	1	25
Subtotal	15	13	87	2	13
Total	30	19	63	11	37

To assess the possibility of increased HIV replication and viral load in the subjects as a consequence of vaccination, in vivo viral activity was measured by quantitative cultures of the virus in plasma and peripheral-blood mononuclear cells, by the polymerase-chain-reaction testing of DNA from peripheral-blood mononuclear cells, and as serum levels of p24 antigen. Assay by quantitative culture and the polymerase chain reaction demonstrated no changes during this trial. Serum p24 antigen was undetectable in all subjects.

DISCUSSION

The therapeutic use of vaccines was introduced by Pasteur in the 19th century for the treatment of acute rabies infection, but the value of this approach in the treatment of other infections has not been extensively explored. Although there are other examples of postinfection modification of viral-specific immunity (for example, after exposure to hepatitis A or B), there are no well-documented studies in humans that have demonstrated the feasibility of this approach in the setting of an established or chronic viral infection. Even in animals the only suggestion that such an approach is feasible is limited to a single investigation of herpes simplex in guinea pigs.[48]

The present study demonstrates the feasibility of virus-specific immune modification by active immunization after infection. Specifically, a gp160 vaccine derived from an HIV envelope gene augmented host-directed viral-specific humoral and cellular responses in 19 of 30 persons with early HIV infection. The definition of vaccination response that we chose—i.e., the requirement that a response be both humoral and cellular—was arbitrary but highly restrictive in the light of the scientific objective of this trial to assess the feasibility of postinfection immunization, and in the absence of support for this concept in studies of other chronic viral infections.

By qualitative and quantitative measurement of distinct antibody responses to specific HIV epitopes in natural infection as opposed to postinfection immunization, vaccine-induced humoral immunogenicity in already infected persons wad documented in 70 percent of the subjects. Although gross analysis of whole viral proteins by the Western blotting technique was helpful, characterization of humoral response by mapping of distinct epitopes proved to be a more sensitive method of assessing immunogenicity. Seroconversion to specific envelope epitopes occurred in 20 subjects (19 vaccine responders and 1 nonresponder) (Table 2). In addition, seroconversion associated only with vaccination (conversion to epitopes 241, 254, and 342) occurred in 10 subjects. This variation in humoral responses to the gp160 vaccine, as characterized by epitope mapping, will permit prospective cause-and-effect analysis of specific antibody responses and presents unique opportunities to characterize potential immunoregulatory mechanisms not elicited during a natural infection.

Although the relevance of serum neutralizing activity in vivo is unknown at present, the observation of increased neutralizing activity against disparate strains of HIV (IIIB, RF, and MN) in four of five responders suggests that postinfection immunization induced changes in functional antibody. This vaccine-induced increase in serum neutralization capacity against distinct strains of HIV will potentially aid in the definition of group-specific neutralization epitopes.

A proliferative response to HIV envelope proteins rarely occurs in natural HIV infection (data not shown). After immunization with gp160, however, specific T-cell proliferative responses were documented in 21 (70 percent) of the subjects. The reason for this difference is unclear. One possibility is that the new proliferative response may be directed against an envelope epitope (or epitopes) unique to the vaccine (as a result of the methods of vaccine production or antigen processing in vivo). Alternatively, the protein used in the proliferation assay may not stimulate primary T-cell proliferative responses against homologous wild-type envelopes of natural virus. We have recently obtained additional evidence that vaccination may boost the host cellular immune response: in selected responders to vaccination, HIV-IIIB type—specific cytotoxic T-cell responses were induced after booster immunization (data not shown).

The factors responsible for immunoresponsiveness to vaccination in HIV-infected persons remain to be clarified. Even in early HIV infection, individual patients respond suboptimally to a variety of vaccines, as compared with matched controls.[49] This hyporesponsiveness has been related to early B-cell dysregulation and T-cell dysfunction.[31 50] In the present trial, immunoresponsiveness to vaccination was associated with the base-line CD4 cell count, a finding consistent with the hypothesis that the immunologic status of a host is an important determinant of responsiveness. However, the immunization schedule within specific T-cell-count intervals (Table 3) also influenced responsiveness: schedule B (six injections) was superior. Indeed, the decreased response observed in the subjects with lower CD4 cell counts could be improved by an increased number of vaccinations, which suggests that further modifications in the dosage, regimen, adjuvant treatments, or formulation may improve host immunoresponsiveness.

Although questions have been raised about the safety of active immunization of HIV-infected persons with HIV-specific vaccine products,[51] there was no evidence of immune-specific toxicity. Quantitative cultures, DNA polymerase-chain-reaction assays, and serum antigen assays did not document any evidence of increased HIV load in vivo. Moreover, an excellent in vivo surrogate marker of HIV replication—the rate of decline in the CD4 cell count—was favorably influenced among the subjects, especially those classified as responders, in whom the decrease in the mean CD4 count was 0.2 percent, as compared with 7.3 percent in nonresponders. These data demonstrate that postinfection immune responsiveness was not associated with an increase in CD4 cell destruction, but perhaps rather with decreased replication of HIV in vivo. A more direct measurement of in vivo active expression of virus—RNA-transcript analysis—is under development.[52]

An open, unblinded, phase I trial is not designed to provide conclusive information about therapeutic efficacy. Thus, the ability to respond to gp160 with either a primary or a secondary immune response may have been restricted to a subgroup of patients who had less severe B-cell or T-cell dysfunction. The difference observed between the base-line mean CD4 counts of responders and those of nonresponders (716 and 605 cells per milliliter, respectively) and the overall poor response of subjects with CD4 counts of 600 cells or fewer per milliliter at entry support this possibility. However, because of the grim prognosis of patients with this infection, we believe it was important to explore potential clinical benefits. Thus, we retrospectively compared changes in the subjects' mean CD4 cell counts according to treatment group (vaccination schedules) with expected changes observed during untreated infections, using a data base on the natural history of HIV infection in a cohort of patients from the U.S. Army. Ten patients from this cohort were matched for age, ethnic group, and base-line CD4 cell count with each subject. The mean CD4 count decreased by 8.7 percent in this historical reference group, decreased by 7.2 percent in subjects assigned to schedule A, and increased by 0.6 percent in subjects assigned to schedule B. Although preliminary, these results are encouraging. Direct evidence of therapeutic benefit must await the completion of phase II studies of clinical efficacy.

In the light of these results, the scientific and therapeutic importance of HIV-specific immunization warrants further investigation. Postinfection vaccination should serve as a powerful tool to further the understanding of HIV immunoregulation and, if proved clinically relevant, would provide an alternative strategy for treatment. This approach may also prove useful in defining a protective immune response (or responses) relevant to the prophylactic use of vaccines.

REFERENCES

[1] Melbye M, Biggar RJ, Ebbesen P, et al. Long-term seropositivity for human T-lymphotrophic virus type III in homosexual men without acquired immunodeficiency syndrome: development of immunologic and clinical abnormalities: a longitudinal study. Ann Intern Med 1986; 104:496–500.

[2] Redfield RR, Burke DS. Shadow on the land: the epidemiology of HIV. Viral Immunol 1987; 1:69–81.

[3] Zolla-Pazner S, Des Jarlais DC, Friedman SR, et al. Nonrandom development of immunologic abnormalities after infection with human immunodeficiency virus: implications for immunologic classification of the disease. Proc Natl Acad Sci U S A 1987; 84:5404–8.

[4] Giorgi JV, Fahey JL, Smith DC, et al. Early effects of HIV on CD4 lymphocytes in vivo. J Immunol 1987; 138:3725–30.

[5] Fauci A. The human immunodeficiency virus: infectivity and mechanisms of pathogenesis. Science 1988; 239:617–22.

[6] Birx DL, Redfield RR, Tosato G. Defective regulation of Epstein-Barr virus infection in patients with acquired immunodeficiency syndrome (AIDS) and AIDS-related disorders. N Engl J Med 1986; 314:874–9.

[7] Lane HC, Depper JM, Greene WC, Whalen G, Waldmann TA, Fauci AS. Qualitative analysis of immune function in patients with the acquired immunodeficiency syndrome: evidence for a selective defect in soluble

antigen recognition. N Engl J Med 1985; 313:79–84.

[8] Lane HC, Masur H, Edgar LC, Whalen G, Rook AH, Fauci AS. Abnormalities of B-cell activation and immunoregulation in patients with the acquired immunodeficiency syndrome. N Engl J Med 1983; 309:453–8.

[9] Fahey JL, Taylor JM, Detels R, et al. The prognostic value of cellular and serologic markers in infection with human immunodeficiency virus type 1. N Engl J Med 1990; 322:166–72.

[10] Leitman SF, Klein HG, Melpolder JJ, et al. Clinical implications of positive tests for antibodies to human immunodeficiency virus type 1 in asymptomatic blood donors. N Engl J Med 1989; 321:917–24.

[11] Phair J, Muñoz A, Detels R, et al. The risk of *Pneumocystis carinii* pneumonia among men infected with human immunodeficiency virus type 1. N Engl J Med 1990; 322:161–5.

[12] Goedert JJ, Kessler CM, Aledort LM, et al. A prospective study of human immunodeficiency virus type 1 infection and the development of AIDS in subjects with hemophilia. N Engl J Med 1989; 321:1141–8.

[13] Redfield RR, Wright DC, Tramont EC. The Walter Reed staging classification for HTLV-III/LAV infection. N Engl J Med 1986; 314:131–2.

[14] Robert-Guroff M, Brown M, Gallo RC. HTLV-III-neutralizing antibodies in patients with AIDS and AIDS-related complex. Nature 1985; 316:72–4.

[15] Weiss RA, Clapham PR, Cheingsong-Popov R, et al. Neutralization of human T-lymphotropic virus type III by sera of AIDS and AIDS-risk patients. Nature 1985: 316:69–72.

[16] Lyerly HK, Reed DL, Matthews TJ, et al. Anti-gp 120 antibodies from HIV seropositive individuals mediate broadly reactive anti-HIV ADCC. AIDS Res Hum Retroviruses 1987; 3:409–22.

[17] Weinhold KJ, Lyerly HK, Matthews TJ, et al. Cellular anti-gp 120 cytolytic reactivities in HIV-1 seropositive individuals. Lancet 1988; 1:902–5.

[18] Koenig S. Earl P, Powell D, et al. Group-specific, major histocompatibility class I-restricted cytotoxic responses to human immunodeficiency virus 1 (HIV-1) envelope proteins by cloned peripheral blood T cells from an HIV infected individual. Proc Natl Acad Sci U S A 1988; 85:8638–42.

[19] Walker BD, Chakrabarti S, Moss M, et al. HIV-specific cytotoxic T lymphocytes in seropositive individuals. Nature 1987; 328–345–8.

[20] Berzofsky JA, Bensussan A, Cease KB, et al. Antigenic peptides recognized by T lymphocytes from AIDS viral envelope-immune humans. Nature 1988; 334:706–8.

[21] Allain J-P, Laurian Y, Paul DA, et al. Long-term evaluation of HIV antigen and antibodies to p24 and gp41 in patients with hemophilia: potential clinical importance. N Engl J Med 1987; 317:1114–21.

[22] Burke DS, Fowler AK, Redfield RR, Dilworth S, Oster CN. Isolation of HIV-1 from the blood of seropositive adults. J Acquir Immune Defic Syndr 1990; 3:1159–67.

[23] Schnittman SM, Greenhouse JJ, Psallidopoulos MC, et al. Increasing viral burden in CD4+ T cells from patients with human immunodeficiency virus (HIV) infection reflects rapidly progressive immunosuppression and clinical disease. Ann Intern Med 1990; 113:438–43.

[24] Asjö B, Morfeldt-Månson L, Albert J, et al. Replicative capacity of human immunodeficiency virus from patients with varying severity of HIV infection. Lancet 1986; 2:660–2.

[25] Cheng-Mayer C, Seto D, Tateno M, Levy A. Biologic features of HIV-1 that correlate with virulence in the host. Science 1988; 240:80–2.

[26] Salk J. Prospects for the control of AIDS by immunizing seropositive individuals. Nature 1987; 327:473–6.

[27] Zagury D, Léonard R, Fouchard M, et al. Immunization against AIDS in humans. Nature 1987; 326:249–50.

[28] Redfield RR, Burke DS. HIV infection: the clinical picture. Sci Am 1988; 259(4):90–8.

[29] Dolin R, Graham BS, Greenburg SB, et al. The safety and immunogenicity of a human immunodeficiency virus type 1 (HIV-1) recombinant gp160 candidate vaccine in humans. Ann Intern Med 1991; 114:119–27.

[30] Rickman WF, Waxdal MJ, Monical C, Damato JD, Burke DS. Department of Army lymphocyte immunophenotyping quality assurance program. Clin Immunol Immunophathol 1989; 52:85–95.

[31] Birx DL, Rhoads JL, Wright JC, Burke DS, Redfield RR. Immunologic parameters in early-stage HIV-seropositive subjects associated with vaccine responsiveness. J Acquir Immune Defic Syndr 1991; 4:188–96.

[32] Wages JM Jr, Hamdallah M, Calabro MA, et al. Clinical performance of a polymerase chain reaction testing algorithm for diagnosis of HIV-1 infection in peripheral blood mononuclear cells. J Med Virol 1991; 33:58–63.

[33] Towbin H, Staehelin T, Gordon J. Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: procedure and some applications. Proc Natl Acad Sci U S A 1979; 76:4350–4.

[34] Lee TH, Redfield RR, Hsieh CC, et al. Association between antibody to envelope glycoprotein gp120 and the outcome of human immunodeficiency virus infection. In: Ginsbergh H, ed. Vaccine 1988: new chemical and genetic approaches to vaccination. Cold Spring Harbor, N.Y.: Cold Spring Harbor Laboratory, 1988:373–7.

[35] Shafferman A, Lennox J, Grosfeld H, Sadoff G, Redfield RR, Burke DS. Patterns of antibody recognition of selected conserved amino acid sequences from the HIV envelope in sera from different stages of HIV infection. AIDS Res Human Retroviruses 1989; 5:33–9.

[36] Polonis V, Shafferman A, Lee T, Smith G, Burke D, Redfield R. Relationship between antibody directed against the carboxyl-terminal region of HIV GP120 and markers of HIV specific immunoregulation. J Cell Biol 1989; 109:Suppl 13B:258. abstract.

[37] Syu WJ, Huang JH, Essex M, Lee TH. The N-terminal region of the human immunodeficiency virus envelope glycoprotein gp120 contains potential binding sites for CD4. Proc Natl Acad Sci U S A 1990; 87:3695–9.

[38] Schnittman SM, Lane HC, Roth J, et al. Characterization of GP120 binding to CD4 and an assay that measured ability of sera to inhibit this binding. J Immunol 1988; 141:4181–6.

[39] Lasky LA, Nakamura GM, Smith DH, et al. Delineation of a region of the human immunodeficiency virus type 1 gp120 glycoprotein critical for interaction with the CD4 receptor. Cell 1987; 50:975–85.

[40] Ho DD, Kaplan JC, Rackauskas IE, Gurney ME. Second conserved domain of gp120 is important for HIV infectivity and antibody neutralization. Science 1988; 239:1021–3.

[41] Dalgleish AG, Chanh TC, Kennedy RC, Kanda P, Clapham PR, Weiss RA. Neutralization of diverse HIV-1 strains by monoclonal antibodies raised against a gp41 synthetic peptide. Virology 1988; 165:209–15.

[42] Rusche JR, Javaherian K, McDanal C, et al. Antibodies that inhibit fusion of human immunodeficiency virus-infected cells bind a 24-amino acid sequence of the viral envelope, gp120. Proc Natl Acad Sci USA 1988; 85:3198–202. [Errata, Proc Natl Acad Sci U S A 1988; 85:8697; 1989; 86:1667.]

[43] Looney DJ, Fisher AG, Putney SD, et al. Type-restricted neutralization of molecular clones of human immunodeficiency virus. Science 1988; 241:357–9.

[44] LaRosa GJ, Davide JP, Weinhold KW, et al. Conserved sequence and structural elements in the HIV-1 principal neutralizing determinant. Science 1990; 249:932–5.

[45] Gnann JW Jr, Schimmbeck PL, Nelson JA, Truax BA, Olston MBA. Diagnosis of AIDS by using a 12-amino acid peptide representing an immunodominant epitope of the human immunodeficiency virus. J Infect Dis 1987; 156:261–7.

[46] Chang TW, Kato I, Mckinney S, et al. Detection of antibodies to human T-cell lymphotropic virus-III (HTLV-III) with an immunoassay employing a recombinant Escherichia coli-derived viral antigenic peptide. Biotechnology 1985; 3:905. abstract.

[47] Nara PL, Fischinger PJ. Quantitative infectivity assay for HIV-1 and -2. Nature 1988; 332:469–70.

[48] Stanbery LR, Bernstein DI, Burke RL, Pachl C, Myers MG. Vaccination with recombinant herpes simplex virus glycoproteins: protection against initial and recurrent genital herpes. J Infect Dis 1987; 155:914–20.

[49] Rhoads JL, Birx DL, Wright DC, et al. Safety and immunogenicity of multiple conventional immunizations administered during early HIV infection. J Acquir Immune Defic Syndr (in press).

[50] Birx DL, Redfield RR, Tencer K, Fowler AK, Burke DS, Tosato G. Induction of interleukin-6 during human immunodeficiency virus infection. Blood 1990; 76:2303–10.

[51] Levy JA. Mysteries of HIV: challenges for therapy and prevention. Nature 1988; 333:519–22.

[52] Michael NL, Morrow P, Mosca J, Vahey MT, Burke DS, Redfield RR. Induction of human immunodeficiency virus type 1 expression in chronically infected cells is associated primarily with a shift in RNA splicing patterns. J Virol 1991; 65:1291–303.

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From the Department of Retroviral Research (R.R.R., D.L.B., V.P.) and the Divi-

sion of Retrovirology (D.S.B.), Walter Reed Army Institute of Research (E.T.), Rockville, Md.; the Division of Preventive Medicine, Walter Reed Army Institute of Research, Washington, D.C. (J.F.B.); the Infectious Disease Service, Department of Medicine, Walter Reed Army Medical Center, Washington, D.C. (C.D., S.J., C.O.); the Henry M. Jackson Foundation for the Advancement of Military Medicine, Rockville, Md. (N.K., T.W.); SRA Technologies, Inc., Rockville, Md. (A.F.); the Department of Biochemistry, Israel Institute of Biological Research, Ness-Ziona, Israel (A.S.); and MicroGeneSys, Inc., Meriden, Conn. (G.S., F.V.). Address reprint requests to Dr. Redfield at the Department of Retroviral Research, Walter Reed Army Institute of Research, 13 Taft Ct., Rockville, MD 20850.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

EDITORIAL OPPOSING SECRET TRIALS

Mr. CRANSTON. Mr. President, the Senate will very shortly proceed to consideration of the crime bill. One of the proposals included in the administration's crime bill would create a tribunal which could conduct secret trials and use secret evidence leading to the deportation of resident aliens.

Mr. President, our entire judicial system is predicated on the ability of the accused to know what evidence has been charged against him, and to have an opportunity to respond to that evidence. To accept the administration's proposal is contrary to our basic constitutional principles.

In today's Washington Post an excellent editorial outlines this troubling legislation. I ask unanimous consent that the editorial be placed in the RECORD.

There being no objection, the editorial was ordered to be printed in the RECORD, as follows:

[From the Washington Post, June 19, 1991]

SECRET TRIALS

The Senate is about to consider a terrible proposal that would allow the government to hold secret trials leading to the deportation of certain noncitizens. It will come up as part of an assorted crime package moving to the floor this week. On the agenda are two crime bills, one supported by Sen. Joseph Biden and the Democrats, the other the administration's proposal sponsored by Sen. Strom Thurmond. Because the major features of both bills—the death penalty, habeas corpus revisions and changes in the exclusionary rule—have been considered in both houses recently, the Senate Judiciary Committee held only three perfunctory hearings this year—one on habeas, another on rural crime and a third to hear Attorney General Dick Thornburgh.

Incredibly, no hearings were held on the deportation proposal, which is new this year. Moreover, because the committee didn't even vote on these bills but simply sent both to the floor without recommendation, there is not even a committee report that evaluates this section of the president's bill.

The proposal is directed against aliens the government believes are engaged in "terrorist activity". It applies to all noncitizens, even those who have entered legally, lived here for decades and have children and other close relatives who are citizens. The bill uses a definition of "terrorist activity" that is broad and includes raising money for or urging others to join "terrorist organizations," though it does not define the latter term. That is a political decision left to the government, and presumably it could include groups such as Kurdish nationalists, Afghan rebels, Sikh separatists and the IRA. Spokesmen for the PLO are singled out in the statute as engaging in terrorist activity.

The administration bill would allow the Justice Department to go to a secret court and get an order for a special proceeding to deport such people. Targeted individuals would have no notice of this hearing and no opportunity to attend or be represented. They could be arrested and detained as soon as this petition was filed. At the special proceeding that followed, the government could present secret evidence—outside the presence of the alien and his lawyer—and could even withhold a summary of that evidence from the accused. Theoretically, appeals would be allowed, but again, the evidence used at the trial could be kept under seal and the appeal argued in secret.

Does this sound like a proceeding in an American court? It is a nightmare that could allow the worst kind of injustice. Though not a criminal trial, a deportation hearing involves severe penalties and must afford due process. There is not much that is good in either of the crime bills coming up for consideration—gun control is the exception—but this blueprint for a kangaroo court stands out. It is hard to see how anyone with any respect for the American idea of justice could support it.

COL. WILLIAM K. MERRILL

Mr. SYMMS. Mr. President, I should like to bring to the attention of my distinguished colleagues an Army officer from my State of Idaho, Col. William K. Merrill. Colonel Merrill retires from the Army on June 30. This will be both a sad and joyful day for the Army. Sad because it is losing Colonel Merrill and joyful in celebration of his 40 years of outstanding service.

During the last 25 years, Bill Merrill has been assigned to Army headquarters in Washington where he has been Chief of Military Policies and Equal Opportunity to 7 Secretaries of the Army, 10 Assistant Secretaries, and 8 Chiefs of Staff of the Army. He is an institution, and rightly so. In support of our soldier constituents he has often been the haven of last resort for assisting soldiers, and frequently formulated new policies or fine tuned existing policies to personally assist in solving a particular problem. His humanitarian, compassionate, and commonsense approach to personnel problems is renowned both within and outside the Army. It was he who invented the Army's slogan to "Put the person in personnel." He did just that!

In his 40 years of active duty, Colonel Merrill has commanded an antiaircraft battery at Camp Hanford, WA; served as chief of special intelligence teams in Frankfurt and Berlin, Germany; and commanded various activities at Fort Ord, CA, Fort Riley, KS, Fort Bliss, TX, Fort Bragg, NC, Fort Lee, VA, and Fort Leavenworth, KS.

Truly dedicated to his country, he enlisted in the Marine Corps in World War II, leaving his college studies in Idaho "for a duller day" as Robert Service wrote. His Marine Corps service was anything but dull—it took him throughout the Pacific theater of operations and to the Battles of Tarawa, the Gilbert Islands, Saipan, and Iwo Jima. He returned unscathed to college in Idaho, and on obtaining his degree enlisted in the Army for Officer Candidate School. He was subsequently commissioned an officer in the United States Army on May 5, 1951, and later served in Vietnam.

Colonel Merrill has received the Distinguished Service Medal, four awards of the Legion of Merit, the Bronze Star Medal, two awards of the Air Medal, the Army Commendation Medal, and numerous service and campaign awards. Highly decorated for service in war and peace this soldier has been recognized throughout his military career as a giant of a man—physically and spiritually. The Army has been greatly enriched by his selfless, faithful, and outstanding service.

Colonel Merrill may now deservedly rest on his laurels and enjoy the company of his lovely wife, Alice Voskuhl Merrill, and their children, Junja J. Merrill, and Merrille A. Burns. We wish him happiness and success in all his future undertakings. As Idahoans we proudly salute our native son, Col. William K. Merrill.

IN MEMORY OF DR. HOWARD A. SPORCK

Mr. ROCKEFELLER. Mr. President, I rise to take a moment to pay tribute to a very special West Virginian, Dr. Howard A. Sporck, who recently passed away.

Dr. Sporck was a dedicated physician and caring community leader in Wellsburg, WV, for over 45 years. He established a small clinic and served people in Brooke County based on their medical needs rather than their ability to pay. He also worked for the local Brooke County Health Department and served as the county coroner. He cared deeply about the health and well-being of everyone in his community.

At a time when many people think about retiring and enjoying themselves, Dr. Sporck continued to work. He was a tireless advocate for improved community health care, and was proud that his town of Wellsburg was involved in the Bayer Wellness Campaign, a community-wide initiative designed to promote greater awareness of health care and wellness.

In addition to his medical practice, Dr. Sporck also gave of his time and talents to the community in many

other ways. He served on the Brooke County School Board for many years and worked to establish a consolidated high school because he wanted to expand the curriculum and opportunities for local student. Dr. Sporck understood that communities must invest in education and he was willing to become a local leader for such a worthy cause.

Dr. Howard A. Sporck was a generous man who fought throughout his life to make his community a better place. The people of Brooke County were well served by this caring man.

TERRY ANDERSON

Mr. MOYNIHAN. Mr. President, I rise to inform my colleagues that today marks the 2,286th day that Terry Anderson has been held captive in Lebanon.

TRIBUTE TO NANCY HOWE

Mr. LEAHY. Mr. President, the rate at which U.S. wetlands are destroyed is alarming to many of us, including Vermont wildlife artist and duck hunter, Nancy Howe. She is the first woman and Vermonter ever to win top honors in the Federal duck stamp competition. Her design will be used on the 1991-92 Federal Duck Stamp.

The Duck Stamp Program, initiated by the Department of the Interior, helps compensate for the destruction of wetlands and the depletion of wetland wildlife and resources. Revenues from the duck stamps and prints, amounting to over $400 million since the program began in 1934, have been used to preserve almost 4 million acres of prime wetland habitat under the National Refuge System.

In addition to painting, Nancy raises two children and operates a sheep farm with her husband. In a year's time, Nancy holds the honor of winning three major national art awards, including first place in the Federal duck stamp competition. Out of her concern for wildlife, Nancy has promised $5 from each print to wetland preservation.

It is an honor to Nancy and the State of Vermont that her depiction of the King Eiders was chosen to represent the diminishing wetlands in this country and the plight of wetland wildlife.

The Fish and Wildlife Service of the Department of the Interior anticipate the national issuing of the Federal duck stamp on Monday, July 1. In East Dorset, VT, this commemorative day will mark a ceremony in honor of Nancy Howe hosted by the U.S. Post Office.

All of us in Vermont are proud of Nancy Howe.

PREVENTIVE HEALTH CARE SHOULD BE AVAILABLE TO ALL

Mr. HARKIN. Mr. President, today it was announced that Blue Cross/Blue Shield will recommend that its plans, which provide insurance to nearly 100 million Americans, offer periodic preventive and screening services as part of basic coverage for healthy adults. I rise to commend this enlightened decision. This forward-looking initiative incorporates guidelines developed through the leadership of the American College of Physicians and is in keeping with the Surgeon General's goals for disease prevention and health promotion for the year 2000.

The gradual shift from costly, high-technology interventions to commonsense prevention services is a welcome step in the effort to contain the Nation's annual health care bill and to improve the quality of life of all Americans. Today's announcement represents an important philosophical and practical breakthrough which I have been vigorously promoting. Every American should have access to critical preventive health care. Preventive services should be covered under every health plan, public and private, and I call upon other insurance carriers, including Federal programs, to offer and build upon these important services.

Last year a significant preventive benefit, regular screening mammography services for women 65 years or older, was added to the Medicare Program. This will save many women from premature death and disfiguring surgery. The Breast Cancer Screening Act of 1991—S. 508—which I recently introduced, would extend Medicare's coverage of mammography screening to all women age 50 to 64 lacking such coverage. The newly recommended mammography coverage by Blue Cross/Blue Shield would similarly provide this preventive service to healthy female beneficiaries starting at age 50.

While the Blue Cross/Blue Shield prevention initiative is an important and welcome step in the right direction, the journey toward putting prevention first in our health care system has only begun. The recommended preventive services are only recommendations. To be effective the newly authorized preventive services must be accepted by employer health insurance plans as additional benefits for their employees. Those without private insurance need coverage. In addition, physicians and other health care providers must incorporate the recommended preventive services into the routine care of healthy patients and provide the critical education and counseling to make these services meaningful.

The newly recommended preventive services are presently restricted to healthy adults. Preventive services for children or pregnant women have not yet been adopted despite the overwhelming evidence supporting disease prevention and health promotion in these groups. The adverse consequences of inadequate immunization programs, nutrition, and lead screening can no longer be ignored. In addition, adequate attention has been devoted to the prevention of disabilities and injuries, especially in children and persons with disabilities, has yet to be paid. Older Americans also have much to gain through the availability of appropriate prevention services, education, and counseling.

Disease prevention and health promotion must be the centerpiece of any fundamental health care reform. To this end, I have introduced the prevention first legislative package—S. 504-S. 510. Increased support of biomedical and outcome research is part of the solution for expanding the scope of preventable illness and disability. By now putting prevention first among our health care priorities, we will not only save lives and money but also improve the quality of life.

APPOINTMENT ON BEHALF OF THE REPUBLICAN LEADER

The PRESIDING OFFICER. The Chair announces, on behalf of the Republican leader, pursuant to Public Law 101-509, his appointment of Dr. Donald R. McCoy, of Kansas, to the Advisory Committee on the Records of Congress.

MESSAGES FROM THE PRESIDENT

Messages from the President of the United States were communicated to the Senate by Mr. McCathran, one of his secretaries.

EXECUTIVE MESSAGES REFERRED

As in executive session the Presiding Officer laid before the Senate messages from the President of the United States submitting sundry nominations which were referred to the appropriate committees.

(The nominations received today are printed at the end of the Senate proceedings.)

ENROLLED BILL SIGNED

The Acting President pro tempore (Mr. KERREY) announced that on today, June 19, 1991, he had signed the following enrolled bill:

S. 64. An act to authorize appropriations to establish a National Education Commission on Time and Learning and a National Council on Education Standards and Testing, and for other purposes.

ENROLLED BILL PRESENTED

The Secretary of the Senate reported that on today, June 19, 1991, he had presented to the President of the United States the following enrolled bill:

S. 64. An act to authorize appropriations to establish a National Education Commission on Time and Learning and a National Coun-

cil on Education Standards and Testing, and for other purposes.

REPORTS OF COMMITTEES

The following reports of committees were submitted.

By Mr. BOREN, from the Select Committee on Intelligence, without amendment:

S. 1325: An original bill to authorize appropriations for fiscal year 1991 for intelligence activities of the United States Government, the Intelligence Community Staff, and the Central Intelligence Agency Retirement and Disability System, and for other purposes (Rept. No. 102-85).

EXECUTIVE REPORTS OF COMMITTEES

The following executive reports of committees were submitted:

By Mr. KENNEDY, from the Committee on Labor and Human Resources:

Robert Michael Guttman, of the District of Columbia, to be an Assistant Secretary of Labor.

(The above nomination was reported with the recommendation that it be confirmed, subject to the nominee's commitment to respond to requests to appear and testify before any duly constituted committee of the Senate.)

By Mr. NUNN, from the Committee on Armed Services:

Donald Jay Yockey, of California, to be Under Secretary of Defense for Acquisition; and

Nancy Patricia Dorn, of Texas, to be an Assistant Secretary of the Army.

(The above nominations were reported with the recommendation that they be confirmed, subject to the nominees' commitment to respond to requests to appear and testify before any duly constituted committee of the Senate.)

Mr. NUNN. Mr. President, from the Committee on Armed Services, I report favorably the attached listing of nominations.

Those identified with a single asterisk (*) are to be placed on the Executive Calendar. Those identified with a double asterisk (**) are to lie on the Secretary's desk for the information of any Senator since these names have already appeared in the CONGRESSIONAL RECORD and to save the expense of printing again.

*Gen. Carl E. Vuono, USA, to be placed on the retired list in the grade of general (Reference No. 287)

*Gen. Gordon R. Sulivan, USA, for appointment as Chief of Staff of the Army and reappointment to the grade of general (Reference No. 288)

*Lt. Gen. Richard G. Graves, USA to be placed on the retired list in the grade of lieutenant general (Reference No. 328)

*Maj. Gen. Horace G. Taylor, USA to be lieutenant general (Reference No. 329)

*Vice Adm. Jimmy Pappas, USN to be placed on the retired list in the grade of vice admiral (Reference No. 330)

**In the Army there is one appointment as permanent professor at the United States Military Academy (Colonel Charles F. Brower IV) (Reference No. 331)

*Vice Adm. Raymond P. Ilg, USN to be placed on the retired list in the grade of vice admiral (Reference No. 337)

*Rear Adm. Kenneth C. Malley, USN to be vice admiral (Reference No. 338)

**In the Army Reserve there are 25 promotions to the grade of colonel and below (list begins with Daniel P. Burns) (Reference No. 348)

**In the Army Reserve there are 20 appointments to the grade of lieutenant colonel (list begins with Michael H. Chema) (Reference No. 349)

*Lt. Gen. Norman H. Smith, USMC, to be placed on the retired list in the grade of lieutenant general (Reference No. 357)

*Lt. Gen. Dennis J. Reimer, USA to be Vice Chief of Staff of the Army and to be General (Reference No. 372)

*Lt. Gen. James E. Thompson, USA to be placed on the retired list in the grade of lieutenant general (Reference No. 373)

*Maj. Gen. J. H. Binford Peay III, USA to be lieutenant general and to be Senior Army Member of the Military Staff Committee of the United Nations (Reference No. 374)

**In the Army there are 10 promotions to the grade of colonel and below (list begins with Larry S. Merck) (Reference No. 377)

**In the Army there are 614 promotions to the grade of colonel (list begins with Thomas L. Abbenante) (Reference No. 378)

**In the Army there are 2,233 promotions to the grade of major (list begins with Daniel F. Abahazy) (Reference No. 379)

**In the Naval Reserve there are 648 promotions to the grade of commander (list begins with Edward L. Abner) (Reference No. 381)

**In the Navy there are 637 promotions to the grade of commander (list begins with Richard John Ackermann) (Reference No. 382)

*Lt. Gen. Thomas N. Griffin, Jr., USA to be placed on the retired list in the grade of lieutenant general (Reference No. 384)

*Maj. Gen. Joseph S. Laposata, USA, to be lieutenant general (Reference No. 386)

**In the Army there are 20 promotions to the grade of colonel (list begins with John D. Altenburg) (Reference No. 395)

**In the Army there are 42 promotions to the grade of major (list begins with Ronny Berry) (Reference No. 396)

Total: 4,263.

The PRESIDING OFFICER. Without objection, it is so ordered.

(The nominations ordered to lie on the Secretary's desk were printed in the RECORD of May 6, May 15, June 3, and June 11, 1991 at the end of the Senate proceedings.)

INTRODUCTION OF BILLS AND JOINT RESOLUTIONS

The following bills and joint resolutions were introduced, read the first and second time by unanimous consent, and referred as indicated:

By Mr. LIEBERMAN (for himself and Mr. CHAFEE):

S. 1323. A bill to amend the Clean Air Act to require the offset of certain greenhouse gas emissions and for other purposes; to the Committee on Environment and Public Works.

By Mr. METZENBAUM:

S. 1324. A bill to amend the Public Health Service Act to generate accurate data necessary for continued maintenance of food safety and public health standards and to protect employees who report food safety violations, and for other purposes; to the Committee on Labor and Human Resources.

By Mr. BOREN, from the Select Committee on Intelligence:

S. 1325. An original bill to authorize appropriations for fiscal year 1991 for intelligence activities of the United States Government, the Intelligence Community Staff, and the Central Intelligence Agency Retirement and Disability System, and for other purposes; placed on the calendar.

By Mr. BUMPERS (for himself, Mr. AKAKA, Mr. BINGAMAN, and Mr. BURDICK):

S. 1326. A bill to provide a national program for improving the quality of instruction in the humanities in public and private elementary and secondary schools; to the Committee on Labor and Human Resources.

By Mr. BINGAMAN (for himself, Mr. NUNN, Mr. HOLLINGS, Mr. GORE, Mr. MITCHELL, Mr. WIRTH, Mr. KENNEDY, Mr. ROCKEFELLER, Ms. MIKULSKI, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1327. A bill to provide for a coordinated Federal program that will enhance the national security and economic competitiveness of the United States by ensuring continued United States technological leadership in the development and application of national critical technologies, and for other purposes; to the Committee on Commerce, Science, and Transportation.

By Mr. BINGAMAN (for himself, Mr. HOLLINGS, Mr. NUNN, Mr. GORE, Mr. WIRTH, Mr. KENNEDY, Mr. ROCKEFELLER, Ms. MIKULSKI, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1328. A bill to enhance the national security and economic competitiveness of the United States by providing for increased Federal Government support for the development and deployment of advanced manufacturing technology and the training of manufacturing managers and engineers, and for other purposes; to the Committee on Commerce, Science, and Transportation.

By Mr. HOLLINGS (for himself, Mr. GORE, Mr. BINGAMAN, Mr. NUNN, Mr. MITCHELL, Mr. ROCKEFELLER, Mr. KENNEDY, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1329. A bill to strengthen Federal strategy for the development and deployment of critical advanced technologies, and for other purposes; to the Committee on Commerce, Science, and Transportation.

By Mr. HOLLINGS (for himself, Mr. GORE, Mr. BINGAMAN, Mr. NUNN, Mr. ROCKEFELLER, Mr. KENNEDY, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1330. A bill to enhance the productivity, quality, and competitiveness of United States industry through the accelerated development and deployment of advanced manufacturing technologies, and for other purposes; to the Committee on Commerce, Science, and Transportation.

By Mr. NUNN (for himself, Mr. BINGAMAN, Mr. BYRD, Mr. WARNER, Mr. COATS, Mr. GORE, Mr. THURMOND, Mr. WIRTH, Mr. MCCAIN, Mr. DIXON, Mr. HOLLINGS, Mr. DOMENICI, Mr. HATFIELD, Mr. SMITH, Mr. EXON, Mr. SHELBY, Mr. BUMPERS, Mr. DECONCINI, Mr. GLENN, Mr. LIEBERMAN, Mr. LEVIN, and Mr. KENNEDY):

S. 1331. A bill to require the Secretary of Defense to establish a grant program for the improvement of undergraduate and graduate manufacturing engineering education at institutions of higher education in the United States; to the Committee on Armed Services.

By Mr. BAUCUS (for himself, Mr. GRASSLEY, Mr. SYMMS, Mr. HOLLINGS, Mr. SHELBY, Mr. HARKIN, Mr. WALLOP, Mr. PRESSLER, Mr. SIMPSON, Mr. BOND, Mr. SANFORD, Mr. MCCAIN, and Mr. CHAFEE):

S. 1332. A bill to amend title XVIII of the Social Security Act to provide relief to physicians with respect to excessive regulations under the medicare program; to the Committee on Finance.

By Mr. SASSER (for himself, Mr. JOHNSTON, Mr. HATCH, Mr. DASCHLE, Mr. PRESSLER, Mr. PRYOR, Mr. D'AMATO, Mr. HOLLINGS, and Mr. LEVIN):

S. 1333. A bill to amend the Federal Property and Administrative Services Act of 1949 to authorize the Administrator of General Services to make available for humanitarian relief purposes any nonlethal surplus personal property, and for other purposes; to the Committee on Governmental Affairs.

By Mr. FOWLER:

S. 1334. A bill to provide for the full recovery of the Federal Government's costs of selling timber on national forest lands, to require site-specific identification of national forest lands that are not economically suitable for timber harvesting, to remove that land from the suitable timber base and make associated adjustments in the allowable sale quantity, to assist in the economic transition of timber-dependent communities, and for other purposes; to the Committee on Agriculture, Nutrition, and Forestry.

By Mr. CRANSTON (for himself and Mr. PELL):

S.J. Res. 165. A joint resolution to prohibit the proposed sale to the United Arab Emirates of AH-64 APACHE attack helicopters; to the Committee on Foreign Relations.

STATEMENTS ON INTRODUCED BILLS AND JOINT RESOLUTIONS

By Mr. LIEBERMAN (for himself and Mr. CHAFEE):

S. 1323. A bill to amend the Clean Air Act to require the offset of certain greenhouse gas emissions, and for other purposes; to the Committee on Environment and Public Works.

CO_2 OFFSETS POLICY EFFICIENCY ACT

• Mr. LIEBERMAN. Mr. President, I am pleased to introduce along with my colleague Senator CHAFEE, the Carbon Dioxide Offsets Efficiency Act of 1991, legislation which applies a market based approach to curb the growth of U.S. carbon dioxide emissions that contribute to global warming.

The legislation builds on the cost-effective, economic incentives approach adopted in the acid rain program of the new Clean Air Act, which was strongly endorsed by President Bush. The bill creates market incentives for wide variety of sources to reduce carbon dioxide emissions and receive credit for those reductions. Credits could take a variety of forms, including planting trees, adopting energy efficiency programs, switching to fuels which are less carbon intensive or replacing units with renewable or clean energy sources such as solar, wind, or fuel cells. These credits could be sold or transferred to new plants that will be required to compensate for their new carbon dioxide emissions by acquiring offset credits. Potential offset suppliers and purchasers are left free to determine which of the options are economically attractive; the industry itself will come up with imaginative and cost-effective solutions.

Carbon dioxide is, everyone agrees, a dangerous greenhouse gas. It accounts for 55 percent of the gases that contribute to global warming. The United States, with about 5 percent of the world's population, generates more than 20 percent of all manmade emissions of carbon dioxide.

A recent report by the Congressional Office of Technology concludes that present carbon diozide levels are already higher than an any time in the past 160,000 years. The National Academy of Sciences in its report, "Policy Implications of Global Warming; notes that the atmospheric concentration of carbon dioxide has increased 25 percent during the last century and is currently increasing at about 0.5 percent per year.

There is widespread agreement among scientists that in the absence of dramatic actions, the levels of carbon dioxide will continue to rise dramatically. The International Panel on Climate Change, comprised of scientists from countries around the world, and the U.S. Environmental Protection Agency, have concluded that an immediate 60 to 80 percent reduction in CO_2 emissions is necessary to stabilize concentrations at current levels, in addition to significant reductions in other greenhouse gases.

The testimony of scientific experts clearly indicates that it is time for us to act on this problem. The recent report by the National Academy of Sciences states: "Despite the great uncertainties, greenhouse warming is a potential threat sufficient to justify action now." The OTA report concludes:

> We cannot yet predict the magnitude of climatic effects from greenhouse gas emissions with accuracy. But it is clear that the decision to limit emissions cannot await the time when the full impacts are evident. The lag time between emissions of the gases and their full impact is on the order of decades to centuries; so too is the time needed to reverse any effects. Today's emissions thus commit the planet to changes well into the 21st century.

OTA warns that without any action, carbon dioxide emissions will likely rise 50 percent over 1987 levels in 25 years.

EPA has estimated that carbon dioxide emissions from the utility industry alone could increase by 29 percent by 1995, 50 percent by 2000 and 80 percent by 2005 over 1980 levels if we continue to do business as usual.

Despite these warnings, this administration remains adamantly opposed to any policy for setting specific carbon dioxide emission reduction goals either as part of the international negotiating process. The administration also has not joined other industrialized countries in making unilateral commitments to stabilize or reduce carbon dioxide outside of the United Nations negotiating process. Austria, Australia, Canada, Denmark, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, and the United Kingdom have all unilaterally adopted carbon dioxide stabilization or reduction goals. The administration's justifications for not committing to specific targets has been that it lacks sufficient information regarding the costs and benefits of such a commitment. To me, the costs and benefits are very clear. The cost is a polluted environment that would destroy our way of living and the benefit is a clean global environment for generations to come. As Prime Minister Brundtland of Norway has stated:

> The importance of climate change may be greater and more drastic than any challenge mankind has faced, with the exception of nuclear war.

The positive news from both the National Academy of Sciences and the Office of Technology Assessment is that there are cost-effective measures which can be taken now to address the growth in carbon dioxide emissions. According to the National Academy of Sciences, the United States could reduce its greenhouse gas emissions by between 10 and 40 percent of current levels at very low cost or net benefit by adopting measures such as building energy efficiency, reforestation, appliance efficiency programs.

The legislation I am introducing today takes a modest step forward on the road toward curbing emissions growth in carbon dioxide from the utility and very large industrial sectors. It proposes a flexible system that would require new electric utility plants, a limited number of other utilities, and large industrial sources to make up for the additional carbon dioxide which will be emitted by their new plants by obtaining carbon dioxide offsets. Specifically, the legislation would require new stationary sources that had the potential to emit at least 100,000 tons of carbon dioxide annually to compensate for their emissions by securing offset reductions. In addition, sources repowered after January 1995, would be considered new sources for the purposes of this program. Existing utility sources that reach 65 years of age also would be subject to the offset requirements, commencing in the year 2005. Few existing U.S. powerplants would be subject to this provision anytime soon because the average age of powerplants is 29 years.

The bill establishes a number of alternatives for the production of carbon dioxide credits that could be used to satisfy the offset requirement. Essentially, the bill uses the forces of the free market to encourage businesses to reduce their emissions of carbon dioxide by giving them credits which they can sell to other businesses that build large sources of CO_2 emissions. The bill credits emission reductions that would not have otherwise occurred but which, for the most part, the National Academy of Sciences has concluded can be done at low cost or net benefit. For example, appliance manufacturers who produce appliances with efficiencies greater than their 1990 efficiency levels would be eligible to apply for credits. This bill would give these manufacturers something valuable to sell and thus give them a powerful incentive to produce these efficient products. Energy efficiency programs would be eligible for credits. Automobile manufacturers whose corporate average fuel economy exceeded the requirements of the law would be eligible for receiving credits. Other sources of offsets include: forest preservation or reforestation; switching to a low carbon fuel, such as natural gas; and replacing fossil fuel generating plants with renewable and clean sources of energy such as wind, solar, and fuel cells.

The bill also takes a comprehensive approach to global warming because reductions in other greenhouse gases can be converted into carbon dioxide equivalent credits. By adopting this strategy, other environmental priorities such as protecting the ozone layer can also be served.

For example, the bill allows credits for programs which capture methane from coalbeds, landfills, or sewage treatment plants. This is an important provision because methane is one of the most potent contributors to global warming. Per molecule, methane is about 25 times more effective in trapping heat than carbon dioxide. Methane concentrations have approximately doubled over the past two centuries and are currently higher than at any time during the last 160,000 years. Without action to reduce emissions, EPA projects that annual worldwide methane emissions will increase by about 10 to 30 percent by the year 2025. Landfill emissions around the world account for 5 to 18 percent of all methane emissions.

The amount of credits allowed for both methane capture programs and reductions in other greenhouse gases will take into account the differential radiative activity and atmospheric lifetime of these pollutants as compared to carbon dioxide.

The mechanics of the offset program are straightforward. The bill requires new sources to acquire, as a condition of receiving an operating permit, sufficient carbon dioxide credits to compensate for the expected carbon dioxide emissions in the first year of operation. Every year thereafter, the unit would be required to deposit with EPA sufficient carbon dioxide credits to match their annual carbon dioxide emissions.

To facilitate market development and ease the burden of new sources in finding sufficient credits, EPA would be required to establish a national carbon dioxide offset bank. In addition, EPA would establish regulations governing the certification of carbon dioxide credits for those sources seeking to supply the credits. EPA must also establish guidelines for State agencies to assume responsibility for the certification programs. States developing programs in conformity with these guidelines would assume responsibility for certifying CO_2 credits from sources within the State. In this case, EPA would reserve the right to review within 90 days any certification made under a State program prior to the deposit of those credits into the National Offset Bank.

Mr. President, some utilities already have committed themselves to programs either equivalent to or more stringent than this legislation. Applied Energy Services which has one facility in Connecticut and is constructing another, has adopted as corporate policy the offsetting of all new CO_2 emissions from their projects. AES already has put this policy into effect by planting trees in a Guatemala forest to offset CO_2 emissions from one of its plants in Connecticut.

The president and chief executive of Arizona Public Service Co., Mark DeMichele, who serves as chairman of the Edison Electric Institute's Steering Committee on Global Climate Change has written to Congressman COOPER, the chief House sponsor of this legislation: "While I cannot speak for the entire electric utility industry, in concept, I wholeheartedly support the proposed legislation."

Last month, Mayor Bradley of Los Angeles announced that the Los Angeles Department of Water Power and the Southern California Edison Co., had pledged to reduce carbon dioxide emissions by 20 percent by the year 2010 with at least half of those reductions to be achieved by the year 2000. According to the mayor, this program would actually reduce carbon dioxide emissions by more than 40 percent when compared with the projected levels.

In announcing this commitment, the chairman of Southern California Edison stated:

> Taking prudent, reasonable economical steps to reduce CO_2 emissions is warranted by current scientific understanding of the potential for global warming. Our actions are consistent with the recent policy recommendations of the National Academy of Sciences and we believe they make good environmental, scientific and business sense.

Mr. President, that statement sums up the fundamental basis for this legislation: we can take reasonable, economical steps to curb the growth of CO_2 emissions.

I ask unanimous consent that the full text of the legislation and a section-by-section analysis be printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

S. 1323

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "CO_2 Offsets Policy Efficiency Act of 1991."

SEC. 2. FINDINGS.

The Congress finds that:

(1) The United States has 5 percent of the world's population and yet consumes more than 20 percent of the world's fossil fuels and emits more than 20 percent of the world's CO_2 derived from the combustion of fossil fuels.

(2) The United States consumes fossil fuels on a per capita basis at four times the worldwide average and more than twice the per capita average in many other highly industrialized countries.

(3) High rates of energy consumption in the United States contribute to urban smog, acid rain, oil spills, and other environmental pollution problems.

(4) Creating administrative mechanisms which require fossil fuel users to take account of the environmental consequences of their actions will balance the continued use of these critical energy resources with reductions in the environmental damages that they cause.

(5) Administrative mechanisms that facilitate CO_2 offset transactions will create incentives for technological innovation reducing further society's energy and environmental costs.

(6) By providing incentives for energy users to use energy more efficiently, the United States can improve its economic productivity, enhance its international competitiveness, reduce its trade deficit and reduce its dependence on foreign oil.

(7) Establishing a CO_2 offsets policy would encourage electric utilities to consider their emissions of CO_2 when making futue demand and supply-side decisions to meet their future capacity requirements.

(8) A Federal policy to take advantage of opportunities to offset greenhouse gas emissions would ensure that the United States can reduce its emissions of greenhouse gases while continuing to utilize coal, its most abundant domestic energy resource, which is essential to the Nation's long-range energy, economic, and national security.

(9) A Federal CO_2 offset policy offers the opportunity for the United States to begin to address the global climate change with the least-cost, market-based strategy which allows every industry the flexibility to choose the technology and displacement methods most appropriate for its individual circumstance.

SEC. 3. CONTROL OF GREENHOUSE GASES.

The Clean Air Act is amended by adding the following new title at the end thereof:

TITLE VII—CONTROL OF GREENHOUSE GASES

"SEC. 701. DEFINITIONS.

"As used in this title—

"(1) The term 'major CO_2 source' means any stationary source of CO_2 which emits or

has the potential to emit 100,000 tons or more per year of CO_2.

"(2) The term 'new major CO_2 source' means any major CO_2 source the construction or modification of which commences on or after a date eighteen months after the enactment of this title.

"(3) The term 'commence', 'modification' and 'construction' shall have the same meaning as such terms have when used in section 111, except that the term 'modification' shall also include any major CO_2 source which is repowered on or after January 1, 1995 or any existing utility CO_2 source which, on or after January 1, 2005, will have been in operation for a period of not less than 65 years.

"(4) The term 'permitting authority' means the authority established under this title to issue operating permits for major CO_2 sources.

"SEC. 702. OFFSET CREDITS REQUIREMENT.

"(a) CO_2 OFFSET REQUIREMENT.—No new major CO_2 source may operate during any period after the date 36 months after the date of enactment of this title unless the owner or operator of the source has obtained, and is in compliance with, a permit issued under this title. Such permit shall require the owner or operator to demonstrate to the permitting authority possession of certified CO_2 credits equal to the CO_2 emissions expected to occur between the commencement of operations of the source and December 31 of the year in which operations begin. The permit shall, for each subsequent calendar year, require the owner or operator to deposit by December 31 of such year sufficient certified CO_2 credits into the National CO_2 Offset Bank established under section 705 to compensate for that year's CO_2 emissions. All new major CO_2 sources shall obtain certified CO_2 credits only in the manner described in section 703.

"(b) TREES.—A new major CO_2 source that uses as a fuel trees that are replaced through replanting and that have not been grown as a CO_2 offset under section 703(b)(2) of this Act is not required to obtain CO_2 credits for the CO_2 emissions from the combustion of such trees.

"(c) VIOLATIONS.—

"(1) EXCESS EMISSIONS PENALTY.—The owner or operator of any new major CO_2 source subject to this title that emits CO_2, as measured pursuant to regulations promulgated under section 704 of this Act, for any calendar year in excess of the CO_2 offset credits the owner or operator deposited for the source for that calendar year shall be liable for the payment of an excess emissions penalty. That penalty shall be calculated on the basis of the number of tons emitted in excess of the source's CO_2 offset credits the owner or operator deposited for the source for that year multiplied by $250. Any such penalty shall be due and payable without demand to the Administrator as provided in regulations to be issued by the Administrator by no later than 18 months after the date of enactment of this title. Any such payment shall be deposited in the United States Treasury pursuant to 31 U.S.C. 3302. Any penalty due and payable under this subsection shall not diminish the liability of the source's owner or operator for any fine, penalty or assessment against the unit for the same violation under any other section of this Act.

"(2) EXCESS EMISSIONS OFFSET.—The owner or operator of any new major CO_2 source that emits CO_2 during any calendar year in excess of the certified CO_2 credits deposited by the source shall be liable to offset the excess emissions by an equal tonnage amount in the following calendar year.

"(3) PENALTY ADJUSTMENT.—The Administrator shall, by regulation, adjust the penalty specified in paragraph (1) for inflation, based on the Consumer Price Index, on the date of enactment of this title and annually thereafter.

"(4) PROHIBITION.—It shall be unlawful for the owner or operator of any new major CO_2 source liable for a penalty and offset under this subsection to fail to pay the penalty under paragrph (1) or to offset excess emissions as required by paragraph (2).

"SEC. 703. CERTIFICATION OF OFFSETS

"(a) EPA REGULATIONS.—The Administrator shall, not later than 18 months after the date of enactment of this title, promulgate regulations establishing procedures for the certification of CO_2 offset credits. Such regulations shall authorize a permitting authority to certify as a CO_2 offset credit any CO_2 reduction if the person providing such reduction or the person purchasing such offset credit establishes to the satisfaction of the permitting authority that such reduction complies with the requirements of regulations under subsection (b). In the event that the permitting authority is a State agency operating under an EPA-approved program in accordance with section 704(b), the Administrator shall retain for the 90-day period following the receipt of such certification the authority to review such State certifications prior to deposit in the National CO_2 Offset Bank established under section 705.

"(b) ELIGIBLE CO_2 OFFSET CREDITS—

"(1) FUEL SWITCHING.—The Administrator shall, not later than 18 months after the date of enactment of this title, promulgate regulations concerning the certification, on an annual basis, of CO_2 emission reductions by sources subject to the requirements of title IV of this Act, to the extent such reductions occur from switching to less carbon intensive fuels following the enactment of this paragraph. Such regulations shall establish procedures for calculating fuel use, in mmBtus, and the number of pounds of CO_2 emitted per mmBtu for the fuel or, in the case of a mix of fuels, the weighted average amount of CO_2 emitted per mmBtu, for the year in which the switch occurs and for the year preceding the switch in fuels. For purposes of determining the CO_2 emitted per mmBtu for each fuel or mix of fuels, such regulations shall take into account the application of technological controls which reduce the amount of CO_2 emitted from the combustion of such fuels. For purposes of this paragraph, the calculation of the number of pounds of CO_2 emitted per mmBtu for the year prior to the year in which the switch occurs shall not exceed the average amount emitted during the five year period preceding the switch in fuels. CO_2 offset credits may be awarded under this paragraph only for reductions measured by (A) calculating the difference between the number of pounds of CO_2 per mmBtu of the fuel or, in the case of a mix of fuels, the weighted average amount of CO_2 per mmBtu, in the year prior to the switch and in the year in which the switch occurs, and (B) multiplying the amount in subparagraph (A) by the total number of mmBtus consumed by the source in the year in which the switch occurs, divided by 2000.

"(2) FORESTS.—The Administrator shall, in consultation with the Secretary of Agriculture and the Secretary of the Interior, promulgate regulations not later than 30 months after the date of enactment of this title establishing regional average annual per acre CO_2 fixation rates by tree species, evaluated over a 100 year period. These rates shall be adjusted, by region, to account differing land productivity and precipitation, and for CO_2 emissions caused by reasonably anticipated loss of tree growth due to fire and other causes. In addition, these regulations should consider and prescribe the conditions under which public lands may be leased for the purpose of producing CO_2 offsets. CO_2 offset credits may be certified, on an annual basis, as follows—

"(A) NEW FORESTS.—Tree growth on lands which have not experienced significant tree growth for the 30 year period prior to 1990 shall be eligible for CO_2 offset credits equal to the applicable regional average annual per acre fixation rate multiplied by the number of acres planted as offsets, provided that the acres planted as offsets have a recorded easement assigned to the Administrator which ensures that such acreage will not be cut for at least 100 years from the date such acreage is certified as CO_2 offset credits.

"(B) FOREST MANAGEMENT.—Tree growth on lands which have experienced significant tree growth during the 30 year period prior to 1990 shall be eligible for CO_2 offset credits equal to the difference between the average annual per acre fixation rate of the new tree growth and the regional average annual per acre fixation rate of the prior tree growth, multiplied by the number of acres planted for offset credits. Such credits shall be eligible provided that the acres identified as offsets have a recorded easement assigned to the Administrator which ensures that such acreage will not be cut for at least 100 years from the date such acreage is certified as CO_2 offset credits.

"(C) OLD GROWTH FORESTS.—As part of the regulations promulgated under this paragraph, the Administrator shall promulgate sequestration values associated with the preservation of old growth forests. Such forests shall be eligible for total CO_2 offset credits equal to the difference between the average expected sequestration value of such forests and the average expected sequestration value of new forest in the same region during a 100 year period. The average expected sequestration value during a 100 year period shall be determined by adding the expected sequestration values for each year in the 100 year period and dividing by 100. For purposes of the preceding sentence, expected sequestration values shall account for CO_2 emissions from tree loss due to fire and other natural causes. Such credits shall only be eligible if the acres identified as offsets have a recorded easement assigned to the Administrator which ensures that such acreage will not be cut for at least 100 years from the date such acreage is certified as CO_2 offset credits. CO_2 offset credits shall be issued in equal annual increments for the period of the easement.

"(D) EASEMENTS.—Easements under this paragraph shall provide, at a minimum, that clear cutting, harvesting or other methods of destruction of trees, bushes, and understory shall be prohibited, except that the Administrator, in consultation with the Secretary of Health and Human Services, may authorize the cutting of individual trees, including the Pacific Yew tree, if the Administrator has determined that cutting such trees will contribute significantly to the protection of human health.

"(E) DEFINITION.—For purposes of this paragraph, the term 'old growth forests' means any significant tract of public or private forest land which can be harvested under Federal, State, or local laws; and

which is referred to as "Old Growth" in the document Interim Definitions for Old-Growth Douglas-Fir and Mixed-Conifer Forests in the Pacific Northwest and California (1986), developed by the Old-Growth Definition Task Force of the Forest Service, United States Department of Agriculture Forest Service, Pacific Northwest Research Station Research Note PNW-447.

"(3) CAFE.—The Administrator shall, in consultation with the Secretary of Energy, promulgate rules not later than 24 months after the date of enactment of this title concerning the certification of CO_2 credits from new vehicle fleet fuel efficiency improvements. CO_2 offset credits may be certified only for corporate average fuel efficiency (CAFE) improvements beyond those actually achieved by the source from sales during 1990 and shall not include efficiency improvements which are banked for future use by the manufacturer under other provisions of federal law. In no event shall CO_2 offset credits be certified for efficiency improvements required by any provision of Federal law. For purposes of this certification, the Administrator shall develop and employ an assessment of the statistical lifetime and use of vehicles proposed for CO_2 offsets. The number of CO_2 offset credits certified shall be based on the normal expected lifetime and use of the vehicles sold.

"(4) APPLIANCE EFFICIENCY.—Not later than 24 months after the date of enactment of this title, the Administrator, in consultation with the Secretary of Energy, shall promulgate regulations concerning the certification of CO_2 credits from appliance efficiency improvements. CO_2 offset credits may be issued only for efficiency improvements beyond those actually achieved by the source from sales during 1990. In no event shall CO_2 offset credits be issued for efficiency improvements required by any provisions of Federal law. Such certification procedures shall include adjustments to extra energy efficiency improvements to reflect the national proportion of household electricity derived from fossil fuels. In addition, the number of CO_2 credits certified shall be estimated on the basis of the normal expected lifetime and use of the appliance.

"(5) ENERGY CONSERVATION.—Not later than 24 months after the date of enactment of this title the Administrator, in consultation with the Secretary of Energy, shall promulgate regulations concerning the certification of CO_2 credits for energy conservation investments. Such regulations shall include a list of energy conservation measures eligible for CO_2 credits and shall indicate the amount of CO_2 emissions avoided by and CO_2 credits allowed for each measure. The Administrator shall determine the amount of CO_2 emissions avoided based on the average CO_2 emissions reported under section 821 of the Clean Air Act Amendments of 1990 in the State in which the energy conservation investment was made. The Administrator shall revise the determination in the previous sentence each year to reflect changes in CO_2 emissions reported in subsequent years under section 821 of the Clean Air Act Amendments of 1990. Energy conservation measures which are exclusively informational or educational in nature shall not be eligible for CO_2 credits. Energy conservation measures which increase the efficiency of appliances shall not be eligible for credit under this paragraph. The number of credits granted shall be adjusted by the national proportion of electricity generated by fossil fuels for the region in which the conservation investment is made. The Administrator shall publish and periodically update a listing of approved conservation options and their CO_2 credit yields.

"(6) METHANE RECOVERY.—Not later than 24 months after the date of enactment of this title, the Administration shall promulgate regulations concerning the certification of CO_2 equivalent credits from the capture and use of methane from coalbeds, municipal landfills, wastewater treatment facilities and sewage sludge facilities. The credits certified shall reflect both the differential radiative activity and atmospheric lifetime of methane compared to CO_2 as well as the CO_2 produced as a result of its ultimate combustion. The CO_2 equivalence of methane shall be established in accordance with section 703(c).

"(7) COGENERATION FACILITIES.—Not later than 24 months after the date of enactment of this title, the Administrator shall promulgate regulations concerning the certification of CO_2 credits created by the construction and operation of cogeneration facilities that replace existing industrial boilers or other thermal power not produced by cogeneration, provided that emissions of CO_2 from such cogeneration facilities shall be subject to the offset requirements of section 702. Credits for any given year shall be determined by calculating the following amounts—

(A) the emissions from the boiler being replaced in a baseline year to be determined by the Administrator, expressed in tons of CO_2, multiplied by the total steam output in the year for which credit is to be given and divided by the total steam output of the boiler being replaced in the baseline year,

(B) the kilowatt hours of electricity generated in that year by the cogeneration facility multiplied by the average emissions rate expressed in pounds of CO_2 per kilowatt hour of either the system or utility that the industrial facility bought electricity from in the baseline year, divided by 2000.

(C) the total pounds of CO_2 emitted in that year by the cogeneration facility, divided by 2000.

Certified CO_2 offset credits under this paragraph shall equal the sum of (A) and (B) minus (C).

"(8) CHLOROFLUOROCARBONS (CFCS).—The Administrator shall promulgate regulations not later than 12 months after the date of enactment of this title concerning the certification of CO_2 equivalent credits for the capture and destruction of chlorofluorocarbons (CFCs) in the United States and in other nations. In no event shall the Administrator certify CO_2 equivalent credits for the capture and destruction of CFCs obtained in the United States until the Administrator has determined, pursuant to the review required by section 603(e) of this Act, that alternative systems and products to manufacture and operate appliances without class II substances are commercially available. The CO_2 equivalence of all CFCs shall be established in accordance with section 703(c).

"(9) ALTERNATIVE FUEL VEHICLES.—Within 12 months of the date of enactment of this title, the Administrator shall establish regulations identifying the CO_2 credits for the manufacturer of alternative fuel vehicles which use less carbon intensive fuels than gasoline powered vehicles, as determined by the Administrator. No vehicle may be eligible for credit unless it operates using a single fuel.

"(10) REPLACEMENT AND REPOWERING OF UTILITY SOURCES.—Not later than 24 months after the date of enactment of this title, the Administrator shall promulgate regulations concerning the certification of CO_2 credits for utility sources that achieve more efficient heat rates through the repowering or replacement of an existing unit, including the use of fuel cell technology, provided that emissions of CO_2 from such sources shall be subject to the offset requirements of section 702. Such regulations shall establish criteria to determine the heat rate of the unit, expressed in mmBtus per kilowatt hour, in a baseline year to be determined by the Administrator. Credits for any given year shall be determined as follows—

"(A) if the kilowatt hours generated by the new or repowered unit in that year are greater than or equal to the kilowatt hours generated by the old unit in the baseline year, CO_2 credits shall be determined by calculating the tons of CO_2 emitted in the baseline year and subtracting from that amount the tons of CO_2 determined by multiplying (i) the tons of CO_2 emitted in the baseline year and (ii) the ratio of the heat rate of the new or repowered unit to the heat rate of the old unit in the baseline year.

"(B) if the kilowatt hours generated by the new or repowered unit in that year are less than the kilowatt hours generated in the baseline year, CO_2 credits shall be determined by multiplying (i) the tons of CO_2 emitted by the new or repowered unit in that year and (ii) the ratio of the heat rate of the old unit in the baseline year to the heat rate of the new or repowered unit and subtracting from that product the tons of CO_2 emitted by the new or repowered unit in that year.

"(11) REPLACEMENT OF UTILITY SOURCES WITH RENEWABLE ENERGY SOURCES.—Not later than 24 months after the date of enactment of this title, the Administrator shall promulgate regulations concerning the certification of CO_2 credits for renewable energy sources that replace existing utility sources which emit CO_2. Credits for any given year shall be determined based on the amount of CO_2 emissions from the existing utility source which is replaced. No credits may be certified under this paragraph unless it can be demonstrated that the renewable energy source replaces a specific, identifiable existing utility source. For purposes of this paragraph, the term "renewable energy" means energy derived from biomass, solar, geothermal, wind or fuel cell technology as identified by the Administrator in consultation with the Secretary of Energy. Incidental CO_2 emissions associated with the use of these renewable energy technologies shall be subtracted from any CO_2 offsets credit which may be certified under this paragraph, as determined by the Administrator.

"(12) OTHER CREDIT SOURCES.—In no case shall CO_2 offset sources be limited to those explicitly defined by regulation under this section. Potential offset sources should be allowed to demonstrate to the satisfaction of the Administrator after notice and comment that such sources should be certified according to the intent of this program. The Administrator shall establish a baseline for each source of CO_2 offsets or category of such sources subject to certification requirements under this paragraph. Such baselines shall be set according to the actual performance of such sources or categories of sources during the baseline year specified by the Administrator. Offset sources explicitly credited by regulation shall be allowed to demonstrate to the satisfaction of the Administrator after notice and comment that technical progress or other innovation has improved the efficiency of the CO_2 offset producing process. Except for paragraph (8), regulations promulgated under this subsection shall be construed to apply only to CO_2 offset credits

obtained within the United States unless the Administrator has promulgated regulations to ensure that CO_2 offset credits not obtained within the United States will comply with all the requirements of this title to the same extent as CO_2 offset credits obtained within the United States.

"(13) REPOWERING.—In no case shall certification be granted for a utility shutdown for the purposes of repowering or refurbishing an existing facility.

"(14) EXPEDITED CERTIFICATION.—The Administrator may promulgate regulations under this section providing for expedited certification of CO_2 credits. If such regulations are promulgated, the Administrator shall establish a requirement that, for purposes of section 702, a new major source of CO_2 shall obtain more than one ton of CO_2 offset credits certified pursuant to this paragraph for each ton emitted by such source. In determining the additional CO_2 offset credits required under the preceding sentence, the Administrator shall take into account the additional uncertainties in certification under such expedited procedures compared with certification under the other regulations of this section.

"(15) OTHER AUTHORITY.—

"(A) FEDERAL AUTHORITY.—In no case shall certification be granted for greenhouse gas reductions which are required under any other provision of this Act or other authority of Federal law.

"(B) STATE AUTHORITY.—Nothing in this title shall preclude or deny the right of any State or any political subdivision thereof to disallow the certification of any CO_2 offset credit, if, in the sole discretion of such State or political subdivision, such certification is determined to be inconsistent with the law, regulations or policies of such State or political subdivision. In no event shall a State certify CO_2 offset credits which do not meet the requirements of this section. Not later than 18 months after the date of enactment of this title, the Administrator shall promulgate procedures for States and political subdivisions thereof to identify CO_2 offset credits that will be disallowed. Such regulations shall establish reasonable time limits during which states must make determinations under this paragraph.

"(c) GREENHOUSE GAS CREDITS.—The regulations under subsection (b) shall provide that a reduction in any air pollutant (including methane and N_2O) which the Administrator determines to contribute to global warming may be certified as a CO_2 offset credit if such reduction satisfies the criteria of subsection (b), except that the amount of such credit may be reduced or increased based on radiative differences and atmospheric lifetime to reflect the relative global warming potential of such air pollutants. The Administrator shall consult with the Administrators of the National Oceanic and Atmospheric Administration and the National Aeronautic and Space Administration concerning the determination of CO_2 equivalents for all CFCs regulated by the Montreal Protocol to control substances that deplete Stratospheric Ozone and for all other greenhouse gases including but not limited to N_2O and methane.

"SEC. 704. PERMIT PROGRAMS

"(a) REGULATIONS.—The Administrator shall promulgate within 18 months after the date of the enactment of this title, regulations establishing the minimum elements of a permit program to be administered by any air pollution control agency. These elements shall include each of the following:

"(1) Requirements for permit applications, including a standard application form and criteria for determining in a timely fashion the completeness of applications.

"(2) Monitoring and reporting requirements.

"(3) Requirements for adequate personnel and funding to administer the program.

"(4) A requirement that the permitting authority have adequate authority to—

"(A) issue permits and assure compliance by all sources required to have a permit under this title with each applicable standard, regulation or requirement under this title;

"(B) issue permits for a fixed term;

"(C) terminate, modify, or revoke and reissue permits for cause;

"(D) enforce permits, the requirement to obtain a permit, including authority to recover civil penalties for permit violations; and;

"(E) collect the annual CO_2 offsets from affected sources for deposit with the Environmental Protection Agency to facilitate CO_2 credit certification and tracking.

"(5) Adequate, streamlined, and reasonable procedures for expeditiously determining when applications are complete, for processing such applications, for public notice, including offering an opportunity for public comment and a hearing, and for expeditious review of permit actions, including applications, renewals, or revisions, and including an opportunity for judicial review in State court of the final permit action by the applicant, any person who participated in the public comment process, and any other person who could obtain judicial review of that action under applicable law.

"(b) SUBMISSION AND APPROVAL.—(1) The Governor of each State shall develop and submit to the Administrator a permit program under State or local law or under an interstate compact meeting the requirements of this title. Not later than 1 year after receiving a program, and after notice and opportunity for public comment, the Administrator shall approve or disapprove such program.

"(2) If the Governor does not submit a program as required under paragraph (1) or if the Administrator disapproves a program submitted by the Governor under paragraph (1), in whole or in part, the Administrator shall promulgate, administer, and enforce a program under this title for that State.

"(c) SUSPENSION.—The Administrator shall suspend the issuance of permits promptly upon publication of notice of approval of a permit program under this section, but may, in such notice, retain jurisdiction over permits that have been federally issued, but for which the administrative or judicial review process is not complete. The Administrator shall continue to administer and enforce federally issued permits under this title until they are replaced by a permit issued by a permitting program. Nothing in this subsection should be construed to limit the Administrator's ability to enforce permits issued by a State.

"(d) CONDITIONS.—Each permit issued under this title shall include an enforceable requirement that the permittee submit to the permitting authority, no less often than every 12 months, the results of any required monitoring, and such other conditions as are necessary to assure that the permittee has not emitted CO_2 in excess of the CO_2 emission offset credits held by the permittee.

"(e) INSPECTION, ENTRY, MONITORING, CERTIFICATION, AND REPORTING—Each permit issued under this title shall set forth inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions. Such monitoring and reporting requirements shall conform to any applicable regulation under subsection (b). Any report required to be submitted by a permit issued to a corporation under this title shall be signed by a responsible corporate official, who shall certify its accuracy.

"SEC. 705. NATIONAL CO_2 OFFSET BANK.

"(a) EPA REGULATIONS.—

"(1) NATIONAL CO_2 OFFSET BANK.—With 12 months of enactment of this title, the Administrator shall publish regulations creating a National CO_2 Offset Bank for the purpose of ensuring adequate supplies of CO_2 offsets and to create procedures for the tracking and retirement of used CO_2 credits. At a minimum, these regulations must require the identification of the owners of CO_2 offset credits, their addresses, the tonnages available, and the source of the CO_2 credit. These regulations may require depositors to identify a minimum asking price.

"(2) CO_2 OFFSET CERTIFICATE ISSUANCE.—Upon notification by the owner of a certified offset of a transfer of ownership of the offset, the Administator shall debit the account of the seller in the National Offset Bank and credit the account of the purchaser. The Administrator, if requested by the purchaser, will issue certificates of CO_2 credit equal to the purchase quantity and make such withdrawal from the bank within 60 days of receipt of such request.

"(b) EPA OVERSIGHT.—In exercising its certification review authority under section 703, the Administrator shall act within 90 days to decertify any CO_2 credit submitted for banking in accordance with the generic certification rules promulgated in accordance with section 703.

"(c) PUBLIC LISTING OF CREDITS.—The Administrator shall make available to the public on a continuous basis the contents of the National CO_2 Offset Bank to include but not be limited to the names and addresses of the owners of available CO_2 credits, the associated tonnages, sources of the CO_2 credits, and minimum asking prices if required.

"(d) DEBITS.—Allowances deposited with the Administrator by permitting authorities or permitted sources in compliance with CO_2 offset requirements established in section 702 shall be debited from the accounts of registered certified credit owners listed in the National CO_2 Offset Bank.

SECTION-BY-SECTION ANALYSIS OF THE CARBON DIOXIDE OFFSETS POLICY EFFICIENCY ACT OF 1991

Sec. 1.—The Act may be cited as the CO_2 Offsets Policy Efficiency Act of 1991.

Sec. 2.—Findings.—The Congress finds that the United States has 5 percent of the world's population and yet consumes more than 20 percent of the world's fossil fuels and emits more than 20 percent of the world's carbon dioxide derived from combustion of fossil fuels. A Federal carbon dioxide offset policy offers the opportunity for the United States to begin to address the global climate change with the least-cost, market-based strategy which allows every industry the flexibility to choose the approach to obtaining offsets which is most appropriate for its individual circumstance.

Sec. 3.—Control of Greenhouse Gases.

Requires new stationary sources that have the potential to emit at least 100,000 tons of CO_2 annually to compensate for their CO_2 emissions by securing offsetting greenhouse gas reductions. In addition, sources repowered after January 1, 1995, would be considered new sources subject to offset re-

quirements. Existing utilities would gradually enter the offsets program as they turn 65 years old, but this provision does not commence until 2005.

Requires new sources to acquire, as a condition for receiving an operating permit, sufficient CO_2 credits to compensate for expected CO_2 emissions in the first year of operation. Every year thereafter, the unit would be required to deposit with EPA sufficient CO_2 credits to match their annual CO_2 emissions. The unit's annual CO_2 emissions would be monitored and reported under the CO_2 monitoring requirements of the Clean Air Act of 1990. Units that fail to deposit sufficient CO_2 credits would be subject to a $250 per ton penalty. In addition, the exceedance would have to be compensated by an excess emission offset within the next calendar year.

EPA is required to promulgate regulations governing the certification of CO_2 credits for the supply of sources and guidelines for State agencies to assume responsibility for the certification program. If the permitting authority is an authorized State agency, the Administrator shall retain the right to review the State certification for a period of 90 days following the State certification.

Establishes a number of ways that firms could obtain CO_2 credits for meeting the offset requirements including:

1. Fuel switching.—Fuel conversions by stationary sources to fuels which are less carbon intensive fuels such as natural gas would be granted credits equal to the difference between what CO_2 emissions would have been without the switch and what they are after the switch.

2. Trees.—Planting trees on land that has not been forested for over 30 years and which is not part of a normal reforesting operation can generate CO_2 credits. Improved management practices and the preservation of old growth or ancient forests are also eligible for CO_2 credits. In each of these cases, landowners must sign 100-year easements in order to guarantee that the CO_2 benefits are provided.

3. Cafe.—Automobile manufacturers could obtain offset credits for achieving corporate average fuel efficiency improvements beyond those actually achieved by the manufacturers from sales during 1990 and which are not banked for future use by the manufacturer under other provisions of Federal law.

4. Appliance efficiency.—Appliance manufacturers can obtain credits for achieving efficiencies greater than their 1990 efficiency levels. The number of CO_2 credits certified shall be estimated on the basis of the normal expected lifetime and use of the appliance.

5. Energy efficiency.—Energy efficiency programs would be eligible for CO_2 credits.

6. Methane capture.—Credits are available for capturing methane from coalbeds, municipal landfills, wastewater treatment facilities, and sewage sludge facilities. The credits shall reflect both the differential radiative activity and atmospheric lifetime of methane compared to CO_2.

7. Cogeneration.—Credits are available for replacing an existing industrial boiler with a cogeneration unit; the credits would reflect both the efficiency gain produced by replacing the old boiler and the gain in producing power.

8. CFCs.—Credits would be available for the capture and destruction of chlorofluorocarbons in the United States and worldwide. In the United States, credits are not available until safe alternative chemicals are commercially available.

9. Alternative fuels.—Mobile source fuel switches to less carbon intensive fuels would receive CO_2 credits. For example, compressed natural gas vehicles would receive credits equal to the difference between the current corporate average fuel economy standard in CO_2 terms and the CO_2 produced by the CNG vehicles.

These credits would be computed and awarded to the vehicle manufacturer for the expected lifetime CO_2 emissions reductions from that vehicle.

10. Increased efficiency of plants.—Utility sources which achieve more efficient heat rates through the repowering or replacement of an existing unit can receive credits. These credits would be calculated annually by adjusting the CO_2 emissions from the new facility by the efficiency improvement of the new unit.

11. Renewable resources.—Renewable and clean energy sources, including solar, wind, fuels cell technology can generate credits when they replace existing fossil fueled source.

12. Other credits.—Other credit sources can be identified and developed providing they meet the requirements of EPA's certification program.

The Administrator may promulgate regulations providing for expedited certification of CO_2 credits. If such regulations are promulgated, the Administrator shall establish a requirement that the source shall obtain credits at greater than a 1:1 value.

Credits shall not be granted for reductions which are required under any other provision of Federal law.

States shall have the prerogative of determining whether CO_2 reductions required by State law or regulation should be granted credits.

The regulations promulgated by EPA shall provide that a reduction in a pollutant which contributes to global warming may be certified as a CO_2 offset credit, except that the amount of such credit may be reduced or increased based on radiative difference and atmospheric lifetime to reflect the relative global warming potential of such air pollutants.

EPA must promulgate regulations establishing the minimum elements of a permit program to be administered by a State.

EPA is required to promulgate regulations establishing a National CO_2 Offset Bank to ensure adequate supplies of CO_2 offsets and to create procedures for the tracking and retirement of used CO_2 credits.●

By Mr. METZENBAUM:

S. 1324. A bill to amend the Public Health Service Act to generate accurate data necessary for continued maintenance of food safety and public health standards and to protect employees who report food safety violations, and for other purposes; to the Committee on Labor and Human Resources.

POULTRY CONSUMER PROTECTION ACT

Mr. METZENBAUM. Mr. President, I rise today to introduce the Poultry Consumer Protection Act of 1991. This bill is intended to be a beginning, a first step in what I feel should be a wholesale revision of U.S. poultry regulation.

This bill requires that the Secretary of Health and Human Services complete a detailed study on the sources and levels of bacterial contamination in our food supply, particularly in raw poultry. In addition, the bill would protect poultry industry workers who come forward with information that contributes to the study. This bill will begin to address growing evidence of a food safety crisis in the poultry industry. Eighty percent of raw poultry—or more—has been found contaminated.

I would note parenthetically that there is also a well-documented worker safety crisis in the poultry industry, which I hope to address in the future.

Mr. President, the Department of Agriculture seems to have forgotten the true purpose of food inspection.

I must confess some confusion as to exactly why the mission of food inspection is given to USDA. The Agriculture Department's role is to promote farm sales—and our farmers certainly need all the help they can get these days.

But how can we trust an agency charged with promoting food sales to be tough about food inspection?

Mr. President, in my view, the risk inherent in this conflict of interests has manifested itself in our poultry supply today. The USDA has delegated poultry safety to the poultry industry itself under the innocuous sounding "streamlined inspection system".

How are consumers supposed to trust the word of the poultry industry—whose main job is to sell more chickens?

Mr. President, the streamlined inspection system, or SIS, has made a mockery of the USDA "seal of approval." Today, it is not the Government that guarantees the safety of poultry, but the poultry industry itself. Who elected the poultry industry? To whom are they responsible? To the balance sheet, that's who—not to consumers.

Mr. President, the SIS concept was tried in the beef industry—and it was a flop. In fact, ranchers were so concerned about SIS destroying consumer confidence in the safety of beef that they urged USDA not to expand the SIS—Cattle Pilot Program beyond its experimental phase.

I was pleased that the chairman of the Senate Agriculture Committee, PATRICK LEAHY, joined me in writing to Secretary of Agriculture Edward Madigan, to urge that the SIS—Cattle Pilot Programs not be expanded. It is now my understanding that the SIS—Cattle Program will, indeed, be withdrawn and I ask unanimous consent that a copy of my letter be printed at the conclusion of my remarks. If the SIS concept flopped for beef, why is USDA letting it continue for poultry?

Mr. President, SIS evinces an attitude problem at the USDA. To me it indicates an arrogance about this agency's responsibility to consumers. The SIS program is not simply a case of lax inspection. The SIS concept demonstrates a laissez faire approach to inspection, by the Government, at a time when inspection should be growing

even more intrusive, even more hands on. The unfortunate truth is that no amount of old fashioned, visual inspection will detect the new threat from bacterial contamination. But that is no reason to be trusting visual inspection to poultry producers themselves. The USDA should be stepping up visual inspection while developing new techniques to detect salmonella, campylobacter, and other bacteria. Instead USDA entrusts the old-fashioned inspection program to poultry producers themselves, and tries to tell us that the new problem of bacterial contamination is really no problem at all.

Mr. President, I should note that there has been an on-again, off-again effort by the USDA to develop bacterial testing techniques. The program is called Hazard Analysis and Critical Control Point [HACCP—hay-sip]. Through the HACCP Program, the Department suggests to poultry producers new methods for limiting bacterial contamination.

Suggests? Suggestions don't satisfy me, and they shouldn't satisfy the American consumer. I want real enforcement of real regulations, and I want it now.

The CDC estimates that 4 million Americans annually are sickened by food-borne salmonella bacteria, and 2,000 Americans die from it. The cost in medical bills and lost work time is over $2 billion, according to USDA research. Epidemiologists agree that the single most common way for consumers to come in contact with salmonella today is through raw poultry.

Mr. President, American consumers eat an average of 85 pounds of poultry and poultry products each year—an incredible quantity. This is truly an issue that touches the lives of each and every one of us. Poultry is touted as a low-fat, high protein alternative to other, less-healthy meats. As consumers turn toward poultry to improve their health, I worry that poultry may be turning against consumers.

Mr. President, in any industry, when consumer demand rises sharply, production processes must change in order to meet that new demand. In the past, such changes in production methods have resulted in remarkable improvements in output and efficiency. This is exactly what has happened in the poultry industry. Poultry operations today produce a 50 percent larger bird, using 15 percent less feed, in 20 percent less time than they did 20 years ago. Half the number of birds are lost to disease and death today than in 1968. I think that this is an example of what can be "done right" by American industrial innovators.

But as we have seen time and time again in the past, the innovation of output is often way ahead of innovation in safety—the safety of the product, and the safety of the workers by whom it is produced.

Mr. President, I regret that the poultry industry is following this tragic industrial pattern. The industry has put its energy and its money behind research, and it has come up with bigger and better birds. But the safety of its product and working conditions in which it is produced have lagged far, far behind. A chicken may be twice as plump for much less feed than 20 years ago, but reports indicate that the same chicken carries 4 times as much bacteria than 20 years ago.

Mr. President, I am glad that poultry is popular with consumers; I am glad that poultry prices have remained relatively low over the years.

I am also glad that small-time poultry entrepreneurs, like one in Canton, OH, are doing all they can to keep their product clean, using competition to keep the chicken giants more honest.

But I am angry that the poultry industry conglomerates—and the Department of Agriculture officials charged with regulating it—pretend that no problems exist. If you believe the poultry industry, chicken is as clean as it needs to be. And if a chicken here and there is contaminated, well, then it is the consumer's problem to avoid getting sick from it.

Is chicken as clean as it needs to be? Is getting sick the consumer's problem? I say no. And it's time that the USDA put it's foot down, and say no as well.

Mr. President, no such tough talk has come from the Department of Agriculture. The Federal Government began inspecting meat in 1906, and poultry after World War II. The reason for Government inspection of food was as simple then as it is now: The safety of our food supply is just too important to entrust to the private sector. Impartial Government officials are supposed to be the only ones who can faithfully guarantee the wholesomeness of our foods.

Mr. President, today 4 companies produce 41 percent of all poultry. Twenty companies produce 79 percent.

When you have so few operations producing so much of America's total output, regulators should get tougher. USDA is doing just the opposite.

Mr. President, the time has come for USDA's food safety and Inspection Service [FSIS] to junk the streamlined inspection service, and to go full stream ahead on bacterial testing research. The alternative, at the very least, is to stop using a USDA label to certify wholesomeness, when USDA lets someone else do the inspecting. If USDA insists on delegating its responsibility to industry, the consumer should at least know about it.

I ask unanimous consent that a copy of my bill be printed at the conclusion of my remarks, along with a number of articles on poultry production, as follows: The Atlanta Journal-Constitution, May 26, and June 2, 1991, The Arkansas Democrat, April 21, 22, 23, 24 and 25, 1991, Time, November 26, 1990, the Wall St. Journal, November 16, 1990, and the Atlantic, November, 1990.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

S. 1324

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Poultry Consumer Protection Act of 1991".

SEC. 2. FINDINGS AND PURPOSES.

(a) FINDINGS.—Congress finds that—

(1) United States consumers are entitled to a safe supply of food;

(2) it is the responsibility of United States food producers to deliver products, whether raw or processed, that require no more than reasonable and proper care by private and commercial consumers in order to maintain the wholesomeness of the products;

(3) it is the responsibility of the Federal Government to ensure basic standards of food safety, and to identify and report sources of food contamination;

(4) United States consumers are making poultry an increasingly large part of their diets;

(5) poultry has been recognized as a high protein alternative to foods with higher fat content;

(6) evidence suggests that poultry transmits certain microbiological pathogens in greater quantity than other popular parts of the diet of persons in the United States;

(7) consumers should be responsible for reasonable, proper precautions in the preparation of foods;

(8) it is the responsibility of food producers to maintain standards of wholesomeness that require no more than reasonable, proper care by consumers in order to avoid sickness;

(9) the level of poultry-borne microbiological pathogenic contamination has surpassed the level at which reasonable, proper care by consumers can consistently mitigate the risk of sickness;

(10) the use of increased processing line speeds by the poultry industry makes it impossible for inspectors to complete appropriate inspection of poultry products and increases health risks to consumers; and

(11) the continued increasing public demand for poultry requires that appropriate steps be taken to secure the safety of poultry supplies.

(b) PURPOSES.—The purposes of this Act are—

(1) to generate accurate data necessary for continued maintenance of food safety and public health standards;

(2) to provide current, scientifically sound information regarding health risks to the United States consumer resulting from changes in levels of microbiological pathogenic contamination in the food supply of the Nation, including health risks resulting from changes in food consumption and production patterns in the United States; and

(3) to facilitate public and private disclosure of information in order that the public health may be maintained.

SEC. 3. REPORT AND EMPLOYEE PROTECTION.

Title XVII of the Public Health Service Act (42 U.S.C. 300u et seq.) is amended by adding at the end the following new sections:

"SEC. 1708. MICROBIOLOGICAL PATHOGENIC CONTAMINATION STUDY.

"(a) DEFINITIONS.—As used in this section:

"(1) FEDERAL PUBLIC HEALTH AGENCY.—The term 'Federal public health agency' means an independent establishment that has public health responsibilities.

"(2) INDEPENDENT ESTABLISHMENT.—The term 'independent establishment' has the meaning given the term in section 104 of title 5, United States Code.

"(3) INORDINATELY.—The term 'inordinately' means, with respect to incidence of human infection or death, any incidence statistically greater than the incidence predicted by appropriate current food safety data, as determined by the Secretary.

"(4) MICROBIOLOGICAL PATHOGENIC CONTAMINATION.—The term 'microbiological pathogenic contamination' includes the presence of the salmonella group of bacteria and campylobacter jejuni.

"(b) STUDY.—

"(1) IN GENERAL.—The Secretary shall conduct a study regarding the incidence of human infection resulting from microbiological pathogenic contamination of the United States food supply.

"(2) SUBJECTS.—In conducting the study described in paragraph (1), the Secretary shall—

"(A) collect current data regarding human infection or death resulting from microbiological pathogenic contamination.

"(B) evaluate sources of microbiological pathogenic contamination in the United States food supply;

"(C) evaluate the relationship between—

"(i) changing patterns of food consumption; and

"(ii) the spread of microbiological pathogenic contamination;

"(D) assess progress in achieving use of reliable laboratory testing methods as the measure of microbiological pathogenic contamination in the United States food supply, including progress in achieving the 1987 National Academy of Sciences recommendations regarding domestically produced poultry and poultry products;

"(E) assess the most scientifically efficient means to limit microbiological pathogenic contamination of the United States food supply;

"(F) identify geographic concentrations or patterns of human infection and death resulting from microbiological pathogenic contamination borne by the United States food supply;

"(G) identify sources of microbiological pathogenic contamination that result in human infection or death in cases in which the human infection or death occur in an inordinately large geographic concentration;

"(H) determine the level at which microbiological pathogenic contaminants in the United States food supply do not pose a significant threat of human illness sufficient to cause incapacity or require professional medical care for identifiable population groups, including groups such as infants, elderly persons, and persons with compromised immune systems; and

"(I) identify the most common ways in which consumers come into contact with microbiological pathogenic contamination in the United States food supply.

"(c) REPORT.—

"(1) INITIAL REPORT.—Not later than 12 months after the date of the enactment of this Act, the Secretary shall submit to the Committee on Labor and Human Resources of the Senate and the Committee on Energy and Commerce of the House of Representatives a report containing the findings of the Secretary based on the study described in subsection (b), and recommendations for decreasing the microbiological pathogenic contamination in the United States food supply.

"(2) SUBSEQUENT REPORTS.—Not later than 12 months after the date of the presentation of the initial report described in paragraph (1), and annually thereafter, the Secretary shall submit a report to the committees described in paragraph (1) containing an update of the information contained in the initial report.

"(d) AGREEMENTS.—The Secretary may enter into agreements with other organizations and Federal public health agencies to carry out this section.

"(e) DETAIL OF FEDERAL EMPLOYEES.—On the request of the Secretary, the heads of other pertinent Federal public health agencies shall provide, without reimbursement, any of the personnel of the agencies to the Department as the Secretary determines to be necessary to carry out this section. Any detail shall not interrupt or otherwise affect the civil service status or privileges of the Federal employee.

"(f) TECHNICAL ASSISTANCE.—On the request of the Secretary, the heads of other pertinent Federal public health agencies shall provide, without reimbursement, such technical assistance and administrative support services to the Department as the Secretary determines to be necessary to carry out this section.

"(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section such sums as may be necessary for fiscal year 1992 and each of the subsequent fiscal years.

"SEC. 1709. EMPLOYEE PROTECTION.

"(a) DEFINITIONS.—As used in this section:

"(1) EMPLOYEE.—The term 'employee' means an employee of an employer.

"(2) EMPLOYER.—The term 'employer' means a person engaged in a business affecting interstate commerce.

"(b) DISCLOSURE AND PARTICIPATION IN PROCEEDINGS.—No person shall discharge or discipline an employee, or in any other manner discriminate against an employee with respect to the compensation, or the terms, conditions, or privileges of employment, of the employee, because the employee (or a person acting in accordance with a request of the employee)—

"(1) discloses information that the employee reasonably believes will assist completion of the study described in section 1708(b); or

"(2) testifies or is about to testify in any proceeding relating to completion of the study described in section 1708(b).

"(c) PROCESS.—In a case involving discharge, discipline, or discrimination under subsection (b), the process, procedures, and remedies shall be governed by the applicable provisions of section 405 of the Surface Transportation Assistance Act of 1982 (49 U.S.C. App. 2305), except that, in determining whether a violation of subsection (b) has occurred in such a case, the standard of proof that is used by the Merit Systems Protection Board in proceedings under section 1221 of title 5, United States Code, as described in paragraphs (1) and (2) of subsection (e) of such section, shall be employed".

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC, May 31, 1991.

EDWARD MADIGAN,
Secretary of Agriculture, Department of Agriculture, Washington, DC.

DEAR SECRETARY MADIGAN: We are writing to urge that you withdraw the Streamlined Inspection System—Cattle (SIS-C) proposed rule, and discontinue the SIS-C pilot programs which have been in operation since 1985.

It is our understanding that you have taken the future of SIS-C under review. In our opinion, the dismal results of SIS programs generally offer little basis for continuation of SIS-C. Food safety experts and beef producers alike are concerned that the low public regard for SIS quality assurance could result in damage to beef marketing efforts, and further erode public confidence in the safety of America's food supply. A September, 1990 report by the National Academy of Sciences echoed these concerns, emphasizing the absence of sound scientific or empirical foundations for the streamlined inspection concept.

The "crisis of confidence" resulting from SIS-C has been articulated by firms ranging from the giant Iowa Beef Products to small producers represented by the Western Organization of Resource Councils and the Dakota Resource Council. The N.A.S. concluded that SIS-C largely bypasses recommendations it has promulgated three times since 1985 regarding scientifically sound modernization of U.S. food inspection. It is no wonder that SIS is a source of grief to those who know best, American agriculture producers.

Mr. Secretary, application of the SIS concept to industry operations has raised a number of questions which must be answered before SIS is expanded further. We support the Department of Agriculture's mission to improve the safety and marketability of U.S. agricultural products. Consequently, we are at a loss to see how Streamlined Inspection System—Cattle advances either of these objectives.

We look forward to working with you on this pressing food safety problem.

Very sincerely yours,

HOWARD M. METZENBAUM,
U.S. Senator.

PATRICK J. LEAHY,
U.S. Senator.

[From the Atlanta (GA) Journal-Constitution, May 26, 1991]

CHICKEN: HOW SAFE?—PART 1

(By Scott Bronstein)

Three columns of chickens, dangling by their feet, speed into the ear-splitting din of a cool, dank warehouse—a maze of birds in dizzy, mechanized motion.

The lines of bobbing broilers coil around half a dozen machines that eviscerate the fryers and thread past the rare human worker who, wearing a hairnet, cotton smock and black rubber boots, reaches out to snip with scissors at the occasional bird the machines miss.

It is an automated cascade triggered by consumers seeking low-cost, low-cholesterol fare in record numbers. And it carries a hidden price: contamination.

The U.S. Department of Agriculture, responsible for ensuring that poultry products are wholesome, is failing so completely that the distinctive USDA seal of approval today no longer guarantees that chicken is safe to eat, said more than six dozen USDA inspectors at the nation's largest poultry plants.

Every week throughout the South, millions of chickens leaking yellow pus, stained by green feces, contaminated by harmful bacteria, or marred by lung and heart infections, cancerous tumors or skin conditions are shipped for sale to consumers, instead of being condemned and destroyed, the USDA inspectors said. Consumer advocates, federal veterinarians, former USDA scientists and congressional experts also describe a poultry production system swamped by success and out of control.

"You know the USDA seal of approval we put on the chicken? Well, it means nothing now. It's meaningless," said Gail Duncan, an inspector at the Trussville, Ala., plant owned by Atlanta-based Gold Kist Inc., the nation's third-largest poultry company.

Senior USDA officals call Mrs. Duncan, a 42-year-old mother of two who has been a federal poultry inspector for nine years, and hundreds of inspectors like her the consumer's "first line of defense" on poultry processing lines. She has become so concerned that chicken is no longer wholesome she has not served it to her own family for a year. Five dozen inspectors said they also were so concerned that they no longer eat chicken.

"Chickens we would routinely condemn 10 years ago are now getting right through to the consumer," said Mrs. Duncan. "What's so bad is the people are paying taxes for us to do this job and we can't do it. We are not being allowed to protect the consumer."

In all, The Atlanta Journal-Constitution interviewed 84 federal poultry inspectors from 37 processing plants in Georgia, Arkansas, Alabama, North Carolina and Mississippi—about 5 percent of all USDA inspectors monitoring poultry quality in the South. Included were inspectors at plants operated by the eight largest poultry companies in the United States. Among the findings:

Thousands of birds contaminated or stained with feces are shipped every day instead of being condemned, 81 inspectors said.

Thousands of diseased birds pass from processing lines to stores every day, 75 inspectors said.

Thousands of contaminated birds are salvaged by cutting away visibly diseased meat and selling the rest—much of which is also diseased—as chicken parts, 70 inspectors said.

Maggots, especially in summer months, often infest cutting and processing machinery, 47 inspectors said.

"Last summer, they were bringing plastic tubs into the plant and they had maggots crawling all over them," said Susan Ridgway, 42, an inspector at the ConAgra plant in Dalton, Ga. "These tubs would have been loaded up with chicken parts if we hadn't caught it. It happens all the time."

USDA scientists, industry experts and consumer advocates say that millions of birds leave plants every week contaminated by the unseen bacteria that cause serious food poisoning.

To meet spiraling demand, chickens today are slaughtered and processed by high-speed automated machinery. By their design, the automated lines spread bacteria and contamination, industry experts say.

While the demand for chicken has soared in recent years, so has the incidence of food poisoning caused by two powerful bacteria that often infect poultry: salmonella and campylobacter.

Millions of people become ill every year after eating food contaminated with salmonella or campylobacter—and several thousand die as a result, most of them elderly, children, or people with a weakened immune system, the U.S. Centers for Disease Control estimates.

Reported individual cases of food poisoning caused just by salmonella jumped 116 percent in the last two decades. Up to half of the salmonella cases are caused by tainted chicken, the CDC estimates. As many as 70 percent of the campylobacter cases come from poultry, USDA scientists say.

Poultry processors strongly defend their products.

Industry officials are keenly aware that it would be economic suicide to ignore quality control. Consumer confidence is the keystone of their sucess.

"We do not put out a product that is unwholesome. We simply would not do that," said Dr. James Whitmore, vice president for research and quality assurance at Tyson Foods Inc., the nation's largest poultry processor.

Paul G. Brower, a spokesman for Gold Kist, agreed. "We spend a great deal of time and money and hire poeple who are very thoroughly trained in quality control to be sure that we produce, process and market a safe, sanitary, wholseome product."

Industry executives and USDA officials point out that today less than one-half of 1 percent of the chickens are condemned for detectable disease, down from 10 percent several decades ago. They concede that at least one-third of their processed chicken is contaminated with salmonella and other bacteria. But they think the CDC is simply wrong in estimating that millions are getting food poisoning from chicken.

It would cost far too much to produce cleaner chicken, industry officials said, and they believe that consumers would be reluctant to pay the price. Thanks to an intensive investment in high-speed processing machinery, chicken is today the cheapest meat consumers can buy. In fact, a whole chicken actually cost less today per pound than 40 years ago.

Poultry processors could produce chickens completely free of bacteria by irradiating them, but consumers appear to be more frightened of this technique than by the threat of bacteria.

Industry officials say that as long as consumers thoroughly cook poultry, however, there is no danger of food poisoning.

"The chicken is without a doubt wholesome and healthy—as long as it's cooked properly," said Dr. Kenneth N. May, a spokesman for the industry's trade group, the National Broiler Council.

Poultry companies and the USDA, in effect, today increasingly depend on consumers to protect themselves—despite a federal food inspection system that costs taxpayers $417 million a year. What inspectors miss at the processing plant must be caught in the kitchen.

Even trained federal inspectors can often miss the subtle signs that might indicate any of a dozen diseases. And, without a microscope, it is impossible for anyone to tell whether chickens are covered with bacteria.

The most vigilant consumer cannot control the preparation of chicken in restaurant kitchens, which cook about 40 percent of the chicken produced today. Some 25,000 fast-food outlets have added chicken to their menus since 1977.

It is equally difficult for anyone to obtain a firsthand look at how plants process poultry.

Of the nation's 15 leading poultry processors, only Gold Kist and Seaboard Farms allowed a reporter to tour a processing plant. On the day of the tours, workers and inspectors seemed to follow proper procedures to ensure that only wholesome chicken was shipped.

Four USDA-approved commercial testing laboratories in the Southeast refused to conduct poultry salmonella and campylobacter contamination tests for the Journal-Constitution. Brian Shelton, lab manager for Pathogen Control Associates, echoed other lab managers when he explained why: "I would expect an extremely high percentage of the chickens would test positive. Our poultry industry clients wouldn't like that."

Growing health hazards posed by chicken are the byproduct of the industry's dizzying success and widespread government deregulation of poultry processing, critics believe.

Commercial chickens are raised in crowded "grow-out houses" and slaughtered at high speed by automated machinery—both of which can increase contamination, they say. By law, each bird must be inspected—but the lines move so fast that thorough examination is all but impossible, inspectors say.

Now the Agriculture Department has plans to allow production lines, which have already doubled or tripled their speed, to move even faster.

Without the money to hire more inspectors to meet the increased workload, the government is turning an increasing share of the safety responsibilities over to the industry.

"They're inspecting more and more chickens, with fewer and fewer people. And the lines run faster and faster, and salmonella contamination is growing greater and greater," said Carol Tucker Foreman, assistant secretary for food and consumer services under President Carter. Ms. Foreman now is a consumer advocate in Washington.

No government or regulatory testing for bacteria is regularly done at any U.S. poultry plant today. Scientists don't have enough test data to even know how few bacteria it takes to make someone sick, so regulators have no idea where to set a safe limit.

Three times in the past five years, the National Academy of Sciences urged regular testing for the bacteria that cause food poisoning. To ensure consumer safety, the academy also recommended changes in the slaughter and processing. The suggestions were largely ignored by USDA, according to academy reports.

Congressional attempts to improve regulatory enforcement have also met with little success. When legislation was introduced in the U.S. Senate four years ago to strengthen poultry inspection, the bill never made it out of committee. It was the last significant congressional effort at change.

Pacing the increased demand for chicken, millions of birds go whirring down conveyor lines daily in slaughter houses in Georgia and other Southeastern states. Georgia, Alabama and Arkansas produce half the chicken Americans eat and much of the chicken eaten around the world.

As the speed of the lines increases, there are too few federal inspectors to ensure that poultry products are free of disease and contamination, USDA inspectors, congressional experts and consumer advocates said.

The number of USDA meat and poultry inspectors has dropped 7.5 percent, from 7,758 inspectors in 1975 to 7,174 today. In that same period, the number of chickens produced in the United States and requiring federal inspection jumped 100 percent.

Hundreds of vacant poultry inspector positions have gone unfilled for lack of funding. The Southeast has the most acute shortage, with 217 of 1,816 positions unfilled last month.

USDA officials say they have handled staff shortages by relaxing the inspection standards and by turning inspection over to the companies.

"We don't do all the product checks we should be doing," said Dr. James D. Willis, Southeast regional director of the USDA's Food Safety and Inspection Service. "Sometimes we have to sacrifice those because of staff shortages."

Rotten meat is easy to spot. But the question of microbiological safety of chicken is a far more urgent problem. Microscopic bacteria like salmonella occur naturally on chickens and, though not harmful to them, can be deadly to humans.

Many scientists believe the salmonella contamination rate has doubled in 20 years. Up to 80 percent of the chicken coming from poultry plants is contaminated with salmonella, according to an unreleased 1989 USDA draft report in which analysts tested 1,500 carcasses at five large Southeastern poultry plants. That compares with about 10 percent for beef or pork.

The presence in chicken of campylobacter bacteria is higher still. Although not as well-known as salmonella, the bacteria are thought to cause twice as much food poisoning.

Dr. Norman J. Stern, a USDA microbiologist in Athens and an authority on campylobacter, recently found 98 percent of the ready-to-eat store-bought chickens he tested in Athens contaminated with the bug.

"The average chicken you buy today in any store has enough campylobacter on it to make 1,000 people very sick," he said. But, he added, "nobody eats raw chicken, so nobody gets those doses.

Ralph George, 54, an on-line inspector at the ConAgra plant in Dalton, like many inspectors feels trapped between the speeding lines and the need to protect the consumer.

"I'm ashamed to even let people know I'm a USDA inspector. There are thousands of diseased and unwholesome birds going right on down the lines that we can't catch."

TODAY, IF YOU BLOW THE WHISTLE, YOU ARE IN TROUBLE

INSPECTORS SAY BOSSES, PLANTS PRESSURE THEM

(By Scott Bronstein)

ELLIJAY, GA.—In the clanking, hissing, rumbling roar of the Gold Kist processing plant, William R. Freeman, 58, stares eight hours a day at a speeding current of raw pink chicken carcasses.

The 25-year veteran inspector and grandfather of three is trained to check for a dozen different diseases in every bird. They pass in front of him every two seconds for eight hours. Hundreds of times every shift, an inspector may be forced to stop the processing line to reject a contaminated carcass.

Like scores of USDA inspectors across the poultry belt, Mr. Freeman says thousands of birds leave plants daily that should be condemned. Mr. Freeman also says there's little he can do about it.

"The oath I took to be an inspector said if I ever saw anything wrong, like a problem with a bad product, I was supposed to report it," said Mr. Freeman. "But today I can't report anything. Today, if you blow the whistle, you're in trouble with the inspection service. I feel the oath I took is violated every day I work by the program we have."

The Atlanta Journal-Constitution interviewed 84 federal poultry inspectors. Forty-eight of them, including Mr. Freeman, who work at two dozen different plants say they are routinely cursed, rebuked and harassed by company officials or by their own government supervisors when they halt speeding production lines to scrutinize spoiled or diseased meat.

The inspectors say clashes with the poultry companies are common, and many believe their ability to ensure the quality of commercial poultry is compromised daily.

Industry officials say the inspectors are wrong. "It's simply not true," said Paul G. Brower, spokesman for Gold Kist. "The inspectors are never treated that way. They are not ever abused or harassed or treated badly in any other way."

Lester Crawford, who oversees all meat inspection in the country as head of the USDA's Food Safety and Inspection Service, said the poultry inspection system works "better than ever."

When asked about the complaints heard in interviews, he said: "All our work force isn't completely happy. But the employees who think there are problems are small in number."

Dr. Crawford said the inspectors are "derelict" if they allow contaminated or diseased chicken to leave a plant. "They also have their responsibility to stop the line, and I've always backed them on that." he said.

Scores of inspectors, however, said the department does not back them when they try to stop the lines.

Barbara Hitt, 39, a seven-year inspector at the Marshall Durbin plant in Jasper, Ala., said there is pressure today on inspectors to do their job less thoroughly.

"It used to be that if it had severe contamination, you condemned that sucker," Mrs. Hitt, a widow whose USDA paycheck supports a daughter at home, said. "But nowadays my own supervising inspector says, 'There can be no more bad birds on your tally. You've had too many.'"

Sixty miles across the state, at the Gold Kist plant in Boaz, Charles S. Painter, 30, a five-year inspector, describes a similar problem: "My supervisor drags me off the line regularly because the company complains that I've pulled too many bad birds. I'm being told to let them go by so the company's production quotas can be met."

Last summer, Jetty Mincey, an on-line inspector at the Canton, Ga., plant operated by Seaboard Farms, had her name posted on the wall at work with other inspectors, she said. "It listed every time when we stopped the line. There have been times we've had to stop the line 500 times for bad birds during a shift at night. And they'd have every one marked down on their papers. They try to make us feel bad for doing our jobs," she said.

Steve Bass, general manager of Seaboard's Canton operation, said he was "unsure" whether such a list was ever posted.

Inspectors' morale is at an all-time low, say USDA veterans such as Doris Pursley, 43. She left her job cutting chicken meat 11 years ago to become an inspector because protecting the consumer appealed to her and seemed a way to do "some good" in the industry.

Today Ms. Pursley and many inspectors like her are frustrated and bitter. "I know for a fact that now I'm far less able to protect the consumer than I once could," said Ms. Pursley.

In the fast-growing area of "further processing," where items such as chicken nuggets, patties, cut-up parts or cooked products are made, a single inspector can be responsible for watching over processing at up to six plants, often miles apart.

When processing inspector Wanda C. Craig, 35, arrived early at one of five North Georgia plants she was monitoring several weeks ago, she found workers mixing 60-pound boxes of rotten meat in with good meat to make chicken patties, she said.

"It had already turned green and had a real bad odor," said Ms. Craig, who has been an inspector for more than 14 years. "It had defintely gone bad. I had to condemn all of it—huge 60-pound boxes of skins. This plant had been mixing that bad meat right in with the good. Had I not come in, it would have been put through the grinder and gone out to the public.

"Sometimes we can only get into each plant for 10 minutes, so you can imagine what kind of inspection they're getting. I know there are things going on when we're not there that shouldn't be," she said.

Most inspectors earn $25,000 to $33,000 a year. Six weeks of training is the principal requirement for the job.

Most inspectors belong to the federal union of meat inspectors, thus having some job protection that gives them some freedom to speak their concerns—although many still insisted on anonymity.

Federal veterinarians who supervise the inspectors do not have a union or the same protection as the inspectors. But they also have concerns about poultry inspection, according to Dr. Edward L. Meaning, executive vice president of the National Association of Federal Veterinarians. He said most poultry plant veterinarians belong to the group.

"There are many vets concerned about the line speeds and about the fecal contamination that may ensue from that. Their concern is one of wanting more data," he said.

"The biggest human threat is not from the bad, condemnable birds that get through. The main threat is from the 70-plus percent of the carcasses with pathogens that can make humans very sick," he said.

In the past, friction between the plant employees and federal inspectors was common, said Dr. James D. Willis, Southeast regional director of the USDA's Food Safety and Inspection Service.

That's no longer true, he said: "We work with the industry today. They now do a lot of the product checks, and we monitor them. . . . The inspectors are not doing as much as they used to do. Now, the plant does much of the inspection for us."

That's just the problem, say many inspectors. The USDA today "serves" the poultry industry rather than consumers, they believe. "The USDA has completely relaxed the inspection service over the years," says Douglas Terry, 64, a 30-year inspector at the Peterson Industries Inc. plant in Decatur, Ark.

Dr. Menning sharply criticizes the USDA's increasing push to hand inspection to companies that have "a financial interest" in meeting quotas.

For Wilmer L. Williams, 48 an inspector for 11 years at the ConAgra plant in Enterprise Ala., there is no question inspection is compromised. "The plants don't watch the chickens as closely as we do," he said.

"Let's be honest. The plant people are not going to slow down the lines for something they find wrong. How often do you hear of a highway patrolman giving himself a ticket for speeding? It just don't happen."

A DAY TO FORGET: MOST SICK I HAVE EVEN BEEN

(By Scott Bronstein)

Mike Quinn, a 40-year old heart surgery nurse at Piedmont Hospital, was barbecuing chicken for his children in the back yard of his Stone Mountain home. He licked from his

fingers some barbecue sauce that had touched the raw chicken.

That was his mistake.

Twelve hours later, Mr. Quinn was convulsed by cramps and diarrhea so severe that he lost 10 pounds in 48 hours.

At least 2 million people were poisoned last year by salmonella bacteria and up to 2,000 died, scientists at the U.S. Centers for Disease-Control estimate. And at least twice as many people were poisoned by little-known bacteria called campylobacter, they believe. In both groups, they say, up to half got sick eating chicken.

Mike Quinn was one of them.

Doctors at Piedmont Hospital's emergency room diagnosed food poisoning caused by campylobacter. The microscopic one-cell organisms left his colon raw and bleeding. "The bacteria had just eaten it up. Stripped inside out," Mr. Quinn said. He was hospitalized for five days last November. He still has not completely recovered.

In all, the USDA estimates that salmonella and campylobacter infections cost more than $2 billion a year in medical expenses, lost productivity, product recalls and related costs.

"The fact that poultry consumption and the number of salmonella cases are rising at similar rates doesn't prove correlation," said the CDC's Morris Potter. "But I do think it is a cause for great concern."

The elderly, the very young, and those with a depressed immune system are particularly vulnerable to food poisoning, say medical experts like Dr. Potter.

Some people find it hard to believe that chicken can be so dangerous.

Deborah Croney, 41 was one of 130 people who got sick from salmonella last September after eating a chicken barbecue dinner at the Seymour Apple Festival, 30 miles from Springfield, Mo. A half-dozen, like Ms. Croney, were hospitalized.

"I had a really hard time accepting that it was the chicken. I couldn't hardly believe it," she said. "This was the most sick I've ever been. I felt like I might die."

USDA EASES UP ON PLANTS SIX TIMES IN 15 YEARS

(By Scott Bronstein)

Six times in 15 years, the U.S. Department of Agriculture changed its procedures in ways that weakened the poultry inspection system.

Mandatory inspection of all chickens began in 1957, after the Poultry Products Inspection Act was approved by Congress.

That law was broadened a decade later with the Wholesome Poultry Product Act.

In 1977, the USDA allowed companies to rinse, rather than cut out, chicken contaminated with fecal matter.

The companies, petitioned for the change when they discovered that their new machinery ruptured intestines and spilled fecal matter into the bird carcasses, say consumer advocates.

In the late 1970s many plants were allowed to develop "salvage" lines, where meat believed unaffected by disease or contamination was trimmed from chicken carcases and sold to consumers as cut-up parts or processed meat.

In 1984, the department allowed plants to raise production-line speeds and take on some inspection duties. They were allowed to trim bruises, broken bones or other bad parts marked by inspectors without an inspector watching the trim operation.

A year later, the department no longer allowed its online inspectors to slow the lines. Now only supervisors have the authority.

And production lines in some plants were allowed to speed up again in 1986.

During the last four years the USDA has been experimenting with a pilot program in a Puerto Rican plant, allowing company employees to do even more inspection.

Printed on virtually every package of chicken available for purchase by consumers today is a small blue circular seal that reads: "Inspected for wholesomeness by the USDA, U.S. Department of Agriculture.

For 33 years, the government seal has assured consumers that the raw chicken they purchase has met rigid inspections mandated by Congress.

It is the only way consumers have to tell if the chicken they eat is safe.

"That stamp meant the chicken was safe to eat for the consumer, that they could trust it," said Dr. Robert B. Mericle, a supervisor for poultry inspection in the Midwest from 1952 to 1969 and one of the nation's authorities on the subject.

"It meant the chicken was processed under sanitary conditions, and that each bird was inspected by a government worker to see if it was free from disease."

Beef, veal, lamb and pork producers has to start using the stamp in 1906 after Congress enacted the Meat Inspection Act, spurred by Upton Sinclair's expose to the red-meat packing industry.

But more than 50 years passed before Congress, in 1957 decided to regulate poultry as well. It approved the Poultry Products Inspection Act that year at the urging of poultry processors themselves—many of whom were competing against a few firms that voluntarily allowed inspection in their plants.

The seal had first appeared on chicken in the early 1920s, when several companies began allowing voluntary inspections so their canned chicken products could be stamped, assuring consumers of product purity.

Accompanying the seal of approval on most chickens is a crest-shaped seal stamped "Grade A." A separate division of the USDA, outside the food inspection service, gives chickens this additional mark if they are visibly "perfect" birds free of such defects as bruises, feathers or discoloration.

POULTRY INSPECTION: WEAKENING THE STANDARDS

Important events since poultry inspection began, leading to increased line speeds and companies doing more of the inspection. Each chicken represents 10 birds per minute per inspector.

1957: Poultry Products Inspection Act passed. Inspectors look at 16 birds per minute.

1978: "Modified Traditional" inspection begins. Now inspectors watch 22 birds per minute.

1984: U.S. Department of Agriculture allows companies to adopt "New Line Speed." Inspectors now watch 30 birds per minute.

1986: "Streamlined Inspection System" cuts number of inspectors by a third at some plants. Inspectors now watch 35 birds per minute.

1991: USDA is experimenting with faster line speeds to test effects on contamination.

Source: USDA officials, inspectors.

HIGH-TECH PLANTS CHURN OUT BIRDS—BUT ADD TO RISK

(By Scott Bronstein)

Within a few years, industry officials hope to automate poultry processing almost completely. Consumer activists and scientists warn that the chicken produced by such plants may—by their design—be more contaminated than ever.

Modern chicken slaughter and processing are a testimony to the high technology of the late 20th century, a product of millions of dollars of research money engaging the best minds at universities across the South. Their engineering expertise created sprawling factories where 200,000 chickens a day enter one end and pallets of family-sized ready-to-buy packages of filleted breasts leave at the other end.

"The poultry industry has enjoyed a technical revolution over the last two decades, analogous to the invention of the cotton gin in the 19th century," said Thomas Devine, legal director of the Government Accountability Project, a consumer advocacy group in Washington, D.C.

"The problem is that with the new mechanization there's a lot more contamination that routinely occurs, and no one is doing anything about it," he said.

A QUICK RIDE

Nearly every large company now has "integrated" operations, meaning that it typically runs in one location all aspects of processing, from the feed mill to the rendering mill, to the hatcheries, to the slaughterhouse, processing and packaging areas.

Chickens begin their ride through a slaughterhouse by brushing up against an electrically charged metal grate carrying about 18 volts of electricity. This stuns the birds.

Then, at the rate of about 140 birds per minute, their throats are cut by a circular 8-inch rotating blade that severs their main artery.

As the carcasses move onto the processing line, critics say, contamination caused by the automated machinery begins. One recent USDA study found that just over half the chickens at one Puerto Rican processing plant were contaminated with salmonella bacteria going in, but three-fourths were contaminated coming out.

DANGER POINTS

USDA scientists and consumer experts say the problem areas include:

Dirty water. Chickens are soaked in 40-foot tanks to loosen their feathers. The steaming hot water quickly becomes a thick, brackish, bubbling soup filled with debris from the feathers. The water, usually about 135 degrees, is not hot enough to kill bacteria. Salmonella and other bacteria survive to contaminate other birds.

Bacterial mist. The wet feathers are beaten loose by thousands of 4- to 6-inch rubberized spinning "fingers." They contaminate the birds by spreading bacteria, dirt and fecal matter on the feathers, directly and also through a sort of "bacterial aerosol." The fingers can also beat germs deep into the chickens' skin.

Ruptured birds. The birds are eviscerated by machine. Because no two chickens are alike and the machines are so precise, intestines are often ruptured when mechanically "drawn" or removed from birds, causing fecal contamination.

The wash process. More than a decade ago the USDA allowed companies to begin washing birds one time with a mild chlorine rinse instead of trimming out fecal contamination. But USDA scientists have shown that, even after 40 washings without chlorine, bacteria cannot be completely removed.

Cross-contamination. Chickens are cooled for processing in a large communal bath known as the "chill tank." Large enough to handle up to 5,000 birds at once, the tanks

mix clean chickens with dirty ones. Dr. Huda S. Lillard, a USDA microbiologist in Athens, published a study showing the number of birds with salmonella more than doubled after immersion in the chill tank. She says the tank is where contamination is most likely to occur.

"None of the new changes brought into the production process were designed to reduce the level of bacterial contamination. They were always designed to increase production levels," said Rod Leonard, who served as federal administrator for meat and poultry inspection under President Johnson.

"The effect all these changes have on the quality of the poultry, its wholesomeness, is they raise the level of contamination," said Mr. Leonard, now a consumer advocate at the Community Nutrition Institute, a group based in Washington, D.C., that does policy analysis in food, nutrition and agriculture.

Automation has become the rule in most slaughterhouses. In 1967 a slaughter operation typically required about 100 employees. Today, only 35 employees are needed. The rest is done by machine, according to Lamar Rice of Stork Gamco Inc., one of the leading poultry machine manufacturers in the country. In 24 years, 14 of 22 different jobs formerly done manually have been automated, he said.

"I believe that within two to five years this industry will be 95 percent automated," said Harold Ford, executive vice president of Southeastern Poultry and Egg Association.

"A TERRIBLE THING TO DO"

It was in 1977 that the industry persuaded USDA to allow the washing of contaminated birds, instead of requiring that they be trimmed. Today, the official directly responsible for that decision regrets it.

"It turned out be a terrible thing to do," says Carol Tucker Foreman, a consumer advocate who was assistant secretary for food and consumer services under President Carter.

"By allowing the companies to wash instead of cut meat away we created a financial incentive for them to be sloppy in the evisceration of birds." she said. "We took away one of the incentives to run clean, safe lines."

A WELL-BRED BIRD BEGINS IN THE LAB

(By Scott Bronstein)

Poultry experts are breeding a better bird.

William P. Roenigk, an economist with the National Broiler Council, jokingly calls it the "Dolly Parton chicken."

Consumers mostly favor white over dark meat, and chicken breeders are developing birds with larger breasts to oblige. The industry has redirected millions of dollars of its profits back into research to develop heavier, healthier chickens for delivery to tables in record time.

Today, thanks to genetic selection, vitamins, growth hormones, antibiotics and myriad other advances, the industry typically get a 5.15-pound broiler after 46 days. Ninety-five percent commonly survive, according to Dr. William A. Rishell, vice president and director of research and development at Arbor Acres Farm in Glastonbury, Conn.

Broiler body weight has increased by 1.65 pounds since 1968—in broilers that are 10 days younger and using 15 percent less feed, he said. And the number of birds dying before they are ready for market has been cut to half the 1968 level.

Sone chicken diseases have been eradicated. Marek's disease, a poultry disease similar to cancer, was eliminated in the 1970s. As a result, the industry has saved around $3 billion in 20 years since, said Mr. Roenigk.

That's only the beginning.

Studies are under way to genetically select broilers that are more immune to bacteria such as salmonella and campylobacter and a variety of diseases. For example, Dr. Norman J. Stern, a microbiologist for the USDA's Agricultral Research Service in Athens, is trying to breed chickens that are less susceptible to campylobacter. Resistant birds, however, won't stop contamination caused by processing.

Industry officials also say that eventually they will be able to achieve full-weight chickens in just over one month—and that chicken will contain less fat.

Today, a whole chicken carcass might contain about 16 percent fat. Breeders think they can get that down to 10 percent.

HOW CHICKENS GET TO YOUR TABLE

1. EGG

Contamination can begin in the egg because the hen that lays it may be contaminated. Eggs are laid in breeder farm houses, each sheltering 9,000 females and 900 males for high productivity. About 85 percent of the hens lay one egg a day every day of their lives. Each day, the eggs are collected and sent to the hatchery.

2. HATCHERY

250,000 eggs per day; 90,000 per incubator; 18 days to incubate; 25 eggs per basket; 5 baskets deep; 6 days to hatch; 50,000 hatch per day.

Throwing room. To keep up with the hundreds of thousands of chicks that hatch each day, workers in this room literally scoop up large handfuls of chicks every second, throwing them several feet through the air onto conveyor belts.

The fluffy yellow chicks, no bigger than baseballs, are inoculated, in some plants debeaked (beaks blunted on hot plate to reduce danger), and transported to grow-out houses.

3. GROW-OUT HOUSES

23,000 birds per house, 6 weeks to grow.

Chickens are caught manually, at night, by a 5-person crew. All 23,000 chickens can usually be caught and caged in under three hours.

22–26 birds per cage.

4. SLAUGHTERHOUSE

(a) Chickens are dumped from their cages onto a conveyor belt; (b) workers hang the birds upside down by hooking both feet into moving shackles at about one bird per second; (c) the chickens are sprayed with water and stunned by an 18-volt electric shock; (d) a mechanized blade draws a quick, long slash across each chicken's neck and blood begins pouring onto the floor and into drains; (e) after the blood has drained, the birds are dragged through a tank of scalding water to loosen their feathers; (f) the feather-removing machine pummels the dripping and dirty feathers off the carcasses. The feathers drop in soggy piles to the ground and are swept away in a refuse drain; (g) machines and workers sever the birds' heads and open their body cavities, laying the guts in a pile; (h) USDA on-line inspectors check every bird for a dozen different diseases, tumors and infection, as well as for feces and gall contamination. They have 1 to 2 seconds per bird; (i) infections are sucked out with a vacuum cleaner, and skin tumors, unless two or more are found, are removed and the chicken is salvaged; (j) after inspection, the viscera are cut from the chickens and they are given several last washes and further trims; and (k) the chickens are sent to the chill tank, where as many as 5,000 may be cooled in a water bath at one time.

5. PROCESSING

(a) Chickens are weighed, graded by size, and cut up, packaged whole or prepared for specially packaged food items; and (b) dozens of workers stand side by side, making the same cuts or slices in each carcass as it passes by at a rate of one every few seconds.

Poultry plants produced 25.5 billion pounds of chicken meat in 1990. For every person in the United States, there were 24 broilers slaughtered and inspected last year.

Figures are for a typical industrialized broiler operation and will vary from plant to plant. Source: U.S. Department of Agriculture. Gold Kist and Seaboard Farms.

FRESH EGGS TAKEN OFF MANY MENUS

Salmonella contamination is so pervasive that often it is even inside the eggs chickens lay. Today, some of the nation's leading restaurants, hotels and airlines—worried about food poisoning—are breaking their fresh egg habit and are using pasteurized, packaged liquefied eggs instead.

And beginning July 1, Georgia will lead the nation with new refrigeration laws for eggs.

Under a state law enacted this year, eggs must be refrigerated by handlers at an ambient temperature not to exceed 45 degrees Fahrenheit from the time they are gathered until they are served at restaurants or in institutions. It prohibits grocers from storing them in unrefrigerated aisle displays.

BACTERIA: THE HIDDEN HAZARD

Two types of bacteria are the most common cause of food poisoning:

Salmonella

A hardy bacterium that can live up to six months on a kitchen cutting board; occurs naturally on chicken, but often causes them no harm. In the human intestine, however, it can cause constant diarrhea, abdominal cramps, nausea, and even death in those with a weak immune system.

Campylobacter jejuni

A newly discovered one-cell organism which is thought to cause twice as much food-borne illness as salmonella.

BREEDING A HEALTHIER CHICKEN

USDA researchers are trying to breed campylobacter-resistant chickens at the Department of Poultry Science at Auburn University.

SALMONELLA ON THE RISE

Number of sporadic or single cases of salmonella infections reported annually. The CDC estimates only 1 percent to 5 percent of the actual number of cases are reported. The CDC also estimates that up to half of sporadic cases are derived from poultry.

DID YOU KNOW?

Chickens have keen hearing and sight, but they have only 24 taste buds compared with 9,000 for humans. Chickens have a poor sense of smell.

THE PRICE OF CHEAP CHICKEN

In all, 84 federal poultry inspectors were interviewed at 37 processing plants in five states, including plants operated by the eight largest poultry companies in the United States.

Contamination

Thousands of birds tainted or stained with feces, which a decade ago would have been condemned, are now rinsed and sold daily, 81 inspectors said.

"Would you want to go out to a pasture with a chicken, cut him up, then drop him into a fresh manure pile and eat him? That's what the product is like coming from chicken plants today."—Pat Godfrey, 44, an inspector at Tyson's Springdale, Ark., plant.

Disease

Thousands of diseased birds pass from processing lines to stores every day, 75 inspectors said. Many chickens have pus seeping from their body cavities. Others with cancerous tumors often get through, 69 inspectors said.

"I've had bad air sac birds that had yellow pus visibly coming out of their insides, and I was told to save the breast meat off them and even save the second joint of the wing. You might get those breasts today at a store in a package of breast fillets. And you might get the other part in a pack of buffalo wings."—Ronnie Sarratt, 40, an inspector at the Tyson plant in Gadsden, Ala.

Salvage

Poultry plants today often "salvage" meat, cutting away visibly diseased or contaminated sections and selling the rest as packaged wings, legs or breasts, 70 inspectors said.

"Practically every bird now, no matter how bad, is salvaged. This meat is not wholesome, I would not want to eat it. I would never, in my wildest dreams, buy cut-up parts at a store today."—Richard Simmons, 51, an inspector at ConAgra's Gainesville plant.

[From the Atlanta Journal the Atlanta Constitution, June 2, 1991]

CHICKEN: AT WHAT COST?—PART 2

FOR WORKERS, PRICE CAN BE HIGH—PAIN, CRIPPLED HANDS

(By Scott Bronstein)

GAINESVILLE, GA.—Every seven seconds for eight hours a day, Maria Reyes picks up a 10-pound bag full of quartered chicken legs and twists it closed with both hands. Then, with a deft circling motion, she seals it with a clasp in her right hand—about 80 pounds every minute, 4,800 pounds every hour, 19 tons of chicken every day.

By the end of her week at the Mar-Jac poultry plant in Gainesville, the self-proclaimed Chicken Capital of the World, the pain shoots up both of her arms and a 2-inch-long knot rises along her right wrist. She wears a splint. Her sister, Ana-Maria, 46, who fills and seals giblet bags, has had a similar knot on her right wrist for more than a year.

"It hurts when I sweep, or try to hold things, even when I do the dishes," said Miss Reyes, 35. Her sister chimed in, "I can't raise my arm above my head because it hurts so badly. My daughter has to help me put on my hairnet each morning."

To keep pace on poultry production lines moving twice as fast as a decade ago, the human components of the highly automated poultry processing machinery, such as Miss Reyes, her sister, and her niece, Ana-Isabel, must move their arms in quick staccato fashion to slice, wrap, cut, and, on occasion, rip apart raw chicken with their hands.

The repetitive motions often cause what are called repeated trauma disorders. They range from simple tendinitis in the wrists or shoulders to carpal tunnel syndrome, which can leave a worker virtually crippled, requiring corrective surgery.

Thousands of poultry workers across Georgia and other poultry states have required carpal tunnel surgery as a result of damage to nerves and tendons in wrists or hands. About 5 percent of the injuries result in permanent disabilities, federal safety officials said.

No one today can be sure exactly how many poultry workers are being injured because the Occupational Safety and Health Administration (OSHA) does not regularly monitor repeated trauma cases or accidents involving knives, saws or other machinery.

But repetitive motion injuries have in the last few years become the most common occupational illness in the United States. Today, more than half of all reported occupational illnesses involve repeated trauma, say officials at the U.S. Department of Labor. And poultry plant workers are injured through repeated trauma more often than workers in any other U.S. industry except redmeat packing.

Industry officials acknowledge the high number of worker hand and arm injuries, but the solution for many companies is to eliminate the jobs through greater automation—with the likely result that bacterial contamination of chicken caused by such machinery will get worse.

"We're well aware of the problem. And we don't have an answer for it yet," said Harold Ford, excecutive vice president for the Southeastern Poultry and Egg Association.

"We're trying to be responsive. We don't want our employees to suffer working for us," said Mr. Ford. "We're reaching the point, because of worker complaints and insurance problems and the OSHA on our backs, that we have no choice but to look for more automation that can replace the poeple in the plants. That means you'll have more people in these rural communities unemployed. Many are not skilled, and they're not going to be able to go out and get other jobs overnight."

Each morning across the U.S. poulty belt—in Arkansas, Mississippi, Alabama, Georgia and North Carolina—tens of thousands of workers report to poultry processing lines. In the Gainesville area, where Miss Reyes works, the work force is predominantly Mexican. Elsewhere in Georgia, in cities such as Buena Vista, Athens, Macon and Carrollton, and in other poultry belt states poultry workers are mostly black.

Whatever their race or national origin, however, the workers are overwhelmingly female and according to physicians, particularly susceptible to repeated trauma injuries.

Miss Reyes, her sister and niece are among the 12,000 Mexican workers who labor in Gainesville area poultry plants. Dressed in cotton smocks, hairnets and rubber boots, they join other shift workers streaming before dawn from the two-room cottages and cramped trailers of Gainesville's "Little Mexico." About one-third are in the United States illegally, workers themselves estimate.

From some Mexican villages, like Maria Reyes's hometown of Cinco de Febrero in the state of Durango, almost two-thirds of the population has moved to Gainesville in the past seven years. She crossed the border into the United States two years ago, unable to speak English—and the $6-an-hour poultry job was the only work she could find. In Mexico, she operated a word processor for the government.

While many of the injured American poultry workers try to seek help from state workers' compensation boards, or even at times through the courts, most Mexicans cannot even complain about working conditions.

They worry that if they do, they could jeopardize their jobs and their continued presence in the United States. A quick call to immigration authorities could settle a labor dispute at many plants.

Teodoro Maus, the Mexican consul in Atlanta, finds conditions in the poultry industry disheartening. "It's tragic—these people come here to work, and they'll work 20 hours a day under the worst conditions with little complaint, because they feel they have no choice," he said. "What's worse is that there are companies willing to take advantage of these people, have them working under these horrible conditions, knowing they will never speak up."

Looking down at her swollen hands at the end of the week, Maria Reyes grows silent for a moment. Then she says quietly through an interpreter, "I feel like I'm trapped. I cannot get a better job because even though I have skills, I don't speak the language. If I complain, they send me home without pay, and then I have nothing."

Her sister nods in agreement: "We rarely complain at work. We can lose our job. Or worse, they send us back to Mexico."

Hand and wrist injuries have been well-documented at a few poultry plants in recent years. Federal safety officials say the injury rate is alarming:

One in five poultry workers has been seriously injured in the hands, wrists or shoulders, many requiring surgery, National Institute for Occupational Safety and Health (NIOSH) experts say.

Poultry processing and slaughtering had an average of 15 percent more repeated trauma injuries in 1989 than the motor vehicle assembly industry and 118 percent more than shipbuilding.

An estimated one in three poultry plant workers today suffers severe pain in the arms, wrists or shoulders, according to Thomas Hales, a medical epidemiologist at NIOSH.

Poultry processing was ranked the 24th most hazardous U.S. industry in 1989, out of 697 ranked by the Bureau of Labor Statistics, for injuries and illnesses causing lost work time. It was worse than coal mining, auto manufacturing and construction.

"This is a huge problem throughout the poultry industry," said Dr. Hales, who has helped design studies on workers in several poultry plants, including the Cargill Inc. plant in Buena Vista and a Perdue Farms plant in North Carolina." I would say one-third of the workers on production lines throughout the poultry industry today are suffering from repetitive trauma disorders."

Georgia legislators are studying a bill introduced this year to change state workers' compensation laws. In part, it would make it harder for poultry workers with repeated trauma injuries, like carpal tunnel syndrome, to qualify for compensation, say workers' comp attorneys.

The bill's chief author, Rep. Jim Griffin (D–Tunnel Hill), said he is unsure how it would affect carpal tunnel cases, but said the measure is designed to save the state money. "I think a big problem with workers' compensation today is that it's paying for things it shouldn't pay for. That's what we need to fix."

Poultry processing workers, who average $6.90 an hour, are among the lowest-paid workers in the United States, labor statistics show. Poultry processing pays its workers the lowest wages of all food manufacturing industries in the country.

In Georgia in 1990, the average weekly pretax wage for poultry workers, $314.78, was significantly lower that that of manufacturing and construction workers.

While many Mexican workers in Gainesville do not complain because they fear deportation, poultry workers in other towns—many of them single mothers—say simply they cannot afford to risk the regular pay.

Alice Denise Fletcher, 32, cut breast meat from chickens on the processing line at the Choctaw Maid Farms plant in Carthage, Miss., for a decade. The single mother earned about $5 an hour to pay the bills and feed her three children.

Every other second of every minute she worked on the processing line, she grabbed a chicken with her left hand, and with a quick twisting motion sliced the breast meat away from the bird with a * * * chickens every day.

In 1988, Ms. Fletcher's right wrist began to hurt so much she had difficulty holding her knife. The company sent her to a doctor, who gave her medication and took her off the line for one day. Then the pain began again.

"It got worse, and they never would let me go to the doctor after the first time," she says today. After a few months she could scarcely use her hand at all. A personal physician in Jackson offered an independent diagnosis: severe carpal tunnel syndrome. In 1989 and 1990, she underwent surgery on her right wrist a total of three times.

Today she assembles lamps at a workshop for the handicapped in Kosciusko, Miss. She gets paid $1.50 an hour and now gets food stamps.

"I blame the chicken plant for injuring me. I ain't going to be able to use my hands the same way ever again," she said.

Ricky Rayborn, human resources director at the plant, would not address Ms. Fletcher's case. "We operate a safe plant, and we do everything we can to prevent injuries," he said. "When an injury does take place, we make sure the injured workers are taken care of through proper medical procedures and medical personnel."

In interviews, more than 40 injured workers from a dozen different poultry plants said they were discouraged or even prevented from seeing doctors when they complained of pain.

They said they had to complain as many as half a dozen times over a month or more before plant nurses allowed them to see a company doctor.

In spite of notes from doctors, some were fired after they were injured, according to workers' compensation attorneys. In some cases, workers said, company doctors told them nothing was wrong. When they sought a second opinion, they learned from other physicians that they had been severely injured, often requiring surgery.

"If you don't intervene and remove these workers and treat their injuries, and you progress to the carpal tunnel stage, then these can be disabling injuries," said Dr. Hales. "They can be irreversible in some of these workers."

David H. Moskowitz, a workers' compensation lawyer in Decatur who has represented more than 75 injured poultry workers in South Georgia, said he often has to fight with companies before they will allow injured workers to see company doctors.

"It's like something you'd imagine out of the Soviet Union," he said. "It's hard to believe someone injured in the course of employment should have to go through this much turmoil just to get appropriate medical treatment in a democratic society."

Linda C. Cromer, an organizer with the Retail, Wholesale and Department Store Union, which represents about 10 plants across the poultry belt, says the industry "has reached a crisis situation."

"Processors have proven they will not willingly make these jobs more safe," she said.

In 1989, the Empire Kosher Foods poultry plant in Mifflintown, Pa., was fined $1.36 million by OSHA for "knowingly and willfully" exposing workers to cumulative trauma injuries. It was the first such fine in the country—but not the last.

That same year, Cargill's plant in Buena Vista was fined $242,000 and also cited for "knowingly and willfully" injuring about half its workers.

The plants—and other fined later—contested the government action. In some cases, settlements are still pending. But empire Kosher Foods, Cargill and other companies have started new safety programs as a result of government pressure.

But many critics say the speed of production lines is the major reason for the continuing high rate of injuries. The lines have not been slowed.

Some plants rotate workers in an effort to reduce injuries, but many workers say they still experience pain.

For Ann Moultry, 47, and others like her, the poultry plants are often the best work they can find.

"It's true, it's a good-paying job. And those are hard to find around here," she said. For seven years she has been grading and hanging 41 chickens a minute at the Southland Broilers Inc. plant in Enterprise, Ala. Last year, she was diagnosed with carpal tunnel syndrome and udnerwent surgery on both wrists. She can now do only light work at the plant.

"At times I can't even wring a bath rag out," she said. "The strength just leaves my hands."

"I KEEP THINKING . . . THAT SHE'LL COME WALKING IN THE DOOR"

(By Scott Bronstein)

GAINESVILLE, GA.—Graciela Gonzalez was about to take a break from sorting chicken breasts at the Dutch Quality House plant that Wednesday night.

She removed her hairnet and hung up her white apron. Friends beckoned her to hurry so she could get the full 10 minutes' break time.

Before leaving her station, she knelt to retrieve some scraps of chicken that had fallen to the floor beneath the "shaker," a vibrating steel machine that sorts frozen chicken breasts.

As she leaned under the machine, her long black hair was swept into the moving parts overhead. She had time to scream only once. As the mechanism drew her head up, a rotating steel shaft struck her skull. She was pronounced dead at the hospital.

Graciela Gonzalez lived, worked and—on Feb. 27, 1991—died in Gainesville, Ga. But to this day, she has never officially existed in the eyes of either her employer or the United States of America. She was never really here.

Mrs. Gonzalez was an undocumented immigrant. The name on the false documents she carried was Rosa Marie Charles.

She is one of the thousands who have come here from small Mexican towns. They are workers on whom Georgia's poultry industry increasingly has come to depend. They are also workers who have little leverage to complain about product quality or working conditions or anything, because—like Mrs. Gonzalez—in the eyes of this country many of them don't really exist.

Officials with Dutch Quality took the body of Mrs. Gonzalez, a 26-year-old mother of two, to Memorial Park Funedral home in Gainesville. Attendants were unsure how to label the corpse. "When you have two or three different names you're dealing with, it's pretty confusing," said funeral home manager Marion Merck. "To be honest, we've been confused from this since it started."

TWO COUNTRIES, TWO FUNERALS

Mr. Merck, contacted the Mexican consulutate's office in Atlanta for help, and a funeral service was arranged in Gainesville. Nearly 150 Mexican workers, along with company officials, came to pay their respects to the woman whose real name most never knew.

As soon as the service was over, family members took her children and whisked Mrs. Gonzalez's body off to her Mexican hometown. Within a week of her death, she was buried with a Mass and wake in Salvatierra. It cost her family about $1,500.

Mrs. Gonzalez's two daughters, Isela, 4, and Jennifer, 11 months, still do not know their mother is dead. Asked where her mother is, Isela says simply, "She is working."

"We haven't been able to tell them yet," said Samuel Gantes, Mrs. Gonzalez's husband, looking down at his daughters playing in the family's small blue house in "Little Mexico" on the south side of Gainesville.

Officials at Dutch Quality offered to pay for the family to fly the body to Mexico. But relatives who accompanied the body, also undocumented workers, then found themselves trapped on the other side of the border. To return to homes and jobs in Gainesville, they waded back across the Rio Grande to Texas, where immigration agents arrested them and sent them back to Mexico.

Just before dawn a week later, they waded across at Matamoros, picked up the daughters, who had been driven back into the United States by a legal family member, and drove to Gainesville. The group got back to Georgia five weeks after Mrs. Gonzalez's death.

MOTHER OF ALL OF US

Mrs. Gonzalez's dream of a better life took form two years ago when she left Salvatierra in the state of Guanajuato and waded quietly and illegally over the U.S. border, carrying Isela in her arms.

On the U.S. side of the river, Mrs. Gonzalez acquired a fake Social Security card, a false birth certificate, and her $6-per-hour job at the poulty plant in Gainesville. Soon after arriving she gave birth to her second daughter, Jennifer, in Gainesville.

Nobody knows just how many men and women like her are living in the cramped cottages and trailer homes of Gainesville's "Little Mexico." But in the last decade, a steady stream of workers has traveled from Mexico to Georgia's poultry plants.

Mexican workers in Georgia today come primarily from the states of Jalisco, Durango and Guanajuato. A few key towns, like Cinco de Febrero in Durango, have had as many as two-thirds of the working population make the pilgrimage to Gainesville. Some came legally. Many did not.

Mrs. Gonzalez was her family's pathfinder. Her brothers Jaime and Alfonzo and her sister Edelia, who are also undocumented, say they followed her to Gainesville, where all of them found jobs in poultry plants. Mrs. Gonzalez had been pooling all their income, saving for a down payment on a house for the family. Four more brothers and sisters were planning to come.

She was also the one who sent money home to their parents, Alfonzo and Luz Maria, in Mexico.

"She was the mother of all of us. She ran all the finances. She made all the decisions," said Jaime, 28. "I still can't believe it. I keep thinking she'll be coming in any minute. That she'll come walking in the door. She was the woman of the house, the core of the family," he said, holding back tears.

"With her gone, we don't know what we're doing anymore. No one has been able to put their ideas in order," he said.

"She came from Mexico with the hope of doing something," said Mr. Gantes. "Mexico is so poor. She was working to make something of herself in life. Something better. She wanted the best things for our daughters."

WE ALWAYS LIVE IN FEAR

Company officials say they want to help the family.

"We have been working with [her] family to provide for their needs," said Elton Maddox, general manager of the plant. "We will do everything we can to help them in their time of need."

As of now, no formal benefits package has been given to the family. State law grants workers' compensation to undocumented workers or, in the case of death, to family members in the United States. But many Mexicans in Gainesville don't know this—or are too afraid to seek aid.

"As undocumented workers, it's difficult for us at a time like this. We have less rights," said Jaime. "We always live in fear the company might report us, or send immigration after us."

LOW-COST CHANGES IN THE LINE HELP WORKERS, COMPANY

(By Scott Bronstein)

CANTON, GA.—Seaboard Farms, the nation's eighth-largest poultry company and the second-leading poultry farm based in Georgia, has taken an industry lead in adopting measures to keep its workers safer.

One result seems to be a more loyal work force.

"Whenever we had a problem with workers who were in pain, we tried to get the machine fit the person, instead of asking the person to fit the machine," said David R. Bleth, a safety expert who formerly worked at Seaboard and the man directly responsible for designing most of the company's recent changes.

In most plants the turnover of on-line employees can be as high as 300 percent a year. The turnover this past year at Seaboard was about 70 percent, three times lower than several years ago—at a plant where the work force jumped from 400 to 800 in the last decade to handle increased processing of chicken.

At Seaboard, as at many other plants, whole areas of the line where workers have manually removed much of the meat from carcasses are being automated or redesigned to reduce the potential for worker injuries.

SIMPLE—AND EFFECTIVE

But Seaboard has gone a step further. The company hired three full-time industrial engineers specializing in workplace safety and instituted "complaint" sessions for workers to air what bothered them physically about their jobs. The engineers listened, then made changes. They were simple and inexpensive. But more than anything, they were effective.

Among them:

Leaning posts, or resting platforms resembling tilted stools, were custom-designed and installed throughout the plant's slaughterhouse. Now, workers who once stood all day can rest their weight on a support post. Cost: $15,000.

Hydraulic lifts—to raise and lower work stations or counters in the slaughter plant where workers handle chickens—were installed in several areas. Now, employees can personally adjust the area where they work, in some cases avoiding the need to bend to what had been uncomfortably low positions. Cost: $6,500.

The "wheels" where chicken wings are placed to be cut up on a machine were redesigned to bring them closer to workers. Now, they no longer need to extend their reach far out over the machine as they place the wings. Cost: $800.

The counters over which workers had to lift chicks in the chick room were tilted. Now, workers who had complained about pain in their left shoulders need not reach up as they place the just-inoculated chicks in trays to be sent to grow-out houses. Cost: $700.

Conveyor belts where frozen chicken breasts once stacked up, waiting for workers to grab them, now flow into chutes that end in plastic bags. Workers need only close the bags, instead of also having to reach up and grab the meat. Cost: $40,000.

Automatic tool-sharpening boxes, more common in the industry today, have been placed throughout the processing area. Now, workers who need sharper tools no longer have to rely on fellow workers assigned to come around to sharpen the blades.

"THIS IS THE FUTURE"

Seaboard officials say the changes have paid for themselves and resulted in a more productive work force. They eventually will be made at all Seaboard plants.

"We feel we have to make these kinds of changes," said Steve Bass, general manager of Seaboard's Canton plant. "If the changes mean someone doesn't get hurt, it's worth our while."

In an industry where competition is fierce and any solution to the growing number of worker injuries is highly valued, Seaboard's changes have not gone unnoticed.

"This is the future, right here," said J. Craig Wyvill, program director for Georgia Tech's agricultural technology research program, which works closely with the poultry industry to improve safety and efficiency.

"The poultry companies today are starting to learn that they have to take responsibility for the plant and the workers inside it," Mr. Wyvill said.

THERE'S A CATCH TO CATCHING BIRDS: IT'S HAZARDOUS TO THE HEALTH

(By Scott Bronstein)

ELLIJAY, GA.—Overhead lights switch off, faint red lights switch on, and in the dim hue Steve Crawford, 26, wades into a white sea of 25,000 chickens. Bending over, he sweeps his right hand under a chicken, grabs its scaly foot between his fingers, then grabs another the same way.

He stands and switches the two birds to his left hand, shoving them between the pinkie and ring fingers. He bends again, grabs two more, rises, and slides them between the next two fingers. Within a few seconds he has 10 chickens hanging by their feet, wedged between the fingers on his left hand. He bends again to grab three more birds between the knuckles of his right hand.

Mr. Crawford walks over to a freezer-sized metal cage and throws them into one of 15 small compartments. Seven other Seaboard Farms "catchers" work with him in the 400-foot-long chicken house.

Every night, thousands of chicken catchers like Mr. Crawford fan out in the nation's grow-out houses and begin their nightlong harvest, seizing chickens by their feet.

Virtually every chicken eaten in the United States today has been caught manually by the 8,000-odd chicken catchers like Mr. Crawford, who perform one of the most difficult—and perhaps most hazardous—jobs in the entire industry.

The unusually high levels of organic dust and bacterial endotoxins in the air in chicken houses present "an acute health hazard and should be reduced," according to a federal study published in the American Journal of Industrial Medicine in February.

Catching is also one of the industry's truly backbreaking jobs. By the time his eight-hour shift ends at 3 a.m., Mr. Crawford and the other catchers will each have grabbed about 5,000 chickens; to do that, they must bend over some 2,000 times a night.

The fleshy part of the catchers' fingers, where rings would normally rest, look like thick, squashed cigars, covered with calluses and knots. They are hard and scaly to the touch, very much like the thousands of scaly chicken feet that are wedged between them each and every night.

But more than anything, chicken-catching is a hazard to the catchers' lungs. Air in the chicken houses is thick with the stench of ammonia and feces, making it difficult to breathe. The litter the chickens walk on traps ammonia and other gases, as well as organic dust that contains excrement, insect parts, microorganisms and microbial toxins.

Of catchers surveyed for the federal study, 86 percent reported at least one acute respiratory symptom, with as many as one-third suffering chronic severe shortness of breath, coughing, wheezing or eye irritation. The study also showed that catchers suffer significantly higher rates of chronic phlegm and wheezing than non-exposed blue-collar workers.

With "continued exposure," they may risk chronic lung disease, the researchers warned. They urged further research into long-term effects.

The industry has long sought to automate the job, but machines used to gather the chickens often bruised or mangled them. No machine could match the ability of men and women to grab the birds only by the scaly part of their feet, avoiding the tender, easily bruised legs.

The catchers are paid relatively well for the industry—about $350 per week—and many stay on the job a long time. David Shirley, 26, who works in a crew with Mr. Crawford, has been a catcher for 15 years. "I was in school when I started," he said. "It's all I've ever done."

MEXICAN WORKERS TAKE UP THE SLACK IN POULTRY PLANTS

(By Scott Bronstein)

When federal immigration authorities raided a half-dozen Georgia poultry plants in March, they said the mass arrests of undocumented workers, deportations and indictments would open up 500 jobs for Americans.

Two months later, more than 300 undocumented workers have been deported to Mexico, a dozen indicted on charges of using false documents, and the jobs have been filled—by still more Mexican workers, some of whom immigration officials believe may also be illegal.

"We did not fill all those jobs with local people," said Steve Bass, general manager of the Seaboard Farms plant in Canton, where nearly 100 undocumented workers were arrested during the raids.

"Some of the jobs were filled with Anglos, but many were with Hispanics again. The

thing is, those jobs would not have been available to the Hispanics in the first place if people around here had taken them. But they often won't take them," Mr. Bass said.

The poultry processing jobs are among the lowest paid and most hazardous manufacturing jobs in the United States. Many companies in the industry, which is moving to eliminate as many production line jobs as possible through automation, have little incentive to improve pay or working conditions. Others, under the spur of federal citations and fines, are taking measures to improve conditions.

Under the new Immigration Act passed by Congress in 1986, the U.S. Immigration and Naturalization Service has the authority to impose stiff fines against employers who knowingly employ undocumented workers. The last raid was conducted on March 27. None of the companies have been charged so far.

In the two years since the law went into effect, at least 50 other Georgia companies have been fined in excess of $1.5 million for employing undocumented workers, said Neil Jacobs, assistant director of the INS in Atlanta. But none of them were poultry plants, he said.

"For us to charge a company for hiring these people, we'd have to prove the company knew their documentation was fraudulent. It's very difficult to do."

"IT WAS EASY TO GET WORK"

Some Mexican workers arrested in recent raids said the chicken plants asked them for little identification before they were hired.

Berta Barajas-Garcia, 21, was among those arrested in a raid at the Cagle's Inc. poultry processing plant in Atlanta in February. She told INS agents she was asked for a Social Security number when she applied. She made one up.

Ms. Barajas waded across a river near Tijuana at 2 a.m., Nov. 2, 1989, and came straight to Georgia to seek work at Cagle's. She had heard the company frequently hired undocumented Mexicans. At the plant, she weighed 10-pound bags of chicken breasts eight hours a day for a year, until her arrest.

"Cagle's didn't ask me for anything else. They didn't ask me to show any real documentation," said Ms. Barajas during an interview with INS agents before she was deported back to Mexico. "It was easy to get work at Cagle's without papers."

The same was true for Antonia Ramirez-Luna, 21, who crossed the border into Brownsville, Texas, about midnight on Feb. 21 of last year. When she applied at Cagle's, she, too, was asked only for a Social Security card, she said. "I borrowed one from somebody," she said in an interview with INS agents.

Other arrested workers offered similar stories.

FAKE IDS FOR UNDERAGE BOYS

Some of the poultry plants, such as Zartic Inc. in Rome, had unknowingly violated state labor laws by hiring boys—undocumented Mexicans not old enough to work, authorities said.

"We did find youngsters underage working at the poultry plants," said Mr. Jacobs of the INS. But, he explained, the companies cannot be charged because the workers had fake documents that disguised their age.

"All the youngsters had fraudulent documentation raising their age," he said.

Within 48 hours, the Mexicans were flown to Texas and marched across the border. But many had been in the United States before and said they planned to return soon.

"Many Mexicans, even those who are legally here, are living in fear now," said Flexi Cosme, the director of Hispanic social services at St. Michael's Roman Catholic Church in Gainesville. "They are worried because INS has singled them out. Many of them are afraid that just by being Hispanic, they are in jeopardy or might be discriminated against."

Graciela Gonzalez was a human cog in the automated production lines that feed America's appetite for cheap chicken. She died mangled by a high-speed machine that sorts frozen chicken fillets in a Gainesville poultry plant. Her children still don't know she is dead. Their father tells them she is at work.

Daily, poultry workers risk illness or injury on the production lines. Steve Crawford in Ellijay damages his lungs breathing the fog of organic dust and bacterial endotoxins inside the chichen houses where he works. Priscilla Aldrich in Elberton, Elizabeth Burke in Macon, Eula Moses in Cusseta, and Willie Sue Morelock in Canton now have crippled hands and wrists caused by poultry jobs.

The industry employs thousands of people in small towns throughout the South. The workers are predominantly women. Their work is more hazardous and pays less than coal mining or construction.

Industry officials acknowledge the injuries. They look to eliminate them by eliminating the jobs through even greater automation, with the likely result that contamination of chicken caused by such machinery will become more severe.

Mrs. Gonzalez was 26 when she died—one of thousands of undocumented Mexican workers in Gainsville who work in poultry plants. For them, to complain about working conditions is not only to risk losing their job, but also to court deportation. When hundreds are arrested and deported, hundreds more take their place.

In Gainsville—the Chicken Capital of the World—false papers and the fear of immigration agents are part of daily life. And if, like Mrs. Gonzalez, the immigrants are killed on the job, the employers may not even know their names.

READERS ASK: "WHAT ARE WE SUPPOSED TO DO?"

(After last Sunday's publication of Part 1 of this project, many readers called reporter Scott Bronstein with further questions. Highlights of those—and Mr. Bronstein's responses:)

Q: "We can't eat shellfish because of pollution. We can't eat beef, because it's high in cholesterol. And now we find chicken, which we've been living on, is no good. What are we supposed to do?"—Patty Rubin, east Cobb.

A: Prepare poultry carefully. At a minimum, raw chicken should be stored so drippings from the package do not come into contact with other foods. After cutting or handling meat, thoroughly clean cutting board, knife, counter and hands with hot soapy water. Always cook chicken very thoroughly, ideally so that inside of meat reaches a temperature of 170–180 degrees Fahrenheit.

Q: "Where do we go to buy clean chicken? I have a chicken I bought Saturday, and I can't even cook it. Were some companies cleaner than others?"—Pat Cannon, Smyrna.

A: USDA inspectors interviewed at 37 processing plants, including the eight largest U.S. poultry processors, described the same problems and did not indicate that any company was any better or any worse than others.

Q: "It's an outrage. And I blame the federal government. Millions of people have been getting ill from chickens, and the government isn't doing anything about it. We deserve better."—Andre Maison, Snellville.

A: Consumer advocates in Washington agree. They say consumers should demand a congressional investigation of poultry inspection. They say the government must create a standard for how much bacteria is unsafe, then must require that chicken be tested for microbiological pathogens before sale. They also say federal employees—not the companies—should do the inspections.

Q: "It's terrible the inspectors can't do their jobs. I have to say I'd much rather pay a higher price for the food I buy to be sure that I'm putting safe food on the table. Are turkeys safer than chickens?"—Sylvia Overcast, Atlanta.

A: Consumer advocates say that turkey processing plants have similar inspection systems and have similar problems.

Q: "We all want to know if kosher chicken is any safer."—Betty Skoke, Atlanta.

A: Consumer advocates say that kosher chicken, as well as free-range chicken, stands a good chance of being freer of dangerous bacterial contamination.

Q: "I was wondering, just how safe is beef and pork?"—Ken Rogers, Atlanta.

A: USDA tests show that up to 10 percent of red meat tested is contaminated with salmonella bacteria, which can cause food poisoning, compared with up to 80 percent of chicken. Red meat is higher in cholesterol than chicken.

Q: "One inspector suggested we not buy "cut-up parts." But is the purchase of a whole chicken any safer?"—James J. Macie, Jonesboro.

A: Industry studies show that cut-up parts are becoming increasingly popular with consumers, but in interviews 70 USDA inspectors said many of the cut-up parts come from "salvage" operations and may be diseased or unwholesome. Most inspectors who still eat chicken said they prefer to buy whole chickens.

ABOUT THIS REPORT

This special report was researched and written over four months by Scott Bronstein and photographed by Michael A. Schwarz. The project was supervised and edited by Robert Lee Hotz and copyedited by Sharon Bailey. Graphics were designed by Duffy Dolan. Pages were designed by Jay Scott and Phil Gast.

Mr. Bronstein, 33, joined The Atlanta Journal-Constitution in 1987. Earlier, he worked at The New York Times and Agence France-Presse in Paris. He received a master's degree from the Columbia University Graduate School of Journalism. Mr. Schwarz, 33, has been a photographer at the newspapers since 1987. He was chosen by Life magazine as one of the country's outstanding young photographers that year.

WHERE TO WRITE

Sen. Wyche Fowler Jr. (D-Ga.), Member, Senate Agriculture, Nutrition and Forestry Committee, 204 Russell Senate Office Building, Washington, DC 20510-1003, phone: (202) 224-3643.

Rep. Charles Hatcher (D-Ga.), Member, House Agriculture Committee, 2434 Rayburn House Office Building, Washington, DC 20515-1002, phone: (202) 225-3631.

Sen. Howard M. Metzenbaum (D-Ohio), Active in consumer legislation, 140 Russell Senate Office Building, Washington, DC 20510-3502, phone: (202) 224-2315.

Sen. Patrick J. Leahy (D-Vt.), Chairman, Senate Agriculture, Nutrition and Forestry

Committee, 433 Russell Senate Office Building, Washington, DC 20510-4502, phone: (202) 224-4242.

Locally: Georgia Department of Agriculture, Tommy Irvin, commissioner, 19 Martin Luther King Jr. Drive, Atlanta, Ga. 30334, phone: (404) 656-3685.

HOW TO PROPERLY COOK CHICKEN

Raw chicken should be stored so drippings from the package do not come into contact with other foods, especially fresh vegetables or fruits. After cutting and handling meat, thoroughly clean cutting board, knife, counter and hands with hot soapy water before touching any other food.

Always cook chicken to internal temperature of 170-180 degrees Fahrenheit.

ROASTING, BROILING, STEWING, FRYING

Visual signs meat is safe: Juices run clear; meat is not pink, but it is very tender; leg moves freely in socket of whole bird.

GRILLING

Special precautions: Carry chicken outside to grill only just before cooking; only cook amount to be eaten. Meat shouldn't sit out in sun; coals should be hot, covered with gray ash; partial cooking in oven or microwave must only be done just before grilling. A second, clean plate should be used to remove meat afterward; on a grill, food often looks well-done on outside, yet is undercooked inside.

Visual signs meat is safe: Make cut in meat to be sure it is well-done; juices run clear; meat is not pink.

MICROWAVE

Cooking instructions: Cover the dish; rotate the dish several times during cooking; check internal temperatures in several places after cooking; cooking times vary depending on wattage of oven.

SPECIAL HOTLINE

If you have any questions about the safety of the chicken you buy, call the USDA hotline: 1-800-535-4555—Source: U.S. Department of Agriculture.

CONSUMER INFORMATION

Several consumer groups have been active in lobbying for stricter poultry inspection and other changes to enhance the safety of food products.

Public Citizen Health Research Group, (Ralph Nader group), Gerald Kuester, 7th Floor, 2000 P St. NW., Washington, DC 20036, phone: (202) 872-0320.

Foreman and Heidepriem, Carol Tucker Foreman, 1112 16th St. NW., Suite 750, Washington, DC 20036, phone: (202) 822-8060.

Community Nutrition Institute, Rod Leonard, 2001 S. St. NW., Suite 530, Washington, DC 20009, phone: (202) 462-4700.

Government Accountability Project, Christy Law, 25 E St. NW., Suite 700, Washington, DC 20001, phone: (202) 347-0460.

"MY HANDS JUST DON'T WORK NO MORE"

(By Scott Bronstein)

Eula Moses of Cusseta is back at work, four months after surgery for carpal tunnel syndrome, at the Cargill Inc. plant in Buena Vista. For four years, she trimmed meat from chicken carcasses, every three seconds grabbing a chicken with her left hand and scissoring away meat with her right. Last fall her left hand began hurting badly. A plant nurse prescribed hot packs, ice packs and pain relievers as treatment of the pain. Eventually, her thumb and three fingers went numb. Dr. Colin McKenzie in Columbus operated in January; the company paid. A company spokesman said Cargill tries "to be sensitive and responsive" to carpal tunnel syndrome. Mrs. Moses, 30, went on workers' compensation, and her income dropped from $214 to $142 a week while her husband, Charlie, recovering from a broken ankle, was getting $106.67 in workers' compensation. With two young sons, $150 in rent, and $800 a month in bills for groceries, utilities and a car loan, money has been tight. Now, she's back at work, deboning thighs at the rate of about 1,200 an hour, 9,600 a day, 48,000 a week. And her hands are beginning to hurt again. "If I could get a job somewhere else, I would. But right now, I'm stuck here."

Pricilla Aldrich pulled slippery, raw chicken skin from carcasses with her bare hands every six seconds during four years on the line at the Seaboard Farms plant in Elberton. She made $158 per week. Her hands were in constant pain. "I couldn't open a can, I couldn't even turn a mustard jar," she said. Supervisors switched her to another job on the line, placing wings into a cutting machine every few seconds. Her hands got worse. Dr. Jim Roderique (at left) eventually diagnosed carpal tunnel syndrome, and in January of this year he operated on both hands. Disabled, Ms. Aldrich had to quit; she says the company paid her a settlement of $20,000. Seaboard officials won't comment on the case other than to say she "voluntarily resigned." A mother of five, Ms. Aldrich says she stayed as long as she did because she needed the job so badly. "I forced myself to stay there. This was the only job around here, and I had no way to pay the rent. Being so desperate, you got all these kids, you have to feed them." She hopes to find new work. "But there's not many jobs around here. And who wants to hire a 43-year-old woman with screwed-up hands?"

Elizabeth Burke's left hand went numb after just six months of pulling skin on a poultry processing line. "Sometimes when you would touch it, it would feel like electricity was shooting through it and up into my arms," she said. After diagnosing carpal tunnel, Dr. Charles L. Ridley Jr. of Macon operated in late January. Today Ms. Burke says she can still barely move her thumb. Before the surgery, the sturdy production worker made $180 a week at the Cagle's Inc. plant in Macon. On workers' cmpensation, she receives $146. Ms. Burke, 45, a single mother of three teenagers thinks the poultry work ruined her hands. The company declined to comment. "The chicken plant has no sympathy for people," says Ms. Burke. "All they care about is the production of their birds. They treat their chicken better than they do their workers."

Willie Sue Morelock of Canton knew she was in trouble 18 months ago when she began dropping things. She had worked in North Georgia chicken plants since the age of 12. But on the verge of retirement, she found she could not longer hold scissors to cut chicken. She couldn't lift corn bread in a frying pan at home. She dropped so many glasses she bought plasticware instead. For a number of years she had trimmed chicken breasts at Tip Top Poultry Inc. in Marietta, at $5.25 an hour. Doctors said nerves in both wrists had been "crushed flat." They told her without surgery she'd lose all use of her hands permanently. "There I was trying to make a living, using my hands. And then I'm losing the use of them on account of it." The company paid for surgery on both hands last year. But today she still has trouble. "My hands just don't work no more. I'd have to say I'm crippled, really." And, at 59, she's jobless. "At my age, what other job can I do? Who will hire me?" she asks. Tip Top won't discuss her case because it is "still pending."

[From the Arkansas Democrat, Apr. 21, 1991]

CONSUMERS HAVE BONE TO PICK ON PRODUCT SAFETY

(By Jane Fullerton)

Poultry consumers face a massive public health threat triggered by the relaxation of federal regulations and industry standards, critics contend and studies show.

Up to 76 percent of raw chickens in grocery stores may be infected with salimonella and other harmful bacteria that contribute to hundreds of deaths and millions of illnesses annually, government studies document.

The final product is no different than if you took a bird . . . stuck it in the toilet and then ate it," said Gerald Kuester, a former U.S. Department of Agriculture microbiologist.

Industry and government officials adamantly defend the safety and quality of poultry, bristling at charges the products may be harmful.

"We sort of feel it's a shame that we get such a black eye because we do such a great job," said Dr. Ken May, former head of Holly Farms' chicken operations and now a consultant to the National Broiler Council, a Washington-based industry association.

Health officials, consumer advocates and industry critics contend the bacterial problem has taken on staggering proportions and threatens to grow. That affects not only the consumers who have chosen poultry as the nation's favorite meat, but the industry that pumps almost $2 billion and more than 85,000 jobs into Arkansas' economy.

Industry executives and government officials recognize that the potential for a bacterial problem exists but they contend the problem is overstated. They assert proper handling and thorough cooking are the only certain ways to eliminate the health threat.

Critics charge the USDA continues to downplay connections between its relaxed poultry inspection regulations and increased poultry bacterial contamination. They say the agency has disregarded not only consumer advocates and health officials, but censored its own studies highlighting the problems.

Officially, the USDA acknowledges more than a third of the chickens that reach consumers are contaminated with salmonella, a bacteria that can cause not only common diarrhea, but serious illness and even death.

However, unpublished government studies obtained by the Arkansas Democrat from a former USDA scientist show poultry plants contaminate from 58 percent to 76 percent of chickens with salmonella bacteria during processing. Some USDA inspectors have claimed the contamination rate could be as high as 90 percent.

Federal inspectors, who guard the quality of the nation's food supply, contend they are frequently harassed by poultry companies' management and questioned by their own government bosses. They say they have little chance to examine the sometimes pus-filled and tumor-ridden birds as they speed by on processing lines at rates as high as 91 birds a minute.

And the inspectors charge USDA health regulations are violated routinely throughout the industry, including in Arkansas processing plants.

Critics contend this outdated inspection system, which has changed little since the 1960s, includes few safeguards to prevent contamination from bacteria, feces or filth.

But industry and USDA officials staunchly defend the nation's food supply—and particularly poultry products—as the safest in the world.

"Meat and poultry is the most inspected food in the world, bar none," said Jim Greene, a spokesman for the USDA's Food Safety and Inspection Service. "The meat and poultry industry is the most regulated industry in the country.

Mark Simmons, chief executive officer of Simmons Industries, said the industry works to keep its plants clean and its products wholesome. Simmons' company, based in Siloam Springs (Benton County), has been a frequent target of criticism.

The majority of the people in the industry are concerned about the quality of the product and want our customers to have confidence in it," he said.

FLAWS REVEALED

A five-month investigation by the Democrat has found:

The nationwide number of food poisoning cases grows each year, with 47,812 cases of salmonella reported to the national Centers for Disease Control in 1989.

That represents a 41.8 percent increase from 1980 and a 116.4 percent leap from 1970. Health officials estimate the actual number of salmonella cases reaches up to 4 million a year.

In 1987, 105 salmonellosis deaths were reported to the CDC. Health officials estimate the actual number of deaths to be between 1,000 and 2,000 each year.

New evidence suggests salmonella and other food poisoning is particularly threatening to people with depressed immune systems and can actually trigger the onset of AIDS in an HIV-positive person.

Several studies show bacterial contamination in raw poultry remains greater than the USDA's officially acknowledged rate of 35 percent. That rate increases as the birds move through the processing system, the studies also show.

The National Academy of Sciences lent credibility to industry detractors when it criticized the poultry inspection system as outdated, calling for significant changes to focus on preventing rather than merely detecting bacterial contamination.

"(T)he weight of the evidence suggests that the current program is not effectively protecting the public health," the Academy said in a 1987 report. 'Major changes are required in the poultry inspection system if public health is to be protected."

A lax USDA attitude toward inspection in the 1980s allowed such problems to intensify, critics believe. They point to a 1981 comment by Robert Bartlett, an official with the agency's Food Safety and Inspection Service, as signaling the onset of a decade of deregulation:

"The political climate is such that the special interest groups supporting the meat and poultry industry have won and now have the ear of Washington. They 'paid their dues' and are now in the driver's seat."

During the 1970s and 1980s, the USDA implemented two significant changes in poultry processing that critics say contribute to the bacteria problem: faster processing line speeds and washing feces-contaminated birds rather than trimming or condemning them.

A USDA plan to remove much of the responsibility for poultry inspection from the federal government and place it with the companies was shelved a few years ago. But critics contend a new Agriculture Department plan, currently under study, is the first step toward allowing the industry to regulate itself.

Meanwhile, Kuester, poultry inspectors, plant workers, consumer advocates, health officials, scientists and others say the bacteria problems are increasing, threatening to kill and sicken even more consumers.

"Within the scientific community, poultry contamination is recognized as the major food safety problem."

After leaving the Agriculture Department, Kuester began working with Ralph Nader's consumer watchdog group, Public Citizen.

OFFICIALS DEFEND QUALITY

Ultimately, critics contend the poultry industry—crucial to the economy of Arkansas, the nation's No. 1 poultry producer—could be threatened by a consumer backlash.

Industry and government officials repeatedly assert they are doing all they reasonably can to ensure a safe product. They claim the charges come from dissatisfied labor groups, alarmist consumer advocates and disgruntled inspectors fearful of losing their jobs if the inspection system is changed.

They contend the poultry industry delivers one of the world's safest, cleanest and healthiest food supplies—and at a low price.

"The industry is very aware of consumers," said Ken May of the National Broiler Council. "Of all the agricultural products produced in the United States, the poultry industry is the most aware of consumer concern."

Salmonella is not a major problem if poultry products are handled and cooked correctly, Dr. Michael Rosenstein, director of veterinary and technical services for Hudson Foods Inc. told the Democrat earlier. He also said there is not widespread consumer demand for a cleaner product.

"My own personal opinion is that the human species has lived with salmonella for millennia," Rosentein said. I just can't get real excited about the poultry industry getting rid of salmonella. . . . If you handle the product right, you don't have anything to worry about."

John Tyson, vice chairman for operations of the Springdale-based poultry giant. Tyson Foods Inc., contends the bacteria issue has been blown out of proportion.

"We set standards higher than the USDA regulations," he said. "There are some places where it's almost like a medical environment. It's hard to get it any cleaner.

"Everybody in the food industry works their rears off to make sure we have the safest food chain in the world."

A CONTAMINATED SYSTEM

Critics maintain the bacterial problems are spread throughout the poultry producing and processing system.

Although bacteria can be present on any poultry product—such as turkeys, Cornish game hens or ducks—much of the criticism and most of this report focused on the broiler chicken industry.

For some chickens, salmonella contamination occurs before they reach the plant. Estimates vary for the number of chickens with salmonella present in their systems when they enter a processing plant, although bacteria are present on the skin and feathers of most birds.

But when they leave those plants, the number of salmonella-contaminated birds has leaped. Officially, the USDA acknowledges at least 35 percent of the birds reaching consumers are tainted with bacteria.

Even the USDA confirms that bacterial contamination multiplies significantly in the processing plant.

"Cross-contamination is always a problem on any slaughter line," says Jim Greene, the USDA spokesman.

PLANT CONDITIONS VARY

The tales from the processing plant told by government inspectors and plant workers could turn even the strongest of stomachs. Their stories evoke images of "The Jungle," Upton Sinclair's controversial account of turn-of-the-century meatpacking.

These stories are not isolated. Dozens of plant workers and government inspectors from Arkansas to North Carolina describe similar conditions wherever they work.

From 1987 to 1990, the Government Accountability Project, a Washington-based government watchdog and whistleblower advocate, presented sworn statements to Congress from 150 federal inspectors and plant workers in more than a dozen states representing most of the major poultry companies.

More than two dozen inspectors and workers recounted their experiences for the Democrat. Many of them did not want their names used because they fear recrimination from the USDA or their employers.

These accounts are representative of the problems described for the Democrat. No particular company was cited as uniformly good or bad. Several sources noted that conditions vary from plant to plant, even within a company.

The people describe from first-hand experience instances of birds being allowed to pass inspection that were infected with cancerous tumors and scabs, oozing with pus, tainted with manure, dead when they arrived at the plant, or picked up from dirty floors.

Others say the plants where they work are clean and the chickens are wholesome.

MORE STORIES

Stories from the Tyson plant in Rogers cropped up repeatedly. That plant processes what is referred to as "light fowl," egg-laying hens past their prime. The meat is cooked and used for diced products such as dumplings and soup.

Estes M. Philpott, who retired in November after more than 30 years as an inspector, worked at plants throughout Northwest Arkansas.

Of the Tyson plant at Rogers he says: "That's the biggest garbage of them all."

Another Arkansas inspector who has worked at that plant said the federal inspectors joke among themselves that "any self-respecting dog wouldn't eat this."

Tyson officials point out that comparisons between the birds processed at Rogers for use in diced products and the top-quality broilers processed elsewhere for retail sale are not fair.

"From the nutritional and food safety aspect, they're just as clean and wholesome as broilers," said Ellis Brunston, Tyson's corporate director of technical services. "But aesthetically-wise, that's not the same quality meat."

Brunton, who oversees the company's quality assurance laboratories, pointed out the hens are heavier and older than broilers which are bred specifically to produce high-quality meat.

"We're really talking about apples and oranges," he said. "It's like comparing a dairy cow versus a relatively young steer."

Estes Philpott, the retired inspector, also cited an incident that occurred Nov. 23, 1990, at the Simmons Industries plant in Siloam Springs when a load of chickens infected with the respiratory disease air sacculitis arrived.

As Philpott was sorting the sick birds, he said the plant's chief inspector told him not to condemn any. But Philpott said he condemned more than 915 birds from an estimated 80,000. Each of the other five inspectors also condemned dozens of birds.

Many plants use "lung guns" to suck the infection from the lungs and salvage such

birds. But Philpott and other inspectors say the infection is not limited to the lungs, but that pus and material that "looks like phlegm" spreads throughout the bird's body.

"That's one of the worst things people can eat," Philpott said.

He stopped eating chicken about 15 years ago.

MAGGOTS FOUND

A former worker at the Tyson plant in Neosho, Mo., described what happened when another worker found maggots on a chicken being processed. The plant processes chicken for products such as soups and stews.

The worker recalled a plant supervisor arriving. The manager picked the maggots off the bird and flicked them from his hand.

The chicken continued along the processing line.

"He didn't make no effort to check the meat," the worker said.

The former Tyson worker no longer eats chicken. "Once I seen how their quality control was, I don't eat their product anymore."

Ellis Brunton, the Tyson offficial, reacted to the Neosho story with shocked disbelief.

"That's just not a likely scenario. I don't think that would happen," he said. "You can probably get all kinds of horror stories from any company."

Brunton pointed out that such practices are not in the company's best interests.

"We try to stick to our business of providing a safe product that consumers can have a lot of faith in," he said. "Our whole reputation is based on that. Food safety—that's the foundation you build on."

A worker at a former Holly Farms processing plant in Wilkesboro, N.C. said quality has decreased since Tyson bought the company nearly two years ago.

The worker said supervisors with Tyson have become more concerned about keeping the number of condemmed chickens low, to the extent they put rejected chickens back on the processing line.

"Our quality has went to zilch since (Tyson) took over," the worker said.

OTHERS DEFEND PLANTS

In addition to stories about the birds, these workers and inspectors also describe plants infested with roaches, flies and maggots. They tell of floors, from which chickens are retrieved, covered with manure, urine, chewing tobacco, dirt and other filth. They explain how condensation from rusting pipes drops on the birds along with peeling plant and metal shavings.

However, others interviewed say the plants in which they work are as clean as possible, given the messy business they conduct.

"I think we have a really nice plant in comparison with what some of the others are supposed to be like," said a worker at the Peterson Industries plant in Decatur (Benton County).

Sam Shrum worked at the Simmons Industries plant in Southwest City, Mo., for three years ending in November 1989. In addition to that plant, the company operates two processing plants in Siloam Springs and one in Jay, Okla.

The Missouri plant was placed under an intensified federal regulatory program in 1987 following revelations about plant conditions and USDA violations.

In a sworn affidavit filed with the Government Accountability Project, Shrum described the conditions at the Missouri plant—after the company successfully completed the intensified inspection program.

Shrum said the company did not regularly clean the chill tank where chickens are cooled in a common bath after processing. "Blood, grease, fecal contamination, oil, fat, feed, pus and mucus falls into it all the time," he said.

He went on to describe the plant's insect problems.

"When I left, the bugs often were out of control," he said. "Maggots came out of the walls and swarmed into the kill room. We'd spray the walls to try and keep the numbers down."

Officials with Simmons have steadfastly rejected such allegations, saying the company has been unfairly portrayed. Mark Simmons calls some of the charges against his company "damn lies."

During a March tour of the Southwest City plant by a Democrat reporter and photographer, none of the conditions described in Shrum's affidavit were apparent.

No maggots were visible in the kill room or elsewhere. The water in the chill tanks had the reddish tint of blood from the chicken carcasses.

A federal inspector working there also defended the plant's cleanliness: "I have never seen a cockroach in that plant. They have an excellent sanitation program."

The inspector said the USDA's intensified inspection program helped ease tensions between the government inspectors and the plant management.

"It scared them enough that they started listening to the USDA then," the inspector said. "Before, they hadn't. It was just a constant battle."

Although much attention focused on Simmons' Missouri plant, those familiar with the industry contend it is no different than most plants. They believe USDA officials made Simmons a scapegoat to shift attention from other plants.

LESS THAN 2 SECONDS

The inspectors' chief complaint is the rapid speeds at which the birds move on the processing lines.

The USDA line systems allow birds to move at rates of 70 to 91 per minute with two or three federal inspectors examining them. That gives inspectors less than two second to examine each chicken.

For instance, at Simmons' Missouri plant, the processing lines move at 91 birds a minute with three inspectors examining every third bird.

When it comes down to it, you're still talking about 30 to 35 birds a minute," said Jim Greene of the USDA's inspection service.

Virtually every federal inspector, plant worker, consumer advocate or health official interviewed cited the fast line speeds as contributing to the high rates of bacterial contamination.

The chickens simply move too quickly for the inspectors to see evidence of disease or bacterial contamination, they contend.

"Less than two seconds per bird doesn't give you too much time," said Ethel Reed of Siloam Springs, a retired inspector.

In 1986, an Arkansas chapter of the American Federation of Government Employees surveyed its members on poultry inspection issues. More than 75 percent of the 103 USDA inspectors responding said they felt line speeds were to fast.

Company employees agree with the inspectors that rapid line speeds hinder spotting bad chickens.

"Our main problem up here is the lines move so fast we can't do our jobs," said a worker at the Peterson Industrial plant in Decatur.

But industry and USDA officials dispute criticism of the fast line speeds. the systems were thoroughly tested for effectiveness before implementation. Green said.

"None of these programs are entered into haphazardly." he said.

In addition, Greene said the chief inspector of each plant has the authority to stop or slow the lines if something is wrong. Lower level inspectors have the authority to stop the line for emergencies, but cannot slow it.

OTHER PROBLEMS

But federal inspectors say the system doesn't always work that way.

In the survey of Arkansas inspectors, 61.2 percent said regional or national USDA supervisors had overturned the chief inspector's decisions that were unfavorable to the company, such as whether to pass or condemn birds.

The survey also found:

74.8 percent said they were asked to pass birds they previously would have condemned.

57.3 percent said they had been harassed by plant management.

60.2 percent said plant workers removed USDA tags indicating birds to be retained or rejected, a criminal violation.

"Behind our backs, yes, it goes on. It sure does," said an inspector who has worked at Hudson Foods and Simmons plants. "If it wasn't for inspectors, you wouldn't know what you were eating."

SELF-REGULATION?

Despite such stories, a USDA plan in the 1980s called for eventually shifting inspection duties from federal inspectors to the poultry processing companies. Although this self-regulation plan ultimately was rejected, critics contend that mindset remains.

"What do you think the industry is going to do if they have total control?" one inspector, who has worked at Simmons and Hudson plants, asked. "They're going to pick stuff up off the floor, sell stuff that's contaminated.

"They are there to make a profit. The USDA inspection service is there to make sure they produce a quality, wholesome product," he said. "Those are two conflicting ideas—one is to make money; one is to ensure quality. That's where the rub is."

But the industry contends it could be hurt worse if it did not ensure the highest possible product.

John Tyson sums up his company's position on food safety succinctly: "We put our name on it."

Tyson Foods, as well as several other companies, offers an unqualified guarantee for customer satisfaction on all its products.

"That's where we feel comfortable that we're doing our best to ensure food quality," he said. "It's Don Tyson's personal guarantee."

PROBLEMS CONFIRMED

Government studies support contentions of problems in the U.S. poultry production and processing system.

In 1987, the USDA began studying the correlation between increased line speeds and bacteria contamination rates at a Puerto Rico processing plant.

The agency has never released its findings and the study is still continuing. But a censored preliminary report documents a 24 percent increase in salmonella contamination rates after the firds are processed—to a 76 percent contamination rate coming out of the chill tank.

Former USDA microbiologist Gerald Kuester analyzed the results of that study. In his report he outlined up to 50 points during processing where bacterial contamination could occur. He ended his paper with a

recommendation of placing warning labels on packages to alert consumers to the dangers they face if chicken is not handled carefully and cooked properly.

Kuester said he was told by his USDA superiors the report could not be published "because the industry won't like it."

Kuester's report never was published. A comparison with his original draft shows that what was published was a watered-down version without the call for warning labels.

Following that incident Kuester said he was forced out of the job he held for 10 years with the Agriculture Department.

"They didn't want to hear it," Kuester said. "They didn't want to deal with my recommendations."

Jim Greene, the USDA spokesman, disputes the salmonella contamination rate cited by Kuester.

"We dispute it because we have no solid data that shows the contamination rate was that high," he said.

The USDA plans to release some findings from the Puerto Rico study within a year, Greene said. "Then those numbers can be picked by everybody."

A 1988 USDA study of five processing plants in the Southeast found contamination levels of 58 percent—before the chickens went into the chill tank, where further cross-contamination can occur.

That study has never been published.

Another USDA study showed washing—even 40 times—does not control or remove bacteria.

Another USDA study found the rate of salmonella contamination increases by as much as 28 percent in the chill tanks, where birds are cooled after processing.

TESTING PRIMITIVE

Underlying the criticism of poultry processing is the fact that today's system for inspecting poultry—as well as the systems for inspecting other meats—relies primarily on the senses of sight, smell and touch rather than scientific testing to determine bacterial contamination.

Critics of the present system—including two former Agriculture Department officials who oversaw the inspection service—believe the inspection system must catch up with the industry's technological advances and consumers' skyrocketing demand.

One problem is that today's tests for bacterial contamination take several days. By the time the results are known, the poultry has been shipped and, perhaps, eaten.

Arkansas native Carol Tucker Foreman is a former U.S. assistant agriculture secretary who oversaw the inspection system during the Carter Administration. She also is the sister of Lt. Gov. Jim Guy Tucker.

"I think the inspection system needs to be updated so that it deals with present-day problems and present-day strategies," she said.

Foreman's assertions are echoed by Rodney Leonard, who oversaw the inspection system during the Johnson Administration and now heads the Community Nutrition Institute in Washington.

These critics have even suggested dismantling the inspection system and reorganizing it under consumer control. Since the Reagan administration, the inspection system has been overseen by the assistant agriculture secretary whose other primary responsibility is marketing.

NEW APPROACH

A 1987 report by the National Academy of Sciences also criticized the poultry inspection system as outdated. Although the report stopped short of advocating abandoning the traditional bird-by-bird inspection system, it said that system should be supplemented by random sampling for bacterial and chemical contamination.

"(T)he committee believes that the present system of inspection provides little opportunity to detect or control the most significant health risks associated with broiler chickens," the report stated.

Dr. Morris Potter, a veterinarian specializing in public health for the Centers for Disease Control, was a member of the committee that issued that report.

"We have to get the outsides off and the insides out without contaminating the whole bird, and we haven't done that," he said. "We almost purposely pound feces into their skin so as many people as possible get sick."

The USDA is now studying an approach outlined in the Academy's report. The plan calls for identifying and eliminating trouble spots in poultry production and processing.

Ellis Brunton, Tyson's quality assurance chief, said the company has begun to implement some aspects of the new approach in its plants.

"I think it is the wave of the future," Brunton said. "I know there are some people that oppose that, but I think it makes scientific sense."

But critics contend the USDA plan is a step toward letting companies regulate themselves. They fear it could increase, not decrease, the number of contaminated birds reaching consumers as federal inspectors move into an oversight role, rather than a hands-on role.

STILL AT RISK

In short, evidence indicates consumers may put their health at risk when they make poultry a part of their diet. Critics say that risk will remain until consumers force the poultry industry and the Agriculture Department to produce chickens with less bacterial contamination.

"If consumers want it, industry will produce it," said Morris Potter of the federal Centers for Disease Control. "So far, consumers haven't said, 'We want lower salmonella rates.'"

One Arkansas inspector agreed: "I don't think people are really aware of the potential danger. They don't know what's going on."

But consumers have become aware of salmonella and the problems associated with it. In 1988 comments at a poultry processors' workshop in Minneapolis, the head of USDA's Food Safety and Inspection Service acknowledged poultry is a "significant vehicle of food-borne bacterial poisoning."

"Neither industry nor government can ignore the concerns that are being expressed," Dr. Lester Crawford said. "The American people now know how to pronounce salmonella, and they associate it with poultry. We have to ask ourselves honestly if, in light of current knowledge, these concerns are not justified."

In the long run, Leonard believes lack of consumer confidence in the safety and quality of poultry could halt the increased consumption of poultry and the increased profits of the multibillion dollar industry.

"If the poultry industry becomes identified as a source of contaminated and high-risk foods, that will eventually show up in the marketplace," Leonard said.

The poultry industry also has considered that possibility.

"From an economic standpoint, we want our products to be safe," said Ken May of the National Broiler Council.

Despite their strong positions, the critics insist they don't want to put the poultry industry out of business; they just want to improve its product.

"The industry has responsibility to make sure they produce the cleanest product possible," said Leonard. "To do otherwise is simply to be so dominated by greed, that they're indifferent to the conditions they're creating.

"With that kind of mentality, the only thing they're going to understand is that they'll be hurt in the pocket-book if they don't take some responsibility for the health and safety of American consumers."

Carol Tucker Foreman praises the poultry industry's innovation. That's why she believes the industry can solve its problems—if it chooses.

"When I was growing up in Arkansas, we used to raise chickens in the backyard," she said. "Now we have this fascinating industry that can do anything it wants.

"So the only conclusion is that they don't want to clean it up. I believe this industry can do anything it wants."

[From the Arkansas Democrat, Apr. 21, 1991]

POULTRY INDUSTRY: SUCCESS AT A PRICE

(By Jane Fullerton)

The poultry industry—the backbone of Arkansas' economy and a model of agricultural efficiency—has grown from a backyard hobby to a corporate conglomerate in just a few decades.

Fifty-five years have passed since John Tyson, poultry pioneer and patriarch, hauled his first load of chickens from Springdale to Chicago.

He earned $265.

Since then the $15 billion poultry industry has been nurtured along by the likes of John's son, Don Tyson, as well as James Hudson, Bo Pilgrim and Frank Perdue, visionary capitalists who took a Depression-era campaign slogan—a chicken in every pot—to heart with a vengeance.

In Arkansas, poultry and egg production generate nearly $2 billion in revenue every year. Politicians often mention that one of every 12 Arkansans depends on the industry for a livelihood.

Few people dispute the poultry industry's financial success or the state's economic benefits. But some people contend such gains come with a high price tag.

Critics say the price is paid by:

Poultry consumers, who risk their health at the dinner table as the increase in salmonella cases parallels the increase in poultry consumption.

Plant workers, who earn among the lowest wages in manufacturing industries and have some of the highest risks of job-related injury.

Contract farmers, who risk their long-term financial security by mortgaging their homes for short-term production contracts with poultry companies.

Ultimately, critics contend, the price may be paid by the poultry industry, which risks losing consumer confidence and corporate profits.

The industry critics who spoke with the Arkansas Democrat include former U.S. Agriculture Department officials, current and former USDA poultry inspectors, health officials, consumer advocates, farm and labor leaders, political observers, and poultry workers and farmers.

It is ironic that at the same time unprecedented technological progress has catapulted poultry production and processing into the 21st century, words from a previous era like

"slavery" and "serf" punctuate the tales told by plant workers and contract farmers.

In this report, the Democrat will examine the poultry industry from production to processing to consumption. It will look at how the industry affects consumers, farmers, workers, taxpayers and politicians.

In researching this report, the Democrat interviewed more than 100 people associated with the poultry industry in Arkansas, in Washington and across the country. The Democrat also examined thousands of pages of studies, reports and documents pertaining to the industry.

[From the Arkansas Democrat, Apr. 21, 1991]

FASTER PROCESSING; MORE CONTAMINATED BIRDS?

(By Jane Fullerton)

The live chickens, leaving a trail of white feathers, arrive about a dozen to each 3.5-square-foot cage loaded on tractor-trailer rigs.

Fresh from the farm, they are ready to journey through the processing plant—beginning as chickens, ending as ready-to-cook fryers or ready-to-eat products.

The life of today's disease-resistant, feed-efficient, genetically-engineered broiler chicken lasts just nine weeks from egg to McNugget.

This account of the inner workings of a processing plant is based on observations from visits to poultry plants. In March, an Arkansas Democrat reporter and photographer toured two Simmons Industries processing plants, one in Siloam Springs (Benton County) and one in Southwest City, Mo.

Although Simmons' Missouri plant was the target of criticism in a 1987 segment on CBS television's 60 Minutes, the tour was intended only to provide an overall impression of how a poultry processing plant works.

This account also is based on descriptions from industry observers, plant workers and federal inspectors as well as information from the U.S. Department of Agriculture, the National Broiler Council and the National Academy of Sciences.

After forklifts unload the birds, conveyor belts carry them into an eerily dim room. With lighting designed to calm the disoriented animals, they are hung in shackles by their feet on the kill line. The chickens are stunned with an electric shock, then their necks are slit with a device similar to a circular saw.

Once the chickens have been slaughtered, they are dipped in a scald tank. The water, 125 to 140 degrees Fahrenheit, loosens the feathers.

Dirty birds—covered with manure, salmonella, parasites and feed—mix with clean birds. When they are dipped in the scald tank, the contamination from even a single bird can spread to the others. USDA studies have shown the hot water kills some, but not all, bacteria.

Former USDA microbiologist Gerald Kuester and other critics have called for separating the birds before they are processed, slaughtering clean ones first and dirty ones last.

"Until USDA requires a critical control point to check poultry for salmonella before slaughter, the rest of the process will be a guessing game," Kuester said.

Ellis Brunton, corporate director of technical services who oversees Tyson Foods' quality assurance programs, said researchers have investigated flock separation. But such a measure might not justify the work required.

"It sure will not eliminate salmonella," he said. "The overall effect would be * * *

POUNDING PLUCKERS

Next, the chickens move to the picking machine, where thousands of rubber "fingers" pummel the birds to remove their feathers. Here critics contend the picking equipment spreads contamination among the birds while it pounds the dirt, feces, bacteria and other contamination into the skin and meat.

Kuester and other critics advocate steaming to loosen and remove the feathers, a proactice used in some European plants. But such a move is not favored by the industry because the process can leave the birds discolored and the skin burned.

The USDA defends the American technique in its literature:

"In the 1960s, the defeathering systems were first criticized as a possible contamination source. However, the only existing alternative is hand plucking of feathers—a time-consuming, labor-intensive alternative that would greatly raise the cost of poultry and is not proven to be more effective . . . in reducing bacterial contamination."

After the feathers are removed, the heads and feet are cut off. Workers rehang the birds on the processing line, which carries them to the eviscerating room.

EVISCERATION

Here the birds' internal organs are removed. Depending on the size of the birds, workers reach into the body cavity to revmove the organs by hand or, most commonly, mechanize equipment pulls the organs out.

The automated equipment first approved in the early 1970s, coupled with line speeds that zip the chickens through processing plants at speeds up to 91 birds a minute, has allowed the industry to push its production past six billion birds a year.

Simmons, the 18th largest broiler company, processes 1.9 million chickens a week. Its Missouri plant processes 830,000 birds every week.

Tyson Foods Inc., the world's largest poultry processor, slaughters 24.5 million birds a week.

The machines tend to rip the flesh and tear the intestines, say consumer advocates, federal inspectors and plant workers. The intestinal contents, frequently contaminated with salmonella and campylobacter bacteria, spill on the carcass. Then the machines can spread the contamination to subsequent birds.

"By contamination, I am specifically referring to fecal matter, worm eggs, parasites and undigested food," Albert Midoux, a retired federal inspector in Northwest Arkansas and southwest Missouri, said in a sworn statement presented to Congress.

Ellis Brunton of Tyson acknowledged the equipment can rupture a bird's internal organs. But he said, and the USDA agrees, such problems can be minimized by adjusting the equipment, sizing the birds and training the work * * *

ON THE LINE

At the next stage, USDA poultry inspectors examine the birds, ensuring they are fit for human consumption by looking for signs of disease, defect or contamination.

This step allows poultry companies to sell their products stamped with the USDA inspection seal—trusted by consumers as a symbol of quality since 1957.

The inspectors work alongside company employees who trim problem areas from the chicken carcasses at the inspectors' direction. The plant workers also look for cosmetic defects.

But the inspectors contend they don't have time to adequately examine the birds. And the plant workers say they don't have time to do their jobs, including preparing the chickens for the inspectors to view.

The chickens whiz past the inspectors and workers at rates of 70 to 91 birds a minute. Such speeds are faster than the approximately 50-birds-a-minute rates used by the industry until new USDA systems started in the late 1970s and early 1980s.

With two or three inspectors per processing line, the system allows between 1 and 1.5 seconds to look at each bird. As a result, the inspectors say—and the plant workers agree—more contaminated and diseased chickens are allowed to reach consumers.

But USDA and industry officials say the number of birds each inspector must scrutinize has remained constant since the 1960s—about 35 birds a minute. When inspection began in 1957, each inspector examined 17 to 20 birds a minute.

"I don't think we really have imposed more risk," said Ellis Brunton of Tyson. "I say that from our own testing as well as USDA testing."

There is no established scientific link between faster line speeds and increasing salmonella contamination.

In a 1987 report on poultry inspection, The National Academy of Sciences said although current evidence indicates faster line speeds may not increase contamination, more studies are needed to determine the impact on public health.

However, the Academy's report also said, "It appears that little attempt has been made to evaluate inspection methods and line speeds with regard to fecal contamination, microbiological quality and public health impact."

In addition to the faster line speeds, the number of inspection personnel has not kept pace with the pounds of poultry to be inspected.

A December 1990 report by the federal government's General Accounting Office found the USDA's inspection service had 6 percent fewer staff members in 1989 than in 1980 as well as 3 percent less funding.

TYPICAL FUNCTIONS OF AN INTEGRATED BROILER FIRM

1. Breeder hens and males are purchased from primary breeder companies as day-old chicks. When these hens lay eggs, the production process begins.

2. The eggs are taken to a hatchery. They are cleaned, checked and incubated, hatching on the 21st day. Within hours, the chicks are checked and vaccinated.

3. The young birds are moved to grow-out houses, where more than 99 percent of broilers are grown under contracts between a farmer and a company. The environment in a typical 16,000-square-foot house is carefully controlled for proper heat and ventilation. The 20,000 birds receive sustenance from automatic feeders and waters. It takes about 6.5 weeks for the birds to reach a typical market weight of 4.3 pounds.

4. When the birds reach market weight, the company sends catching crews and trucks to load and transport the broilers to the processing plant. Here, the birds are slaughtered, processed and made into market-ready products. Only 18 percent of broilers leave the plant as whole birds.

5. About 56 percent of broilers are sold as cut-up chicken or selected parts. About 26 percent are further processed into such items as nuggets, entrees, battered and cooked chicken, or other convenience products.

6. Fresh chicken can reach the retail meat counter the day following processing. Most

chicken arrives within three days of processing. The "sell-by" date on each package is usually seven to 10 days from processing.

7. In 1989, U.S. consumers ate an average of 68.6 pounds of chicken per capita. By 1995, the National Broiler Council projects that figure will rise to 87 pounds, with a total for all poultry of 110 pounds—nearly half of all meat consumed.

8. Left-over chicken parts, including heads, feet and feathers, are processed into chicken, pet and livestock feed. However, some waste—such as dead birds, chicken litter, sludge and waste water—is created during chicken production and processing.

9. The feed mill supplies feed to chicken farms, completing the cycle by using the excess chicken parts to provide the feed needed to grow more chickens.

[From the Arkansas Democrat, Apr. 21, 1991]

PROPOSALS FOR ENSURING CLEAN CARCASSES VARY

(By Jane Fullerton)

As salmonella cases and poultry consumption continue to increase, industry observers cite several options to reduce or stop bacterial contamination on poultry.

These suggestions come from both industry supporters and detractors. They range from irradiation to warning labels to simply separating clean birds from dirty birds before processing.

However, many of the proposed solutions would require changes in poultry processing that could result in higher prices for chicken at the grocery store.

"If we increase the price of food 5 percent, (low income people) are going to have to eat 5 percent less," said Dr. Morris Potter, a veterinarian with the federal Centers for Disease Control, who has studied the poultry industry for the National Academy of Sciences.

"We don't want to harm the nutrition of the nation's poorest people as we try to make the food supply safer for the rest of us."

Although the price tag would vary, industry officials agree cost would be a crucial consideration in modifying the methods or equipment used to slaughter and process the birds.

Some consumer advocates say any cost increase would be nominal—a few pennies per pound.

"The wholesale price of poultry might go up 10 percent—4 to 6 cents a pound," said Rodney Leonard, a former assistant secretary with the U.S. Department of Agriculture, now with the Community Nutrition Institute in Washington.

"That's not a major cost increase compared to the cost of beef."

In addition to changes in plant technology and processing procedures, these are among the suggestions being discussed for reducing bacterial contamination on poultry products:

IRRADIATION

One of the most effective methods for eliminating bacteria on poultry products is exposure to radiation.

The controversial technique was approved in 1990 for use on poultry products. It also is approved for use on other food products including pork, fresh fruit and vegetables, wheat and flour, nuts, spices and teas.

Proponents contend that if consumers want a bacteria-free food supply, irradiation is the answer. But opponents contend not enough is known about the long-term health effect of irradiation and the toxins the process may produce.

Regardless of the debate about irradiation's safety, the poultry industry is not likely to employ a technique that comes with so many questions and worries so many consumers.

"We have never seriously considered it," said Ellis Brunton, corporate director of technical services for Tyson Foods Inc. "I just don't think consumers or Tyson are ready for that, and I think I speak for the entire industry."

Researchers at the University of Arkansas, funded by the USDA, are studying a method of passing mild electrical charges through water in which raw chicken is soaking.

The procedure has been shown to kill salmonella and other bacteria in the water. The researchers also are working on ways to kill the bacteria on the birds' skin. If the procedure can be successfully adapted, it could be used to reduce or eliminate cross-contamination during processing.

The researchers, Dr. Carl Griffis and Dr. Michael Slavik, have applied for a patent for their procedure.

"This project has the potential for a major impact on the industry," said Griffis.

COMPETITIVE EXCLUSION

Under this theory, "good" bacteria are introduced into the chicken so there is no room left for "bad" bacteria, such as salmonella. The concept is being studied by the USDA and others in the poultry industry.

Researchers are studying several ways to introduce the beneficial bacteria: injecting it into the egg or adding it to the feed within a few days of hatching or within two weeks of slaughter.

Of all the possible methods for reducing bacterial contamination now being researched and discussed, Brunton said this one showed the most promise.

"There's good evidence to show it looks like a possibility," he said, although it remains in the research stage.

WARNING LABELS

Just as cigarettes and alcohol carry health warnings, some consumer advocates favor placing similar warning labels on chicken.

Such a label would go beyond advising consumers of proper handling techniques by outlining the health risks associated with poultry products if those guidelines are not followed carefully.

Gerald Kuester, a former USDA microbiologist who studied bacterial contamination of poultry, has been an outspoken proponent of warning labels. He contends the USDA censored his calls for labels because they were deleted from a report prior to publication.

However, other industry critics believe warning labels are an ineffective way to inform consumers. Potter said people may not understand, accept or react to the warning.

"If we label chickens as hazardous, people will say, 'Oh, hell, there's nothing safe to eat,' and ignore all warning labels," Potter said.

Industry officials hold a similar view. While they oppose warning labels, they point to consumer education programs undertaken by groups such as the USDA and the National Broiler Council.

About 70 percent of raw, retail poultry products now carry labels explaining how to handle and cook poultry, May said.

"We take the positive view and say here is how to handle the product. We are not real excited about putting a warning on. As an industry, we do not think it's necessary."

[From the Arkansas Democrat, Apr. 22, 1991]

DAY 2: RISK TO HEALTH—POULTRY BLAMED FOR HEALTH PROBLEMS

(By Jane Fullerton)

As the nation's appetite for poulty increases, critics point to an alarming array of health problems, ranging from a few days of nausea to life-threatening infection, caused by bacteria commonly found on poultry.

The increase in health problems, critics believe, not only threatens consumers, but the health of the poultry industry—Arkansas' largest industry and leading employer.

Ultimately, critics contend concern about the long-term health effects of bacteria related illnesses may leave the poultry industry vulnerable to consumer backlash. That could affect Arkansas, the nation's leading poultry producer.

Government and industry officials contend the health risk is exaggerated. Poultry products are perfectly safe, they say, if handled properly and cooked thoroughly.

But health researchers and industry critics point to these staggering statistics about salmonella:

It sickens up to 4 million Americans annually.

It kills up to 2,000 people each year.

It may hasten the onset of AIDS.

It is particularly threatening to infants and the elderly, groups vulnerable to illness.

It can cause short-term problems such as diarrhea or long-term problems such as arthritis.

It has been documented on 35 to 76 percent of chickens tested.

In addition, studies show campylobacter, another bacterium that causes many of the same health problems as salmonella, occurred in up to 83 percent of chickens tested from grocery stores. Nearly half the reported cases of campylobacter have been linked to poultry.

Several additional types of bacteria sometimes found on chicken can cause other problems, ranging from spontaneous abortions to meningitis. One of these bacteria has a higher death rate than botulism.

And new evidence indicates bacteria associated with food poisoning may hasten the onset of AIDS.

Food poisoning caused by salmonella and other bacteria can occur when eating raw or undercooked poultry and egg products, as well as other food products of animal origin. It also can occur when bacteria are transferred from the poultry to another surface, such as a kitchen counter.

Poultry industry officials downplay such problems, saying they can be controlled by conscientious consumers. While they acknowledge the potential for bacterial problems exists, officials contend the health threat can be eliminated through proper handling and cooking procedures.

"All you have to do, like your mother told you, is cook the dadgum thing," said John Tyson, vice chairman of operations for Springdale-based Tyson Foods. "Then the problem is solved."

INCREASES PARALLEL

But health reseachers and industry critics believe the jump in food-borne illness cases mirrors the increase in poultry consumption.

Salmonella reports rose 41.8 percent during the 1980s and leaped 116.4 percent between 1970 and 1989, according to the Centers for Disease Control in Atlanta.

Meanwhile, poultry consumption grew at a nearly identical rate of 41 percent during the 1980s. The per-capita amount of poultry eaten climbed from 17 pounds in 1940 to more than 85 pounds in 1989.

"The combination of chicken consumption increasing and salmonella cases increasing translates in my mind to a reasonable conclusion that contamination on chicken meat is a public health concern," said Dr. Morris Potter, a public health veterinarian with the CDC who served on a National Academy of Sciences committee examining the poultry inspection system.

Additionally, unpublished government studies have shown salmonella to be present in up to 76 percent of chickens after processing. The U.S. Agriculture Department officially says 35 percent of raw chicken is tainted with the bacteria, although no bacteria are allowed on cooked products.

Government and industry officials point out that salmonella is found throughout the environment—on people, on animals, in the soil, in the water, virtually everywhere.

Don Allen, executive vice president of the Arkansas Poultry Federation, said the salmonelaa issue has been blown out of proportion.

"There's not a lot of people that know anyone who's had salmonella poisoning," he said.

"We were raised on chicken and eggs," Allen said of his family. "Everyday I eat two eggs or more. I'd hate to think of how much chicken I've eaten. And none of us have ever had salmonella poisoning."

But industry critics and health officials warn the poultry industry could be hit hard if consumers realize the potential health threat of salmonella and other bacteria.

They note the consumer reaction to what health officials view as the less-threatening problem of food toxins. The consumer uproar about alar in apples led to a government ban on it use.

Compounding the situation is the projected growth of some of the populations most susceptible to the effects of food-borne illness—the elderly and those with immune deficiencies. Consequently, health officials believe the problem will grow.

"People for years have thought of it as a bellyache. It clearly is more than that," said Carol Tucker Foreman, a cosumer advocate and former U.S. assistant agriculture secretary in charge of meat and poultry inspection. The Arkansas native is the sister of Lt. Gov. Jim Guy Tucker.

CASES UNDERREPORTED

Salmonella is a bacteria common throughout the environment. The National Broiler Council, a Washington-based industry association, points out salmonella can be found in soil and water, as well as in the intestines and on the skin of humans, animals and birds. The bacteria's prevalence makes it difficult to pinpoint the source of salmonella or the number of cases attributable to poultry. But the National Academy of Sciences, in a 1987 report on poultry inspection, said "numerous epidemiological studies document a major role for broiler chickens as a vehicle for salmonellosis in humans."

The number of cases of salmonella—which first emerged as a public health problem in the 1940s—has grown steadily since the Centers for Disease Control began compiling national figures in 1960. That reflects the nation's appetite for poultry, which also has inceased steadily since the 1940s.

In 1960, there were 6,929 reported cases of salmonellosis, excluding the strain that causes typhoid fever. That figure grew to 22,096 cases in 1970 and to 33,715 cases in 1980. For 1989, the most recent statistics available, CDC reported 47,812.

What those figures don't reveal is the true number of salmonella infections. Health officials estimate the salmonella cases reported to the CDC represent about 1 to 5 percent of actual cases.

CDC officials estimate 800,000 to 4 million people contract salmonellosis each year. Most cases are neither diagnosed nor reported, they say.

While many people get sick because of salmonella, a few die.

In 1978, there were 79 deaths attributed to salmonellosis. By 1987, the most recent year for which statistics are available, the number of deaths had increased by 32.9 percent to 105.

However, health officials believe the number of salmonella deaths is greatly underreported. The CDC estimates the actual number of salmonella deaths to be between 1,000 and 2,000 each year, primarily striking the elderly and infants.

CAMPYLOBACTER RISK

In addition to salmonella, health officials are concerned about the rising incidence of campylobacter infections, first isolated in humans in 1972. Like salmonella, campylobacter primarily causes diarrhea, but can lead to more serious health problems.

The most recent CDC data covers the five-year period from 1982 to 1986. With 11 states participating in 1982, there were 4,031 campylobacter cases reported to the CDC. By 1986, 39 states reported 10,021 cases.

CDC officicals report most campylobacter cases are related to raw or undercooked poultry. CDC studies found handling raw poultry, as well as eating poultry, was a risk factor.

The National Academy of the Sciences' report said studies of chickens in grocery stores found campylobacter on 12.5 to 82.9 percent of chickens tested.

Campylobacter "has been found at many points during slaughter and processing, and a signficant proportion of the broiler chicken carcasses available for retail sale carry the microorganism," the report said.

"Epidemiological studies suggest that at least 48 percent of campylobacter cases are attributable to chicken."

For persons with immune deficiencies, food-borne illness poses a serious health threat. As more people live longer with AIDS, "food-borne agents will play a greater role in the premature termination of life," the FDA's Douglas Archer said at a February 1990 meeting of the American Association for the Advancement of Science.

"There is reason to believe that infections with bacterial and viral agents, including some associated with food, may actually hasten the progression of HIV infection to AIDS," he said.

Archer noted the Department of Health and Human Services has a goal by the year 2000 to decrease the incidence of four food-borne bacteria—salmonella, campylobacter, listeria and E. coli. All four are found on poultry products.

BACTERIA AND TOXINS

The problems associated with common bacteria pose a more serious health threat to the American public than the problems associated with toxins, pesticides or chemicals in their food, said the CDC's Morris Potter.

For instance, Potter said, when consumers believed alar in apples threatened their health, they stopped buying those apples and grocery stores started selling alar-free apples.

Ultimately, the Environmental Protection Agency banned the use of alar.

Issues like alar elicit a greater response from the public because they represent an unknown health risk, Potter said. Diarrhea, on the other hand, is something people are familiar with.

"I think there are all kinds of reasons why people should be more concerned about salmonella as compared with toxins," he said. "We can show them bodies of people injured by plain ol' bacteria. But it's hard to show them damage from eating alar apples."

Rodney Leonard agreed. He is a former Agriculture Department official who oversaw the inspection system and now heads the Community Nutrition Institute in Washington.

People will take the issue of bacteria-contaminated food more seriously when they realize the ramifications for their health, Leonard said.

"Once the middle class realizes if they have food poisoning, they may end up with arthritis or some other problem," he said, "they're going to turn on this with a vengeance."

POULTRY FACTS

In 1962, 4.361 billion pounds of broiler chickens were slaughtered, with 15.2 percent cut-up and 2.0 percent further processed. In 1987, 15.502 billion pounds of broilers were processed, with 56.8 percent cut-up and 22.1 percent further processed.

In 1960, 79.8 percent of broiler chickens were produced in the South. By 1989, the South's share grew to 87.4 percent.

The leading poultry and egg producing states are: Alabama, Arkansas, California, Delaware, Georgia, Maryland, Mississippi, North Carolina, Pennsylvania, Texas and Virginia.

In 1988, Arkansas farmers could produce 4-pound broiler chickens in six weeks on less than 2 pounds of feed per pound of live weight. In 1935, it took 16 weeks to produce a 2.9 pound broiler, and 4.5 pounds of feed per pound of live weight were needed.

Broiler chicken production increased from 34 million in 1934 to about 6 billion in 1990. Output increased in all but five of the past 50 years, with significant increases since 1975.

More broilers currently are produced in a single day than the entire annual output in 1930.

The number of U.S. farms producing broiler and other meat-type chickens dropped from 42,185 in 1959 to 27,645 in 1987. At the same time, output rose from 1.4 billion birds in 1959 to 4.4 billion in 1987.

Farms raising at least 100,000 birds increased from 2,254 in 1959 to 14,473 in 1987. Those farms captured 93 percent of total sales in 1987.

Poultry housing units are becoming increasingly automated and climate-controlled. Such housing improvements—combined with better breeding, feeding and disease-control—have cut broiler chicken production time by two weeks in the past 10 years.

A typical broiler chicken house is roughly 40 feet by 400 feet, or about 16,000 square feet, containing 20,000 birds.

In 1960, there were 286 firms selling commercially raised chickens to retailers. In 1989, there were 48.

In 1960, the 20 largest companies controlled 47 percent of the industry's output. In 1990, the 20 largest companies had 79.3 percent of the market, while the eight largest had 56.6 percent. The four largest companies—Tyson Foods Inc., ConAgra Inc., Gold Kist Inc. and Perdue Farms Inc.—produced 41.2 percent of the chicken sold in the United States.

In 1989, Arkansas' cash receipts from poultry and eggs totaled $1,888,624,000—accounting for 12.6 percent of the nation's total poultry recipts.

In Arkansas, that accounts for 46.9 percent of the state's total farm receipts. Of that total, 78 percent comes from broiler chickens, 12 percent from eggs, 9 percent from turkeys and 1 percent from chickens other than broilers.

POULTRY INSPECTION IN THE UNITED STATES

1906: The Meat Inspection Act is passed.

The law followed the uproar over Upton Sinclair's expose on the meatpacking industry, The Jungle. It did not cover poultry inspection.

1926: The Federal Poultry Inspection Service is established.

The voluntary inspection program, begun in the New York City area, was designed to help localities in their inspection programs.

1957: The Poultry Products Inspection Act is enacted.

It was the first federal law mandating poultry inspection and covered products destined for interstate commerce. The law called for inspection of birds before and after slaughter, inspection of plant facilities and inspection of imported products.

1968: The Wholesome Poultry Products Act is passed.

If amended the 1957 law to require inspection for virtually all poultry sold to consumers, including products not covered under the previous law.

The law did not make significant changes in the poultry inspection process. A 1987 study by the National Academy of Sciences reported no major changes have been made in poultry inspection laws since 1968, despite the more than tripling of the pounds of poultry inspected.

1989: The U.S. Department of Agriculture withdraws plans for a revamped poultry inspection system.

The "Discretionary Inspection" proposal would have required amending the federal laws that mandate every bird to USDA inspected. The self-regulating plan would have turned over much inspection responsibility to the poultry industry, with federal inspectors overseeing the process. It also would have allowed line speeds up to 182 birds a minute—twice as fast as current speeds.

1989: In October, the USDA announces plans to implement a new approach to poultry and meat inspection, the "Hazard Analysis and Critical Control Point System."

A two-year study of the plan begins, including public hearings, workshops, testing and evaluation.

1991: The USDA continues studying the new inspection program.

Following the study, which is more than half complete, the USDA plans to implement the program in poultry and meat plants during the next several years.

The poultry industry praises the program as the basis for a more scientifically sound processing and inspection system. But industry critics and consumer advocates fear the program may result in less regulation of the meat and poultry industries.

[From the Arkansas Democrat, Apr. 22, 1991]

CARE IN COOKING REDUCES POSSIBILITY OF FOOD POISONING

(By Jane Fullerton)

While the feathers fly about the safety of the nation's poultry supply, consumers may reduce their risk of contracting bacteria-related illnesses with thorough washing and cooking practices.

Most health officials agree consumers can help protect themselves from salmonella, campylobacter and other bacteria by taking common-sense steps when preparing poultry: thorough washing of hands and utensils will reduce the possibility of cross-contamination, while thorough cooking will kill the bacteria.

However, some consumer advocates question the adequacy of washing as a means of getting rid of salmonella from raw poultry. They point to a Dutch study, among others, showing this practice had virtually no impact on salmonella transferred to other surfaces during cooking preparation.

Critics contend much of the poultry processed in the United States is contaminated with salmonella or campylobacter—bacteria that can induce illness and, in rare cases, death.

The U.S. Department of Agriculture acknowledges more than a third of poultry is contaminated with salmonella, but unpublished USDA studies put the figure as high as 76 percent.

The National Academy of Sciences reports studies showing campylobacter on up to 82.9 percent of chicken in grocery stores. Poultry has been cited as causing nearly half of all reported campylobacter cases.

COMMON MISTAKES

In an April 1990 memorandum, officials with the federal Centers for Disease Control listed the three most frequent problems contributing to food-borne illnesses, such as from salmonella and campylobacter. They are:

Eating raw or undercooked food from animal sources.

Contaminating other foods with the juices or drippings from raw meat, poulty, shellfish or eggs.

Leaving potentially contaminated foods for extended periods of time at temperatures that permit bacteria to grow.

Read and follow label instructions to "keep refrigerated" or "use by" a certain date.

If in doubt, throw it out.

For further information on food safety, contact the USDA's Meat and Poultry Hotline at 1-800-535-4555. A USDA home economist will answer questions Monday through Friday from 9 a.m. to 3 p.m. CST.

However, taking these precautions may not be enough, poultry industry critics contend.

Rodney Leonard, who oversaw the Agriculture Department's inspection service during the Johnson Administration, acknowledged poultry can not be completely free of bacteria.

But the industry could take steps to reduce bacteria, said Leonard, who now heads the Community Nutrition Institute in Washington.

"To prepare poultry, you have to take almost the same precautions as a surgeon has to take to prepare for surgery," he said. "And even then you can't really protect yourself."

Leonard cited a 1978 Dutch study showing that efforts to destroy salmonella by washing were not effective. The study found salmonella had transferred throughout the kitchen—to the counters, the sink, the cutting board, the salt shaker, the door handle.

"What it shows is that there is no safe way to prepare poultry," he said.

Department of Agriculture studies also have found washing—even 40 times—does not adequately remove bacteria from birds during processing.

Meanwhile, studies have shown campylobacter also can spread throughout the kitchen during food preparation.

In addition, the National Academy of Sciences reports campylobacter illness has been caused simply by handling raw chicken.

Leonard previously told consumers to follow safe cooking and handling procedures, but his advice has changed.

"Don't eat poultry," he said. "That's the only way you're ever going to convince the industry to take steps to make sure the American food supply is as clean as possible."

The National Broiler Council points out salmonella is found on other raw meat products and is widely prevalent in the environment:

"Today's poultry is safer and more wholesome than it has ever been, and our nation's food supply is the most abundant and least expensive in the world."

Such assurances offer no comfort to Leonard, who has given up on the meat.

"I love it," he said, "But I won't eat it".

The National Broiler Council agrees with that assessment. "By cooking foods properly and exercising good food handling practices, the consumer can eliminate the potential for any problem that may arise from the presence of salmonella in raw food products," the Washington-based industry group states in guidelines for handling poultry products.

LOWERING THE RISK

These steps are encouraged when handling raw poultry products, whether chicken, turkey, or other fowl:

Thoroughly wash the raw bird.

Poultry should be cooked well-done, not medium or rare, to an internal temperature of 180 degrees Fahrenheit. Use a meat thermometer to check the temperature. When poultry is cooked properly, the meat should not be pink and its juice should be clear, not pink.

Wash everything that comes in contact with the raw poultry—your hands, the cutting board, the knife, other utensils, counter tops. Use hot, soapy water. You also may want to use a diluted chlorine solution.

Consider using separate cutting boards for meats and vegetables. Some studies show salmonella can live for up to six months on a wooden cutting board. Or cover your cutting board and counters with a protective covering like waxed paper, which can be discarded after use.

Use caution to ensure the raw bird does not come in contact with other foods in the grocery bag, in the refrigerator or on the counter. Thoroughly wash any foods that might have touched the poultry.

If cooked poultry is not eaten immediately, it should be stored either hot, between 165 and 212 degrees Fahrenheit, or in the refrigerator at 40 degrees Fahrenheit or below. Cooked poultry should not be left at room temperature for more than two hours.

Do not defrost poultry at room temperature. Thaw it in the refrigerator or in cold water. It also can be defrosted in a microwave oven, following the manufacturer's guidelines.

NUTRITIONAL COMPOSITION OF CHICKEN

Cut	Protein		Calories		Total fat		Cholesterol		Sodium		Iron	
	Grams	Percent	Amount	Percent	Grams	Percent	Milligram	Percent	Milligram	Percent	Milligram	Percent
Whole	23	51	134	7	4.1	6	76	25	73	2	1.0	6
Breast	24	53	116	6	1.5	2	72	24	63	2	.9	5
Wing	23	51	147	7	5.6	8	72	24	78	2	1.0	6
Drumstick	23	51	131	7	3.8	6	79	26	81	2	1.1	6
Thigh	21	47	152	8	6.7	10	81	27	75	2	1.1	6

All figures are for a 3-ounce, baked, skinless serving.

[From the Arkansas Democrat, Apr. 22, 1991]

SALMONELLA STRIKES U.S. WALLETS

(By Jane Fullerton)

As salmonella and campylobacter infections affect millions of Americans, the resulting economic effect totals more than $2 billion annually.

U.S. Department of Agriculture studies estimate society's cost from salmonella and campylobacter—from all sources—to be more than $1 billion each every year.

Tanya Roberts, an agricultural economist with the USDA in Washington, reached the figures by calculating a wide range of costs of individuals, the food industry and health agencies.

Her figures include salmonella and camplylobacter from all sources, not just poultry.

Roberts' research showed the total annual cost for salmonella cases ranged from $983 million to $1.36 billion. She found the average cost of a salmonella case to be $700.

For campylobacter, the result was slightly higher with an estimated annual cost of $1.47 billion.

To calculate the costs, Roberts took into account such factors as: medical costs, income or productivity loss, pain and suffering, leisure time costs, child care costs and travel costs.

She also considered public health costs for disease surveilliance, outbreak investigation and cleanup.

However, the figure excludes several costs which could be significant. They include chronic health problems, lowered productivity of poultry before slaughter and legal liabilities for food-borne illness.

POULTRY FACTS

Arkansas ranks first in the nation in broiler chicken production, fourth in turkey production and sixth in egg production.

Per capita consumption of all poultry increased from 17 pounds in 1940 to 85.3 pounds in 1989. It may reach 110 pounds by 1995, while chicken consumption alone could hit 95 pounds by 2000.

As a percentage of total meat consumption, poultry increased from 11 percent in 1940 to 34 percent in 1989, with a corresponding decrease in red meat (beef, pork, lamb and veal) as a percentage of total consumption.

Broiler chicken output, under population growth assumptions, would have to increase nearly 10 percent from 1987 to 2000 simply to maintain the current per capita consumption level. A 4 percent annual increase in consumption suggests a need for more than 70 percent production expansion by 2000.

The amount of broiler chicken meat condemned by USDA Inspectors grew from 2.7 percent in 1965 to 4.0 percent in 1970, then declined to 1.8 percent in 1987. Lower condemnation rates resulted in higher percentage yields during the 1980s than during the 1970s.

Per capita consumer expenditures for poultry have more than quadrupled during the past 30 years, from $14.84 in 1955 to $63.85 in 1986.

Consumers can now buy chicken for less than half of what they paid 30 years ago if prices are adjusted for inflation. The adjusted price has gone from 68.8 cents a pound in 1955 to 22.9 cents in 1987.

In 1988, the average price per pound for chicken was 85 cents. For choice beef the price was $2.55, while pork cost $1.83.

During the past 30 years, consumers have responded to a 10 percent decline in the real price (adjusted for inflation) of retail chicken with a 13-percent increase in per capita consumption.

About 50 percent of chickens reach consumers, through grocery stores. Restaurants market more than 40 percent. The rest are exported or used for pet food.

About 25,000 nonpoultry fast food outlets have added chicken to their menus since 1977.

In 1962, more than 80 percent of chickens were sold whole. Another 15 percent were sold as cut-up parts. Less than 2 percent were further processed into prepared products—cooked, deboned, filleted, ground, smoked or formed into a product such as patties or nuggets.

By 1990, about 18 percent of chickens were sold as whole birds. Cut-up parts increased to 56 percent, while 26 percent were further processed.

The volume of cut-up chicken parts increased tenfold after 1962. The volume of further-processed chicken products expanded even faster, growing from 87 million pounds in 1962 to nearly 2.4 billion pounds in 1985. That represents a 27-fold increase in 23 years.

Nationwide, cash receipts from poultry and eggs totaled more than $15 billion in 1989.

[From the Arkansas Democrat, Apr. 23, 1991]

PROCESSING TASKS TAKE PAINFUL TOLL

(By Jane Fullerton)

When Betty Smith comes home after eight hours of trimming the cuts and bruises from chicken carcasses, she tends her own injuries.

Smith's hands and arms ache, numbed from repeating thousands of motions every day while working in a Northwest Arkansas poultry plant.

To ease the pain, she soaks her hands and arms in hot vinegar or alcohol. Then she rubs them with medicated ointment and wraps them in cloth bandages for the night.

Despite such meticulous care, when she awakens for another day on a chicken processing line, her hands remain swollen from the previous day's work.

Smith's story is becoming increasingly common among the tens of thousands of workers in poultry plants in Arkansas—the nation's leading poultry state—as well as plants across the country.

Injuries like hers, as well as other problems, are on the rise:

More than one of every five poultry plant workers—22.8 percent—suffer on-the-job injuries, according to the U.S. Department of Labor's Bureau of Labor Statistics.

Working in a poultry plant ranks as the 28th most dangerous occupation in the nation for job-related injuries and illnesses. That tops jobs in mining, farming and construction.

In Arkansas, the state Workers' Compensation Commission ranks food manufacturing—which includes the sizable fields of poultry slaughtering and processing—as the state's most hazardous industry. It's a distinction the food industry has maintained for at least the last decade.

The Occupational Safety and Health Administration has cited at least six poultry companies nationwide for employee safety violations since 1989.

For repetitive motion disorders, like those experienced by Betty Smith, the poultry industry trails only the meatpacking industry in the number of injured workers.

Like many other poultry plant workers, Smith puts up with this for a simple reason: She needs the job.

Because she fears losing her job with Peterson Industries in Decatur (Benton County), Smith did not want her real name used.

Despite their dangerous jobs, workers like Smith—who spend their days performing nasty tasks like pulling intestines from wet chicken carcasses—are rewarded with one of the smallest paychecks in the food manufacturing industry.

The Labor Department recently showed poultry workers earned an average of $6.87 an hour. That was the lowest among meat products workers, who averaged $8.02. All food manufacturing workers averaged $9.77 an hour.

Statistics also show poultry workers aren't sharing in the industry's financial prosperity and remarkable growth.

The retail price for chicken has risen twice as fast as the wages paid to poultry workers, according to a 1989 report on the poultry industry by the Institute for Southern Studies, a non-profit North Carolina public policy organization.

The report showed poultry workers in 1960 received 2.6 cents of the 43 cents a pound chicken brought at the grocery store.

By 1980, the retail price jumped 40.3 percent to 72 cents a pound, but the workers' share increased only 21.2 percent to 3.3 cents.

But the industry contends it provides jobs and opportunities the workers might not find elsewhere.

"I think we're able to offer an opportunity to folks to come in and have a permanent job and grow with the company and accumulate a capital base," said John Tyson, vice chairman of operations for Tyson Foods. "We give folks a chance to get some things in life that some other industries don't."

HAZARDOUS JOB

Industry critics compare the poultry workers' situation to another era.

"Plant workers are treated like slave labor," said a federal poultry inspector who has worked in several Arkansas processing plants.

"They're like indentured servants," added Debbie Berkowitz, director of health and safety for the United Food and Commercial Workers Union in Washington.

Betty Smith agreed: "They don't treat the people all that well."

But she will continue trimming the carcasses and wrapping her arms because, "Everybody right now needs their jobs."

After more than a decade at the Peterson plant, performing virtually every task on the processing line, the job Smith fears losing pays $6.20 an hour.

For such wages, poultry plant workers remain on their feet for eight hours a day, with few breaks, as chickens fly past them at rates topping 90 birds a minute.

The duties of their decidedly unglamorous jobs include slitting open the birds' bodies from the anus to the breast and yanking out the intestines.

The temperatures in the plants vary from the extreme heat of the scald tanks and cooking ovens to the extreme cold of the chill tanks and freezer units.

The hazards of such work are many, ranging from minor finger cuts to irritating skin rashes to chronic hearing loss.

And a growing number of poultry plant workers are experiencing the often permanent and disabling injuries associated with repeating the motions of their jobs more than 10,000 times a day.

"Every person that works in a poultry plant ought to have a front seat in heaven right next to God because they've been through hell on Earth," said Benny Dollar, president of United Food and Commercial Workers Local 425 in Little Rock.

INDUSTRY REPLIES

The poultry industry is sensitive to such criticism.

Industry leaders acknowledge the business they run includes certain hazards for workers. But, they contend, they do all they can to ensure a safe working environment.

Such practices are not only in the workers' best interest, but theirs as well, they point out. Healthy workers are more productive—and more profitable.

"The industry has been very responsive and worked very hard," said Dr. Ken May, former head of Holly Farms' chicken division and now a consultant to the National Broiler Council, a Washington-based industry advocate.

"I think it's safe now, but the industry is working to make it safer," he said. "They're not going to abuse employees because they need them. They're part of the family."

Aubrey Cuzick, a group vice president for one of Tyson Foods' four poultry divisions, agreed.

Employees, he said, are vital not only to the productivity, but the profitability of the company. He noted that Tyson, for instance, thanked its hourly employees with across-the-board 3 percent bonuses last year.

MOTION DISORDERS

Health officials, industry critics and the workers themselves believe the primary problem faced by poultry workers is the repetitive nature of their jobs. The repeated motions caused by cutting, slicing or trimming with knives and scissors can leave them with permanent and sometimes crippling disorders.

Repetitive motion problems—disorders such as carpal tunnel syndrome, tendonitis and tenosynovitis—strike not only poultry workers, but other assembly line workers who repeat the motions of their jobs quickly and frequently.

Poultry workers often repeat their tasks in less than 30 seconds, which adds up to hundreds or thousands of motions a day.

Other workers whose jobs put them at risk for repetitive motion problems include those who use computer keyboards, such as telephone operators, newspaper workers and data entry personnel.

The problems occur when muscles swell in the arms, wrists, hands or fingers, exerting pressure on the enclosed nerves. The result can be numbness, tingling or soreness with the eventual loss of dexterity of gripping ability if left untreated.

NUMBER OF CASES GROWS

The U.S. Labor Department reports repetitive motion disorders are the fastest growing category of job-related illness. The poultry processing industry has the second highest rate of cases.

In 1988, the industry reported 307.0 cases per 10,000 workers, according to the federal Bureau of Labor Statistics. By 1989, that number had grown to 527.7 cases.

In Arkansas, repetitive trauma disorders accounted for 65.8 percent of job-related illnesses in 1989, according to the Workers' Compensation Commission. That was an increase from 59.9 percent the previous year.

Although reporting has improved, some industry critics and health officials believe the actual number of cases may be higher because not all cases are diagnosed or reported.

"In general, it's a significant problem. In almost every industry, its there," said Tom Cochran, an ergonomist with the Occupational Safety and Health Administration in Washington. "In the poultry industry, there are high incidence rates of it."

Ergonomics is the science that seeks to adapt working conditions to suit workers. Cochran, one of three ergonomists at OSHA, has toured several poultry plants.

A former worker at Tyson's plant in Dardanelle (Yell County) began to notice the symptoms about four months after she started. She eventually saw a company-approved doctor who recommended wrist braces and light duty.

"It helps," she said of the lighter work detail. "But it don't make it go away. You go back to using the scissors, and it comes right back."

A worker at a Tyson plant—formerly Holly Farms—in Wilkesboro, N.C., had surgery on both hands for carpal tunnel syndrome, the most serious of several conditions caused by repeated trauma.

"I was back on the lines about 45 minutes after they finished with me," she said. "When I had to pull the fat and cut the wings, it hurt because I felt like I might be pulling my stitches."

A worker at the Peterson plant in Decatur said when he saw a doctor, who was approved by the company, he told her not to work so hard.

"When you get it, you try to pick something up with your hands," she explained. "You can't hold it. Your muscles just give out on you."

Betty Smith, another Peterson worker, said she and other workers are reluctant to seek medical help for their repetitive motion disorders because they fear reprisal or job loss.

"If you see a doctor, then you're on that list," she explained. "They know everybody that complains."

INDUSTRY TRIES TO HELP

Poultry industry officials say the industry is addressing the problem of cumulative trauma disorders in several ways.

Workers who report problems to their plant nurse, many of whom are not registered nurses, receive treatments such as:

Soaking their hands or arms in hot wax or in ice;

Pain killers, such as aspirin or ibuprofen;

Vitamins, such as B6 or B12;

Wrapping their hands or wrists in cloth bandages;

Using braces to prevent their wrists from bending.

If the problem persists, workers may be referred to a company-approved doctor. In addition to those treatments, they may receive steroid injections or undergo surgery.

Some plants also have begun rotating workers among jobs and conducting warm-up or strengthening exercises.

"We put a lot of emphasis and we're spending lots of dollars" on repetitive trauma problems, said Aubrey Cuzick, the Tyson vice president. "We really have come a long way on ergonomics."

However, both OSHA's Tom Cochran and the UFCW's Debbie Berkowitz criticized many of those treatments as ineffective.

In addition to the treatments, Cuzick said, Tyson has been actively working to reduce the number of repetitive trauma problems among its workers. At its plants in Green Forest and Berryville (both in Carroll County), for instance, the company is considering using electric knives to reduce the workers' motions.

During the company's recent stockholders' meeting, Tyson awarded its $5,000 "Grand Idea" prize to a worker from the plant in Waldron (Scott County) who redesigned a tool to reduce the repetitive motions needed to do the job.

But a worker at a former Holly Farms plant in Wilkesboro, N.C., who has had surgery on both hands for carpal tunnel syndrome, offered her own solution.

"If they prevented the mess, they wouldn't have to contend with it," she said.

LINE SPEED PROBLEM

The UFCW's Debbie Berkowitz contends repetitive trauma problems could be alleviated through simple measures: slower processing line speeds coupled with more and longer breaks.

She also advocates allowing workers to adjust their position and height to reduce strain as well as redesigning tools so they require less strain to use.

"In all the plants, the lines have speeded up, and there are fewer workers," Berkowitz said. "These people are doing too much work."

Tom Cochran, the OSHA ergonomist, offered a similar assessment.

"The real solution is to engineer the problems out," he said. "Reduce the repetitions, reduce the force and reduce the awkward postures."

Accomplishing that, he said, could mean slower lines or more workers.

"A lot of it is brought on by just pushing workers harder and harder and harder." he said.

In its industry report, the Institute for Southern Studies found poultry worker productivity increased 50 percent faster than productivity in other manufacturing plants.

The study showed that in 1960, each poultry worker produced an average of 50 pounds per hour. In 1987, each worker produced 138 pounds, a 176 percent increase.

In addition to repetitive trauma disorders, poultry workers face other hazards. Industry workers and observers cite these:

Cuts from the knives and scissors that are integral to the jobs.

One Arkansas worker needed stitches twice after cutting her fingers. "I have kind of missed the chicken liver a time or two," she said.

Other workers have lost fingers and arms to the blades and saws used to process poultry.

Exposure to temperature extremes.

Workers, who often wear thermal underwear year-round, say they have seen cases of hypothermia brought on by the cold temperatures.

A former Arkansas worker said she recently quit her job primarily because of the cold temperatures.

"I've seen it go down to right at freezing," she said. "They're supposed to keep it 50 degrees, but they don't keep it anywhere near there."

Dave Cochran, the OSHA ergonomist, noted cold temperatures also contribute to repetitive trauma disorders.

Constant wet conditions.

The wet conditions create slippery floors and compound problems from the cold temperatures.

Exposure to chemicals used during processing and refrigeration, including chlorine, ammonia and carbon dioxide.

One worker described the condensation that can form and drip on workers as well as chickens from overhead ammonia pipes.

"It just scares me knowing it's overhead," she said.

Exposure to the birds and their blood can cause skin problems, such as rashes and warts.

One Arkansas worker recounted the rash she had between her fingers: "Chicken itch, that's what they call it. It's real red, and it's irritating."

Exposure to high noise levels.

Repeated exposure to high noise levels can cause hearing loss.

COMPLAINTS OF ABUSE

Besides health and safety problems, poultry plant workers in Arkansas and elsewhere say they have been treated poorly by plant management.

Among the instances they cite:

Workers have been denied restroom breaks.

Because they work on a continuous processing line, workers cannot leave without someone taking their place. As a result, several workers recounted seeing others urinate on themselves.

"I've been refused bathroom privileges," said a worker who witnessed a woman urinate on herself. "But I never would let it get to that point. I'm too stubborn. I would've walked off the line."

Workers often see their breaks evaporate.

According to workers, observers and managers, most plants offer two unpaid 30-minute breaks per eight-hour shift. Workers usually receive one other 10-minute break.

They also are to receive emergency breaks when needed. But some workers say they have been refused emergency breaks, which are given at the discretion of the supervisor.

Company officials say that if an employee needs to leave the processing line for an emergency, they will accommodate the worker.

One woman, whose duties include filling in while workers take their breaks, said workers at her Arkansas plant are allowed about six to 10 minutes.

"If they need emergency breaks, we see to it they get it," she said.

Workers have fainted or become ill when they were not allowed to leave the processing line.

HORROR STORIES

Some of the most graphic accounts come from workers at Perdue Farms plants in North Carolina. The Maryland-based company is the nation's fourth largest poultry processor.

One former Perdue worker submitted a sworn affidavit to Congress on Nov. 16, 1989, recounting instances where workers had vomited on the processing line, urinated on themselves, lost fingers to processing equipment or were sexually harassed.

In her affidavit, Donna Bazemore, now an organizer with the Center For Women's Economic Alternatives in Ahoskie, NC., also related this experience:

"Another time a woman who had been complaining of headaches wasn't allowed to leave the line. She passed out and died right there on the line, or maybe she hit her head when she fell. I don't know.

Perdue officials were quick to reply. They sent their own statement to Congress, along with two sworn affidavits from company officials rebutting specific incidents cited by Bazemore.

They called Bazemore's charges "scurrilous," as well as "misleading, false and exceptionally damaging to the high quality standards and reputation maintained by Perdue Farms."

The Goverment Accountability Project, a Washington-based government watchdog and whistleblower advocate, supplied five additional affidavits to support Bazemore's charges of unsanitary conditions and worker abuses. Two of those affidavits came from Agriculture Department inspectors who worked at the plant with Bazemore.

In a sworn affidavit filed in January 1990, plant worker Marion White recounted her experiences with Perdue since 1987. She described her problems with carpal tunnel syndrome that led to surgery. At age 33, she said she has lost much use of her right hand.

White said she had been denied restroom breaks. "As a result, I've messed myself and the floor up sometimes. Lots of girls have, but few like to admit it. It's so horrible."

White also explained why she continued working under conditions she characterized as "modern slavery."

"Since many single mothers like myself can't support our families on the minimum wage jobs that are the only other choice, and we don't want to go on welfare, we do what we're told. That's the rule. You can't defend yourself, let alone the public health."

BELOW-AVERAGE PAY

Compounding the health and safety risks faced by poultry plant workers are the wages they earn.

Poultry industry critics and observers contend it is not coincidental the industry is centered in the South, with plants frequently located in economically depressed, rural areas.

In Arkansas, the hourly wages paid to poultry workers fell below the state's average hourly manufacturing wage of $8.26 in 1989. That figure was well below the national average of $10.47.

In its 1990 industry directory, the Arkansas Industrial Development Council reported the average earnings of the state's food manufacturing workers at $6.53 an hour.

A more specific breakdown that would provide an average hourly wage for the poultry industry is not available from the state. However, recent national figures show poultry workers earned from $6.69 to $6.87 an hour.

"They prey on those people who have to work under those conditions," said Bruce Blevins, an official with a North Carolina Teamsters union striking several former Holly Farms plants * * * Benny Dollar noted many residents in poultry producing areas who have higher levels of education do not work in the processing plants.

"If there were both jobs in the area, they would take them," he said. "They're not working in those poultry plants because they want to."

Some workers agreed with that assessment.

"It's not fun," said one Arkansas worker. "I'm there for the pay. I'm there to make money, or I wouldn't be there at all."

The Little Rock-based Women's Project spent six months in 1989 researching the state's poultry industry and talking with plant workers.

"Because plants are located in economically depressed areas, there is always a constant supply of low-income people eager for work; consequently, the plants maintain an economic stranglehold on the area and manage to place any requirements they wish on workers," the group said in a report not previously released in Arkansas.

"The $5 an hour they pay, while little more than subsistence wages, are accepted by local workers because job opportunities of any kind are so few."

The comment of one worker who spoke with the Arkansas Democrat paralleled what the Women's Project found: "For the area we live in, our pay rate is about as good as any job for the education we have."

INDUSTRY OFFERS JOBS

The poultry industry has a different viewpoint. Industry leaders emphasize they offer competitive wages and plentiful jobs in areas that otherwise might not have either.

"We've been able to go in . . . and stabilize an economic area," said John Tyson. "It's the subtle stabilization of an agricultural area."

Politicans in Arkansas frequently recite the industry statistic that one of every 12 members of the state's work force depends on the poultry industry for a job.

In Arkansas, 84,000 people are directly employed in the poultry industry with an annual payroll of approximately $1.3 billion, according to the Arkansas Poultry Federation.

Tyson Foods is the state's largest employer. Five other poultry companies also are among the state's 30 largest employers.

With related businesses, family members and contract farmers included, the poultry federation estimates more than 200,000 Arkansans—about 8.5 percent of the state's population—depend on the poultry industry for their livelihood.

However, the industry also has an unusually high turnover rate. At Tyson's Green Forest plant, for instance, the 1990 turnover rate was 92 percent, said Aubrey Cuzick.

According to the Arkansas Poultry Federation, the average poultry company employee in Arkansas earns "in excess of $17,500," before taxes, including benefits such as health insurance.

For the first six months of 1990, the latest figures available, the state Employment Security Division found poultry workers earned an average $300.50 a week, or $15,626 a year, before taxes. For 1989, the weekly figure was $296.24.

The poultry federation also says more than 4,000 new poultry industry jobs have been created in the past year. Don Allen, the federation's executive vice president, pointed to four construction projects currently under way that will add 2,000 new jobs.

Further, the poultry federation states in its literature, "More and more of them are higher-paying jobs, requiring some college, or college degrees, and offering greater opportunities for young Arkansans than has been the case in the past."

In addition, eight of the top 10 poultry producing counties in Arkansas fall in the low-

est half of county unemployment rankings. Benton and Washington counties, the top two poultry producers, have the lowest unemployment rates in the state with 3.1 percent and 3.3 percent, respectively, according to Employment Security Division figures for November 1990.

"There's not a rural person in this area that's not positively impacted by the poultry industry," said Mark Simmons, chief executive officer of Simmons Industries, based in Siloam Springs (Benton County).

The UFCW's Benny Dollar acknowledged the employment statistics. But, he contends, if the poultry industry weren't supplying those jobs, somebody else would.

"If it wasn't here, there would be another industry that didn't maim and lame people," he said.

Some industry critics contend wages and working conditions could be better if more poultry workers were represented by unions.

In its report, the Institute for Southern Studies found fewer than a fourth of poultry workers are unionized.

In Arkansas, the UFCW has waged battles in several plants and lost several certification votes. Currently, the UFCW represents workers in about a dozen plants.

The poultry industry generally has opposed unions among its workers.

For instance, a 1983 dispute between workers at Tyson's plant in Nashville (Howard County) and the UFCW culminated with union pickets outside McDonald's restaurants. That plant is a major supplier of Chicken McNuggets.

McDonald's threatened to stop using Tyson as a supplier, while Tyson threatened to lay off workers if the pickets didn't stop. Ultimately, Tyson retained the McDonald's contract, but more than 225 workers were laid off.

In a separate incident, when Tyson purchased Holly Farms in July 1989, negotiations were under way with the Teamsters Local 391 representing long-haul truck drivers at the Wilkesboro, N.C., plant.

On Oct. 1, 1989, the union went on strike against seven plants in North Carolina, Virginia and Texas. Nearly a dozen union members attended Tyson's stockholders' meeting in February, passing out handbills and seeking negotiations.

Meanwhile, the union has called for a boycott of all Tyson and Holly Farms products.

Tyson is only one of several poultry companies that discourage unions.

"We don't think we need a third party to commnicate between workers," said Mark Simmons. "We go to the trouble to communicate well enough to handle our problems—and do that well enough to not need the interference of a third party."

According to the Institute for Southern Studies report, Frank Perdue, president of Maryland-based Perdue Farms also has resisted unions.

The group's report said Perdue once turned to the Mafia to help open new markets during a union boycott of his products. Perdue recounted his experience in a 1985 deposition to the President Commission on Organized Crime.

LIMITED CHOICES

Fear of losing their jobs is common among Arkansas' poultry plant workers. As a result, many are unwilling to talk about the problems they experience, either publicly or anonymously.

Many speak of their jobs with a tone of resignation.

"I'm not unhappy with my job," said a 14-year veteran of two Arkansas plants. "I just keep thinking I could be better."

A former worker at Tyson's plant in Waldon expressed the feelings of many workers who spoke with the Democrat.

"It wouldn't been all right, but every day it get faster," she said. "Every day they demand more out of you for the same amount of money."

When she felt the conditions were too damaging to her health, she choose to leave. But, she said, many others don't have that choice: "There's a lot of people that can't get out of there."

LOWERING RISK IN COOKING POULTRY

These steps are encouraged when handling raw poultry products. For further information, contact the USDA's Meat and Poultry Hotline at 1-800-535-4555. The phone is answered from 9 am. to 3 p.m, CDT on weekdays.

Thoroughly wash all types of raw poultry.

Cook well-done to an internal temperature of 180 degrees (meat should not be pink).

Use hot, soapy water to wash everything that comes in contact with raw poultry (hands, counter tops, utensils, etc.)

Use separate cutting boards for meat and vegetables (salmonella can live six months on a wooden cutting board).

Keep raw poultry from contact with other foods in grocery bag, refrigerator or counter.

Store cooked poultry either hot (165-212 degrees Fahrenheit) or cold (below 40 degrees). Do not leave at room temperature for more than two hours.

Thaw in refrigerator, cold water or microwave, not at room temperature.

Follow "keep refrigerated" or "use by" certain date labels.

If in doubt, throw it out.

[From the Arkansas Democrat, Apr. 24, 1991]

DAY 4: RISK TO FARMERS—FARMERS DESCRIBE BARELY SCRATCHING OUT A LIVING

(By Jane Fullerton)

For nearly a quarter-century, Mary Jones raised chickens for Tyson Foods.

In 1989 the Howard County woman lost her poultry contract—and her livelihood—when she could not afford the $30,000 in equipment improvements required by the company.

Now the widow subsists on a $317 monthly Social Security check.

Jones is among the contract farmers serving Arkansas' poultry companies who contend they are locked into an impoverished system reminiscent of the Middle Ages and locked out of the industry's prosperity as it catapults toward the 21st century.

Rather than being tied to their land like the serfs of another era, some contract poultry farmers say they are indentured through short-term contracts, long-term debts and sub-minimum wages.

To grow birds for a poultry company in Arkansas, or elsewhere, farmers must be willing to:

Invest tens of thousands of dollars in state-of-the-art automated chicken houses and equipment, often by mortgaging their homes or farms.

Sign a contract with the company that guarantees them only one flock of birds at a time, about two months' worth.

Expect pay that sometimes amounts to less than the $4.25 hourly minimum wage.

"I'm losing several thousand dollars a year," said a Tyson farmer. "Some growers say that they make a little bit. But nobody's making enough to live on."

And if they complain about the low wages or try organizing an association, the farmers contend the companies will simply cut them off. That would leave the farmers saddled with empty chicken houses and massive debts.

The growers' fears are based on the knowledge that several companies—including Springdale-based Tyson Foods Inc., El Dorado-based ConAgra Inc. and Cargill Inc., which has Arkansas operations—have been accused of wrongdoing involving their contract growers.

The federal government accused Tyson, in the 1960s, and Cargill, in the 1980s, of blacklisting growers and terminating their contracts for organizing producers' associations.

ConAgra recently lost one lawsuit and settled two others out of court for falsifying poultry weights and terminating contracts. A jury awarded growers $17 million in damages in one case.

In addition, at least two families currently are suing Arkansas companies—ConAgra and Peterson Industries of Decatur (Benton County)—for what they contend are unfair practices.

Meanwhile, the contract system rewards the poultry companies with consistent profits and the consumer with inexpensive poultry.

The industry contends the contract system amply rewards growers with guaranteed paychecks and bonus incentives—and some growers agree.

Poultry company officials dispute the assessment of disgruntled farmers, saying the occupation offers good financial opportunities in an unstable agricultural economy.

Growers would only be let go as a last resort, company officials say, and only for a justifiable reason.

Industry officials say the contract system provides a grower with a steady paycheck protected from market uncertainties, while the company absorbs the cost of the birds and accepts the fluctuations of the marketplace.

Additionally, industry officials point out the most efficient growers are rewarded with bonuses.

Dr. Ken May formerly headed Holly Farms' chicken operations and now serves as a consultant to the National Broiler Council, a Washington-based industry association.

May says the contract system has allowed farmers to build better homes and live better lifestyles. The difference is apparent, he says, in his home state of North Carolina as well as other poultry states, including Arkansas.

"What contracts did for farmers is it gave them a guaranteed income," he said. "They know if they put chickens in, they'll get paid."

FEAR OF RETRIBUTION

While the industry says farmers can earn a good living—some estimates indicate each house can earn a net profit of about $20,000 annually—some farmers say they earn much less.

One ConAgra grower borrowed $210,000 to build two chicken houses. Now he doubts he'll be able to repay his 10-year loan.

"I'm right on the verge of losing it," he said. "I don't see how we can sit here and work for nothing for 10 years. I just hope we can hold it together."

When Mary Jones lost her contract after her husband died, she worried about making ends meet.

"I didn't know how I was going to make it," she said. "I don't have as much money as I used to have. But you can get by on less when you have to."

Like most of the growers interviewed by the Arkansas Democrat, Jones did not want her real name used. Many farmers say they fear retribution from the poultry companies.

One who will talk is Frank Corley of Nashville (Howard County), who has grown chickens for Tyson for nine years.

"There's people throughout the state that are having it tough," he said. "But, man, they wouldn't tell you they was having it tough because they'd be scared they was gonna get cut off."

A former oil field worker, Corley finds himself a point man for a fledgling Southwest Arkansas group advocating reforms in the contract system. The Contract Poultry Growers Association and its 200 dues-paying members from Arkansas and surrounding states hope to make changes that will benefit poultry growers and poultry companies.

Previous efforts to organize such groups in Arkansas, dating back 30 years, met with little, if any, success. All of the companies involved refused to deal with the groups, none of which remain active.

"Our basic position is we deal with a grower on an individual basis," said Aubrey Cuzick, a group vice president who oversees one of Tyson's production divisions.

"NOT SHARING BONANZA"

The companies contend changes in the contract system are unnecessary because farmers can earn a good living by raising chickens and turkeys on contract.

Don Allen, of executive vice president of the Arkansas Poultry Federation, said his organization is not directly involved with contract growers.

But, he added, "If it was as bad as some of those folks say it is, I don't think they'd keep building (poultry) houses."

John Tyson, vice chairman of operations for Tyson Foods, said the contract agreement offers growers an opportunity few people have.

"They get that pleasure of being on the farm and living a lifestyle that's fast disappearing in America today," he said. "These folks get to enjoy a unique lifestyle that a lot of us would like to have."

But many growers say their lives are far from idylic. In addition to daily problems, they also are concerned about further concentration in an industry domninated by a handful of powerful companies.

"Fewer and fewer companies have more control over the poultry business," said a 20-year grower from El Dorado. "The more control they have, they can do us any way they want to.

"We're not sharing in the bonanza of the chicken business, and that's bad."

A study by the Texas Agriculture Department, released in January 1990, reached a similar conclusion. "Although the grower makes a substantial capital invesment and takes most of the risk, he or she is not sharing in the success of the industry."

Meanwhile, poultry farmers and industry observers say the poultry industry's contract farming system will continue spreading to other agriculture areas such as crops, cattle, and hogs.

While that may mean higher profits for companies and lower prices for consumers, some believe it may mean the end of a way of life for American farmers.

"That's a rather foreboding kind of development," said the Rev. David Ostendorf, director of Prairie Fire, a rural advocacy group based in Iowa.

At an hourly rate based on a 40-hour week, the Tyson growers in Texas earned $6.97 an hour, while the Pilgrim growers made 84 cents an hour.

But a study by the Rural Advancement Fund in North Carolina found many growers across the country say their pay is closer to $2,000 per house per year. That would put the hourly rate at $2.88—well below the $4.25 minimum wage.

ARKANSANS' EARNINGS

Arkansas growers cite earnings similar to those in the Texas study. They produce settlement sheets and expense listings showing earnings such as:

$919.26 for four chicken houses for eight weeks, after mortgage payments on the $250,000 investment. That figures to $2.87 an hour, based on a 40-hour week.

When $1,600 for operating expenses was deducted, that farmer lost nearly $700.

$567.79 for two houses for eight weeks. Although the mortgage payments had been deducted, other expenses remained to be paid. That figures to $1.77 an hour.

Rob Robinson, the grower association's president, summed up the situation as the group's members see it.

"The main problem we're looking at is profitability, or being able to make a living, which apparently we're not doing," he said.

But Cuzick pointed out the industry also operates on a low margin of return. He calculated that with 4.7 billion pounds of chickens, Tyson's 1990 net income of $120 million translates to a return of 2.5 cents a pound.

Cuzick noted $45 million of that profit went to bonuses for the Tyson employees and growers. Every farmer received a 4.5 percent bonus, he said.

Vice Chairman John Tyson noted top growers earn more than the average price. "You don't hear the growers getting the bonuses complaining."

COMPANIES PROFIT

While many growers complain about low pay, the polutry corporations and their stockholders enjoy record earnings.

Net sales for Pilgrim's Pride—the fifth largest poultry processor—rose from $297 million to $506 million between 1984 and 1988. Stock holder equity rose by 197 percent.

Pilgrim's 1990 sales were $724.2 million.

Stockholder equity for Tyson grew by 305 percent during the same period. From 1988 to 1990, stockholder equity nearly doubled to just under $663 million.

Tyson's average return to investers of 58.27 percent for the 1976–86 period was the highest 10-year average in American business.

This disparity troubles poultry farmers.

"The end result is the ones making the money is the ones that never sees the bird or the chicken meat either one," said one Tyson grower from Nashville.

But the growers say their concers are not with the companies profit margins. They are quick to point out their livelihood depends on those companies making money.

"I don't care for them making millions," said a former grower for Peterson Industries in Decatur. "I just wish they'd let us make a living."

BIG INVESTMENT

Poultry growers also are concerned about the capital investment required to obtain a contract from a poulty company.

While they must take out 10-year to 20-year loans to build $65,000 chicken houses, they are guaranteed only one batch of chickens at a time. In addition, the companies frequently require growers to make costly adjustments or additions to their equipment.

For instance, Tyson's Nashville manager notified growers in a June 26, 1990, letter about requirements for the number and spacing of ventilation fans in each chicken house.

"Deadlines for meeting these requirements will be May 1, 1991," the letter stated. "Fans will be available through the Company with cost of fans being held out of settlement checks."

Although Aubrey Cuzick said he wasn't surprised growers had been told such changes are mandatory, he said it wasn't Tyson's policy to hand down ultimatums.

But growers contend the constant changes make it difficult for them to stay in the black. They also say the requirements shift with local management and often are arbitrary.

One grower cited recent additions to his three chicken houses: $26,000 to add feeding systems and $11,000 to replace watering systems.

Such changes are not necessary to produce top-quality chickens, said another grower.

"That chicken will drink water out of a green cup just as well as it will out of a yellow cup. I can put a dish pan in the chicken house, and I'll raise you a chicken. . . . They're telling me I have to buy a Cadillac."

But company efficials say updating and adjusting equipment allows growers to better produce chickens.

"We make recommendations that are based on our experience that this is a better way to do it," said Cuzick.

If growers don't follow the company's recommendations, they say they'll lose their contracts.

BROILERS MARKETED IN ARKANSAS BY COUNTY, 1989 (THOUSANDS)

Washington: 123,627, Benton: 80,549, Polk: 51,035, Howard: 47,646, Sevier: 47,076, Yell: 44,825, Madison: 41,925, Hempstead: 40,050.

Carroll: 32,524, Pope: 29,919, Cleburne: 28,573, Pike: 26,612, Scott: 24,550, Logan: 21,621, Johnson: 21,587, Conway: 20,097, Stone: 20,051.

Crawford, 18,450, Union: 18,383, Lafayette: 15,876, Cleveland: 15,834, Miller: 15,243, Franklin: 14,016, Perry: 13,874, Montgomery: 13,643, Columbia: 10,650.

Lincoln: 9,843, Sebastian: 9,824, Nevada: 8,796, Independence: 8,772, Izard: 8,529, Boone: 7,680, Bradley: 6,847, Van Buren: 5,988, Little River: 4,520, Ouachita: 3,612, Grant: 2,568, Jefferson: 2,568, White: 2,473, Clark: 2,275, Pulaski: 1,712, Drew: 1,712, sharp: 1,206, Baxter: 1,057, Lonoke: 856, Dallas: 428, Desha: 428, Faulkner: 119, Searcy: 67.

Source: Cooperative Extension Service.

[From the Arkansas Democrat, Apr. 24, 1991]

FEAR OF LOSING CONTRACTS KEEPS FARMERS QUIET

Although some poultry farmers believe they are victims of an unfair contract system, they generally remain quiet in the belief poultry companies will sever their contracts if they complain.

That fear is rooted in the reality that several companies—including Tyson Foods Inc., ConAgra Inc., Cargill Inc. and Peterson Industries Inc.—have been accused of wrongdoing that ranges from misweighing birds to blacklisting growers to terminating contracts.

Several poultry growers in Arkansas and elsewhere have sought recourse through the judicial system for what they believe are unfair practices.

An Arkansas family and an Oklahoma family who contracted with an Arkansas company filed lawsuits after their contracts were severed.

At least three similar lawsuits in other states were successful. All of the cases involve companies based in Arkansas or with operations in Arkansas.

In the two lawsuits involving families contracting with Arkansas companies:

An Oklahoma couple who grew chickens for Peterson Industries filed suit March 12 in federal court in Tulsa, Okla.

Glen and Sue Hurt, who live in Delaware County in Northeast Oklahoma, charge Peterson with breach of contract, fraud, and malicious and negligent actions. They are seeking more than $50,000 in compensatory damages and more than $50,000 in punitive damages.

The Hurts grew chickens for Peterson since the early 1970s. The company severed the contract March 28, 1989, after a two-year series of events that included diseased chickens and collapsed growing houses.

The couple raised breeding hens for Peterson, based in Decatur (Benton County). The company is a leading genetic researcher and supplier of poultry breeding stock.

A Union County couple sued ConAgra when they were cut off in 1989 after nine years with the company.

Louia and Vencill Cogburn of Huttig are seeking more than $160,000 in damages to offset the debt they incurred, said their attorney, James Madison Baker of Hamburg (Ashley County). They raised chickens for the company's El Dorado-based poultry division.

Baker said the case, which could come to trial by summer, could affect other growers and companies.

"This thing has got some far-reaching implications," he said.

FLORIDA CASE

In a Florida case, the 11th U.S. Circuit Court of Appeals in Atlanta upheld a preliminary injunction in January against Cargill. The Minnesota-based agriculture conglomerate has been accused of terminating a contract because the grower initiated a lawsuit alleging the company used fraudulent practices.

Two separate lawsuits evolved after growers suspected Cargill of underweighing their birds. In 1988, Cargill admitted it had mistakenly used false weights for 10 to 14 months at its Jacksonville, Fla., plant. The company repaid growers $300,000.

But Arthur Gaskins and 38 other members of the Northeast Florida Broiler Growers' Association thought the misweighing was more widespread and cost them more money. In March 1989, they filed suit alleging Cargill systematically used fraudulent practices to underpay them during a 10-year period.

As a result of that suit, Cargill cut off Gaskins' contract after 17 years as a grower for the company. Cargill officials have said Gaskins was dropped because he spoke to the media and made negative comments about the company. The U.S. departments of agriculture and justice have sided with Gaskins in the suit, saying Cargill's actions violated the federal Packers and Stockyards Act.

The two lawsuits now have been consolidated. The preliminary injunction upheld earlier this year means Cargill must continue doing business with Gaskins until his suit is settled. But neither suit has been heard in court, and no date has been set for a jury trial.

The federal court ruling upheld the lower court finding that the growers would likely succeed in their lawsuit. It charges Cargill with racketeering, extortion, obstruction of justice, mail fraud, wire fraud and violations of federal agricultural statutes.

James Grippando, one of the Miami attorneys repesenting the poultry growers, said the precedent-setting federal court ruling had ramifications for the entire poultry industry because it indicated poultry companies must show an economic reason to terminate a grower's contract.

"Processors take the position that they can terminate these people anytime," Grippando said.

"This ruling says the federal statute imposes on them obligations beyond what they've written into their contracts," he said. "That's good news for poultry growers across the country."

In Alabama, a jury found ConAgra guilty of fraud and breach of contract in November 1989. It awarded 268 growers $4.55 million in damages for lost income and $9.1 million in punitive damages. With interest, the judgment totals more than $17 million and continues to grow.

ConAgra has appealed the verdict. The 11th Circuit Court heard oral arguments in the appeal Monday.

The case began in 1982 with five growers suing because they said their contracts had been improperly terminated. That case was settled out of court in 1988. The terms of the agreement were not disclosed.

The case eventually grew to include charges of misweighed birds and breached contracts, so the court separated it into two lawsuits. That second suit is the one that is pending.

In Louisiana, ConAgra settled out of court in January 1990 with six growers whose contracts were terminated. Like the previous Alabama settlement, terms of the agreement remain secret.

Six growers began the case in 1983. They argued they had become "locked into a feudal serf production system" that left them with few rights and the company with vast power, a poultry growers' newsletter reported.

TYSON CASE IN 1960S

Officials with companies such as Tyson adamantly deny such wrongdoing occurs.

"I have to say, I think we treat our growers better than anybody in the industry," Jim Blair, Tyson's general counsel, told the Arkansas Democrat earlier. "If any of them are unhappy with us, that's news to me, and I do try to stay on top of that.

"All these things you have read in the papers, the lawsuits in Florida against other companies, this kind of thing just does not go on in Tyson Foods. It never has. It never will."

But Tyson, represented by Blair when he was a private attorney in Springdale, was found guilty by the federal government of practices similar to those of Cargill.

The company fought a 1968 U.S. Department of Agriculture administrative ruling that accused Tyson and two other firms of blacklisting, harassing and terminating Northwest Arkansas poultry growers in 1962 who had formed a growers' association.

The U.S. Secretary of Agriculture issued a cease and desist order Jan. 23, 1968, against Tyson, Arkansas Valley Industries (later acquired by Tyson) and Ralston Purina Co. for their actions in conjunction with the Northwest Poultry Growers Association.

The order said, in part, "Respondents are ordered to cease and desist from * * * entering into agreement or cooperating with others to boycott, blacklist, harass, etc., any poultry producer."

That order, however, was overturned July 30, 1969, in federal court. The 8th U.S. Circuit Court of Appeals at St. Louis ruled the USDA had no jurisdiction in the case.

Testimony during hearings into the 1968 case revealed Don Tyson, then executive vice president and now chairman of the company, told poultry growers he would not "tolerate" their organization. He said company officials would "attend meetings and take down names."

Evidence during the investigation indicated Tyson Foods compiled and circulated a list of growers who were leaders of the association.

Those growers, Don Tyson was quoted in the ruling as saying, "would find they would have a little hard way to go."

[From Time magazine Nov. 26, 1990]

THE DANGERS OF FOUL FOWL; AS POULTRY'S POPULARITY GROWS, THE SCOURGE OF SALMONELLA SPREADS

(By David Bjerklie)

When Americans sit down to their Thanksgiving turkey this week, some uninvited guests could turn a nice meal into a miserable occasion. If the big bird is not thoroughly cooked, it could pass on bacteria that cause fever, stomach cramps, vomiting, diarrhea—all the classic symptoms of food poisoning. Often the culprit is salmonella, a nasty microbe that, despite industry and government inspections, lurks in perhaps * * * all poultry sold in the U.S.

Salmonella poisoning has been around for a long time, but the number of reported cases has surged, form 33,700 in 1980 to 47,800 last year. Those figures represent only a small fraction of the problem, since most cases, while unpleasant, pass quickly and go unreported. Experts believe that each year as many as 4 million Americans have a bout with salmonella. Occasionally the infection is serious enough to require hospitalization, and it can lead to arthritis, neurological problems and even death. The eldelry, AIDS suffers and others with weakened immune systems are especially vulnerable to the disease, which claims 2,000 lives annually.

One reason for the spread of salmonella, ironically, is Americans' determination to guard their health. In the quest to keep cholesterol levels down, people are turning more often to low-fat poultry: annual per capita consumption of chicken alone has risen from 40 lbs. in 1970 to more than 70 lbs. this year. Unfortunately, mass-production techniques make many poultry farms and plants prime breeding grounds for salmonella. Different strains of the bacteria can contaminate eggs as well as meat. (Raw cow's milk can also be tainted, but beef is less of a problem than poultry because the slaughtering process is cleaner.)

Chickens typically travel a filthy path from the farm through the slaughterhouse. Stuffed 10 or 12 to a cage on the truck to the processing plant, they eat one another's germ-laden excrement and spread it on their feathers and skin. At the plant, the birds move rapidly along a disassembly line where they are killed, dropped in scalding water, mechanically defeathered and eviscerated, and chilled in huge water tanks that usually become contaminated. "This is really no different than putting these birds in your toilet," contends Gerald Kuester, a microbiologist with the Public Citizen advocacy group.

Poultry producers are trying to deal with the situation. They put chlorine in the chilling tanks, and they are experimenting with other chemicals in hopes of finding one that is more effective against salmonella. Irradiation could wipe out the bacteria, but it would be costly and consumer acceptance might be low, since many people mistakenly believe that zapping food with radiation makes it dangerous to eat. The visual inspections carried out routinely in the plants can weed out obviously diseased chickens, but the contamination is usually invisible. A panel of experts convened by the government may recommend soon that the Department of Agriculture develop better tests to detect salmonella.

For now, the best safeguard is to clean up kitchen techniques in homes and res-

taurants. The basic instructions: cook poultry until the juices run clear, and thoroughly wash hands and food preparation surfaces as well as all plates and utensils that come into contact with raw poultry. Dane Bernard, director of microbiology at the National Food Processors Association, asserts that proper handling by cooks could reduce the number of salmonella infections at least 75. Caution is the key. Warns Joseph Madden of the Food and Drug administrations microbiology division: "The consumer should assume that any poultry product has bacteria on it."

[From the Wall Street Journal, Nov. 16, 1990]

FOWL PROCESS: FASTER SLAUGHTER LINES ARE CONTAMINATING MUCH U.S. POULTRY

(By Bruce Ingersoll)

LEWISTON, NC.—The chickens hurtle down the high-speed line, jiggling along at 91 birds a minute, all as plump and yellow as Frank Perdue could want.

The birds have been stunned, killed, bled, beheaded, plucked, eviscerated and government-inspected here at Perdue Farms Inc. In the automated flurry of pounding off feathers and pulling out intestines, some have become contaminated with feces. Then, all the carcasses take a plunge, one after another, into the chiller, a huge refrigerated tank of water used to cool thousands of chickens an hour.

But the chiller produces an unintended side effect: It is one of several points on poultry slaughter lines where clean birds pick up salmonella and other disease-causing bacteria from contaminated chickens. "Birds that bathe together get contaminated together," says Thomas Devine, a leader of a consumer coalition seeking tighter regulation of the $18-billion poultry industry.

A NEW THREAT

Cross-contamination is the curse of processors nationwide who strive to transform barnyard fowl into safe, high-quality food. By putting their lines on fast-forward, processors are meeting the boom in poultry demand—safely, they argue. But a growing chorus of scientists, consumer advocates and federal inspectors contend the process is undercutting food safety. Increasingly, these critics are linking high-speed chicken processing—and cuts in federal oversight—to a nationwide rise in foodborne disease rates.

Just as the problem is getting more public attention, health officials are finding new reasons to sound alarms over poultry industry practices. An obscure bacterium called campylobacter has emerged in the last few years as the No. 1 known cause of gastroenteritis in the U.S., according to the Centers for Disease Control, and researchers have found the bug sometimes contaminates as much as 90% of market-ready chicken and turkey.

The scientific consensus is that salmonella, by comparison, contaminates about 60% of chicken on the market, up from about 37% in the late 1970s. The result: Contaminated poultry is blamed for as many as 1.5 million campylobacter cases annually—roughly three times the number of cases of salmonellosis.

KILLED IN THE KITCHEN?

Industry officials strongly defend the safety of poultry. "We can't afford to make our customers sick," says Kenneth May, a poultry scientist and consultant to the National Broiler Council. Birds raised "in a natural environment do have microorganisms on them. It just doesn't normally cause a problem. The thing we've got going for us is that people cook the stuff," which, done properly, kills bacteria.

But consumer advocates contend underregulation is as much a problem as undercooking. They say the Agriculture Department never should have allowed major processors to speed up their slaughter lines to rates of 70 to 91 chickens a minute from the high 50s a decade ago without a commensurate increase in inspection. Instead, the agency reduced the number of federal inspectors on each line under its so-called streamlined inspection system, relying heavily on company employees to catch processing defects.

"A better name for it would be streamlined infection system," asserts Mr. Devine of the Government Accountability Project, a whistleblower group based in Washington.

The parade of poultry double-timing past inspectors at Perdue's Lewiston complex, and at other companies nationwide, moves so fast an inspector has just two seconds to scrutinize each carcass, inside and out, for fecal matter, tumors and other signs of disease. "After a while, it gets to be a blur," says one inspector.

Some poultry inspectors contend the Agriculture Department erred in deputizing processors to inspect themselves, and insist the practice can lead to reduced vigilance. Last year, for example, David Carney, a Cleveland-based inspector, found a Kralis Brothers Foods Inc. plant in Mentone, Ind., was shipping thousands of chickens contaminated on the outside with buckwheat kernels that had been in the birds' crops before slaughter. Many of the birds also had broken bones and blood clots. Two months ago, he says he caught nine birds with "flagrant defects" that Kralis had missed. Some birds were scabby or had clumps of unplucked feathers. "The USDA seal of inspection doesn't mean much," Mr. Carney asserts. "These birds should never have gotten out the door."

"If we shipped product like that, I don't think we'd have any customers," responds plant manager Woodford Johnson, who denies the incidents occurred. "Our quality is higher than USDA standards."

There is growing clamor from consumer groups for slowing down line speeds, at least to the point where the eviscerating machines aren't rupturing intestines and splattering fecal matter about. "As long as you have an epidemic of foodborne illness, why not take conservative steps to protect the public," says Carol Tucker Foreman, a consumer lobbyist and former Agriculture Department official who recommends condemning every bird that has punctured intestines.

The industry rejects the idea of throttling back, as does the government. "If you cut the line speed in half, there's no evidence you would change the [bacteria] level," says Mr. May. Agriculture Department officials contend it would be too costly and impractical to reinstate the inspection procedures of the late 1970s. Instead, they plan to ask processors to make some voluntary changes in their slaughter operations to reduce contamination. Perdue Farms and some others are well ahead of the regulators on one innovation: adding chlorine to the chill water.

Given the risks of food-poisoning, however, critics of streamlined inspection question the wisdom of putting companies on what amounts to an honor system. For the elderly and infants particularly, a campylobacter or salmonella infection can be fatal. The two infections are estimated to cause 500 deaths a year in the U.S., and both can lead to a form of arthritis and other chronic diseases. What's more, campylobacter sometimes results in colitis and appears to be linked to Guillain-Barre syndrome, a neurological disorder that can cause fatal respiratory paralysis. Even without such complications, a bout with campylobacter can produce painful diarrhea and abdominal cramps.

But in a videotape distributed by the National Broiler Council, Lester Crawford, administrator of the Agriculture Department's Food Safety and Inspection Service, plays down poultry's role in transmitting disease. While acknowledging occasional problems with mishandled chicken and turkey salad, he insists that "food poisoning from intact poultry products is rare."

Whatever the case, disease-causing bacteria sometimes contaminate a large percentage of the birds shipped to consumers. Studies show that even if only a few birds are infected upon arriving at the slaughterhouse, uninfected birds can become similarly tainted as they run the gauntlet of modern poultry processing. The inspection service, in a study at a Puerto Rico plant, found 57 percent of the plucked chickens coming in contaminated but 76 percent going out the door infected.

Fecal cross-contamination can occur when flocks gather in the unloading sheds; when they are soaked in scalding water to loosen their feathers; and when they are hustled through a row of automatic feather pickers that pummel them with rubber "fingers." The pounding not only expels feces but drives bacteria into skin creases and feather follicles, say inspectors and microbiologists. Further cross-contamination can occur if the eviscerating machine, which pulls out intestines with a mechanical hand, isn't properly adjusted.

Lately at its Lewiston complex, Perdue has been running flocks of five- to six-pound birds through machinery that is optimally designed for 3½-pound broilers. The feather pickers have "been beating them to death, tearing up the skin," says one federal inspector. "Some birds got stuck [in the eviscerator] and really messed things up." Perdue calls the problem "highly unusual" and says it can be corrected by readjusting the machines.

Typically, in such a situation inspectors condemn grossly contaminated birds, while plant workers trim or wash the fecal matter off the rest. "Hopefully, it gets all trimmed off," says the inspector. "I'd be lying if I said it did." As for washing birds, government researcher Huda Lillard found the measure to be futile. After rinsing a chicken carcass 40 times, she still could detect bacteria clinging to it.

Processors wouldn't have been able to rev up their lines if the inspection service in 1978 hadn't started allowing companies to wash, instead of tediously trim, contaminated birds. Relying solely on manual trimming was just too slow. "I'm responsible for that little travesty," says Ms. Foreman, who oversaw the agency during the Carter administration. "I never should have approved washing." She says she was misinformed by a government study involving only 180 birds from one plant that purported to show that washing worked.

Last year, the inspection service, under pressure from inspectors, decided to do a follow-up of the 1975 study, this time looking at 1,500 birds at five large plants in the Southeastern broiler belt. An unpublished draft report shows a startling 26% to 79% of washed birds contaminated with salmonella, depending on the plant, and 25% to 80% of unwashed birds tainted. Even though the washed poultry had a higher average contamination rate,

researchers concluded that the washing policy is still justified.

Meanwhile, in a survey of 50 brandname broilers distributed by several processors in Athens, Ga., government researcher Norman Stern found 90% to be contaminated with campylobacter, ranging from a couple of cells to one million. For some people, as few as 100 to 500 cells can be an infectious dose. "People don't eat raw chicken," says Mr. Stern. "But the problem is, one drop of [chicken] blood dripping on lettuce could contain 1,000 to 10,000 organisms."

Food safety specialists and researchers say consumers shouldn't expect the impossible of poultry processors: an absolutely sterile product. Instead, they should do their part at home by thoroughly cooking poultry and washing utensils that have touched it.

Perdue Farms, meanwhile, insists its own campaign to reduce bacteria levels on its products is paying off in longer shelf life. "Retailers continue to tell us that our shelf life is 1½ days longer than our competitors', a good indication that we're reducing the bacterial load," says Clay Silas, laboratory director for the Salisbury, Md., company.

Growers shipping birds to the Lewiston plant, for example, are required to stop feeding their flocks in advance of slaughter so the birds' intestines aren't full. In the plant, which can process 400,000 birds a day, throat-cutting knives and other equipment are constantly sprayed, while every bird is washed inside and out by a high-pressure washer before going into the chiller.

A lot of the bird-to-bird contamination occurs, research shows, when the birds take their last communal dip together in the chiller. "Even if you chlorinate the chill water, it's still like soaking birds in a toilet," asserts Gerald Kuester, a former government microbiologist. Industry officials say processing may spread bacteria from bird to bird but it also dilutes the overall dose level. But Mr. Kuester says consumers shouldn't be heartened by that calculation. Even if birds emerge from the chiller carrying very low levels of campylobacter and salmonella, the organisms can multiply when poultry is thawed at room temperature, he says.

Some companies in Europe chill their birds with blasts of cold air to avoid cross-contamination. U.S. companies consider air-chilling too slow and costly. But critics say the industry has another reason for sticking to water chillers. "Federal regulations allow each carcass to soak up as much as 8 percent water," says Edward Menning, an official of the National Association of Federal Veterinarians. "This enables the sale of hundreds of thousands of gallons of water at poultry meat prices—a profit the industry is unwilling to forgo."

[From Atlantic Magazine, November 1990]

PUBLIC HEALTH: DIRTY CHICKEN

Americans are eating more poultry these days, because they think it's good for them. With one third the saturated fat of lean beef, chicken seems the cleaner, safer food. Poultry is also cheap: it is one of the few products whose prices in constant dollars have steadily decreased since the 1950s. This year Americans will eat more than ninety pounds per person, almost double the amount of poultry they ate in 1970 and more than the amount of beef they consume.

In the past few years, however, a less healthful side to poultry has emerged. While poultry production and consumption in the United States has risen sharply, public attention has been drawn to high rates of poultry contamination by disease-bearing microorganisms, especially salmonella. A pathogenic bacterium abundant in nature, particularly in animal feces, salmonella causes everything from mild diarrhea, fever, and flu-like symptoms to death. In 1985 the U.S. Department of Agriculture announced that 35 percent of chicken carcasses were contaminated with salmonella. Last year USDA tests of five processing plants in the Southeast, the leading poultry-producing region, found salmonella levels of 57.5 percent.

Whether or not poultry contamination is on the rise is debated; scientists say, however, that it definitely is not going down. What is certainly rising is the number of people getting sick from salmonella—one current estimate is 2 to 4 million Americans a year. The actual number is not known, because most people who suffer from salmonellois—and, indeed, most food-borne illness—never know what hit them. Contaminated food often looks and tastes fine. Food-borne bacteria frequently multiply in the body for one to seven days before they reach levels high enough to cause illness. According to Douglas Archer, the deputy director of the Food and Drug Administration's Center for Food Safety and Applied Nutrition, about two or three percent of the people suffering severe diarrheal illness, such as one gets from salmonella, develop reactive arthritis within weeks. A smaller number of people come down with inflammation of various tissues, neurological problems, or other diseases, some of which can be fatal. In fact, Archer says, 2,000 Americans die of salmonella poisoning each year—mainly the very old, the immuno-compromised, and the very young. Although the number of cases of salmonellosis that can be traced to poultry is unknown, Dr. Robert Tauxe, a specialist in enteric diseases says that CDC surveys indicate that poultry is a significant source.

Scientists are tracking another pathogenic bacterium, Campylobacter jejuni, which causes similar gastrointestinal symptoms, sometimes with bloody stools. Clinicians have been able to culture Campylobacter from fecal specimens only since the late 1970s. Once they were able to detect it, they discovered that Campylobacter might be responsible for at least as many cases of food-borne illness as salmonella. Over half of the sporadic outbreaks of campylobacteriosis have been attributed to poultry. Indeed, samples of poultry contamination indicate Campylobacter levels similar to or higher than those of salmonella.

If the 1980s were the decade of cholesterol and fat, the 1990s will be the decade of food-borne infectious disease, Archer says. With the rise in immuno-deficient and elderly populations, more people will die from contaminated food. When mishandled or undercooked, poultry, Archer says, poses a great threat.

Why is poultry so dirty? Unfortunately, the very technology that has made poultry plentiful and cheap has also increased the spread of disease-bearing bacteria.

Over the past twenty-five years there has been a revolution in the slaughter and processing practices for meat and poultry—indeed, in the entire system of raising animals to slaughter-weight quickly and cheaply. The poultry industry has grown from an annual volume of 2.1 billion birds in 1964 to more than 6 billion birds today. The Expansion has been made possible by intensive farming practices, which concentrate animals in huge warehouses; sophisticated systems of temperature, feed, and water controls; genetic selection of the biggest and hardiest birds; the regular use of antibiotics, which speed the birds' rate of growth (just how is not understood) and enable them to withstand stressful growing conditions; and a highly advanced understanding of poultry nutrition. Innovations like these have decreased the time it takes to grow a three-pound chicken from four months in 1940 to just six weeks today. Volume has also been boosted by automatic slaughtering plants that whiz 21 million chickens a day through the process at speeds up to ninety-one birds a minutes, as machines beat off feathers and pluck out entrails. While the technological advances have been remarkable, they have unfortunately been made without regard to controlling microbial contamination.

Contamination begins, poultry scientists say, in the egg, where a tiny percentage of unhatched chicks carry pathogens from their mothers. In the crowded "grow-out" house, more birds are contaminated by contact with other chickens, wild brids, rodents, the feed, and the buildings themselves.

Contamination begins in earnest, however, during the trip from farm to slaughterhouse. Here poultry undergo the greatest stress of their short lives and at the same time are squeezed together, facilitating the spread of bacteria. "By the time chickens leave the farm," says Nelson Cox, a microbiologist at the USDA's Agricultural Research Service, in Athens, Georgia, "only one to three percent have salmonella in their intestines, although most have it on their skin and feathers. But this expodes to twenty to twenty-five percent in transport, because the birds are deprived of feed for twelve hours, jammed into little coops—about ten to twelve birds per three-and-a-half-foot-square coop—and they're eating each other's fecal matter throughout the trip."

At the slaughterhouse the level of contamination skyrockets. By the time chickens leave the slaughterhouse, Cox says, "the contamination levels can be upwards of seventy percent."

After having their throats slit, chickens are dipped into a tank of scalding water to loosen the feathers, which are softened with mud and feces from life at the farm. Occasionally a bird will still be breathing and will inhale the filthy water, drawing bacteria into its system. The hot water also opens its pores, allowing more bacteria to enter the skin. Then defeathering machines, with rubber fingers the size of a man's thumb, beat the bird carcasses to knock off the feathers. If there are scabs, scales, or tears on the skin, the machines may pound contamination into the skin; they also press feces out of the animal. The machines themselves create an aerosol mist of bacteria as they work, contaminating surrounding birds. Automatic eviscerating machines compound the problem. They remove the intestines of each bird at high speed, often breaking open the viscera and spilling the contents—including feces—over the bird. Finally, the birds are dropped into a large chill tank, where their temperature is quickly reduced to 40°F. Chilling curbs microbial growth, but tanks allow feces to wash from one bird to another. (The scalding tanks have the same drawback.)

Chlorine is often added to the water in order to limit the bacteria spread, but a number of foreign countries, including Canada, won't buy birds that have been soaked in chlorinated water, so chlorine is not always used. Chlorine can react with organic materials, such as chicken skin, and produce chloramines, which are carcinogenic; the hazard to people is far from established, how-

ever. Although chlorine does reduce the level of pathogens in the water, Gerald Kuester, a microbiologist who researched poultry slaughter when he worked at the USDA, says that is is ineffective in killing the bacteria on a carcass, because it is neutralized by animal protein. "The chlorine is quickly bound to any organic matter," says Kuester, who now works for Public Citizen, "and never gets to the bacteria."

Chlorinated or no, birds from chill tanks can be very dirty, "At the beginning of the day the chill-tank water is clear and clean," one inspector says. "But as the day goes on, it becomes murky, dirty-brownish, and bloody." By the end of the day, when the tank is drained, the bottom may be a foot deep in filth.

Kuester said that washing—the industry's method for cleaning off soiled carcasses—doesn't remove the bacteria either, because they can cling tightly to the skin. Washing serves only to remove the evidence; the contamination remains. Thorough cooking does kill the bacteria, but while a bird is raw, it is often loaded with pathogens. "At the end of the line the birds are no cleaner than if they been dipped in dirty toilet," Kuester says. "They may have been washed, but the germs are still there." Using machines to wash away feces was illegal until 1977. That year the USDA Food Safety and Quality Service (Now the Food Safety and Quality Service, under Carol Tucker Foreman, began to allow it. Foreman, who left the USDA in 1981, now regrets her decision, explaining that she was persuaded by industry, her staff, and one study—later shown to be flawed—that found washing to be effective at removing bacteria. She has since become an outspoken critic of the washing policy.

The rate of bacterial contamination in red meat is much lower than it is in poultry—more like four percent—but similar problems exist in processing red meat. "All of these animals have pathogens on their skin and in their intestinal tracts," say Morris Potter, a veterinarian in the Division of Bacterial Diseases at the CDC. "And the problem of getting the outsides off and the insides out without contaminating the rest of the carcass has not been solved." Dehiding veal and beef creates much the same bacterial spray that defeathering machines do, say Potter. The high speed at which the operation takes place can worsen the problem.

The main reason steaks are less contaminated than broilers, Potter says, is that the skin, which is the most highly contaminated part of the animal, has been removed. It ends up hanging in your closet or shoe rack, while chicken skin ends up on your plate. Processed meats such as turkey roll, sliced roast beef, and hamburger are often as bacteria-ridden as chicken. Having been cut up and mixed about, the meat has had more opportunities to be contaminated. If one piece of beef headed for the meat grinder is contaminated with salmonella, every hamburger that emerges from the grinder will also be contaminated. Perhaps this is why a 1986 survey by the New York City Department of Consumer Affairs showed that one in six samples of hamburger meat and more than half of all cooked roast beef found in the city's supermarkets, delicatessens, and butcher shops was contaminated with some type of pathogenic bacteria. The researchers also found pathogens in more than half of the raw chicken breasts they checked.

Industry spokespeople say that bacterial contamination is inevitable in any foodstuff and that normal hygienic precautions will protect consumers. They argue that the public has been mistakenly led to believe that absolute purity is a feasible goal. "The basic name of the game here is that anything is going to have microorganisms, I don't care if it's a tomato or turkey," say Mahlon Burnette, a nutritional biochemist and spokesperson for the National Broiler Council.

Burnette says that the high rate of bacterial contamination in chickens is a natural phenomenon, and he believes that the high-speed technology—the mechanical eviscerators, the fast-moving lines, and the water baths—doesn't cause any extra contamination. "Mechanical eviscerators didn't come into the industry before 1976," he says, "whereas these statistics existed before." But the consumer advocate Rod Leonard, who was the director of the food inspection service in the Johnson Administration, argues that contamination levels have increased from 29 percent in the late 1960s to 35 percent in 1985, with recent scattered tests indicating a level between 50 and 75 percent. Leonard, who is now the director of the Community Nutrition Institute, in Washington, agrees that we will never have a bacteria-free food supply. "The body can handle natural amounts," he says. "The problem is that we're overwhelming every normal defense mechanism." Burnette argues that the numbers are irrelevant. "Since you don't know which animals are contaminated," he says, "you should always use care in handling and cooking them."

Most experts would agree with Burnette that careless consumer handling of raw meat and poultry is at least as much responsible for the current outbreak of food-borne illness as the food itself. All agree that consumers should adopt more stringent sanitary routines. According to the USDA's Meat and Poultry Hotline (800-535-4555), consumers should cook beef, veal, lamb, and poultry to a minimum internal temperature of 160° F. For those without a meat thermometer, poultry is safe when the juices run clear and the meat is no longer pink. Foods cooked in microwave ovens, which sometimes have "cold spots" where heat doesn't penetrate, should be stirred or rotated during cooking. (Cooking foods in a covered dish creates a hot, wet atmosphere that helps kill bacteria.) Precooked foods bought from restaurants, gourmet shops, or supermarkets, which might sit at room temperature before being sold or on the trip home, should be reheated thoroughly. Consumers are advised never to touch cooked food with the plate or knife that was used when the product was raw without washing it first, and also never to thaw frozen meats at room temperature, because microbes, which easily survive freezing, will multiply into the millions.

Consumer advocates, however, feel that too much of a burden is being placed on the consumer to clean up an inexcusably filthy product. Some also argue that the safe handling of poultry is almost impossible for consumers. A 1978 study of sixty Dutch families' dinner practices, conducted at Agricultural University in the Netherlands, found that after dinner was prepared, bacteria from chickens had spread all over the kitchen—to door and tap handles, salt shakers, and spice jars. Even after conscientious washing and rinsing, live bacteria remained on tables, cutting boards, dish cloths, and sinks. "The meat practically has to be handled the way a surgeon handles an organ before transplant," says Amy Karas, who directed the New York City Department of Consumer Affairs study of meat and poultry. After working on the study, she stopped bringing meat home. "It's too much of a problem to handle it safely," she says.

After handling raw meat or poultry, advises Paul Blake, M.D., the chief of enteric diseases at the CDC, consumers should scrub everything they have touched in warm soapy water: utensils, pots, cutting boards, drawer handles, sinks, countertops, the phone, the baby. Skin must be washed for at least twenty seconds to kill bacteria. Salmonella can live up to six months on a wooden cutting board, so it's best to switch to a plastic one, which can be sterilized in the dishwasher. For those who insist on wood, a mild bleach solution is effective in killing bacteria.

Do restaurants follow such stringent procedures? They are supposed to, says an official of the FDA, which trains state and local health inspectors in how to monitor retail food establishments. However, restaurants are inspected only a few times a year, and inspectors observe food preparation practices only if they happen to drop by at mealtimes. High employee turnover in the low-skill, low-pay preparation positions also raises questions about consistency in safety practices. Most chains and large establishments have stringent handling procedures of their own, knowing that an outbreak of disease traced to one of their restaurants would devastate business, and they cook chicken to a high internal temperature.

Precooked and packaged foods sold in supermarkets, such as chicken frankfurters and turkey roll, are inspected by one of 200 "compliance officers" from the USDA, who visit processing plants daily. Samples are periodically sent to one of five regional laboratories across the country. Because it takes seven or more days to transport and grow bacterial cultures, the sampled food usually has gone to supermarkets by the time the USDA sees the results. If the sample shows bacteria, the agency initiates a recall. During the first eight months of this year the USDA issued thirteen recalls, involving an infinitesimal percentage of all precooked food sold in that period.

While USDA and industry representatives say that the contamination problem and the many resulting illnesses and deaths would be avoided if people handled food more carefully, they are reluctant to require warning labels on the food. Lester Crawford, the chief of the FSIS, says that the agency has a vigorous consumer-education program involving the distribution of thousands of publications and news releases, public-service announcements on television and radio, education programs in schools, and the Meat and Poultry Hotline. These efforts are inadequate, says Ellen Haas, the executive director of Public Voice for Food and Health Policy, a nonprofit research and advocacy group. "Brochures or advertisements cannot adequately substitue for a package label that the consumer will see right before he or she prepares and cooks poultry," Haas said in 1987 before a congressional committee. The USDA allows companies to put instructions for safe food handling on poultry packaging, and many have done so. But the labels do not say that the food may cause illness if the instructions aren't followed.

Even if the technology of modern farming, slaughtering, and processing practices were found to be safe in principle, actual practices are sometimes not. "I can tell you stories that would make your hair stand up," says Manford Parker, a retired USDA inspector who worked in meat and poultry plants for eighteen years. He is one of 125 inspectors across the country who have told the Government Accountability Project, a nonprofit

watchdog group, in signed affidavits, of seeing diseased or wormy giblets, hearts, and livers; paint chips and metal shavings falling on the meat; roaches everywhere; toilets containing human excrement overflowing onto floors where chickens were sometimes dropped; chicken-processing equipment that was covered with rotting meat and that was left uncleaned for days; chickens that were already dead before the slaughtering process (a sign of serious disease); and rat infestation so severe that one worker would drive rather than walk across an alleyway out of fear of being attacked.

Are the popular name-brand chickens, like Tyson, Holly Farms, and Perdue, cleaner? Since none of these companies would allow me to tour any of their plants, I must rely on the reports of others. Perdue prides itself on its clean, healthful image. Yet in November of last year Donna Bazemore, an activist for workers' rights who had worked at a Perdue plant in Robersonville, North Carolina, submitted testimony to a House education and labor subcommittee that "the floors regularly are covered with grease, fat, sand, and roaches," along with spit, chewed tobacco, snuff, and feces. Chickens regularly fall off the line and into all the muck on the floor, she reported, and supervisors put the contaminated fowl right back on the line, where they are processed for human consumption. Bazemore also described abusive treatment of employees; macabre working conditions under which strenuous work and insufficient breaks cause employees to vomit, faint, and urinate on themselves or on the floor; insufficient safeguards that result in lost fingers and occasionally in lost limbs; and company policies that are unsympathetic to resulting employee injuries and illnesses.

Perdue Farms immediately issued a statement to the subcommittee denying Bazemore's accusations, calling her testimony misleading and false, and inviting committee members to inspect any Perude plants at any time. In carefully worded sworn statements two Perdue vice-presidents (one already retired) said that their processing plants meet USDA inspection rules and regulations, that workers do not put chickens that have failed inspection back on the line behind inspectors' backs, that they treat their employees as "participants in the business," and that the company has an array of policies whose purpose is to honor and safeguard its employees. Lester Crawford also submitted a letter stating that a USDA inspection conducted after the testimony found "no evidence of the kind of gross violations of Federal inspection rules and regulations described in the * * * testimony." Crawford also pointed out that Bazemore's testimony was based not entirely on her own experience but in part on that of other workers. However, another former Perdue employee and two USDA inspectors who had worked at the Robersonville plant later submitted affidavits to the subcommittee supporting Bazemore's testimony with more lurid stories of filth and abuse at the plant, accounts that they said were based on their own observations. When I asked a Perdue spokesperson to comment on the episode, he said, "It simply does not make sense that a company like Perdue could demand a premium price for its product if it were produced from such horrific conditions."

If violations like the ones described by Bazemore and other workers and inspectors are in fact occurring, what have the USDA inspectors been doing all this time? The USDA places more than 7,400 inspectors, 1,200 of them trained veterinarians, in meat and poultry processing plants to check carcasses as they ride along the assembly line where they are cleaned and cut up. The inspectors were originally placed in meat-packing plants in 1906, when Congress passed the Federal Meat Inspection Act after Upton Sinclair's book The Jungle shocked the nation with its accounts of filth and worker death in the Chicago slaughterhouses. In 1957 the Poultry Products Inspection Act brought poultry under the same inspection system. After the original law was passed, no meat could be sold in interstate and foreign commerce without the USDA inspector's stamp of approval. To earn the stamp, each piece of meat was examined by a USDA inspector who would take a good look as it moved down the line. Although the inspection rules were complex, what they amounted to was that if the meat showed signs of disease or filth, no stamp. Consumers felt safe knowing that no meat would reach them unless it contained that stamp of approval. In the early 1980s, however, inspectors complained that things had changed.

After the Reagan Administration took office, in 1980, the speed at which poultry moved down the assembly line was allowed to more than double. In the 1970s, inspectors say, the line speed was about thirty-five birds a minute. If something caught an inspector's eye, he could stop the line to take a closer look at a potentially diseased or contaminated bird. The maximum rate allowed is ninety-one birds a minute, and now many inspectors say that they can't see much of anything. Even if an inspector is able to find a defect on a bird, the new "streamlined inspection system" (SIS), implemented in 1986, may not allow him to do much about it. If the violation involves what under SIS is considered an aesthetic rather than a public-health problem, the inspector must wait for plant employees to clean up the problem. Some inspectors say that many of the violations said to be aesthetic—such as oil, rust, feathers, and lesions on skin—are in fact dangerous.

There is a backup system, Food Safety Inspection Service officials point out. The inspectors take a sample of ten birds per line twice per eight-hour shift to estimate the level of contamination. If violations exceed a certain threshold, the whole group of birds on the line flunks, opening the possibility that every bird on it will be reviewed.

This may be good in theory, consumer groups say, but not in practice. In the first place, they say, the sample is too small to be representative of the lot. At the Gold 'N' Plump broiler plant in Coldspring, Minnesota, for example, inspectors take four samples of ten birds each out of about 62,500 slaughtered every eight hours. Elementary statistics dictates that ten out of 15,000 is nowwhere near a valid sample size. Second, although a day's slaughter may contain birds from as many as ten different suppliers, the sample may be drawn from just one supplier's birds. If the sample passes, the other nine suppliers' birds are approved too, even though they may have been raised under vastly different conditions. Administration officials counter that plant employees are also taking samples—ten birds per line per hour, with government inspectors checking their paperwork. However, the resulting sample size remains small, and the question is raised as to whether industry self-inspection is a fair substitute for government inspection if a government stamp is to be given at the end of the process.

Some inspectors say that no matter who performs the sample inspection, the USDA standards for examining a lot permit it to receive a perfect score even though it may be full of violations. Two sores or two abscesses on a bird do not count: it must have three of any one, and even then the bird passes—the abscesses and sores are trimmed off. One cancer tumor is also allowed, and is trimmed off (as far as is known, cancer in poultry is not transmissible to people). "It's almost impossible to flunk a lot," says Dave Carney, an inspector and a union representative from Salem, Ohio. "Under SIS you can easily pass a lot of birds that are full of feathers, fecal contamination, blood clots, skin blisters, and abscesses." Air sacculitis, an infection of the respiratory system which can produce pus around the lungs, is allowed if it isn't too advanced. Isn't such a condition an indication that the whole bird is sick? "It's got to be systemic," one veterinairan inspector says, "but I'm not allowed to say so."

Even if a sample does flunk, that does not automatically trigger a full-scale examination. First the company gets to inspect a new sample of its own, and to choose the birds it wants to examine. If the company's results are not consistent with the USDA findings, Carney says, nothing happens.

When I asked a USDA administrator about these charges, he claimed that inspectors are in fact allowed to use their own judgment: "These decisions are made by people who are trained to know the difference between a tumor that is superficial and one that is systemic. There are no absolutes." Lester Crawford, the FSIS chief, agrees: "The inspector is sovereign. He may slow down the line, he may stop the line, he may close the plant" if he believes there is a public health threat.

Many inspectors, however, say that they are often reprimanded by USDA higher-ups when they flunk too many birds or stop the line to inspect more closely. When plant managers complain to USDA officials about inspectors' decisions, the inspectors say, the officials often rule in favor of the plants. Inspectors also charge that they are sometimes punished by the USDA for trying to enforce the law. One says, "Inspectors who try to enforce the law are reprimanded, hounded, transferred." Crawford says, "That would be a felony, and we would not tolerate that. We don't have the right to over-rule the inspectors."

As for inspectors' stories of widespread violations in meat and poultry plants, "only about five percent are committing violations," Crawford says. "The vast majority are in compliance with our regulations." Indeed, not all inspectors are unhappy. Ron Farrell, a veterinarian inspector at three Ohio meat and poultry plants, says that he has never had a problem with the plants, the USDA policies, or the line speeds during his year and a half with the FSIS. Meat and poultry industry spokespeople say that inspectors' complaints are exaggerated in response to the recent modernization of the system, which will make inspectors less important. In 1985 the National Academy of Sciences issued a report characterizing the USDA inspection as old-fashioned and unscientific. Having inspectors examine each animal's carcass, the report said, was insufficient, because most contamination that is transmitted to people cannot be seen with the naked eye; the product should be laboratory-tested at key points during the slaughtering process. The report advised that more use should be made of statistical sampling techniques and recommended that a system for reducing microbiological contamination be instituted at critical points during the process.

USDA officials say that they acted on these recommendations when they streamlined the system, implementing sampling procedures and limiting the duties of inspectors. They also say that they are trying to get the plants themselves to be more active in the process, in order to move from government inspection toward industry quality control. The unhappy inspectors are telling the public about filth and negligence in the plants. USDA and industry spokespeople claim, because they want to return to the old system, in which inspectors had more power and discretion.

It may be true that the inspection system needed to be modernized, but that is not what the USDA has done, consumer advocates say. What they've done," Rod Leonard, at the Community Nutrition Institute, says, "is to dismantle the inspection system without putting a new one in its place. Sampling ten birds per line is hardly what one would call scientifically based statistical sampling. Washing away feces is not modernizing, if the microorganisms remain."

Crawford says that the FSIS is not dismantling the inspection system, only making it more efficient. in addition to removing unnecessary steps, he says, the agency is trying to develop a system to control microbiological contamination during slaughter, as recommended by the NAS report. He points to a project in Puerto Rico, where scientists are studying the life cycle of salmonella to determine how it can be controlled during breeding, growth, and slaughter. From this research, Crawford says, regulations will be issued within the next two years. He also points to a committee he chairs that is "considering the wisdom" of setting threshold limits on bacteria in seafood, meat, and poultry products.

The USDA is, at the same time, working to streamline the inspection of cattle. The new system will cut back inspectors' duties, allowing a dramatic increase in the pace at which cattle move through the slaughtering process—the USDA forecasts a 40 percent increase in industry productivity. USDA spokespeople do not say that the new system will reduce product contamination, only that it will improve inspector efficiency.

Can most of the industry be trusted to ensure the quality of its own product, with reduced responsibility for USDA inspectors? USDA spokespeople say yes. Yet a 1981 Government Accounting Office study of sixty-two meat and poultry slaughtering plants found that 26 percent were not meeting FSIS standards. Months later few plants had improved. The GAO concluded that neither the plants nor the USDA showed much interest in complying with federal sanitation standards.

Furthermore, 1981 was not the last time proultry processors were caught committing violations and the USDA failed to take appropriate action. In 1987 an employee of a Simmons Industries poultry plant in Southwest City, Missouri, admitted before CBVS's 60 Minutes television cameras that he had removed "retain" tags from thousands of contaminated chickens and sent the birds on their way for general consumption. Another employee and several inspectors who worked at the plant reported that this violation was only one of many that Simmons and other plants were committing every day. Following the broadcast the USDA responded to the public outcry by announcing that the plant would be inspected more intensely, with surprise visits, to ensure that it had improved. However, in an affidavit filed with the U.S. Department of Labor last spring a former Simmons employee, Sam Shrum, said that the USDA's get-tough policy was a sham. "We always had from one to two weeks' notice for all the 'surprise' visits and we knew what was going to be checked," Shrum said. After the 60 Minutes broadcast the USDA included a different Simmons Industries plant in a special pilot project in company self-inspection—a project that the USDA claimed was available only to plants with exemplary records.

The chief of inspection has always been in an awkward position," says Carol Foreman, who was an assistant secretary of agriculture under President Jimmy Carter. The chief of inspection, whose job is to police an industry, reports to the Secretary of Agriculture, whose job is to support the industry. Under Reagan the chief's position became even more awkward. The inspection services were moved from a consumer division of the USDA to a division whose other functions include marketing. Robert Bartlett, the chief of the program-review branch of the FSIS, a unit that monitors inspection practices, described the new attitude in a 1981 staff meeting:

The political climate is such that the special interest groups supporting the meat and poultry industry have won and now have the ear of Washington. They "paid their dues" and are now in the driver's seat. * * * The consumer base has disintegrated. We must be versatile and adjust to this new challenge.

What can be done to improve sanitation at poultry plants? "We have to stop the bacteria at the very beginning of the process, before the animals are born—or at the very end, just before delivery to the supermarkets," says Nelson Cox, the Agricultural Research Service microbiologist, who works with a team of other scientists. Some possible approaches include:

Food irradiation. Zapping packaged poultry with nuclear radiation kills most bacteria. Although irradiation for poultry was recently approved by the Food and Drug Administration (as irradiation for fruits and vegetables and a number of other foods has been), the poultry industry has no immediate plans for using the technology, because of widespread consumer fear that the process is unsafe. The industry also worries that the added cost would lower demand.

Irradiation works by splitting molecular chemical bonds with high-energy beams. When enough bonds are split in salmonella and other contaminating bacteria, the bacteria are killed. The problem is in the formation of free radicals, which set off a multitude of chemical reactions in the food and create new molecules called radiolytic products. Whether the radiolytic products are safe is contested, with disputed studies raising doubts about long-term safety. In any case, for now, neither the public nor the poultry industry wants to use irradiation to solve the samonella problem.

Banning animal parts in feed. In this country mixing feathers, intestines, guts, and heads—the dirtiest parts of the carcass—into feed is a routine practice, and it is thought to be a major source of contamination. (Some European governments discourge it.) The bacteria are generally cooked away before the parts are added to the feed, but, Cox notes, the rush to produce tons of feed daily results in some recontaminated feed; the trucks that deliver the raw chicken parts to the feed mill, for example, are seldom cleaned before they carry away the cooked feed. However, Cox says, there is a serious obstacle to banning the leftover chicken parts from feed: "What else are we going to do with the three million tons of it that producers generate each year?"

Cleaner technology. As replacements for scald tanks and rubber defeathering fingers, Cox and his colleagues have been examining mist scalders that blow hot steam on the birds to loosen the feathers. These mist scalders are so effective, Cox says, "that when the birds emerge, you can almost blow the feathers off with your mouth." Unfortunately, the scalders discolor the birds' skin, making the technology unattractive to processors.

"Competitive exclusion." As Cox explains this technique, "You load up the animal's gut with beneficial bacteria that take up all the parking spaces." As a result, human-disease-causing bacteria can't infect the animal. He and his colleague are studying the benefits of competitive exclusion. "We punch a hole in the egg and drop the bacteria culture in just before the chick hatches. It's born with the intestinal tract of an adult chicken—a superchick." Cox thinks that this method, along with chemically cleaning nests to prevent contamination of eggshells, may be the answer. Currently no large-scale American producer is using competitive exclusion. Some smaller ones are, although their method is cruder and, Cox says, less effective than the one the USDA is developing.

In an attempt to find a healthier chicken, many consumers have turned to free-range chicken. Consumers in the Los Angeles area can buy Rocky Range chicken, which is raised out doors under roomier-than-usual conditions, given some sunshine, and not given antibiotics or other growth-stimulating chemicals (although the chickens are still dipped in common water tanks and defeathered with rubber fingers). Although these chickens taste much better than their mass-produced counterparts, a recent Los Angeles Times survey found a small sample to have the same rates of salmonella as the commercial brands when bought out of supermarket meat cases.

Another alternative pursued by consumers is kosher poultry, which is slaughtered in accordance with Jewish dietary laws. The laws attempt to make the slaughter humane, and also require diseased birds to be culled and all traces of blood to be removed from healthy carcasses. The result is a more labor-intensive process and greater attention to detail.

Kosher birds move more slowly along the assembly line, allowing inspectors more time to spot defects. The slower process, together with manual throat-slitting, ensures that the animals stop breathing before they enter water tanks. Therefore they won't inhale the feces-filled water that would contaminate their insides. (They also won't suffer.) Every bird is inspected twice—by a USDA inspector and by a rabbi. No hot water is used, only cold water, so the pores do not open up to let in bacteria. Often when a bird shows signes of disease, the whole bird is rejected, rather than just the diseased parts. Kosher chickens also are not routinely fed low doses of antibiotics, and are given about two to three weeks longer to grow than mass-produced chickens. But they cost two to three times as much.

The USDA and industry spokes-people say they are doing everything possible. Others argue, however, that more progress could easily be made. "It's amazing what can be accomplished when the priorities are there," Carol Foreman says. When she was the chief of inspection, she says, "we decided that if a plant ended up on a chronic-problem list, we would publish its name." If that didn't work,

the plant would be denied inspection services, a move that would in effect put it out of business. "As soon as we publicly announced our intentions, around 1979, the number of chronic-problem plants dropped remarkably."

Foreman admits that the technology needed for high-speed yet safe production may not yet exist. But she believes that the industry will create it if pubic pressure, and government regulations, require it. "This is the most creative industry I've seen, she says. "It can make one pound of meat out of something less than two pounds of feed. They have taken what used to be a backyard operation and made it into one of the most sophisticated industries in the world. And they say, 'We can't get the germs off the food!' What they're really saying is, 'We don't share your priorities.'"—Gene Bruce

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By Mr. BUMPERS (for himself, Mr. AKAKA, Mr. BINGAMAN, and Mr. BURDICK):

S. 1326. A bill to provide a national program for improving the quality of instruction in the humanities in public and private elementary and secondary schools; to the Committee on Labor and Human Resources.

HUMANITIES EXCELLENCE AND TEACHER TRAINING ACT

• Mr. BUMPERS. Mr. President, I rise today to introduce legislation which I feel very deeply about. I believe this is the Congress that will make major strides in improving the recruitment, preparation, retraining, and retention of teachers in American classrooms, and I hope to play a role in the debate on the appropriate role for the Federal Government to play in the professional development of American teachers. I believe the Federal Government must take a strong leadership role in recruiting new teachers and keeping good teachers in the classroom.

I am an original cosponsor of S. 329, the National Teacher Act of 1991, which was introduced by Senator PELL early in this session. That legislation proposes a comprehensive program for improving the recruitment and retention of teachers. I am particularly interested in one title of that legislation, which would authorize national teacher academies to provide continuing training opportunities for classroom teachers. I am pleased that one of the activities the academies will be sponsoring is summer institutes for teachers.

I commend President Bush for initiating an important dialog with his education reform package aimed at making schools more accountable and preparing students for school achievement, but I have a number of reservations about the President's education package, including concerns about the modest Federal role he proposes, reservations about the choice concept, and questions about whether the package would really help those schools and students who are at highest risk of school failure. Despite my reservations about this package, I am pleased that President Bush has also recognized the need for continuing education of classroom teachers by including Governors' academies for teachers in five core academic subjects.

While the approach of S. 329 is more comprehensive than the legislation I propose, I am still very committed to the program I am introducing today. It is slightly different in focus than the teacher training efforts of the National Teacher Act, and the slight differences are important enough that it should be separately introduced. My legislation goes back to the basics by emphasizing the role of classroom teachers in revitalizing American education.

I want to take a few minutes to present a history of the bill which I call "The Humanities Education Bill." When I read the "Nation at Risk" report in 1983, my reaction was similar to that of my colleagues: Dismay that our students were performing so poorly and that our educational system was so troubled. The dozens of major national reports on education and the report cards issued since the "Nation at Risk" report have done little to allay my fears about American education.

I am shocked, for example, to learn that 75 percent of 11th graders surveyed could not even place Abraham Lincoln's Presidential terms within the period between 1860 and 1889; that four-fifths of the students did not know what the Reconstruction period was; and that 70 percent of students did not know what the Reformation was.

More recently, I read about the weak reading and writing skills of students. Almost 6 of 10 students at age 17 cannot read at a level of difficulty equivalent to newspaper editorials, and about three-quarters of 11th graders can't write a persuasive letter to their Senators. These statistics don't even begin to cover other crises facing our schools, including the fact that in many areas more students drop out of high school than finish—or that thousands of students who do graduate from high school are illiterate.

These statistics do capture some of the changes that are occurring in the schools. Many students do not come to the classroom prepared to learn, and teachers are confronted with an array of problems that could never have been imagined when I was on the school board back in the 1960's.

The crises in the schools have led educators to suggest a broad range of solutions, including innovative concepts like school-based management and teacher effectiveness training. I support broad-based approaches to the problems in American education, but I must admit that my primary response to the crisis in American education—to the crises in rural schools as well as inner city schools—has been the reaction of both a small town school board member and former Governor.

I believe we have to build from the foundation of the American educational system: The classroom teacher. The quickest and simplest way to improve American schools is to keep good teachers in the classroom and improve their skills and knowledge and to recruit highly qualified and motivated teachers. There is obviously a need for competitive salaries for teachers, more minority teachers, and more fully qualified math and science teachers. But I believed in 1983, and I still believe today that much more can be done to help those teachers already in the work force.

I didn't have to look far in 1983 to find a model of teacher training that was a proven success and which could be easily replicated. In the summer of 1983 I read a short article in Time magazine about a summer seminar program for secondary school teachers of the humanities. Teachers chosen for the program were given stipends to go to college campuses during summer months, where they enrolled in rigorous academic courses taught by college professors. The aspect of the program that struck me most was the enthusiasm expressed by the teachers who were fortunate enough to participate in the seminars.

The teachers lauded the program for its intellectual rigor and for the recognition it gave them and their profession. One teacher said, "It's easy to build a wall around yourself and teach students a certain way year after year. I think we'll all go home much better teachers because our excitement about the material will be communicated to the kids." Another said, "In this program high school teachers are recognized as having scholarly interests." No stronger endorsement could have been given the summer seminars than those given by the teachers.

This program, funded and administered by the National Endowment for the Humanities, allowed a select few teachers to go to college campuses for 6-week summer seminars. The seminar topics in that first summer of the program at the University of Texas included Homer's "The Iliad" and "The Odyssey"; Virgil's "Aeneid"; Shakespeare; Alexis de Tocqueville; and Tolstoy's "War and Peace." Almost 2,300 teachers applied for the 225 places available in the first year of the program.

As a member of the Appropriations Committee, I have sought to expand the NEH-sponsored program by increasing the Agency's funding for teacher training. And I want to take this opportunity to applaud Lynne Cheney, chairman of the NEH, for her willingness to administer an expanded program to serve more teachers.

In fiscal year 1991, with a substantial budget increase, the NEH will fund about 65 seminars for 975 teachers. And the NEH has requested an increase in funding, to $4.965 million, to fund about 70 seminars for 1,020 teachers in fiscal

year 1992. I am very pleased that the NEH has willingly and enthusiastically overseen the expansion of the program of seminars, all the while maintaining a very high level of instruction. However, I am impatient about even this level of funding because the NEH seminars can reach only a tiny fraction of the teachers who would benefit from them.

For the last several Congresses I have introduced a bill to establish a comprehensive program of summer seminars in the humanities for elementary and secondary school teachers. The bill is important because it builds on the successful NEH model and because it opens the seminars to all teachers. I will talk about that aspect of the legislation in just a few moments.

Under my bill, the Secretary of Education would be authorized to make grants to colleges, universities, community colleges, and junior colleges to conduct summer humanities institutes for elementary and secondary school teachers. The grants to institutions would include funds for tuition, fees, administration, living expenses, and stipends for participants. The institutes would be restricted to topics in the humanities, including both modern and classical language, literature, history and philosophy, and language arts and social sciences. The bill would guarantee that, if funding reached a certain minimum level, each State would have at lest one institute. The sponsors of the seminars would be required to involve classroom teachers in the planning and development of the seminars.

When I first introduced this legislation in the 98th Congress, only humanities teachers were allowed to participate in the seminars. I thought the seminars were a way to improve teachers' mastery of their subjects, and that they should be limited to those who taught the subjects. Since then, however, I have changed its focus to open the seminars to all teachers, not just teachers of the humanities. I realize that this approach goes against the tide—that most teacher training efforts stress improving a teacher's subject matter skills or skills in her field. However, I believe that a mathematics teacher and his or her students could also benefit if the teacher knows something about the American Revolution, or has spent a summer reading Shakespeare. All students benefit if they share some knowledge of what makes us human. My program will not teach a math teacher more math, but it might make a math teacher a better teacher.

It's also important to remember that it's the humanities which teach us to read, to write, and to communicate with others clearly. The jobs of the 21st century will require strong reading and writing skills, and minimizing the importance of the humanities will weaken Americans students' ability to compete internationally. In a memorandum to his undergraduate students at Harvard University, Prof. Robert Reich advised,

> The intellectual equipment needed for the job of the future is an ability to define problems, quickly assimilate relevant data, conceptualize and reorganize the information, make deductive and inductive leaps with it, ask hard questions about it, discuss findings with colleagues, work collaboratively to find solutions, and then convince others. To the extent [these sorts of skills] can be found in universities at all, they're more likely to be found in subjects such as history, literature, philosophy, and anthropology—in which students can witness how others have grappled for centuries with the challenge of living good and productive lives.

It's also important to recognize the vital link between learning about our democracy and participating in it. In 1986, only 19 percent of 18- to 20-year-olds voted; in 1988, a Presidential election year when we would expect more Americans to vote, only about 36 percent of 18- to 25-year-olds voted. Young people in this country are cavalier about the privilege of voting because they are ignorant of our history and how we became a democracy. Young people generally lack insight into the struggles leading up to the Revolutionary War; the history of the Civil War; the sacrifices of their grandparents during the Second World War; or the struggles—domestic and international—caused by the war in Vietnam. An historian recently commented, "Our citizens are in danger of becoming amnesiacs if you maintain that history is collective memory." I fear that young Americans are already amnesiac about the responsibilities of citizenship—the importance of each man and woman voting whenever he or she has that opportunity. Thomas Jefferson, in justifying the inclusion of the study of history in his plan for education, said

> History, by apprising them of the past, will enable them to judge of the future; it will avail them of the experience of other times and other nations; it will qualify them as judges of the actions and designs of men; it will enable them to know ambition under every disguise it may assume; and knowing it, to defeat its views.

Nothing else matters—not rising SAT scores, more science majors, or even increased international competitiveness—if our young people cannot carry on the ideals of democracy.

I feel as strongly about accountability in education as any of my colleagues. I will confess, however, that my bill will probably be criticized because it is not sufficiently targeted; because it won't pay off in the short term to train a math teacher in Shakespeare or a science teacher in how the Constitution was written. I don't think the results of the seminars I propose will be easily quantifiable, at least not in the short run. But I am convinced that these seminars will make an immediate difference in the lives of teachers and will finally make a difference in the quality of education of American students.

Mr. President, I ask unanimous consent that the text of my bill be printed in the RECORD.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1326

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Humanities Excellence and Teacher Training Act of 1991".

SEC. 2. FINDINGS AND PURPOSE.

(a) FINDINGS.—The Congress finds that—

(1) it is in the national interest to have citizens who are broadly educated, and it is in the national interest of our Nation's schools to prepare young people for active participation in community life and a democratic society, both of which are not possible without knowledge and understanding of the humanities;

(2) studies in the humanities are essential to ensure that our Nation's children acquire the necessary conceptual and analytical skills and have an appreciation for the traditions and values of Western and non-Western cultures; and

(3) it is necessary to improve the quality of instruction in the humanities, and it is not possible to accomplish this goal unless our Nation's teachers have the necessary background and training in the humanities.

(b) PURPOSE.—It is the purpose of this Act to authorize a national program for improving the quality of education by making grants to institutions of higher education or consortia thereof to enable such institutions or consortia to establish and operate teacher institutes for the enhancement of the humanities knowledge of private and public elementary and secondary school teachers.

SEC. 3. PROGRAM ESTABLISHED.

(a) IN GENERAL.—The Secretary shall make grants to institutions of higher education or consortia thereof having an application approved under subsection (b), to enable such institutions or consortia to conduct summer humanities training institutes for the professional development of public and private elementary and secondary school teachers.

(b) AWARD BASIS.—

(1) IN GENERAL.—Grants made pursuant to this section shall be awarded on a competitive basis as measured by the excellence of the program proposed in the application submitted pursuant to section 4, taking into consideration such elements as library resources, faculty achievement, and humanities learning facilities.

(2) SPECIAL RULE.—If the amount appropriated pursuant to the authority of section 6 is greater than $10,000,000 in any fiscal year, the Secretary shall award at least one grant in accordance with the provisions of this Act to an institution of higher education in each State.

(c) USE OF GRANT.—Grants awarded under this Act shall be used for—

(1) the costs associated with enrollment in an institute, including tuition, fees, and living expenses;

(2) a stipend for institute participants; and

(3) the costs of establishing and operating an institute.

(d) EQUITABLE DISTRIBUTION OF GRANTS.—In making grants under this section the

United States shall ensure, to the maximum extent consistent with the purpose of this Act, an equitable distribution of institutes assisted under this Act among States and within States.

SEC. 4. APPLICATION.

(a) IN GENERAL.—Any institution of higher education or consortium thereof desiring to receive a grant under this Act shall submit an application to the Secretary at such time, in such manner, and containing such information and assurances as the Secretary may reasonably require.

(b) CONTENTS.—Each application submitted pursuant to subsection (a) shall—

(1) contain a description of the proposed program of instruction, and the extent to which eligible classroom teacher participants will be involved in the planning and design of the institute;

(2) contain an estimate of the number of teachers to attend the institute, and describe the selection procedures;

(3) describe the nature and location of existing facilities to be used in the operation of the institute;

(4) specify the teaching and administrative staff for the institute, including the involvement of faculty from both the humanities and education disciplines and elementary and secondary school teachers;

(5) specify the academic credit, if any, to be awarded for the completion of the course of study to be offered at the institute;

(6) provide a schedule of stipends to be paid to teacher participants in the institute, including—

(A) an allowance for subsistence and other expenses for teachers attending the institute; and

(B) a stipend for participating in the seminar; and

(7) contain assurances that there will be no duplication of Federal assistance provided to institute participants; and

(8) provide adequate assurances that teachers from a State who wish to participate in an institute's activities will be selected on the basis of—

(A) recommendations from a principal or other supervisory official ; or

(B) a demonstrated interest in the humanities discipline or disciplines studied at the institute.

(c) SPECIAL RULE.—No grants shall be made or contracts entered into under this Act except to such extent, or in such amounts, as may be provided in the appropriation Acts.

SEC. 5. DEFINITIONS.

For the purposes of this Act—

(1) the term "humanities" means both modern and classical languages, literature, history, philosophy, and language arts, and social studies;

(2) the term "institution of higher education" has the same meaning given to such term by section 1201(a) of the Higher Education Act of 1965;

(3) the term "Secretary" means the Secretary of Education;

(4) the term "State" means each of the several States, the Commonwealth of Puerto Rico, the District of Columbia, Guam, American Samoa, the Virgin Islands, the Northern Mariana Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, and Palau (until the Compact of Free Association is ratified); and

(5) the term "State educational agency" has the same meaning given such term by section 1471(23) of the Elementary and Secondary Education Act.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated $50,000,000 for fiscal year 1992, $60,000,000 for fiscal year 1993, and $70,000,000 for fiscal year 1994 to carry out the provisions of this Act.●

By Mr. BINGAMAN (for himself, Mr. NUNN, Mr. HOLLINGS, Mr. GORE, Mr. MITCHELL, Mr. WIRTH, Mr. KENNEDY, Mr. ROCKEFELLER, Ms. MIKULSKI, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1327. A bill to provide for a coordinated Federal program that will enhance the national security and economic competitiveness of the United States by ensuring continued U.S. technological leadership in the development and application of national critical technologies; to the Committee on Commerce, Science, and Transportation.

NATIONAL CRITICAL TECHNOLOGIES ACT

● Mr. BINGAMAN. Mr. President, today I am introducing the National Critical Technologies Act of 1991. This bill is part of a package of five bills Senator HOLLINGS, Senator NUNN, Senator GORE, and I are introducing to maintain U.S. technological leadership and improve the competitiveness of our manufacturing sector. We are pleased to be joined by a number of our colleagues as original cosponsors of this legislation, including Senators MITCHELL, WIRTH, ROCKEFELLER, KENNEDY, MIKULSKI, DIXON, LEVIN, DODD, SHELBY, DASCHLE, LIEBERMAN, and RIEGLE.

The bills represent a joint effort by a group of us on the Armed Services and Commerce Committees to respond to the adverse trends in our technological and manufacturing competitiveness, trends that have been documented in numerous recent Government and private sector reports.

It has been a pleasure to work with Senators HOLLINGS, NUNN, and GORE on this package of legislation. We all realize that if we are going to make progress in reversing our declining competitiveness, the Armed Services and Commerce Committees need to work together. We hope our example will carry over to the executive branch as well. DOD and the civilian agencies must work together, because technologies and manufacturing capabilities we are trying to foster in this package of legislation are critical both to our national security and to our economic well-being.

There is a broad and international consensus on which generic technologies are driving economic growth, and Japan, Europe, and other foreign governments are systematically pursuing leadership in these critical technologies. Many of these same technologies are vital to future weapons systems. A recent report from the private sector Council on Competitiveness entitled "Gaining New Ground" warned that the U.S. position in many critical technologies is slipping and, in some cases, has been lost altogether. The council concluded that, "unless the nation acts immediately to promote its position in critical generic technologies, U.S. competitiveness will erode further, with disastrous consequences for American jobs, economic growth and national security." This act and Senator HOLLINGS' companion bill, the Technology Strategy Act of 1991, both of which build on legislation we have enacted over the last 5 years, are designed to help stem that decline in U.S. technological leadership.

U.S. TECHNOLOGICAL DECLINE

Technology is the future. But for the first time, America's premier place in that future seems in doubt. The country that developed the computer, tamed the atom, and explored the moon is losing one technology-based industry after another to foreign competition. The country that pioneered mass production, machine tools and industrial robots now invests less in plant and equipment than Japan, with a GNP only 60 percent that of ours.

American stores are filled with products invented in the United States but no longer produced here. The ubiquitous video cassette recorder is just one. Although an American company—Ampex Corp.—pioneered the technology, 95 percent of the world's VCR's are now built by Japanese producers. The same story can be told of many other products: televisions, audio tape recorders, cassette disks, liquid crystal display technology, silicon wafers. The list goes on.

In other technologies that the United States pioneered, we are now a distant follower: numerically controlled machine tools, robotics, optoelectronics, and memory chips. Many experts believe that the American computer and software industries are following the same downward trend.

Ironically, the United States remains strong in science, and American firms continue to make most of the world's major technological breakthroughs. But our inability to follow through allows Japan and other rivals to produce the commercial products the world wants. Although the United States still holds key markets, Japanese firms on average can turn technology into new products and processes both more quickly and more cheaply than United States firms.

OBSOLETE FEDERAL POLICY

The strength of U.S. industry in science is due in good part to Federal policy: Following World War II, the Federal Government mapped out a technology course for itself that we continue to follow today. Drawing on the historical thesis of manifest destiny—that America defined itself by constantly pushing out to the frontiers—post-war policymakers such as Vannevar Bush argued that the frontiers of science offered another way for the country to define itself. The result-

ing policy was twofold: support for basic science, and for mission-oriented technology development—primarily defense technology.

That approach, aimed at cultivating the technological frontier, has been extremely successful in many respects. The United States has an unparalleled university research system, a vast pool of scientific talent, and a flexible and efficient government structure for funding cutting-edge research. America leads the world in most areas of basic research: physics, chemistry, astronomy, microbiology, and biochemistry.

America's science policy was well-suited to the postwar era, when U.S. industry overwhelmingly dominated world markets, and it ushered in a period of phenomenal scientific achievement. But three major changes have rendered that approach less effective in an era of strong international competition.

Foreign rivals: The most important change has been the emergence of foreign firms with the ability to adopt and refine technologies developed elsewhere, something we were very good at prior to World War II. The United States has made most of the major breakthroughs in electronics, and yet Japan increasingly dominates that industry. How? Largely by licensing or reverse-engineering our technology, and then developing it into products that are higher-quality and cheaper than anything made in the United States.

The inevitable ease with which technological discoveries can be imitated has taken away much of the advantage once enjoyed by American firms with a new invention. Now, the greatest competitive advantage lies not with those who make the original discovery, but with those who perfect its manufacture.

Technology policy abroad recognizes this reality. Japan focuses on training large numbers of engineers, promoting investment in plant and advanced manufacturing equipment, speeding technology diffusion through cooperative R&D, and assisting small and medium-sized manufacturers through a public network of 170 manufacturing extension centers. Similarly, Germany has an elaborate system of vocational education, a network of applied research and technology transfer centers, and a well developed system of industrial standardization—all designed to promote engineering and manufacturing excellence.

By contrast, our own technology policy cultivates the scientific frontier, largely ignoring downstream issues of engineering and manufacturing. But at what cost? Michael Dertouzos, the chairman of MIT's Commission on Industrial Productivity, recently summed it up. He said, "[in the U.S.] we value creativity and innovativeness, and we don't value production. But the money is not in invention, it's in production." Others have pointed to a publish or perish culture in this country which contrasts to a patent or perish culture in Japan.

Fewer Defense "spinoffs": In addition to basic science, the United States could once rely on applied research on technologies important to the Department of Defense and other mission agencies to yield important civilian applications. For many years, military and space R&D spawned emerging technologies such as computers, semiconductors, and jet-propelled aircraft. DOD was by far the largest market for these technologies in their initial stages. DARPA, in particular, supported leading-edge R&D in dual-use technologies from advanced materials to electronics computing that yielded enormous benefits to the civilian economy. Similarly, the Office of Naval Research and the corresponding offices in the Army and Air Force supported a broad range of research in fields as diverse as economics and aeronautics.

Over the past 20 years, however, defense R&D has been less effective at fostering commercial technology development. First of all, DOD narrowed its vision as an R&D agency at the time of the Vietnam War. As a result of the Mansfield amendment to the fiscal year 1970 Defense Authorization Act, which directed DOD to concentrate on research with direct defense applications, DOD withdrew from supporting many areas, particularly in our universities. Unfortunately, this was a divorce sought by both parties at the time. While the Mansfield amendment was soon repealed, its legacy has lasted. DOD support of technology base R&D has diminished from over 20 percent of its overall research budget in the late 1960's to less than 10 pecent today. In real terms the DOD technology base did not grow in the 1980's while the rest of the research budget, devoted to the development of specific weapons systems, rapidly increased.

In a sense our legislation represents a call on DOD to again broaden its horizons, to recognize that our national security is inextricably linked to the health of our industrial sector, especially at a time when DOD is no longer the dominant customer of high technology products it once was.

Experts agree that the much larger and more dynamic commerical marketplace will increasingly drive the strategic technologies of the future. We will see every more spin-ons to the defense sector in the years ahead and we should be fostering the integration of our civilian and military sectors, not fighting the integration as much of our current defense acquisition system does. And because may U.S. industries critical to national defense have been severely hurt by foreign competition, the Pentagon now finds itself dependent on foreign suppliers for technologies such as electronics components, semiconductor manufacturing equipment, and machine tools. In short, American industry's competitiveness problem has become a genuine threat to national security.

Foreign technology Development: There has been a third major change. Foreign rivals, having out-manufactured us using our own technological breakthroughs are increasingly developing their own. And because both their governments and industry direct their effort almost entirely to the core generic technologies driving economic growth, their investments in that area now exceed our own.

The contrast with Japan is striking to me. Japan is now spending—at the current exchange rate—about $85 billion annually on R&D. About $70 billion of that comes from Japanese industry, almost the same as American industry invests from its own resources despite the far greater size of our economy. About $14 billion is invested by the Japanese Government in civilian R&D and much of this is very closely coupled with the needs of Japan's private sector. We, as a government, spend about the same fraction of GNP on civilian R&D, but unfortunately with much less coupling to private sector needs and much more emphasis on what the Council on Competitiveness has termed national prestige projects. Finally, the Japanese spend less than $1 billion annually on defense R&D, far less than the $40 billion we invest in DOD and DOE weapons research.

One can see a similar, but somewhat less pronounced pattern in European private and public R&D investments. But with these R&D spending patterns we should not be surprised to see technological innovation accelerating abroad. And these patterns suggest that any American effort to meet the foreign technological challenge must involve industry as well as Government. Both are currently underinvesting in long-term research in core generic technologies in comparison with our competitors abroad.

There is strong agreement about what these core technologies are: improvements in advanced materials, electronics and information systems, and engineering and manufacturing are driving innovation and growth in every industry. The National Critical Technologies Panel, a White-House chaired Government-industry committee, issued its first report in April. The 22 generic technologies that the panel identified as critical to future economic prosperity and national security are virtually identical to those identified by the Council on Competitiveness, the Department of Commerce, the Department of Defense, and other United States and foreign technolgy organizations. Most of these critical technologies are not dramatic breakthroughs, such as high temperature

superconductivity, but rather incrementally evolving technologies such as materials processing and flexible manufacturing.

There is also widespread agreement that the United States is losing ground in many of these technologies—irreversibly so in some cases—because of American industry's relative weakness in turning laboratory technology into commercial products and processes quickly and cheaply. The Council on Competitiveness' recent report says it well:

> Leadership in technology is closely linked to leadership in commercial markets * * *. Our national technology priorities must address this marketplace reality.

In contrast to Japan and Europe, the United States has not systematically supported precompetitive research in critical generic technologies. We have done so only to the extent such research coincides with the needs of our mission agencies. In agriculture, in health, in aeronautics, our system generally works. But unfortunately it produces large gaps.

The fundamental problem is rooted in a mistaken application of laissez-faire doctrine to technology policy. Adam Smith himself recognized that in the case of technologies and industries important to national security, nations could not afford to rely solely upon the invisible hand.

Technology is different from commodities like oil. No country has a natural advantage when it comes to computer chips and superconducting alloys. It must be created—through generous support for R&D that is too risky for industry to undertake alone. And that means a direct role for government.

It does not mean government picking winners and losers among individual companies. The critical generic technologies have largely chosen themselves. The question for this Nation is how to ensure that American firms are among the global competitors. That involves providing the necessary infrastructure for American industry in a rational and coordinated approach.

Of the leading industrial countries, the United States alone still fails to provide systematic, coherent support for precompetitive technology development. As market share for U.S. producers continues to shrink, it is time to reexamine our approach.

NATIONAL CRITICAL TECHNOLOGIES ACT OF 1991

The National Critical Technologies Act of 1991 is designed to bolster our country's technology position in four broad ways.

Technology management: First, the act provides for the coordinated management of Federal activities in critical technologies, with direct industry input into that management process. Under the act, the Office of Science and Technology Policy (OSTP)—in close consultation with industry advisory committees—would develop a strategic "roadmap" for each critical technology or set of related critical technologies identified by the National Critical Technologies Panel. Each roadmap would represent a national strategy for maintaining or regaining a leadership position in the development of that technology. The administration's high-performance computing plan—developed at Senator GORE's initiative and the only crosscutting technology plan yet produced by the current interagency process—represents a model for other technology roadmaps required by this act. My understanding is the administration agrees and is already at work on similar plans for advanced materials, biotechnology and manufacturing.

The act also charges OSTP with coordinating technology development activities within the Federal Government, and—in cooperation with industry—periodically evaluating the progress made toward meeting the goals of the roadmap. In short, the act sets up a framework for improved technology management both across Federal agencies and between government and industry.

Technology development: Second, the bill expands the industry-driven component of our Federal research and development effort in critical technologies, to increase its relevance for commercial applications. The act requires the mission agencies, including DOD's Defense Advanced Research Projects Agency (DARPA), to establish "partnerships" with industry to conduct generic, precompetitive R&D. Industry would take the lead in most of these efforts and contribute half the cost. Last year Congress appropriated $50 million to DARPA to fund industry consortia doing R&D in precompetitive technologies. DARPA has indicated it plans to use that money to support partnerships in six areas—optoelectronics, static random access memory chips, superconducting electronics, ceramic fibers, scalable computer systems, and linguistic data processing. All of these are areas selected by DOD and OSTP as critical to the Nation in the long run. The administration eliminated fiscal year 1992 funding for this important program, however. This act reinstates the program and authorizes $100 million for DARPA to expand it. The bill also authorizes $110 million—up from $35 million in fiscal year 1991—for the Department of Commerce's Advanced Technology Program, which supports industry-led projects to develop precompetitive technology. The total authorization for these R&D partnerships is $480 million.

The rationale for these authorizations is straightforward. Just as the Federal Government supports basic research, it must bear part of the burden of exploring risky industrial technologies, which often provide large public benefits but only small private returns. The partnership approach serves to direct public funds to areas that industry itself thinks will have the highest payoffs, but where the benefits would be difficult for individual firms to capture. The partnership approach also guarantees competition in applying technology to meet the needs of the marketplace since partnerships involve at least two and preferably more firms in the precompetitive research.

Technology application: Third, the act supports regional critical technology application centers to help U.S. firms commercialize and apply critical technologies more rapidly and less expensively. Organized around the geographic concentrations of firms that exist in nearly all States—such as autos in Detroit, metalcasting in Birmingham, or electronics in Phoenix—CTAC's will address the "technology infrastructure" needs of firms in the same industry and geographic region. This infrastructure, which is typically lacking for all but the largest U.S. firms, includes (generic) applied R&D and a range of shared technology services: equipment testbed and scale-up facilities, prototype test and development, technical assistance in design and management, market monitoring services, quality testing and standard certification, and education and training. By drawing together firms from complementary sectors, this infrastructure will also strengthen member firms through closer linkages to their customer and supplier firms—a major strength of the Japanese production system.

In keeping with the goal of enhanced technology commercialization and application, industry members will direct the CTAC and provide 40 percent of the cost. State and university participants will contribute another 30 percent. Federal funds will cover the remaining share, not to exceed 30 percent, for a maximum of 6 years.

CTAC's will be selected competitively through a process prescribed by the Secretary of Defense, working closely with the Secretary of Commerce. Selection criteria include the potential contribution of a CTAC to the ability of member firms to compete nationally and internationally, and—as a measure of that likely contribution—the degree of involvement by industry. Where possible, Federal funds will go to sustain or enhance existing programs, rather than to create new ones.

Although some of the building blocks already exist, CTAC's nevertheless address an important need that is currently not being met. About half of the $500 million that States now spend on technology programs goes to industry-university centers—often called "centers of excellence." These centers are indeed excellent, but most of them are

university-dominated and the emphasis is on fundamental research. Industry participants are primarily large firms, and their involvement is generally quite limited. In short, most industry-university centers have enhanced our existing strength in breakthrough innovation but done little to improve commercialization and application—that is, follow through.

The States have developed isolated programs to enhance technology follow through. But those efforts lack sufficient scale and scope, often focusing on a particular need—say, for seed capital or incubators—rather than the range of impediments to technology commercialization and application.

Successful models do exist. Most notable in this country are Ohio's Thomas Edison Centers, designed to enhance the State's existing strengths in materials, manufacturing, and biotechnology. There are nine centers, located where industry and related university activity are concentrated—polymers in Akron, materials technology in Dayton, industrial systems in Toledo, et cetera. The Edison Centers are diverse, but what distinguishes them, overall, is the strong level of industry involvement, and the resulting emphasis on technology application. For example, the Edison Welding Institute in Columbus is operated by its 228 industrial members. The institute conducts research both in-house and through Ohio State University, delivers customized education and training services, and provides engineering services and other assistance with technology application.

Europe provides useful models as well. With a relatively small—pre-1992—domestic market, European firms long ago faced the need to sell in world markets. As a result, Europe has developed a sophisticated set of programs for providing a technology infrastructure, particularly for small and medium sized firms. Programs in Germany, northern Italy, Denmark and elsewhere are remarkably parallel in both their structure—decentralized, sector-based programs that are industry-driven—and their focus—on applied R&D and a comprehensive set of technology services related to product design, market monitoring, education and training, and problem-solving.

Michael Porter's recent book, "The Competitive Advantage of Nations," stresses the regional character of technology development: firms in particular industries tend to cluster geographically—with their customer and supplier firms and with firms in related sectors. Porter says that what makes these geographically concentrated industries competitive has little to do with natural endowment and much to do with public and private investment in specialized factors of production. Critical technology application centers, like the Edison Centers and European programs, provide a way for government and industry to make those much needed investments.

Foreign technology monitoring: Finally, the National Critical Technologies Act expands efforts by U.S. industry and government to monitor and exploit foreign technology advances. Currently, American firms are slow to learn of and adopt technological advances made outside the United States, in contrast to Japan, where government and industry are both organized for global scanning.

The act provides matching funds for industry associations and professional societies to establish an office in Asia or Europe to monitor developments in one or more critical technologies. In addition to disseminating information on foreign advances in R&D and technology application, these offices would identify opportunities for technology transfer and joint ventures involving U.S. firms. This provision is, in part, an effort to encourage U.S. industry associations to be more aggressive in promoting technology transfer and commercialization.

The act also provides for coordination of scanning activities within the Federal Government, by establishing a central clearinghouse in the Department of Commerce for foreign commercial technology monitoring and assessment, and a second clearinghouse in DOD for foreign defense technology monitoring and assessment. Although many Federal agencies routinely collect and disseminate information on foreign technology, the current process is both duplicative and incomplete.

Conclusion: The rationale for the National Critical Technologies Act and Senator HOLLINGS' companion bill, the Federal Technology Strategy Act, can be summed up in a paragraph from the Council on Competitiveness' recent report, "Gaining New Ground":

> The American people and its leaders have too readily assumed that preeminence in science automatically confers technological leadership and commercial success as well. It does not. America assumed that government support for science would be adequate to provide for technology. It is not. In too many sectors, America took technology for granted. Today, the nation is paying the price for that complacency.

The solution to our competitive problems is not to divert resources from science and thereby risk losing our longstanding advantage. But if the United States is to regain its leadership in technology, the Federal Government must step in at other key points where private markets cannot or do not function: in exploring long-term, high-risk industrial R&D at precompetitive stages; in developing the infrastructure of generic R&D and shared services that supports technology application in particular geographic regions; and in monitoring foreign advances in technology development. Like basic research, these are activities that often provide large benefits to society but only small returns to individual firms.

But although limited Federal support is justified, it must be provided in close partnership with industry. Industry involvement in technology development is necessary in order to direct public funds to high-risk areas that industry itself thinks will have the highest payoffs. Similarly, government's role in technology application and foreign technology monitoring is to complement private resources, so as to gain the greatest leverage for Federal funds and to ensure that government dollars do not displace private dollars.

There is precedent for this kind of government-industry cooperation. In 1915, U.S. aviation enthusiasts warned that Europeans would be the first to commercialize the Wright Brothers' invention. At President Teddy Roosevelt's urging, Congress created the National Advisory Committee on Aeronautics, NASA's predecessor, which gave a huge boost to civil aviation. Among other things, NACA provided large wind tunnels that none of the struggling aircraft companies could afford.

More recently, SEMATECH has demonstrated the benefits of a government-industry partnership to develop generic commercial technology. One of SEMATECH's accomplishments has been to strengthen significantly our domestic semiconductor equipment industry. As evidence of that, Motorola's new chip production plant in Austin, TX, will have 80 percent United States equipment; when the plans for the plant were drawn up several years, they called for 80 percent Japanese equipment.

Unfortunately, government-industry partnerships such as NACA and SEMATECH are the exception rather than the rule. Our current national policies and priorities do not routinely or adequately address the commercial technology challenge facing the United States. That in turn poses a risk to national security.

The National Critical Technologies Act of 1991 and the Federal Technology Strategy Act of 1991 provide a framework for addressing this dual challenge. And they do so with sensitivity to the essential role of private markets. The alternative is further technological erosion, with significant damage to jobs, economic growth, and national defense.

Mr. President, I ask unanimous consent that the text of the National Critical Technologies Act appear at the end of my statement.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1327

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be referred to as the "National Critical Technologies Act of 1991".

SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.
Sec. 3. Findings.
Sec. 4. Purposes.
Sec. 5. Definitions.

TITLE I—FEDERAL MANAGEMENT OF NATIONAL CRITICAL TECHNOLOGIES

Sec. 101. Requirement for biennial multiyear national critical technology strategic road maps.
Sec. 102. Submission of initial road maps.

TITLE II—FEDERAL SUPPORT FOR DEVELOPMENT OF CRITICAL TECHNOLOGIES

PART A—DEPARTMENT OF DEFENSE

Sec. 201. Critical Technologies Research and Development Partnerships.
Sec. 202. Cooperative agreements and other transactions relating to advanced research projects.
Sec. 203. Independent research and development.
Sec. 204. Authorization of appropriations.

PART B—OTHER DEPARTMENTS AND AGENCIES

Sec. 221. Department of Commerce Advanced Technology Program.
Sec. 222. Department of Energy Critical Technology Partnerships.
Sec. 223. National Aeronautics and Space Administration Critical Technology Partnerships.
Sec. 224. Department of Health and Human Services National Critical Technology Partnerships.

PART C—ADMINISTRATIVE PROVISIONS RELATING TO CRITICAL TECHNOLOGY PARTNERSHIPS

Sec. 231. Lead institution.
Sec. 232. Partnership proposals.
Sec. 233. Selection of Partnerships.
Sec. 234. Protection of information.
Sec. 235. Other assistance to Partnerships.

PART D—ADDITIONAL DEFINITIONS

Sec. 241. Definitions.

TITLE III—CRITICAL TECHNOLOGY APPLICATION CENTERS

Sec. 301. Assistance for critical technology application centers.
Sec. 302. Authorization of appropriations.

TITLE IV—FOREIGN TECHNOLOGY MONITORING AND ASSESSMENT

Sec. 401. Findings.
Sec. 402. Purposes.
Sec. 403. Coordination of the foreign science and technology information activities of the Federal Government.
Sec. 404. Clearinghouse of Foreign Commercial Technology Monitoring and Assessment.
Sec. 405. Overseas Foreign Critical Technology Monitoring and Assessment Grant Program.
Sec. 406. Clearinghouse of Foreign Defense Technology Monitoring and Assessment.
Sec. 407. Utilization of National Science Foundation Foreign Technology Evaluation Program.

SEC. 3. FINDINGS.

Congress makes the following findings:

(1) It is essential that the United States remain at least competitive in the development and application of technologies that are critical to national security or economic prosperity, as identified by the National Critical Technologies Panel established pursuant to section 601 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6681).

(2) Despite continued United States leadership in science, the United States is experiencing an erosion of market share and a loss of leadership in numerous critical technologies.

(3) The enormous amount being expended by the Federal Government for research and development, including approximately $75,000,000,000 in fiscal year 1992, is not being managed effectively to ensure that sufficient progress is made in the development and application of national critical technologies.

(4) As United States industry is the primary decisionmaker regarding whether and how technology is to be applied, it is necessary for United States industry to be able effectively to influence the allocation of Federal Government spending on research and development of national critical technologies.

(5) The Federal Government must rely increasingly on the civilian technology and industrial base to meet the national security needs of the United States (notwithstanding that the current Department of Defense acquisition process imposes significant obstacles to the ability of that department of the Federal Government to meet such needs through reliance on that base).

(6) The need for such reliance on the civilian technology and industrial base results principally from the growing convergence of military and commercial technologies and from the increasing tendency for such technologies to be applied to serve the much larger and more vibrant commercial marketplace before being applied to meet military needs.

(7) As a result of the growing accessibility of the basic factors of production in global markets, an industry's ability to compete internationally is increasingly determined by its possession of or access to specialized resources and capabilities.

(8) Because firms in a particular industry tend to concentrate geographically, the international competitiveness of that industry can be enhanced by encouraging the ready availability of necessary specialized resources and capabilities in the region where the industry is located.

(9) Limited Federal Government action to encourage the development of such locally based resources and capabilities is necessary when the private market will not or cannot independently make the investments or take other actions necessary to develop such resources and capabilities.

SEC. 4. PURPOSES.

The purposes of this Act are as follows:

(1) To increase Federal Government support for efforts to identify, manage, develop, and apply national critical technologies.

(2) To provide for an appropriate Federal role in the development of each national critical technology and for the coordination of Federal Government activities contributing to the development of each such technology.

(3) To encourage research and development of the national critical technologies through research contracts, research partnerships, and other cooperative agreements entered into by United States industry with the Department of Defense, the Department of Commerce, the Department of Energy, the National Aeronautics and Space Administration, and the Department of Health and Human Services.

(4) To promote the development and sustainment of the international competitiveness of industries in various regions of the United States through the establishment of regional Critical Technology Application Centers that assist the industries in such regions to use one or more national critical technologies for commercial purposes.

(5) To facilitate the coordination of monitoring and assessment of foreign activities in national critical technologies and the dissemination of information on such activities to interested parties in the Federal Government, United States industry, and other interested groups.

SEC. 5. DEFINITIONS.

In this Act:

(1) The terms "Federal laboratory" and "laboratory" have the meaning given the term "laboratory" in section 12(d)(2) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).

(2) The term "critical technology" means—

(A) a national critical technology;

(B) an emerging technology; and

(C) a defense critical technology.

(3) The term "national critical technology" means a technology that—

(A) appears on the list of national critical technologies contained in a biennial report on national critical technologies submitted to Congress by the President pursuant to section 603(d) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683(d)); and

(B) has not been expressly deleted from such list by such a report subsequently submitted to Congress by the President.

(4) The term "emerging technology" means a technology that—

(A) appears on an emerging technologies list submitted to Congress by the Secretary of Commerce; and

(B) has not been expressly deleted from such list by an emerging technologies list subsequently submitted to Congress by the Secretary.

(5) The term "defense critical technology" means a technology that—

(A) appears on the list of critical technologies contained in an annual defense critical technologies plan submitted to Congress by the Secretary of Defense pursuant to section 2508 of title 10, United States Code; and

(B) has not been expressly deleted from such list by such a plan subsequently submitted to Congress by the Secretary.

(6) The term "dual-use critical technology" means a critical technology that has military applications and nonmilitary commercial applications.

(7) The term "defense-specific critical technology" means a defense critical technology that is used solely for military purposes and is unlikely to have any foreseeable nonmilitary commercial applications.

(8) The term "commercial critical technology" means a critical technology that is not a defense-specific critical technology.

TITLE I—FEDERAL MANAGEMENT OF NATIONAL CRITICAL TECHNOLOGIES

SEC. 101. REQUIREMENT FOR BIENNIAL MULTIYEAR NATIONAL CRITICAL TECHNOLOGY STRATEGIC ROAD MAPS.

The National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6601 et seq.) is amended by adding at the end the following new title:

"TITLE VII—NATIONAL CRITICAL TECHNOLOGY STRATEGIC ROAD MAPS

"REQUIREMENT FOR STRATEGIC ROAD MAPS

"SEC. 701. (a) The President, acting through the Federal Coordinating Council for Science, Engineering, and Technology, shall develop, issue, and submit to Congress, at least once every two years, a multiyear strategic road map for each national critical technology (hereafter in this title referred to as a 'national critical technology strategic road map' or 'strategic road map').

"(b) Each strategic road map shall cover at least the four fiscal years following the fiscal year in which the strategic road map is submitted to Congress and may cover more than one national critical technology.

"(c) In developing a strategic road map, the Council shall consult with appropriate representatives of United States industry interested in the national critical technology or technologies covered by the strategic road map and with the appropriate national critical technologies advisory committee established pursuant to section 703.

"CONTENT OF STRATEGIC ROAD MAP

"SEC. 702. (a) Each national critical technology strategic road map shall—

"(1) provide an assessment of the current strengths and weaknesses in the national capability of the United States to develop and apply the technology or technologies covered by the strategic road map and the sources of such strengths and weaknesses, including an assessment of the current activities of United States industry, institutions of higher education in the United States, the Federal Government, and State and local governments which enhance or hinder the development and application of such technology or technologies;

"(2) in light of such assessment, provide guidance for the conduct and coordination of the activities of the Federal Government that are directed toward enhancing the development or application of the national critical technology or technologies covered by the strategic road map;

"(3) specify the goals and priorities of such activities;

"(4) provide guidance for the appropriate roles of each department and agency of the Federal Government, United States industry, and institutions of higher education in the United States in implementing the strategic road map; and

"(5) provide guidance for increasing access to foreign sources of the technology or technologies covered by the strategic road map through international cooperation.

"(b) Each national critical technology strategic road map shall identify the joint actions that are feasible and desirable for departments and agencies of the Federal Government to take—

"(1) to ensure that the results of federally funded and federally conducted research and development of the national critical technology or technologies covered by the strategic road map are appropriately disseminated to United States industry;

"(2) to encourage and enhance the use of such results by United States industry; and

"(3) to provide for the education and training of personnel engaged in research and development of such national critical technology or technologies.

"(c) Each national critical technology strategic road map for a national critical technology or technologies (other than the first strategic road map covering such technology or technologies) shall include a discussion of the achievements of the activities conducted pursuant to the preceding strategic road map issued pursuant to section 701. The discussion shall include—

"(1) an analysis of the progress made toward achieving the goals and objectives of the strategic road map;

"(2) a summary of the budgets of the departments and agencies of the Federal Government for research and development of such national critical technology or technologies for the first two fiscal years covered by such preceding strategic road map; and

"(3) any additional actions or recommendations for legislation necessary to carry out the provisions of this title and the provisions of such strategic road map.

"NATIONAL CRITICAL TECHNOLOGIES ADVISORY COMMITTEES

"SEC. 703. (a) The Director of the Office of Science and Technology Policy shall establish one or more national critical technologies advisory committees to ensure that expert advice on each national critical technology is available to the Federal Coordinating Council for Science, Engineering, and Technology for the purposes of carrying out the responsibilities of the Council under this title.

"(b) Each such advisory committee shall consist of members appointed by the Director from among representatives of United States industry, members of industry associations, representatives of labor organizations in the United States, members of professional and technical societies in the United States, and other persons who are qualified to provide the Council with advice and assistance in the development of one or more national critical technology strategic road maps.

"(c) The Director shall designate a member of each advisory committee to serve as the chairman of the advisory committee.

"(d) Each advisory committee shall, for each national critical technology within the purview of such committee, provide the Council with its independent assessment of—

"(1) the goals and priorities for the development and applications of that national critical technology, including an assessment of the extent to which the achievement of such goals and priorities will ensure continued United States leadership in that technology;

"(2) the specific programs and activities that the Federal Government must conduct as complements to the activities of United States industry in order to accomplish such goals and priorities;

"(3) the progress made in implementing the national critical technology strategic road map for that technology;

"(4) any need to revise such strategic road map;

"(5) the balance between the components of the strategic road map; and

"(6) any other issues identified by the Director.

"(e) A national critical technologies advisory committee shall assist in the development of, and shall review, the first national critical technology strategic road map for each national critical technology within the purview of such advisory committee before that strategic road map is submitted to Congress. With regard to that strategic road map, the advisory committee shall provide the Council with its independent assessment of the matters described in paragraphs (1), (2), (4), (5), and (6) of subsection (d).

"RESPONSIBILITIES OF THE COUNCIL

"SEC. 704. The Federal Coordinating Council for Science, Engineering, and Technology shall—

"(1) serve as the lead organization within the Federal Government responsible for—

"(A) the development of each national critical technology strategic road map; and

"(B) the interagency coordination of the Federal Government activities conducted pursuant to such road map;

"(2) report to the President on a biennial basis on any recommended changes in departmental or agency responsibilities that are necessary for better implementation of the strategic road map;

"(3) each year before the submission of the budget to Congress pursuant to section 1105 of title 31, United States Code, review the budget concerning the consistency of the budget with each national critical technology strategic road map and make the results of that review available to appropriate officials within the Executive Office of the President; and

"(4) in carrying out its responsibilities under this title—

"(A) obtain analyses and assessments from the Critical Technologies Institute established by section 822 of the National Defense Authorization Act for Fiscal Year 1991 (42 U.S.C. 6686), as appropriate; and

"(B) consider any reports of and studies conducted by (i) departments and agencies within the executive branch, (ii) Congress, (iii) the National Research Council, (iv) industry associations, or (v) other persons and organizations.

"DEFINITIONS

"SEC. 705. In this title, the term 'national critical technology' means a technology that—

"(1) appears on the list of national critical technologies contained in a biennial report on national critical technologies submitted to Congress by the President pursuant to section 603(d) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683(d)); and

"(2) has not been expressly deleted from such list by such a report subsequently submitted to Congress by the President.".

SEC. 102. SUBMISSION OF INITIAL ROAD MAPS.

(a) SCHEDULE FOR SUBMISSION.—The President shall establish a schedule for the submission of the initial national critical technology strategic road maps to Congress at regular intervals between the date of the enactment of this Act and October 1, 1996. The schedule shall provide for the submission of at least three such strategic road maps not later than a date within one year after the date of the enactment of this Act.

(b) REQUIREMENT TO COMPLY WITH SCHEDULE.—The President shall submit each initial national critical technology strategic road map to Congress not later than the earlier of the submission date specified for such strategic road map in the schedule established pursuant to subsection (a) or the date on which the strategic road map is completed.

(c) REFERENCE TO NATIONAL CRITICAL TECHNOLOGY STRATEGIC ROAD MAPS.—The national critical technology strategic road maps referred to in subsections (a) and (b) are the national critical technology strategic road maps required by section 701 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (as added by section 101).

TITLE II—FEDERAL SUPPORT FOR DEVELOPMENT OF CRITICAL TECHNOLOGIES

PART A—DEPARTMENT OF DEFENSE

SEC. 201. CRITICAL TECHNOLOGIES RESEARCH AND DEVELOPMENT PARTNERSHIPS.

(a) DEPARTMENT OF DEFENSE GENERIC, PRECOMPETITIVE TECHNOLOGY DEVELOP-

MENT.—(1) The Secretary of Defense shall enter into cooperative arrangements with entities referred to in subsection (c) in order to encourage and provide for research and development of dual-use critical technologies identified in the annual defense critical technologies plan referred to in section 5(5)(A). Each such arrangement shall be known as a "Defense Dual-Use Technology Partnership".

(2) The Secretary shall enter into as many Partnerships as the Secretary determines necessary in order to ensure the conduct of a significant level of research and development on the critical technologies referred to in paragraph (1).

(b) AUTHORITY TO DELEGATE TO DARPA AND THE SECRETARIES OF THE MILITARY DEPARTMENTS.—The Secretary may act through the Defense Advanced Research Projects Agency or the Secretary of a military department in entering into a Partnership arrangement under this section.

(c) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and may include one or more Federal laboratories, institutions of higher education, agencies of State governments, and any other participants that the Secretary considers appropriate.

SEC. 202. COOPERATIVE AGREEMENTS AND OTHER TRANSACTIONS RELATING TO ADVANCED RESEARCH PROJECTS.

(a) BROADENING OF AUTHORITY.—Section 2371 of title 10, United States Code, is amended—

(1) in subsection (a)—

(A) by inserting "or a military department" after "Defense Advanced Research Projects Agency"; and

(B) by inserting before the period at the end the following: "and may authorize the Secretary of the military department concerned to enter into such agreements and other transactions"; and

(2) in subsection (b)(1), by striking out "by the Secretary".

(b) AUTHORITY MADE PERMANENT.—Subsection (g) of section 2371 of such title is repealed.

SEC. 203. INDEPENDENT RESEARCH AND DEVELOPMENT.

Section 2372(d) of title 10, United States Code, is amended—

(1) by redesignating paragraph (5) as subsection (e); and

(2) by inserting after paragraph (4) the following new paragraphs:

"(5)(A) The maximum amount of the costs provided for in an agreement pursuant to paragraph (2)(A) shall not apply to the exempt portion of any costs referred to in subparagraph (B) that are incurred by the person entering into that agreement with the Secretary of Defense. The exempt portion of such costs is the amount equal to 10 percent of such maximum amount.

"(B) Subparagraph (A) applies to costs that are attributable to the participation by such person in one or more critical technology research and development consortia that—

"(i) involve business firms described in paragraph (6); and

"(ii) engage in research and development activities referred to in subsection (c)(3).

"(6) A business firm referred to in paragraph (5)(B)(i) means a company or other business entity that, as determined by the Secretary of Commerce—

"(A) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

"(B) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business entity that is owned by a parent company that is incorporated in a country the government of which—

"(i) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funding indirectly through international organizations; and

"(ii) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.".

SEC. 204. AUTHORIZATION OF APPROPRIATIONS.

Funds are hereby authorized to be appropriated to the Department of Defense to carry out section 201 for each of fiscal years 1992 and 1993, as follows:

(1) For the Defense Advanced Research Projects Agency, $100,000,000.

(2) For the Department of the Air Force, $40,000,000.

(3) For the Department of the Navy, $20,000,000.

(4) For the Department of the Army, $10,000,000.

PART B—OTHER DEPARTMENTS AND AGENCIES

SEC. 221. DEPARTMENT OF COMMERCE ADVANCED TECHNOLOGY PROGRAM.

(a) SUPPORT FOR RESEARCH AND DEVELOPMENT OF NATIONAL CRITICAL TECHNOLOGIES.—The Secretary of Commerce shall continue to support the research and development activities of United States industry and joint ventures relating to the development of commercially useful products and services associated with applications of national critical technologies.

(b) DELEGATION TO DIRECTOR OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—The Secretary shall carry out this section through the Director of the National Institute of Standards and Technology acting under the Advanced Technology Program established pursuant to section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n).

(c) AUTHORIZATION OF APPROPRIATIONS.—Funds are hereby authorized to be appropriated to the Department of Commerce to carry out this section as follows:

(1) For fiscal year 1992, $110,000,000.

(2) For fiscal year 1993, $135,000,000.

SEC. 222. DEPARTMENT OF ENERGY CRITICAL TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—(1) The Secretary of Energy shall enter into cooperative arrangements with entities referred to in subsection (b) in order to encourage and provide for the conduct of research and development of critical technologies selected by the Secretary. Each such arrangement shall be known as a "Department of Energy Critical Technology Partnership".

(2) The Secretary shall enter into as many Partnerships as the Secretary determines necessary in order to ensure the conduct of a significant level of research and development on the critical technologies referred to in paragraph (1).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and one or more laboratories of the Department of Energy and may include institutions of higher education in the United States, other departments and agencies of the Federal Government, agencies of State governments, and any other participants that the Secretary considers appropriate.

(c) AUTHORIZATION OF APPROPRIATIONS.—Funds are hereby authorized to be appropriated for the Department of Energy for each of fiscal years 1992 and 1993 to carry out this section as follows:

(1) For atomic energy defense activities, $50,000,000.

(2) For energy research activities, $50,000,000.

SEC. 223. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CRITICAL TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—(1) The Administrator of the National Aeronautics and Space Administration shall enter into cooperative arrangements with entities referred to in subsection (b) in order to encourage and provide for the conduct of research and development of critical technologies selected by the Administrator. Each such arrangement shall be known as a "NASA Critical Technology Partnership".

(2) The Administrator shall enter into as many Partnerships as the Administrator determines necessary in order to ensure the conduct of a significant level of research and development of the critical technologies referred to in paragraph (1).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and one or more laboratories of the National Aeronautics and Space Administration and may include institutions of higher education in the United States, other departments and agencies of the Federal Government, agencies of State governments, and any other participants that the Administrator considers appropriate.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is hereby authorized to be appropriated to the National Aeronautics and Space Administration $50,000,000 for each of fiscal years 1992 and 1993 to carry out this section.

SEC. 224. DEPARTMENT OF HEALTH AND HUMAN SERVICES NATIONAL CRITICAL TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—(1) The Secretary of Health and Human Services shall enter into cooperative arrangements with entities referred to in subsection (b) in order to encourage and provide for the conduct of research and development of critical technologies selected by the Secretary. Each such arrangement shall be known as a "Department of Health and Human Services Critical Technology Partnership".

(2) The Secretary shall enter into as many Partnerships as the Secretary determines necessary in order to ensure the conduct of a significant level of research and development on the critical technologies referred to in paragraph (1).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and may include one or more Federal laboratories, institutions of higher education, agencies of State governments, and any other participants that the Secretary considers appropriate.

(c) DELEGATION TO THE DIRECTOR OF THE NATIONAL INSTITUTES OF HEALTH.—The Secretary shall act through the Director of the National Institutes of Health in carrying out this section.

(d) AUTHORIZATION OF APPROPRIATIONS.—There is hereby authorized to be appropriated to the Department of Health and Human Services $50,000,000 for each of fiscal years 1992 and 1993 to carry out this section.

PART C—ADMINISTRATIVE PROVISIONS RELATING TO CRITICAL TECHNOLOGY PARTNERSHIPS

SEC. 231. LEAD INSTITUTION.

The participants in each Partnership shall designate a lead institution for the Partner-

ship. The lead institution shall direct the activities of the Partnership.

SEC. 232. PARTNERSHIP PROPOSALS.

(a) SUBMISSION OF PROPOSALS.—Each proposal for the establishment of a Partnership by the Secretary of Defense, the Secretary of Energy, the Administrator of the National Aeronautics and Space Administration, or the Secretary of Health and Human Services, as the case may be, shall be submitted to such official by the lead institution acting on behalf of the proposed participants in the Partnership.

(b) CONTENT OF PROPOSALS.—Each such proposal shall include the following:

(1) Goals and objectives that are consistent with the purposes for which the Partnership may be established.

(2) A research and development plan to achieve such goals and objectives.

(3) Evidence of the expertise of the Partnership participants in developing and using each critical technology that is to be a focus of the research and development activities of the Partnership.

(4) Provisions for the transfer of technology developed by the Partnership, including provisions for transfer through exchange of personnel among the participants in the Partnership.

(5) Evidence of the commitment of eligible firms to participate in the Partnership, including a description of how personnel, equipment, facilities, and expertise of such firms will be used in the planning, conducting, and monitoring of the technology transfer activities of the Partnership and other Partnership activities.

(6) The demonstration of financial commitment required by subsection (c).

(c) COST-SHARING REQUIREMENTS.—(1) Each Partnership proposal shall demonstrate a financial commitment of the non-Federal Government participants to contribute at least 50 percent of the total cost of the Partnership activities. Within the total contribution to be made pursuant to such commitment the non-Federal Government participants may contribute a lesser percentage of the cost incurred during a particular period of Partnership activity or a lesser percentage of the cost of a particular Partnership activity.

(2) In the determination of the contribution made by a non-Federal Government participant, there shall be included the fair market value of the participant's contributions of equipment, services, materials, technology transfer activities, and other assets directly related to the costs associated with the goals and objectives of the Partnership, as determined by the official who establishes the Partnership.

SEC. 233. SELECTION OF PARTNERSHIPS.

(a) SELECTION.—Proposed Partnerships shall be selected through a competitive process prescribed, in consultation with the Director of the Office of Science and Technology Policy, by the Secretary of Defense (for Partnerships to be established by the Director pursuant to section 201), the Secretary of Energy (for Partnerships to be established by such Secretary pursuant to section 222), the Administrator of the National Aeronautics and Space Administration (for Partnerships to be established by the Administrator pursuant to section 223), and the Secretary of Health and Human Services (for Partnerships to be established by such Secretary pursuant to section 224).

(b) REQUIRED CRITERIA.—The criteria for the selection of proposed Partnerships for establishment under this title shall include the following:

(1) The existence of such a significant level of risk of failure to achieve the goals and objectives of the proposed Partnership that timely private sector investment in activities to achieve such goals and objectives is unlikely other than through the Partnership.

(2) Significant promise of achieving the purposes for which the Partnership may be established under this title.

(3) Significant potential for the research and development conducted by such Partnership on a critical technology to contribute to promoting economic prosperity or improving national security, as evidenced by the formulation of business plans for the subsequent commercial development of the technology.

(4) The potential effectiveness of the programs proposed by the Partnership for the transfer of technology through exchanges of personnel among Partnership participants and by other means.

(5) The sufficiency of the breadth of the participation of eligible firms in the Partnership to ensure that there will be competition in the application of the results of Partnership activities to the production of marketable products and the development of marketable processes.

(6) The level of involvement by eligible firms in the proposed Partnership, as determined on the basis of—

(A) the extent of the financial commitment of eligible firms to the activities of the proposed Partnership, including the extent to which the financial commitment of such firms exceeds the requirements in section 232(c); and

(B) the potential for increased participation by eligible firms in the Partnership over time.

(6) Such other capabilities that the Secretary or Administrator, as the case may be, considers desirable.

(c) PAYMENT FOR FEDERAL SUPPORT.—A cooperative agreement or other transaction entered into for or in connection with the establishment of a Partnership under this title may include a clause that requires a participant in the Partnership, as a condition for receiving support under a cooperative agreement or other transaction, to make payments to the department or agency establishing the Partnership.

SEC. 234. PROTECTION OF INFORMATION.

(a) AUTHORITY TO DISCLOSE INFORMATION.—Subject to subsection (b), a participant in a Partnership may disclose information on the research and development activities of the Partnership to the same extent that a Federal laboratory may disclose information under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) and all other applicable provisions of law.

(b) LIMITATIONS ON DISCLOSURE.—No officer or employee of the Federal Government may disclose any trade secret or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5, United States Code, and is obtained from a non-Federal Government participant in a Partnership as a result of the activities of the Partnership, regardless of whether such activities are subject to the Stevenson-Wydler Technology Innovation Act of 1980. The prohibition in the preceding sentence does not apply to a disclosure made with the consent of such participant.

SEC. 235. OTHER ASSISTANCE TO PARTNERSHIPS.

The Secretary of Defense (in the case of a Partnership established pursuant to section 201), the Secretary of Energy (in the case of a Partnership established pursuant to section 222), the Administrator of the National Aeronautics and Space Administration (in the case of a Partnership established pursuant to section 223), and the Secretary of Health and Human Services (in the case of a Partnership established pursuant to section 224) shall provide the Partnership with technical and other assistance that the Secretary or Administrator (as the case may be) considers necessary and appropriate to facilitate the achievement of the goals and objectives of the Partnership.

PART D—ADDITIONAL DEFINITIONS

SEC. 241. DEFINITIONS.

In this title:

(1) The term "eligible firm" means a company or other business entity that, as determined by the Secretary of Commerce—

(A) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

(B) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business that is owned by a parent company that is incorporated in a country the government of which—

(i) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funding indirectly through international organizations; and

(ii) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.

(2) The term "Partnership" means the following:

(A) In the case of the Department of Defense, a Defense Dual-Use Technology Partnership established by an arrangement entered into by the Secretary of Defense pursuant to section 201.

(B) In the case of the Department of Energy, a Department of Energy Critical Technology Partnership established by an arrangement entered into by the Secretary of Energy pursuant to section 222.

(C) In the case of the National Aeronautics and Space Administration, a NASA Critical Technology Partnership established by an arrangement entered into by the Administrator of the National Aeronautics and Space Administration pursuant to section 223.

(D) In the case of the Department of Health and Human Services, a Department of Health and Human Services Critical Technology Partnership established by an arrangement entered into by the Secretary of Health and Human Services pursuant to section 224.

TITLE III—CRITICAL TECHNOLOGY APPLICATION CENTERS

SEC. 301. ASSISTANCE FOR CRITICAL TECHNOLOGY APPLICATION CENTERS.

(a) CONSOLIDATION OF CERTAIN TITLE 10 CHAPTERS.—Part IV of subtitle A of title 10, United States Code, is amended as follows:

(1) Strike out the heading of chapter 151 and insert in lieu thereof the following:

"SUBCHAPTER II—ISSUE OF SERVICEABLE MATERIAL OTHER THAN TO THE ARMED FORCES".

(2) Strike out the heading of chapter 150 and the table of sections of such chapter and insert in lieu thereof the following:

"CHAPTER 152—ISSUE OF SUPPLIES, SERVICES, AND FACILITIES

"SUBCHAPTER	Sec.
"I. Issue to the Armed Forces	2541
"II. Issue of Serviceable Material Other Than to the Armed Forces	2546

"SUBCHAPTER I—ISSUE TO THE ARMED FORCES

"Sec.
"2541. Reserve components: supplies, services, and facilities.".

(3) Redesignate section 2521 as section 2541.

(b) ASSISTANCE PROGRAM REQUIRED.—Title 10, United States Code, is amended by inserting after chapter 149 the following new chapter 150:

"CHAPTER 150—CRITICAL TECHNOLOGY APPLICATION CENTERS

"Sec.
"2521. Critical Technology Application Centers Assistance Program.
"2522. Critical technology application centers.
"2523. Purpose and activities of centers.
"2524. Assistance authorized.
"2525. Proposals for assistance.
"2526. Financial contributions of center participants.
"2527. Management plan.
"2528. Selection of proposals.
"2529. Critical technology application centers evaluation panels.
"2530. Definitions.

"§ 2521. Critical Technology Application Centers Assistance Program

"The Secretary of Defense, in close consultation and coordination with the Secretary of Commerce, shall conduct a program to provide assistance for the activities of regional critical technology application centers in accordance with the provisions of this chapter. The program shall be known as the 'Critical Technology Application Centers Assistance Program'.

"§ 2522. Critical technology application centers

"(a) A critical technology application center eligible to receive assistance under the program is any consortium of participants described in subsection (b) that—

"(1) is established for the purpose set out in section 2523(a) of this title; and

"(2) conducts (or proposes to conduct) activities described in section 2523(b) of this title.

"(b) The participants in a critical technology application center—

"(1) shall include—

"(A) eligible firms that conduct business in the region of the United States to be served by the center; and

"(B) a sponsoring agency in such region; and

"(2) may include—

"(A) institutions of higher education;

"(B) Federal laboratories;

"(C) private, nonprofit organizations; and

"(D) other organizations considered appropriate by the Secretary of Defense.

"(c)(1) A sponsoring agency of a center may be any agency described in paragraph (2) that, as determined by the Secretary, provides adequate assurances that it will—

"(A) meet the financial requirement in section 2526(a) of this title; and

"(B) provide assistance in the management of the center.

"(2) An agency referred to in paragraph (1) is—

"(A) any agency of a State or local government;

"(B) any organization established pursuant to an agreement entered into by two or more States or local governments;

"(C) any organization performing functions pursuant to such an agreement; or

"(D) any membership organization in which a State or local government is a member.

"§ 2523. Purpose and activities of centers

"(a) The purpose of a critical technology application center in a region of the United States is to facilitate the use of one or more national critical technologies for commercial purposes by an industry in that region in order to enhance the development and economic sustainability of the capability of that industry to compete effectively on an international scale and, in the case of the use of national critical technologies having potential military applications, thereby to maintain within the United States industrial capabilities that are vital to the national security of the United States.

"(b) The activities of a center may include the following:

"(1) The joint provision, by participants in the center to other participants in the center, of services that, as jointly determined by the eligible firms participating in the center, will enhance directly the ability of each such firm to use a national critical technology for a commercial purpose. Such services may include the following:

"(A) Operation of equipment testbed and scale-up facilities.

"(B) Development, testing, and evaluation of prototypes.

"(C) Sharing of technical expertise relating to design and management.

"(D) Dissemination of information relating to market trends and technical advances in materials and production equipment.

"(E) Technical education and training.

"(F) Quality testing and standards certification.

"(G) Technical feasibility reviews of ideas and inventions.

"(H) Other services that no such firm is likely to provide for on its own.

"(2) Joint research and development that—

"(A) is generally applicable to the needs of all of the eligible firms participating in the center; and

"(B) as jointly determined by such firms, will enhance directly the ability of such firms to use a national critical technology for a commercial purpose.

"(3) Subject to subsection (c), proprietary research and development that, as determined by one or more of the eligible firms participating in the center, will enhance directly the ability of any such firm to apply a national critical technology for a commercial purpose.

"(4) Appropriate use, by eligible firms participating in the center, of the technological expertise and capabilities of Federal laboratories and institutions of higher education located in the region served by the center.

"(5) Facilitation of the sharing of information, equipment, personnel, and expertise among eligible firms participating in the center and by such firms and other sources of labor, capital, and technological expertise in the region served by the center when such sharing will enhance directly the ability of such firms to use a national critical technology for a commercial purpose.

"(c) The cost incurred in a year for proprietary research and development activities of a center may not exceed 15 percent of the total cost incurred in such year for all activities of the center.

"(d) A critical technology application center receiving assistance under this chapter shall concentrate on building upon, not duplicating, the activities of existing regional institutions that are assisting industry in the region to apply one or more national critical technologies for commercial purposes.

"§ 2524. Assistance authorized

"(a) Under the program, the Secretary may provide—

"(1) financial assistance for the activities of a critical technology application center (including, in the case of a proposed center, the establishment of such center) in any amount not in excess of 30 percent of the cost of conducting such activities (including the cost of establishing a proposed center) during the period covered by the financial assistance; and

"(2) technical assistance for the activities (and, in the case of a proposed center, the establishment) of a center awarded financial assistance authorized by paragraph (1).

"(b) The Secretary may not provide financial assistance for construction of facilities.

"(c) The Secretary may furnish assistance to a critical technology application center under the program for not more than six years.

"§ 2525. Proposals for assistance

"(a) A sponsoring agency may submit to the Secretary a proposal for financial assistance for a critical technology application center.

"(b) Each proposal for financial assistance for a center shall include the following:

"(1) Goals and objectives of the center and a description of the role of the center in improving the competitiveness and productivity of eligible firms on a regional and national basis.

"(2) A program strategy for achieving such goals and objectives, including (A) a research and development plan, (B) a plan for providing services referred to in section 2523(b)(1) of this title, and (C) a description of the other activities to be undertaken by the center.

"(3) A discussion of how personnel, equipment, facilities, and expertise of such firms will be used to support and conduct center activities.

"(4) A management plan that satisfies the requirements of section 2527 of this title.

"(5) The commitment of the eligible firms participating in the center to meet the financial requirement of section 2526(b) of this title.

"§ 2526. Financial contributions of center participants

"(a) The sponsoring agency of a critical technology application center shall pay at least 30 percent of the total cost incurred each year for the activities of the center. Funds contributed for the activities of the center by institutions of higher education or private, nonprofit organizations participating in the center shall be considered as funds contributed by the sponsoring agency.

"(b) The eligible firms participating in a center shall pay at least 40 percent of the total cost incurred each year for the activities of the center.

"(c) The non-Federal Government participants in a center shall pay the total cost incurred each year for proprietary research and development activities of the center.

"(d) In the determination of the contribution made by an eligible firm participating in a center, there shall be included the fair market value of the firm's contributions of equipment, services, materials, and other assets directly related to the costs associated with activities of the center, as determined by the Secretary.

"§ 2527. Management plan

"A critical technology application center shall operate under a management plan that includes the following provisions:

"(1) Provisions for the eligible firms participating in the center to have the primary

responsibility for directing the activities of the center and to exercise that responsibility through, among any other means, majority voting membership of such firms on the board of directors of the center.

"(2) Such other provisions as the Secretary determines necessary to ensure that the policies and activities of the center meet the needs and priorities of such firms.

"(3) Provisions for small and medium-size firms to participate in the center on a dues-paying basis, including a dues structure that encourages firms of such size to participate in the center.

"§ 2528. Selection of proposals

"(a)(1) The Secretary of Defense shall select the critical technology application centers to receive assistance under this chapter. The selections shall be made pursuant to a competitive process which the Secretary shall prescribe.

"(2) The Secretary shall consult closely with the Secretary of Commerce and the Director of the Office of Science and Technology Policy in prescribing the competitive selection process and in making selections pursuant to such process.

"(b) The criteria for selection of a center to receive financial assistance under this title shall include the following:

"(1) The potential for the activities of the center to result in—

"(A) increased international competitiveness and productivity of—

"(i) eligible firms within the region to be served by the center; and

"(ii) eligible firms generally; and

"(B) the emergence in such region of highly productive new firms that are capable of competing on an international scale.

"(2) The level of the involvement of eligible firms in the center, as determined on the basis of the following:

"(A) The extent of the financial commitment of eligible firms to the activities of the center, including the extent to which the financial commitment of such firms exceeds the requirements in section 2526(b) of this title.

"(B) The potential for increased participation by eligible firms in the center over time.

"(C) The provisions made for recruiting small and medium-size eligible firms for participation in the center and for ensuring a significant level of involvement of such firms in the activities of the center.

"(D) The extent to which the eligible firms participating in the center represent, and relate to each other over, the full range of the production process from supplier to producer.

"(3) The extent to which the proposed activities of the center are relevant to identifiable commercial needs of eligible firms conducting business in the region to be served by the center and the quality of those activities for meeting such needs.

"(4) The potential for the center to be able to apply critical technology research and development supported or conducted by Federal laboratories and institutions of higher education.

"(5) The potential for the center to sustain itself through support from industry and other non-Federal Government sources after termination of the Federal assistance provided pursuant to this chapter.

"(6) The level of involvement of appropriate State and local agencies, institutions of higher education, and private, nonprofit entities in the center, as determined on the basis of—

"(A) the extent of the financial commitment of the sponsoring agency to the activities of the center, including the extent to which the financial commitment of such agency exceeds the requirements in section 2526(a) of this title; and

"(B) evidence of the integration of center goals and activities into established programs, departments, and activities.

"(7) The vision, leadership, management direction, and skill of the participants regarding the operation of the center.

"§ 2529. Critical technology application centers evaluation panels

"(a)(1) The Secretary of Defense, in close consultation with the Secretary of Commerce and the Director of the Office of Science and Technology Policy, shall appoint a panel to evaluate the activities of each critical technology application center receiving financial assistance pursuant to this chapter.

"(2) Of the members of each panel—

"(A) at least one-third shall be appointed from among persons in industry who have expertise in matters relating to technology;

"(B) at least one-fourth shall be appointed from among officers and employees of States, local governments, private, nonprofit organizations, or institutions of higher education; and

"(C) at least one-third shall be appointed from among officers and employees of the Federal Government.

"(3) No member of a panel may be an officer or employee of a participant in the center under evaluation by the panel.

"(4) The Secretary shall appoint an officer or employee of the Federal Government to be the chairman of each panel.

"(b) During the 12-month period beginning three years after the date on which a critical technology application center receives financial assistance pursuant to this chapter, the activities of the center shall be evaluated by a panel appointed pursuant to subsection (a). The evaluation shall determine whether the activities of the center are consistent with the purpose set out in section 2523(a) of this title. In the determination of the consistency between such activities and such purpose, consideration shall be given to whether industry in the region served by the center has developed business plans to use a technology developed or applied as a result of such activities to sell products or services in the marketplace and whether such plans are being executed profitably for such industry or are likely to be executed profitably for such industry.

"(c) If the evaluation panel determines that the activities of a critical technology application center are not consistent with the purpose set out in section 2523(a) of this title, no additional financial assistance may be furnished such center under this chapter.

"(d)(1) Each member of an evaluation panel who is not an officer or employee of the Federal Government shall be compensated at a rate equal to the daily equivalent of the annual rate of basic pay prescribed for grade GS-18 of the General Schedule under section 5332 of title 5 for each day (including travel time) during which such member is engaged in the performance of the duties of the evaluation panel. All members of an evaluation panel who are officers or employees of the United States shall serve without compensation in addition to that received for their services as officers or employees of the United States.

"(2) The members of an evaluation panel shall be allowed travel expenses, including per diem in lieu of subsistence, at rates authorized for employees of agencies under subchapter I of chapter 57 of title 5 while away from their homes or regular places of business in the performance of services for the evaluation panel.

"§ 2530. Definitions

"In this chapter:

"(1) The term 'eligible firm' means a company or other business entity that, as determined by the Secretary of Commerce—

"(A) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

"(B) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business entity that is owned by a parent company that is incorporated in a country the government of which—

"(i) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funds indirectly through international organizations; and

"(ii) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.

"(2) The terms 'Federal laboratory' and 'laboratory' have the meaning given the term 'laboratory' in section 12(d)(2) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).

"(3) The term 'national critical technology' means a technology that—

"(A) appears on the list of national critical technologies contained in a biennial report on national critical technologies submitted to Congress by the President pursuant to section 603(d) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683(d)); and

"(B) has not been expressly deleted from such list by such a report subsequently submitted to Congress by the President.".

(c) TABLES OF CHAPTERS.—The tables of chapters at the beginning of subtitle A of title 10, United States Code, and of part IV of such subtitle are each amended by striking out the items relating to chapters 150 and 151 and inserting in lieu thereof the following:

"150. Critical Technology Application Centers ..... 2521".
"152. Issue of Supplies, Services, and Facilities ..... 2541".

SEC. 302. AUTHORIZATION OF APPROPRIATIONS.

(a) DEPARTMENT OF DEFENSE.—Funds are hereby authorized to be appropriated for the Department of Defense to carry out the Critical Technology Application Centers Assistance Program established pursuant to chapter 150 of title 10, United States Code (as added by section 301(a)), as follows:

(1) For fiscal year 1992, $50,000,000.

(2) For fiscal year 1993, $75,000,000.

(b) DEPARTMENT OF COMMERCE.—Funds are hereby authorized to be appropriated for the Department of Commerce to carry out the responsibilities of the Secretary of Commerce under the Critical Technology Application Centers Assistance Program as follows:

(1) For fiscal year 1992, $25,000,000.

(2) For fiscal year 1993, $50,000,000.

TITLE IV—FOREIGN TECHNOLOGY MONITORING AND ASSESSMENT

SEC. 401. FINDINGS.

Congress makes the following findings:

(1) The United States high-technology industry faces global competition that, on an unprecedented basis, challenges its leader-

ship in technologies that might have military applications and nonmilitary commercial applications.

(2) The need for further development of critical technologies fundamental to the national security of the United States is converging with the need for further development of critical technologies essential to the economic competitiveness of the United States.

(3) In order to halt the erosion of United States technological leadership and to rebuild United States strength in critical technologies, the United States must abandon the general inclination to ignore technological advances not originating in the United States and monitor and assess technology developments abroad far more coherently and rationally than has been done in the past.

(4) Both the United States Government and the private sector have important interests and roles in monitoring and assessing foreign technologies.

(5) Many departments and agencies of the Federal Government routinely collect and disseminate foreign scientific and technical information and collect or prepare and disseminate analyses of such information in the performance of the missions of such departments and agencies.

(6) The collection and dissemination of such information, and the collection, preparation, and dissemination of analyses of such information, by those departments and agencies is largely uncoordinated, duplicative, and incomplete.

SEC. 402. PURPOSES.

The purposes of this title are as follows:

(1) To establish a means for coordinating the foreign technology monitoring and assessment activities of the Federal Government.

(2) To establish in the Department of Commerce a central clearinghouse for the information and assessments produced by the numerous offices of the Federal Government involved in monitoring foreign activities regarding research, development, and applications of critical technologies, with particular emphasis on technologies that are critical to the commercial competitiveness of the United States.

(3) To establish in the Department of Defense a similar central clearinghouse with particular emphasis on technologies that are critical to the national security of the United States.

(4) To encourage the establishment in Europe and the Pacific Rim Area of privately operated offices to monitor, assess, and disseminate significant developments in commercial critical technology activities in foreign industries.

(5) To provide for the dissemination of information and assessments prepared under the program to Federal Government agencies and other interested parties.

SEC. 403. COORDINATION OF THE FOREIGN SCIENCE AND TECHNOLOGY INFORMATION ACTIVITIES OF THE FEDERAL GOVERNMENT.

The Federal Coordinating Council for Science, Engineering, and Technology shall—

(1) coordinate the activities of the Federal Government directed at monitoring significant foreign technology developments;

(2) facilitate joint foreign science and technology monitoring and assessment efforts of the departments and agencies of the Federal Government involved in the monitoring and assessment of foreign science and technology; and

(3) establish strategic goals and priorities for the clearinghouses established by—

(A) section 5(e) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3704(e)), as added by section 404; and

(B) section 135(c) of title 10, United States Code, as added by section 406.

SEC. 404. CLEARINGHOUSE OF FOREIGN COMMERCIAL TECHNOLOGY MONITORING AND ASSESSMENT.

(a) ESTABLISHMENT OF CLEARINGHOUSE.—Section 5 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3704) is amended—

(1) by redesignating subsection (e) as subsection (f); and

(2) by inserting after subsection (d) the following new subsection (e):

"(e)(1) There is established within the Office of the Under Secretary of Commerce for Technology an office to be known as the 'Clearinghouse of Foreign Commercial Technology Monitoring and Assessment'.

"(2) The clearinghouse shall be the lead agency of the Federal Government responsible for the compilation and dissemination of unclassified information and assessments on foreign research, development, and applications of commercial critical technologies.

"(3) The clearinghouse shall have the following responsibilities:

"(A) To maintain a central library for the compilation and dissemination of information and assessments on significant foreign activities in research, development, and applications of commercial critical technologies.

"(B) To establish and maintain a widely accessible data base containing information and assessments regarding foreign science and technology activities that involve commercial critical technologies, including, especially, activities in Europe and in foreign countries located on or near the periphery of the Pacific Ocean (known as the 'Pacific Rim Area').

"(C) To perform liaison activities among appropriate agencies and offices within the Department of Commerce, the Department of State, and other departments and agencies of the Federal Government in order to ensure that significant foreign activities in research, development, and applications of commercial critical technologies are identified, monitored, and assessed by appropriate departments and agencies of the Federal Government.

"(D) To identify the requirements of the Federal Government and United States industry for foreign scientific and technical information regarding commercial critical technologies, for associated foreign economic information, and for assessments of such information and to disseminate notice of such requirements to all departments and agencies of the Federal Government.

"(4) The clearinghouse shall produce, on a biennial basis, an assessment of the most significant foreign activities regarding the national critical technologies identified in the latest biennial report on national critical technologies submitted to Congress by the President pursuant to section 603(d) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683(d)).

"(5) The head of each department and agency of the Federal Government shall cooperate with the clearinghouse in coordinating the activities of such department or agency, as the case may be, regarding the collection and transmittal of information and assessments relating to commercial critical technologies.

"(6) In this subsection:

"(A) The term 'commercial critical technology' means a defense critical technology, a national critical technology, or an emerging technology that is not a defense-specific critical technology.

"(B) The term 'defense critical technology' means a technology that—

"(i) appears on the list of critical technologies contained in an annual defense critical technologies plan submitted to Congress by the Secretary of Defense pursuant to section 2508 of title 10, United States Code; and

"(ii) has not been expressly deleted from such list by such a plan subsequently submitted to Congress by the Secretary.

"(C) The term 'national critical technology' means a technology that—

"(i) appears on the list of national critical technologies contained in a biennial report on national critical technologies submitted to Congress by the President pursuant to section 603(d) of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683(d)); and

"(ii) has not been expressly deleted from such list by such a report subsequently submitted to Congress by the President.

"(D) The term 'emerging technology' means a technology that—

"(i) appears on an emerging technologies list submitted to Congress by the Secretary of Commerce; and

"(ii) has not been expressly deleted from such list by an emerging technologies list subsequently submitted to Congress by the Secretary.

"(E) The term 'defense-specific critical technology' means a defense critical technology that is used solely for military purposes and is unlikely to have any foreseeable nonmilitary commercial applications.".

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated for the Department of Commerce for each of fiscal years 1992 and 1993, $10,000,000, for the activities of the Clearinghouse of Foreign Commercial Technology Monitoring and Assessment and otherwise for carrying out the provisions of section 5(e) of the Stevenson-Wydler Technology Innovation Act of 1980 (as added by subsection (a)).

SEC. 405. OVERSEAS FOREIGN CRITICAL TECHNOLOGY MONITORING AND ASSESSMENT GRANT PROGRAM.

(a) ESTABLISHMENT OF GRANT PROGRAM.—The Secretary of Commerce shall establish a foreign critical technology monitoring and assessment grant program. Under the program, the Secretary shall award grants to one or more associations referred to in subsection (b) in order to provide grantees with financial assistance for the establishment of foreign critical technology monitoring and assessment offices in Europe and in foreign countries located on or near the periphery of the Pacific Ocean (known as the "Pacific Rim Area").

(b) ELIGIBLE GRANTEES.—Any not-for-profit association of industrial or professional organizations, and any not-for-profit research and development consortium of United States industry, that has economic and scientific interests in research, development, and applications of commercial critical technologies is eligible for a grant under the program.

(c) GRANT PROGRAM REQUIREMENTS AND LIMITATIONS.—(1) Grants shall be awarded on the basis of merit.

(2) The proceeds of a grant or grants made under this section may not be used to provide financial support for a foreign critical technology monitoring and assessment office for more than six years.

(3) The total amount provided a foreign critical technology monitoring and assessment office by grant under this section may not exceed the amount necessary to meet 50 percent of the capital and annual operating and maintenance needs of such office. An applicant for a grant under this section shall provide assurances in the application that the applicant will contribute sufficient funds to meet at least 50 percent of the proposed office's capital and annual operating and maintenance needs for the first three years after the establishment of the office and an increasing share of the total amount necessary to meet such needs for each of the ensuing three years.

(d) OFFICE ACTIVITIES.—Each privately operated, foreign critical technology monitoring and assessment office supported in part with the proceeds of a grant or grants awarded under this section to an association referred to in subsection (b) shall collect, evaluate, and disseminate to members of the association and to the Clearinghouse of Foreign Commercial Technology Monitoring and Assessment of the Department of Commerce assessments of significant activities in research, development, and applications of commercial critical technologies that are conducted in the geographic area in which the office is located and shall identify technology transfer and joint venture opportunities among United States industrial firms located in that area.

(e) FUNDING.—Funds are hereby authorized to be appropriated for the Department of Commerce to carry out the grant program established pursuant to this section as follows:

(1) For fiscal year 1992, $7,500,000.

(2) For fiscal year 1993, $10,000,000.

SEC. 406. CLEARINGHOUSE OF FOREIGN DEFENSE TECHNOLOGY MONITORING AND ASSESSMENT.

(a) AMENDMENT TO TITLE 10, UNITED STATES CODE.—Section 135 of title 10, United States Code, is amended by adding at the end the following new subsection:

"(c)(1) There is, within the Office of the Director of Defense Research and Engineering, an office to be known as the 'Clearinghouse of Foreign Defense Technology Monitoring and Assessment'.

"(2) The head of the clearinghouse shall consult closely with the head of the Clearinghouse of Foreign Commercial Technology Monitoring and Assessment of the Department of Commerce in order—

"(A) to minimize the duplication of any effort of the Department of Commerce by the Department of Defense regarding defense critical technologies having potential commercial uses; and

"(B) to ensure that the clearinghouse is effectively utilized to disseminate information to appropriate users of such information within the Federal Government.

"(3) The clearinghouse shall have the following responsibilities:

"(A) To maintain within the Department of Defense a central library for the compilation and appropriate dissemination of unclassified and classified information and assessments regarding significant foreign activities in research, development, and applications of defense critical technologies.

"(B) To establish and maintain—

"(i) a widely accessible unclassified data base of information and assessments regarding foreign science and technology activities that involve critical technologies, including, especially, activities in Europe and in foreign countries located on or near the periphery of the Pacific Ocean (known as the 'Pacific Rim area'); and

"(ii) a classified data base of information and assessments regarding such activities.

"(C) To perform liaison activities among the military departments, Defense agencies, other appropriate offices within the Department of Defense, and appropriate agencies and offices within the Department of Commerce, the Department of State, and other departments and agencies of the Federal Government in order to ensure that significant activities in research, development, and applications of defense critical technologies are identified, monitored, and assessed by an appropriate department or agency of the Federal Government.

"(D) To ensure the maximum practicable public availability of information and assessments contained in the unclassified and classified data bases established pursuant to subparagraph (B) by—

"(i) limiting, to the maximum practicable extent, the restrictive classification of such information and assessments; and

"(ii) disseminating information and assessments regarding defense critical technologies having potential commercial uses to the Clearinghouse of Foreign Commercial Technology Monitoring and Assessment of the Department of Commerce.

"(E) To cooperate with the Clearinghouse of Foreign Commercial Technology Monitoring and Assessment of the Department of Commerce to disseminate unclassified information and assessments regarding defense critical technologies having potential commercial uses so that such information and assessments may be further disseminated within the Federal Government and to the private sector.

"(4) In this subsection, the term 'defense critical technology' means a technology that—

"(A) appears on the list of critical technologies contained in an annual defense critical technologies plan submitted to Congress by the Secretary of Defense pursuant to section 2508 of title 10; and

"(B) has not been expressly deleted from such list by such a plan subsequently submitted to Congress by the Secretary.".

(b) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated for the Department of Defense for each of fiscal years 1992 and 1993, $10,000,000, for the activities of the Office of Foreign Defense Technology Monitoring and Assessment and otherwise for carrying out the provisions of section 135(c) of title 10, United States Code (as added by subsection (a)).

SEC. 407. UTILIZATION OF NATIONAL SCIENCE FOUNDATION FOREIGN TECHNOLOGY EVALUATION PROGRAM.

(a) AVAILABILITY OF AMOUNTS AUTHORIZED TO BE APPROPRIATED FOR THE DEPARTMENT OF COMMERCE.—Of the funds authorized to be appropriated to the Department of Commerce in section 404(b) for fiscal years 1992 and 1993, $1,000,000 may be made available to the National Science Foundation for each such fiscal year for support, in whole or in part, of foreign technology evaluation activities directed at the assessment of foreign capabilities in critical technologies.

(b) AVAILABILITY OF AMOUNTS AUTHORIZED TO BE APPROPRIATED FOR THE DEPARTMENT OF DEFENSE.—Of the funds authorized to be appropriated to the Department of Defense in section 406(b) for fiscal years 1992 and 1993, $1,000,000 may be made available to the National Science Foundation for each such fiscal year for support, in whole or in part, of foreign technology evaluation activities directed at the assessment of foreign capabilities in critical technologies.●

By Mr. BINGAMAN (for himself, Mr. HOLLINGS, Mr. NUNN, Mr. GORE, Mr. WIRTH, Mr. KENNEDY, Mr. ROCKEFELLER, Ms. MIKULSKI, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1328. A bill to enhance the national security and economic competitiveness of the United States by providing for increased Federal Government support for the development and deployment of advanced manufacturing technology and the training of manufacturing managers and engineers, and for other purposes; to the Committee on Commerce, Science, and Transportation.

ADVANCED MANUFACTURING TECHNOLOGY ACT

● Mr. BINGAMAN. Mr. President, today I am introducing the Advanced Manufacturing Technology Act of 1991. This is part of a package of five bills Senator HOLLINGS, Senator NUNN, Senator GORE, and I have worked together to draft. We welcome the cosponsorship of many of our colleagues, including Senators WIRTH, ROCKEFELLER, KENNEDY, DIXON, LEVIN, MIKULSKI, DODD, SHELBY, DASCHLE, LIEBERMAN and RIEGLE for our legislation.

This bill and Senator Hollings' companion bill, the Manufacturing Strategy Act of 1991, will unite the Department of Defense and the Department of Commerce, along with other civilian agencies, in a major effort to boost American manufacturing performance. Nothing less will do. The U.S. industrial base is under attack, and losing—to superb foreign competitors who surpass us not in science and breakthrough discoveries, but in engineering and manufacturing. In short, manufacturing matters, and it matters a great deal.

INDUSTRY'S ACHILLES HEEL

Manufacturing is the Achilles Heel of American industry. The United States dominates the world in science, and American companies make most of the major technological discoveries. But as industry moves along the learning curve, the competition quickly comes down to engineering and manufacturing, where Japanese and West German firms excel and United States firms continue to lag.

American stores are filled with products invented in the U.S. but no longer produced here. The ubiquitous video cassette recorder is just one example. Although an American company—Ampex Corporation—pioneered the technology, 95 percent of the world's VCR's are now built by Japanese producers. The Japanese reaped their advantage by investing years of effort in the manufacture of VCR's.

The same story can be told of many other products: phonographs, televisions, audio tape recorders, cassette disks, liquid crystal display technology, silicon wafers, microwave ovens, machine tool centers. The list

goes on. Similar trends are now evident in semiconductors and computers.

In short, manufacturing matters because, ultimately, it is the greatest source of competitive advantage. The inevitable ease with which a technological discovery can be imitated has taken away much of the edge once enjoyed by American firms with a new invention. Now, the greatest competitive advantage lies not with those who make the original discovery, but with those who perfect its manufacture.

Other governments have learned that lesson well. The thrust of Japanese and West German technology policy is technology diffusion, engineering and manufacturing. By contrast, our own technology policy cultivates the scientific frontier, largely ignoring downstream issues of engineering and manufacturing. But at what cost? Michael Dertouzos, the chairman of MIT's Commission on Industrial Productivity, recently summed it up. He said "[in the U.S.] we value creativity and innovativeness, and we don't value production. But the money is not in invention, it's in production."

AMERICA'S MANUFACTURING PROBLEM

Ironically, the U.S. once excelled at production. According to the Economist, "British industrialists strolling around the Crystal Palace in London (in 1851) were horrified at the quality of the latest American guns. Unfair, they said. The dastardly colonials were using a British idea—a new lathe designed by a Mr. Maudsley—to mill weapons with greater precision than the British. Then they had the cheek to sell Britons the fruits of their own basic research." Similar complaints were later voiced about American success with radar, penicillin, polyesters, medical CAT scanners, and other British inventions.

As late as World War II, the United States strength was still in manufacturing. America defeated Germany not with superior technology but with superior production, resulting in greater numbers of ships, planes and weapons.

In recent decades, however, U.S. industry has fallen behind in the invention, production and adoption of advanced manufacturing technology broadly defined. As we enter the 1990's, many American firms are using manufacturing methods better suited to the 1950's.

In part, the problem results from sheer underinvestment. In the 1970's and 1980's, fixed capital investment in manufacturing—as a share of manufacturing output—was 1.5 times higher in Japan than in the United States. In developing new products and processes, Japanese firms devote almost double the share of total project costs to tooling and equipment as do American firms. And Japan now uses numerically controlled machine tools at one-and-a-half times the United States rate. Japan also employs about seven times as many industrial robots per thousand workers as does the United States. West Germany, Sweden, and several other countries have higher robot densities than the United States.

But the problem goes well beyond underinvestment in capital. U.S. manufacturers have also lagged foreign competitors in product development, design, quality control, shop floor organization, inventory management, and workforce training. This means that even when a firm invests in equipment, the equipment is not employed to full potential. For example, using similar flexible manufacturing systems, U.S. firms produce a less varied mix of parts, make fewer parts per day, introduce fewer new parts, and have less machine up-time than comparable Japanese firms.

The U.S. defense industry exhibits the same patterns as the civilian sector. Despite leadership in developing radically new products, DOD contractors have lagged in the adoption of new process technology and production management techniques. A recent National Research Council panel on defense manufacturing identified these concerns with our defense industrial base: Rapidly rising equipment costs, inadequate product quality, lack of surge capability, increasing lead times for new products, lack of cost-reducing capital investments, lack of domestic parts suppliers, despite excess, and capacity at the prime contractor level.

Similarly, the Center for Strategic and International Studies released a report this spring entitled "Integrating Commercial and Military Technologies for National Strength," which pointed out that the current defense acquisition system imposes numerous obstacles to dealing with these problems. Rather than seeking to build on the commercial sector to the mutual advantage of both our security and competitiveness, the existing system drives the two sectors apart.

In both the civilian and defense sectors, the problems of U.S. manufacturing are most acute in small- and medium-sized firms—those with fewer than 500 workers. There are 360,000 of these smaller firms in the United States and they account for 10 to 12 million jobs and more than half of the value added in manufacturing. Although most of these firms are not major exporters, as suppliers to large U.S. manufacturers they have a substantial indirect effect on American competitiveness. They are also critical to national security. The 1991 Joint Chiefs of Staff net assessment concludes that the loss of manufacturers of subsystem components is a threat to our Nation's ability to field state-of-the-art weapons systems.

The U.S. Bureau of the Census, in the largest survey to date of technology adoption in U.S. manufacturing, recently confirmed the lagging performance of small and medium-sized firms. Census asked nearly 10,000 firms in five industries about their use of 17 advanced manufacturing technologies. In all 17 areas, larger firms—those with more than 500 employees—had higher technology adoption rates than smaller firms. For example, large manufacturing firms are twice as likely to use numerically controlled or computer numerically controlled machine tools as are the smallest firms, and three times as likely to use computer-aided design or computer-aided engineering. The best estimates indicate that the productivity rate for small- and medium-sized manufacturing firms is about three-fourths that of large manufacturers.

Japanese and West German Governments make it a priority to strengthen small- and medium-sized manufacturing firms. Japan spends $500 million a year on a public network of 170 manufacturing support centers, known as kohsetsushi centers. When Showa Precision Tools, a successful $1.2-million-a-year diemaking company in Yokohama, decided to buy new equipment for its plant in 1988, the firm received a free evaluation of its purchase plan from manufacturing experts at the Yokohama kohsetsushi center. Upon request, the center will also dispatch a sensei, or master, to instruct shop foremen in quality-control techniques.

The United States, too, has innovative programs—largely at the State level—to modernize small- and medium-sized manufacturing firms. But these manufacturing extension programs are seriously underfunded and receive almost no Federal support; total funding is at most $70 million a year—about $20 million of that from the Federal Government. In striking contrast, our nation spends $1.1 billion each year on agricultural extension—one-third Federal. And yet agriculture accounts for only three percent of GNP, while manufacturing contributes more than 20 percent.

MANUFACTURING IS INDISPENSABLE

What Japan, West Germany, and other countries seem to understand better than the United States is the indispensable role of manufacturing in an advanced economy. Contrary to prophesies of a postindustrial age, manufacturing remains critical to this Nation for three reasons.

First, manufacturing represents more than 20 percent of U.S. gross national product [GNP]—over 18 million jobs. Another 8 to 10 million jobs in upstream services and raw materials go to support manufacturing—such things as machinery repair, testing and lab work, and payroll and accounting. In all, 25 percent of American jobs are closely linked to manufacturing.

Moreover, these jobs are relatively high paying. On average, American manufacturing workers earn 10 percent more than service workers and nearly

double that of those employed in retail trade.

Despite their economic importance, our country is losing manufacturing jobs steadily. As of April, 18.3 million Americans were employed in manufacturing—down from 21 million in 1979 and 19.5 million in the late 1980's. Some of that erosion is a temporary consequence of the recession, but some of it is not. The Office of Technology Assessment estimates that over 1 million manufacturing jobs have been lost as the result of import competition.

Second, international trade is dominated by manufactured goods. Eighty percent of the $100 billion-a-year U.S. trade deficit is in manufacturing—three-quarters of that in just three industries: electronics, autos, and textiles.

Third, the manufacturing sector supports 90 percent of the privately funded research and development in this country. Manufacturing industries are truly the battleground on which the global technology war is being fought.

In sum, boosting American manufacturing performance is critical not just for the survival of U.S. manufacturing firms. It is also critical to strengthening employment and living standards, to reducing our trade deficit, and to supporting continued research and technology development.

ADVANCED MANUFACTURING TECHNOLOGY ACT OF 1991

The Advanced Manufacturing Technology Act of 1991 is designed to boost American manufacturing performance in five broad ways.

Technology management: First, the act provides for the coordinated planning and management of Federal activities in advanced manufacturing technology, with direct industry input into that planning process. Under the act, the Office of Science and Technology Policy [OSTP]—in close consultation with an industry-dominated advisory committee—would develop a 5-year technology roadmap for manufacturing. The roadmap would represent a national strategy for regaining a leadership position in the development of advanced manufacturing technology. OSTP would also coordinate technology development activities within the Federal Government, so as to strengthen working relationships between agencies.

In fairness to the administration, it has already begun this process. The Office of Management and Budget recently completed an inventory of Federal spending on manufacturing R&D, and OSTP has said it will follow up with a broad plan for manufacturing in fiscal year 1993. This bill will expedite that planning process and assure a central role for industry.

Technology development: Second, the legislation increases Federal support for the research and development of advanced manufacturing technology: According to OMB's inventory, manufacturing currently receives less than 2 percent of the Government's research budget, and 80 percent of that is defense-related either in DOD's or the Department of Energy's Defense Programs budget. The administration's budget request for fiscal year 1992 proposes sharp reductions in the defense manufacturing technology program. Our legislation provides stable funding for DOD's Mantech and Industrial Preparedness Programs—roughly $300 million, or triple the administrations request. The bill also authorizes additional funds for the Department of Commerce's Advanced Technology Program, specifically for advanced manfacturing R&D. In addition, the act requires the Departments of Defense, Commerce, and Energy, NASA, and the National Science Foundation to establish R&D partnerships with industry in advanced manufacturing. In most of the civilian efforts authorized by this title, industry would take the lead and contribute half the cost.

The rationale for these partnerships is straightforward. Just as the Federal Government supports basic research, it must bear part of the burden of exploring risky industrial technologies, which often provide large public benefits but only small private returns. The partnership approach serves to direct public funds to areas that industry itself thinks will have the highest payoffs, but where the benefits would be difficult for individual firms to capture. It also ensures there will be competition in bringing the technology developed by the partnerships to the marketplace by involving at least two and preferably more firms in each partnership.

Technology deployment: Third, our bill creates a National Manufacturing Extension Program modeled loosely after the highly successful agricultural extension service. Under this program, the Federal Government will provide matching funds for new and existing State, local, and nonprofit programs to modernize small- and medium-sized manufacturing firms, where the problem is most acute. In these programs, industrially-experienced engineers and other specialists work closely with smaller firms to solve production problems, boost quality and productivity, improve training, and introduce off-the-shelf technology. Not all manufacturing extension programs are equally effective, but the better ones have demonstrated their value, as the Office of Technology Assessment's 1990 report on manufacturing, "Making Things Better," enthusiastically concluded.

Federal support would allow States, localities, and nonprofit groups to expand some of the very good programs currently operating and to initiate programs where none exist. A wide range of programs would be eligible, including in-factory assistance, teaching factories, computer integrated manufacturing [CIM] centers, manufacturing technology testbeds, and flexible manufacturing networks. Given the magnitude of the challenge of modernizing small- and medium-sized firms, this program is intended to be inclusive rather than exclusive. But to insure results, three key criteria will guide the allocation of Federal matching funds.

One is the effectiveness of the program, including the use of an integrated approach to improving firms' manufacturing technology, work force training, and management. The problems of smaller firms are interrelated, and programs that tackle just technology are insufficient. A second criterion is the efficiency of service delivery. There is no substitute for one-on-one contact between an extension agent and a client firm in many cases, but a program should also seek to leverage its resources—for example, by providing group services to firms in a particular region and sector, or by facilitating self-help mechanisms such as manufacturing networks. The third key criterion is significant involvement by industry, which is itself a way to leverage extension activities. Particularly important is the participation of: First, key customers—the large OEM's [original equipment manufacturers] who must motivate many of their supplier firms to improve, and second, manufacturing equipment vendors. Like key customers, equipment vendors will benefit directly from the enhanced sophistication of small- and medium-sized manufacturers.

Our proposed program represents a major commitment by the Federal Government to work with States and industry to upgrade small- and midsized manufacturers. OTA calculated that assistance to 24,000 firms a year—7 percent of the total—would cost $120 million to $480 million, depending on the level and quality of service. Our proposed authorization for fiscal year 1992 of $80 million—$30 million for DOC, $50 million for DOD—together with the required matching funds, would allow States to achieve that modest target. By 1995, we would like to see that amount grow to a national expenditure of about $350 million—$175 million Federal. A program of that size, though still dwarfed by Japan's $500-million-a-year kohsetsushi network, could provide service to as many as 65,000 firms a year.

As is fitting and necessary for an ambitious campaign to modernize America's manufacturing base, the National Manufacturing Extension Program would be a partnership between the Department of Commerce and the Department of Defense. The Commerce Department's National Institute of Standards and Technology has the expertise to administer the program, since its current responsibilities include related activities, which Senator

HOLLINGS has initiated in previous years and which he proposes to expand in the Manufacturing Strategy Act of 1991. And the Department of Defense has a vital interest in the program, since DOD relies increasingly on commercial products, processes, and buying practices for meeting the needs of the military. More narrowly, defense subtier suppliers, whose ranks are dwindling, would be a key target group for a national extension effort. State programs in Pennsylvania, Ohio, New York, Maryland, and elsewhere are currently helping smaller defense contractors diversify into civilian markets, so that they can continue to supply a shrinking DOD market.

Technology education and training: In the area of education, the Advanced Manufacturing Technology Act authorizes $25 million for Federal matching grants to expand post-secondary degree programs in manufacturing engineering and management. This is an area Senator NUNN took the lead in drafting and he is today introducing this component of the Advanced Manufacturing Technology Act as a separate bill to highlight its importance. The program developed by Senator NUNN would be funded by DOD, working closely with the National Science Foundation, which has a strong track record of support for manufacturing research and education.

Engineering schools in the United States, increasingly science-oriented in the last 30 years, have all but ignored the applied field of manufacturing engineering. There are hopeful signs of change: Leading universities—Georgia Tech, MIT, Penn State, Purdue, and Stanford—have established manufacturing engineering programs, primarily at the graduate level, and these programs are showing results. But these programs can only begin to satisfy the urgent need for engineers trained in manufacturing and design disciplines, for managers versed in manufacturing technology, and for faculty qualified to teach manufacturing engineering.

To help address this diverse need, our bill directs DOD to make grants to at least 10 U.S. colleges and universities—both to expand existing undergraduate and graduate programs in manufacturing engineering and to establish new ones. The programs must combine research and work experience with multidisciplinary classroom training. And, as with all of the programs proposed in this act, there must be significant industry involvement.

The education and training title of our bill establishes a second program, Manufacturing Managers in the Classroom, to strengthen the capacity of technical and community colleges and other post-secondary schools to serve regional manufacturing firms. Under this program, the Federal Government would provide matching funds for such schools to recruit experienced manufacturing managers from industry and Federal labs—say, for a 1- to 2- year sabbatical. The managers would help to identify the education and training requirements of regional firms, develop the appropriate teaching curricula for classroom and in-factory classes, and market the programs and facilities of the school to the relevant firms. In short, the managers would serve as a bridge between the factory and the classroom.

The Federal matching funds for this program would be competitively awarded, based on a merit review. As with the National Manufacturing Extension Program, Manufacturing Managers in the Classroom would be a partnership between the Department of Commerce and the Department of Defense. Funding criteria would include the following: First, strong industry involvement; second, evidence that the school has identified ways both to help the manager become an effective teacher and to institutionalize the manager's knowledge and expertise; and third, evidence that the proposed activities are of an appropriate scale and a sufficient quality to ensure a long-term improvement in the school's ability to serve the education and training needs of regional firms.

International activities: Finally, the Advanced Manufacturing Technology Act specifies that a small amount of the funds authorized for technology development shall go specifically to increase access to foreign technology through international cooperation in advanced manufacturing. So far, the United States has been in the position of responding to proposals for cooperative R&D from other countries—proposals that have received a mixed reaction from American firms and universities. Yet few would disagree that international cooperation in manufacturing, under the right conditions, can benefit all parties. The funds set aside for international cooperation by this bill will allow the Federal Government, working closely with U.S. firms and universities, to begin to initiate its own proposals.

CONCLUSION

U.S. industry, long accustomed to a virtual monopoly of world markets, ignored the critical importance of manufacturing in a competitive global economy. Federal science policy ignored it as well. We are now paying a heavy price for that neglect. The MIT Commission on Industrial Productivity said it well in the Commission's 1989 book, "Made in America:" "In order to live well, a country must produce well."

If the United States is to regain leadership in manufacturing, the Federal Government must step in where private markets can not or do not function: In exploring risky industrial technologies that provide large benefits to society but only small returns to individual firms; in deploying modern manufacturing practices and technology to smaller manufacturing firms, which lack the resources to modernize on their own; and in educating sufficient numbers of manufacturing professionals and skilled production workers.

But at the same time, Government must have strong industry participation at every stage. Industry involvement in technology development is necessary in order to direct public funds to high-risk areas that industry itself thinks will have the highest payoffs. Similarly, Government's role in technology deployment and education must be to complement and leverage private resources. Public resources alone are inadequate to meet the scale of the challenge. Moreover, manufacturing modernization is a continual process of adjustment rather than a threshold event; that calls for integrated systems rather than discrete public programs—systems that rely heavily on assistance from key customers and collective problem solving by smaller firms themselves.

The Advanced Manufacturing Technology Act of 1991 and Senator HOLLINGS' companion bill, the Manufacturing Strategy Act of 1991, set out a coherent and ambitious plan for Government-industry cooperation in manufacturing technology management, development, deployment, education, and international cooperation. The bills would also forge an important partnership within the Federal Government, joining the resources of the Department of Defense, the Department of Commerce, and other civilian agencies. If there was ever a challenge that called for such a united front, it is manufacturing. State and local governments and universities are also brought into the partnership, and in turn encouraged to work with and through industry.

The actions proposed in these bills are not sufficient to make up for Government and industry's past neglect of manufacturing. In particular, there must be separate consideration of providing direct incentives for firms to invest in worker training and manufacturing plant and equipment. More generally, it took decades for the United States to lose its leadership position in manufacturing, and it will take decades to restore it. But the Advanced Manufacturing Technology Act of 1991 and the Manufacturing Strategy Act of 1991 put us on that important path, and they take a major step toward reclaiming our heritage as a powerful manufacturing nation.

Mr. President, I ask unanimous consent that the text of the Advanced Manufacturing Technology Act of 1991 be printed at the end of my remarks.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1328

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be referred to as the "Advanced Manufacturing Technology Act of 1991".

SEC. 2. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.
Sec. 3. Findings.
Sec. 4. Purposes.
Sec. 5. Definitions.

TITLE I—ADVANCED MANUFACTURING TECHNOLOGY MANAGEMENT

Sec. 101. Requirement for biennial multiyear advanced manufacturing technology strategic road map.
Sec. 102. Submission of first advanced manufacturing technology strategic road map.

TITLE II—ADVANCED MANUFACTURING TECHNOLOGY DEVELOPMENT

PART A—DEPARTMENT OF DEFENSE

Sec. 201. Defense manufacturing technology and industrial preparedness.
Sec. 202. Department of Defense Advanced Manufacturing Technology Partnerships.
Sec. 203. Authorization of appropriations.

PART B—DEPARTMENT OF COMMERCE

Sec. 221. Advanced Manufacturing Technology Program component.
Sec. 222. Department of Commerce Advanced Manufacturing Technology Partnerships.
Sec. 223. Authorization of appropriations.

PART C—OTHER DEPARTMENTS AND AGENCIES

Sec. 231. Department of Energy Advanced Manufacturing Technology Partnerships.
Sec. 232. NASA Advanced Manufacturing Technology Partnerships.
Sec. 233. National Science Foundation Advanced Manufacturing Technology Partnerships.

PART D—ADMINISTRATIVE AND OTHER PROVISIONS FOR PARTNERSHIPS

Sec. 241. Lead institution.
Sec. 242. Partnership proposals.
Sec. 243. Selection of partnerships.
Sec. 244. Protection of information.
Sec. 245. Technical and other assistance.
Sec. 246. Consultation on partnership activities.

PART E—ADDITIONAL DEFINITIONS

Sec. 251. Definitions.

TITLE III—MANUFACTURING EXTENSION PROGRAMS

Sec. 301. Defense manufacturing extension programs.
Sec. 302. National Manufacturing Extension Program.
Sec. 303. Interagency Council on Manufacturing Extension.
Sec. 304. Authorizations of appropriations.

TITLE IV—MANUFACTURING EDUCATION AND TRAINING

PART A—DEFENSE MANUFACTURING ENGINEERING EDUCATION

Sec. 401. Findings and purposes.
Sec. 402. Manufacturing Engineering Education Grant Program.
Sec. 403. Covered programs of manufacturing engineering education.
Sec. 404. Grant proposals.
Sec. 405. Grant awards.
Sec. 406. Definition.
Sec. 407. Authorization of appropriations.

PART B—MANUFACTURING MANAGERS IN THE CLASSROOM

Sec. 421. Manufacturing Managers in the Classroom Program.
Sec. 422. Authorization of appropriations.

TITLE V—INTERNATIONAL ACTIVITIES IN ADVANCED MANUFACTURING

Sec. 501. Findings and purpose.
Sec. 502. International cooperation in research and development.

SEC. 3. FINDINGS.

The Congress makes the following findings:

(1) The greatest competitive advantage to be derived from a technological discovery lies not with the discovery itself but, rather, with the perfecting of its manufacturing uses.

(2) United States industry has fallen behind industry in other countries in the invention, production, and use of advanced manufacturing technology.

(3) The cost of such lag to United States manufacturing productivity has been high, and the resulting weakness in the United States manufacturing base poses a threat to the national security of the United States.

(4) The 360,000 United States manufacturing firms with fewer than 500 workers are routinely among the last of the United States manufacturing firms to adopt and use advanced manufacturing technology.

(5) The vitality of these 360,000 small and medium-sized firms is critical to the economic prosperity of the United States, for more than half of the value added in the United States to commodities and products by manufacturing such commodities and products into end products is attributable to the manufacturing activities of such firms.

(6) The vitality of these 360,000 small and medium-sized firms, as well as large manufacturing firms, is also critical to the national security of the United States because the Department of Defense relies increasingly on commercial products, processes, and buying practices for meeting the needs of the Department of Defense for supplies and other property.

(7) Manufacturing extension programs conducted by States and other organizations, in some cases with support from large manufacturing firms, are effective in helping small and medium-sized firms modernize their manufacturing equipment and practices. However, such programs involve only a few thousand firms each year.

(8) Efforts by the Department of Defense, Department of Commerce, and other departments and agencies of the Federal Government to modernize United States manufacturing firms should be thoroughly integrated rather than separate and distinct.

(9) Education and training of United States managers, engineers, and workers in the disciplines that place appropriate emphasis on the entire manufacturing process, including design and customer support, are vital for ensuring the ability of United States manufacturing firms to keep pace with advances in manufacturing technology.

SEC. 4. PURPOSES.

The purposes of this Act are as follows:

(1) To ensure that within 10 years after the date of the enactment of this Act the United States is second to no other nation in the development, deployment, and use of advanced manufacturing technology.

(2) To provide for the coordination of the activities of the Federal Government regarding advanced manufacturing technology.

(3) To encourage the development and utilization of generic, precompetitive advanced manufacturing technology through Department of Defense, Department of Commerce, Department of Energy, National Aeronautics and Space Administration, and National Science Foundation programs for awarding research grants and research contracts, establishing research partnerships, and making of other cooperative agreements with United States industry.

(4) To support State, local, and private, nonprofit programs devoted to improving the quality, productivity, and performance of small and medium-sized United States manufacturing firms.

(5) To support the establishment of new programs for the study of manufacturing engineering and management in institutions of higher education in the United States and the enhancement of existing programs for the study of manufacturing engineering and management in such institutions.

(6) To encourage and support teaching by experienced manufacturing managers and experts from United States industry and Federal laboratories in institutions of higher education in the United States.

(7) To facilitate increased access to foreign sources of advanced manufacturing technology through international cooperation by the Federal Government and United States industry in international activities relating to such technology.

SEC. 5. DEFINITIONS.

In this Act:

(1) The term "advanced manufacturing technology" means processes, equipment, techniques, practices, capabilities (including organizational and management practices and capabilities), and skills (including worker skills) that are applied in ways intended—

(A) to improve the efficiency by which a product similar in character to existing products is designed, developed, tested, and manufactured;

(B) to reduce the cost of designing or producing a product;

(C) to improve the quality of a product, including the reliability, functionality, and maintainability of the product; or

(D) to expand the technical capability to design, develop, test, and manufacture a product that is fundamentally different in character from existing products.

(2) The terms "Federal laboratory" and "laboratory" have the meaning given the term "laboratory" in section 12(d)(2) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).

TITLE I—ADVANCED MANUFACTURING TECHNOLOGY MANAGEMENT

SEC. 101. REQUIREMENT FOR BIENNIAL MULTIYEAR ADVANCED MANUFACTURING TECHNOLOGY STRATEGIC ROAD MAP.

The National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6601 et seq.) is amended by adding at the end the following new title:

"TITLE VII—NATIONAL ADVANCED MANUFACTURING TECHNOLOGY STRATEGIC ROAD MAP

"REQUIREMENT FOR STRATEGIC ROAD MAP

"SEC. 701. (a) The President, acting through the Federal Coordinating Council for Science, Engineering, and Technology, shall develop, issue, and submit to Congress,

at least once every two years, in accordance with this title a multiyear strategic road map for advanced manufacturing technology (hereafter in this title referred to as the 'advanced manufacturing technology strategic road map' or 'strategic road map').

"(b) Each strategic road map shall cover at least the four fiscal years following the fiscal year in which the strategic road map is submitted to Congress.

"(c) In developing the strategic road map, the Council shall consult with appropriate representatives of United States industry interested in advanced manufacturing technology and with the Advanced Manufacturing Technology Advisory Committee established pursuant to section 703.

"CONTENT OF STRATEGIC ROAD MAP

"SEC. 702. (a) The strategic road map shall—

"(1) provide an assessment of the current strengths and weaknesses in the national capability of the United States to develop and apply advanced manufacturing technology, including an assessment of the current activities of United States industry, institutions of higher education in the United States, the Federal Government, and State and local governments which enhance or hinder the development and application of advanced manufacturing technology;

"(2) in light of such assessment, provide guidance for the conduct and coordination of the activities of the Federal Government that are directed toward enhancing the development and application of advanced manufacturing technology;

"(3) specify the goals and priorities of such activities;

"(4) provide guidance for interagency coordination of the implementation of the strategic road map within the Federal Government, including the appropriate roles of each department and agency of the Federal Government and of United States industry in implementing the Plan;

"(5) provide guidance for facilitating increased access to foreign sources of advanced manufacturing technology through international cooperation in activities of the Federal Government and United States industry relating to such technology; and

"(6) provide guidance for joint actions for departments and agencies of the Federal Government to take regarding the advanced manufacturing technology activities of such departments and agencies, including joint actions—

"(A) to ensure that the results of the advanced manufacturing technology research and development activities funded or conducted by departments and agencies of the Federal Government are appropriately disseminated to United States industry;

"(B) to encourage and enhance the use of such results by United States industry to improve the quality, productivity, and performance of the manufacturing activities of United States industry, with due regard to environmental considerations; and

"(C) to provide for education and training of personnel engaged in advanced manufacturing technology development.

"(b) Each strategic road map (other than the first strategic road map) shall include a discussion of the achievements of the advanced manufacturing technology activities conducted pursuant to the preceding strategic road map. Such discussion shall include—

"(1) an analysis of the progress made toward achieving the goals and objectives of the strategic road map;

"(2) a summary of the budgets of the departments and agencies of the Federal Government for advanced manufacturing technology activities for the first two fiscal years covered by such preceding strategic road map; and

"(3) any additional actions or recommendations for legislation necessary to carry out the provisions of this title and the provisions of the strategic road map.

"ADVANCED MANUFACTURING TECHNOLOGY ADVISORY COMMITTEE

"SEC. 703. (a) Director of the Office of Science and Technology Policy shall establish an Advanced Manufacturing Technology Advisory Committee to ensure that expert advice on advanced manufacturing technology is available to the Federal Coordinating Council for Science, Engineering, and Technology for the purposes of carrying out the responsibilities of the Council under this title.

"(b) The Committee shall consist of members appointed by the Director from among representatives of United States industry, members of industry associations, representatives of labor organizations in the United States, members of professional and technical societies in the United States, and other persons who are qualified to provide the Council with advice and assistance in the development of an Advanced Manufacturing Technology Strategic Road Map.

"(c) The Director of the Office of Science and Technology Policy shall designate a member of the Committee to serve as Chairman.

"(d) The Committee shall provide the Council with its independent assessment of—

"(1) the goals and priorities for the development and applications of advanced manufacturing technology, including an assessment of the extent to which the achievement of such goals and priorities will ensure United States leadership in the development and application of advanced manufacturing technology;

"(2) the specific programs and activities that the Federal Government must conduct as complements to the activities of United States industry in order to accomplish such goals and priorities;

"(3) the progress made in implementing the strategic road map;

"(4) any need to revise the strategic road map;

"(5) the balance between the components of the strategic road map; and

"(6) any other issues identified by the Director of the Office of Science and Technology Policy.

"(e) The Committee shall assist in the development of, and shall review, the first strategic road map before it is submitted to Congress. With regard to that strategic road map, the Committee shall provide the Council with its independent assessment of the matters described in clauses (1), (2), (4), (5), and (6) of subsection (d).

"RESPONSIBILITIES OF THE COUNCIL

"SEC. 704. The Federal Coordinating Council for Science, Engineering, and Technology shall—

"(1) serve as the lead entity of the Federal Government responsible for the development of the strategic road map and the interagency coordination of the Federal advanced manufacturing technology activities conducted pursuant to the strategic road map;

"(2) on a biennial basis, report to the President any recommended changes in departmental or agency responsibilities that are necessary for better implementation of the strategic road map;

"(3) each year before the submission of the budget to Congress pursuant to section 1105 of title 31, United States Code, review the budget concerning the consistency of the budget with the strategic road map and make the results of that review available to the appropriate officials within the Executive Office of the President; and

"(4) in carrying out its responsibilities under this title—

"(A) obtain analyses and assessments from the Critical Technologies Institute established by section 822 of the National Defense Authorization Act for Fiscal Year 1991 (42 U.S.C. 6686), as appropriate; and

"(B) consider any reports of and studies conducted by (i) departments and agencies within the executive branch, (ii) Congress, (iii) the National Research Council, (iv) industry associations, or (v) other persons and organizations.

"DEFINITIONS

"SEC. 705. In this title:

"(1) The term 'advanced manufacturing technology' means processes, equipment, techniques, practices, capabilities (including organizational and management practices and capabilities), and skills (including worker skills) that are applied in ways intended—

"(A) to improve the efficiency by which a product similar in character to existing products is designed, developed, tested, and manufactured;

"(B) to reduce the cost of designing or producing a product;

"(C) to improve the quality of a product, including the reliability, functionality, and maintainability of the product; or

"(D) to expand the technical capability to design, develop, test, and manufacture a product that is fundamentally different in character from existing products.

"(2) The terms 'Federal laboratory' and 'laboratory' have the meaning given the term 'laboratory' in section 12(d)(2) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a).".

SEC. 102. SUBMISSION OF FIRST ADVANCED MANUFACTURING TECHNOLOGY STRATEGIC ROAD MAP.

The President shall submit the first National Advanced Manufacturing Technology Strategic Road Map to Congress under section 701 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (as added by section 101) within one year after the date of the enactment of this Act.

TITLE II—ADVANCED MANUFACTURING TECHNOLOGY DEVELOPMENT

PART A—DEPARTMENT OF DEFENSE

SEC. 201. DEFENSE MANUFACTURING TECHNOLOGY AND INDUSTRIAL PREPAREDNESS.

In order to enhance research and development in advanced manufacturing technology, the Secretary of Defense, in consultation with the Director of the Office of Science and Technology Policy, shall continue—

(1) to refine and implement the National Defense Manufacturing Technology Plan required by section 2513 of title 10, United States Code; and

(2) to encourage the advanced manufacturing technology research and development efforts of United States industry, Federal laboratories, and institutions of higher education in the United States.

SEC. 202. DEPARTMENT OF DEFENSE ADVANCED MANUFACTURING TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—Not later than one year after the date of the enactment of this Act, the Secretary of De-

fense shall establish one or more Advanced Manufacturing Technology Partnerships to carry out the purpose specified in section 4(3).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and may include one or more Federal laboratories, institutions of higher education in the United States, State entities, and any other participants that the Secretary of Defense considers appropriate.

SEC. 203. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated to the Department of Defense for the purposes of carrying out the provisions of this part, $250,000,000 for each of fiscal years 1992 and 1993.

PART B—DEPARTMENT OF COMMERCE

SEC. 221. ADVANCED MANUFACTURING TECHNOLOGY PROGRAM COMPONENT.

Section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n) is amended by striking out subsection (e) and inserting in lieu thereof the following new subsections:

"(e) There is established within the Program an Advanced Manufacturing Technology Component of the Program. Under the Advanced Manufacturing Technology Component of the Program, the Secretary, in consultation with the Director of the Office of Science and Technology Policy, shall ensure that financial support is provided for the activities of eligible firms and joint research and development ventures to identify and solve generic problems associated with research and development in advanced manufacturing technology and with the establishment of technical standards in advanced manufacturing technology. The Secretary shall place special emphasis on problems that inhibit the rapid development of commercially useful products, processes, and services associated with applications of advanced manufacturing technology.

"(f) As used in this section:

"(1) The term 'joint research and development venture' has the meaning given such term in subsections (a)(6) and (b) of section 2 of the National Cooperative Research Act of 1984 (15 U.S.C. 4302).

"(2) The term 'eligible firm' means a company or other business entity that, as determined by the Secretary of Commerce—

"(A) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

"(B) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business entity of a parent company that is incorporated in a country the government of which—

"(i) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funding indirectly through international organizations; and

"(ii) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.".

SEC. 222. DEPARTMENT OF COMMERCE ADVANCED MANUFACTURING TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—Not later than one year after the date of the enactment of this Act, the Secretary of Commerce, in consultation with the Director of the Office of Science and Technology Policy, shall establish one or more Advanced Manufacturing Technology Partnerships to carry out the purpose specified in section 4(3).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and may include one or more Federal laboratories, institutions of higher education in the United States, State entities, and any other participants that the Secretary of Commerce considers appropriate.

SEC. 223. AUTHORIZATION OF APPROPRIATIONS.

Funds are hereby authorized to be appropriated to the Department of Commerce for carrying out section 222 as follows:

(1) For fiscal year 1992, $50,000,000.

(2) For fiscal year 1993, $100,000,000.

PART C—OTHER DEPARTMENTS AND AGENCIES

SEC. 231. DEPARTMENT OF ENERGY ADVANCED MANUFACTURING TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—Not later than one year after the date of enactment of this Act, the Secretary of Energy shall establish three or more Advanced Manufacturing Technology Partnerships to carry out the purpose specified in section 4(3).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and one or more laboratories of the Department of Energy, and may include other Federal laboratories, institutions of higher education in the United States, State entities, and any other participants that the Secretary of Energy considers appropriate.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Department of Energy for atomic energy defense activities for the purpose of carrying out this section, $50,000,000 for each of fiscal years 1992 and 1993.

SEC. 232. NASA ADVANCED MANUFACTURING TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—Not later than one year after the date of the enactment of this Act, the Administrator of the National Aeronautics and Space Administration shall establish one or more Advanced Manufacturing Technology Partnerships to carry out the purpose specified in section 4(3).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms and one or more laboratories of the National Aeronautics and Space Administration, and may include other Federal laboratories, institutions of higher education in the United States, State entities, and any other participants that the Administrator considers appropriate.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the National Aeronautics and Space Administration for carrying out this section, $10,000,000 for each of fiscal years 1992 and 1993.

SEC. 233. NATIONAL SCIENCE FOUNDATION ADVANCED MANUFACTURING TECHNOLOGY PARTNERSHIPS.

(a) ESTABLISHMENT OF PARTNERSHIPS.—Not later than one year after the date of the enactment of this Act, the Director of the National Science Foundation shall establish one or more Advanced Manufacturing Technology Partnerships to carry out the purpose specified in section 4(3).

(b) PARTNERSHIP PARTICIPANTS.—Each Partnership shall be composed of participants from two or more eligible firms, and may include one or more Federal laboratories, institutions of higher education in the United States, State entities, and any other participants that the Administrator considers appropriate.

(c) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the National Science Foundation for carrying out this section, $10,000,000 for each of fiscal years 1992 and 1993.

PART D—ADMINISTRATIVE AND OTHER PROVISIONS FOR PARTNERSHIPS

SEC. 241. LEAD INSTITUTION.

The participants in each Advanced Manufacturing Technology Partnership proposed to be established under this title shall designate a lead institution for the Partnership. The lead institution shall direct the activities of the Partnership.

SEC. 242. PARTNERSHIP PROPOSALS.

(a) SUBMISSION OF PROPOSALS.—Each proposal for the establishment of an Advanced Manufacturing Technology Partnership by the Secretary of Defense, the Secretary of Commerce, the Secretary of Energy, the Administrator of the National Aeronautics and Space Administration, or the Director of the National Science Foundation, as the case may be, shall be submitted to such official by the lead institution acting on behalf of the proposed participants in the Partnership.

(b) CONTENT OF PROPOSALS.—Each proposal for the establishment of an Advanced Manufacturing Technology Partnership pursuant to this title shall include the following:

(1) Goals and objectives of the Partnership.

(2) A research and development plan to achieve such goals and objectives.

(3) Evidence of expertise among the Partnership participants in developing and utilizing advanced manufacturing technologies.

(4) Evidence of the commitment of eligible firms to participate in the Partnership, including a description of how personnel, equipment, facilities, and expertise of such firms will be used in the planning, conducting, and monitoring of the technology transfer activities of the Partnership and other Partnership activities.

(5) Evidence that the technologies proposed for development by the Partnership will help to minimize any potential health, safety, and environmental hazards of advanced manufacturing activities.

(6) The demonstration of financial commitment required by subsection (c).

(c) COST-SHARING REQUIREMENTS.—Each Partnership proposal shall demonstrate a financial commitment of the non-Federal Government participants to contribute at least 50 percent of the total cost of the Partnership activities. Within the total contribution to be made pursuant to such commitment the non-Federal Government participants may contribute a lesser percentage of the cost incurred during a particular period of Partnership activity or a lesser percentage of the cost of a particular Partnership activity. In the determination of the contribution made by a non-Federal Government participant, there shall be included the fair market value of the participant's contributions of equipment, services, materials, technology transfer activities, and other assets directly related to the costs of the Partnership activities, as determined by the official that established the Partnership.

SEC. 243. SELECTION OF PARTNERSHIPS.

(a) COMPETITIVE SELECTION.—Advanced Manufacturing Technology Partnerships shall be selected through a competitive process prescribed by the Secretary of Defense (for Partnerships established by such Secretary), the Secretary of Commerce (for Partnerships established by such Secretary), the Secretary of Energy (for Partnerships established by such Secretary), the Administrator of the National Aeronautics and Space Administration (for Partnerships established by the Administrator), and the Director of

the National Science Foundation (for Partnerships established by the Director), in consultation with the Director of the Office of Science and Technology Policy.

(b) REQUIRED CRITERIA.—Each Secretary, the Administrator, and the Director, respectively, shall select for the establishment of a Partnership the Partnership proposal or proposals that—

(1) provides for the conduct of activities that involve such a significant level of risk of failure that timely private sector investment in such activities is unlikely other than through a Partnership;

(2) demonstrate the most promise of achieving the Partnership goals and objectives;

(3) offer the greatest potential for improving economic prosperity in the United States or the national security of the United States through research and development in advanced manufacturing technology, as evidenced by such activities as the formulation of business plans for the subsequent commercial development of the technology;

(4) propose the most effective program or programs for the transfer of technology to firms participating in the Partnership from other Partnership participants;

(5) provides for a breadth of participation of eligible firms in the Partnership that is sufficient to ensure that there will be competition in the application of the results of Partnership activities to the production of marketable products and the development of marketable processes;

(6) best provide for minimizing the hazards referred to in section 242(b)(5); and

(7) demonstrate the greatest commitment of eligible firms to Partnership participation.

SEC. 244. PROTECTION OF INFORMATION.

(a) AUTHORITY TO DISCLOSE INFORMATION.—Subject to subsection (b), a participant in an Advanced Manufacturing Technology Partnership may disclose information on the research and development activities of the Partnership to the same extent that a Federal laboratory may disclose information under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3710a) and all other similar provisions of law.

(b) LIMITATIONS ON DISCLOSURE.—No officer or employee of the Federal Government may disclose any trade secret or commercial or financial information that is privileged or confidential within the meaning of section 552(b)(4) of title 5, United States Code, and is obtained from a non-Federal Government participant in a Partnership as a result of the activities of the Partnership, regardless of whether such activities are subject to the Stevenson-Wydler Technology Innovation Act of 1980. The prohibition in the preceding sentence does not apply to a disclosure made with the consent of such participant.

SEC. 245. TECHNICAL AND OTHER ASSISTANCE.

The Secretary of Defense (in the case of a Partnership established by such Secretary), the Secretary of Commerce (in the case of a Partnership established by such Secretary), the Secretary of Energy (in the case of a Partnership established by such Secretary), and the Administrator of the National Aeronautics and Space Administration (in the case of a Partnership established by the Administrator) shall provide the Partnership with technical and other assistance that the Secretary or Administrator (as the case may be) considers necessary and appropriate to facilitate the achievement of the goals and objectives of the Partnership.

SEC. 246. CONSULTATION ON PARTNERSHIP ACTIVITIES.

The Secretary of Defense, the Secretary of Commerce, the Secretary of Energy, the Administrator of the National Aeronautics and Space Administration, and the Director of the National Science Foundation shall each consult with the Federal Coordinating Council for Science, Engineering, and Technology regarding the selection of Partnerships for establishment by such official.

PART E—ADDITIONAL DEFINITIONS

SEC. 251. DEFINITIONS.

In this title, the term "eligible firm" means a company or other business entity that, as determined by the Secretary of Commerce—

(1) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

(2) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business entity of a parent company that is incorporated in a country the government of which—

(A) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funding indirectly through international organizations; and

(B) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.

TITLE III—MANUFACTURING EXTENSION PROGRAMS

SEC. 301. DEFENSE MANUFACTURING EXTENSION PROGRAMS.

(a) REVISION OF AUTHORITY.—Section 2517 of title 10, United States Code, is amended—

(1) by inserting "(a)" before "The Secretary of Defense,";

(2) in the first sentence—

(A) by striking out "the defense subtier industry" and inserting in lieu thereof "defense foundation firms"; and

(B) by striking out "and other existing organizations" and all that follows through "manufactured parts";

(3) in the second sentence, by striking out "of the Act of March 3, 1901 (15 U.S.C. 278k)" and inserting in lieu thereof "or 31 of the National Institute of Standards and Technology Act (15 U.S.C. 278k or 278p)"; and

(4) by adding at the end the following new subsection:

"(b) In this section, the term 'defense foundation firm' means a foundation firm (as defined in section 31(k) of the National Institute of Standards and Technology Act (15 U.S.C. 278p(k)) that is in one of the industries identified by the Under Secretary of Defense for Acquisition pursuant to section 2503(6) of this title.".

(b) CONFORMING DEFINITIONAL AMENDMENTS.—Section 2511 of title 10, United States Code, is amended to read as follows:

"§ 2511. Definitions

"In this chapter:

"(1) The term 'manufacturing technology' means processes, equipment, techniques, practices, capabilities (including organizational and management practices and capabilities), and skills (including worker skills) that are applied in ways intended—

"(A) to improve the efficiency by which a product similar in character to existing products is designed, developed, tested, and manufactured;

"(B) to reduce the cost of designing or producing a product;

"(C) to improve the quality of a product, including the reliability, functionality, and maintainability of the product; or

"(D) to expand the technical capability to design, develop, test, and manufacture a product that is fundamentally different in character from existing products.

"(2) The term 'manufacturing extension programs' means public and private, nonprofit programs for the improvement of the quality, productivity, and performance of small and medium-sized manufacturing firms in the United States.".

SEC. 302. NATIONAL MANUFACTURING EXTENSION PROGRAM.

(a) PROGRAM REQUIRED.—The National Institute of Standards and Technology Act (15 U.S.C. 271 et seq.) is amended—

(1) by redesignating section 31 as section 32; and

(2) by inserting after section 30 the following new section 31:

"NATIONAL MANUFACTURING EXTENSION PROGRAM

"SEC. 31. (a) The Secretary of Commerce, in close consultation and cooperation with the Secretary of Defense, shall conduct a program to be known as the 'National Manufacturing Extension Program'.

"(b) The purposes of the Program are as follows:

"(1) To encourage efforts to improve the manufacturing quality, productivity, and performance of foundation firms by providing financial and technical assistance for—

"(A) the conduct of advanced manufacturing technology programs of States, local governments, and private, nonprofit organizations that facilitate the achievement of such improvements; and

"(B) the establishment of such programs in States in which no such program is conducted.

"(2) To promote the development of a broad range of such programs, including programs that provide for in-factory assistance, teaching factories, computer-integrated manufacturing centers, advanced manufacturing technology testbeds, flexible manufacturing networks, group services, service centers, industry association technology activities, and other productivity and quality improvement activities.

"(3) To increase the involvement of appropriate segments of the private sector, especially key customers of foundation firms, vendors of advanced manufacturing equipment, and industry and professional organizations, in activities that improve the manufacturing quality, productivity, and performance of foundation firms.

"(c)(1) The Secretary of Commerce shall prescribe, in close consultation and cooperation with the Secretary of Defense, policies and procedures to implement the National Manufacturing Extension Program.

"(2) The Secretary may—

"(A) provide financial assistance through grants made or contracts, cooperative agreements, or other financial arrangements entered into in order to carry out the purposes of the Program; and

"(B) provide for the furnishing of technical assistance regarding advanced manufacturing technology to programs receiving financial assistance under the Program.

"(3) The technical assistance that the Secretary may provide for under this section includes such assistance as the following:

"(A) The dissemination of information between programs receiving financial assistance under the Program, between such programs and Regional Centers for the Transfer of Manufacturing Technology, and between

such programs and other appropriate programs.

"(B) Training personnel involved in the conduct of such programs.

"(C) The development and dissemination of generally applicable tools and techniques for diagnosing the problems of foundation firms.

"(D) The dissemination of advanced manufacturing technology by Federal laboratories to foundation firms in accordance with the needs of such firms, as ascertained by the Federal laboratories pursuant to procedures which the Secretary shall prescribe.

"(E) Evaluation of the performance of programs.

"(4) Subject to the authority, direction, and control of the Secretary and the Under Secretary of Commerce for Technology, the Director of the National Institute of Standards and Technology shall perform the responsibilities and exercise the authority provided in this subsection.

"(d) Any State government, any local government, any private, nonprofit institution, any group of State governments, local governments, or private, nonprofit institutions, and any consortium of private, nonprofit institutions may submit to the Secretary an application for financial assistance under the Program in accordance with the procedures prescribed by the Secretary. The Secretary shall encourage multi-State applications where cooperation among States in the direction and delivery of program services serves the purposes of the Program.

"(e) Each application for financial assistance for an advanced manufacturing technology program under the National Manufacturing Extension Program shall include the following:

"(1) A statement of goals and objectives that are consistent with the purposes of the Program.

"(2) A program strategy for achieving such goals and objectives, including a discussion of how personnel, equipment, and facilities belonging to or utilized by the program will be used to carry out program activities.

"(3) A description of the nature and extent of the involvement by and support from private industry (especially key customers of the foundation firms to be served by the Program, vendors of advanced manufacturing equipment, and appropriate industry and professional organizations) in the planning, directing, and delivery of program services.

"(4) The demonstration of financial commitment required by subsection (f).

"(f) Each application for financial assistance for a program shall demonstrate a commitment to derive at least 50 percent of the resources necessary to defray the total cost of the program from non-Federal Government sources. In the determination of the contribution made by a non-Federal Government source, there shall be included the fair market value of the source's contributions of equipment, services, materials, and other assets directly related to the costs associated with the objectives of the Program.

"(g) Applications for financial assistance shall be evaluated on the basis of merit pursuant to procedures prescribed by the Secretary of Commerce, in close consultation with the Secretary of Defense and the Interagency Council on Manufacturing Extension.

"(h) In awarding financial assistance under the Program, the Secretary shall select advanced manufacturing technology programs that demonstrate in the applications the following:

"(1) Evidence that the program—

"(A) will be carried out by a staff that includes personnel who have significant experience in industrial manufacturing;

"(B) is capable of providing in-factory assistance to foundation firms, as appropriate; and

"(C) proposes an approach to improving the quality, productivity, and performance of foundation firms that integrates technology, training, management, and other appropriate factors.

"(2) Significant potential to result in lasting improvement in the quality, productivity, and performance of foundation firms in each region or sector served by the program.

"(3) Significant involvement by and support from private industry (especially key customers of the foundation firms to be served by the program, vendors of advanced manufacturing equipment, and appropriate industry and professional organizations) in the planning, directing, delivery, and financing of assistance to foundation firms.

"(4) The potential for improving the quality, productivity, and performance of a significant number of foundation firms with limited expenditure of public resources through provision of group services, facilitation of manufacturing networks, significant industry involvement, or by other means.

"(5) Appropriate cooperation and coordination with Regional Centers for the Transfer of Manufacturing Technology and other programs conducted by the Federal Government, any State, any local government, or any private, nonprofit organization to modernize United States manufacturing firms.

"(6) Attention to the needs of any foundation firms that supply manufactured products to the Department of Defense or to contractors of the Department of Defense.

"(7) Evidence of vision, leadership, management direction, and skill in developing and operating the program.

"(i)(1) The amount of financial assistance furnished to a recipient for an advanced manufacturing technology program under the Program may not exceed 50 percent of the estimated cost of carrying out the program for the period for which the assistance is to be provided. Financial assistance shall be provided to a recipient program for a period of at least five years unless such financial assistance is earlier terminated for good cause determined by the Secretary. The amount to be furnished shall be determined on the basis of the availability of funds for furnishing such assistance, the limitation in paragraph (2), the policies set out in paragraph (3), and other factors that the Secretary considers appropriate.

"(2) Paragraph (1) does not prohibit a recipient program from reapplying for financial assistance under the Program upon expiration or termination of the furnishing of financial assistance. The application for additional financial assistance shall be subject to the requirements and procedures set out in this section in the same manner and to the same extent as initial applications for financial assistance under the Program.

"(3) The Secretary shall ensure that an adequate level of financial assistance is furnished under the Program for advanced manufacturing technology programs that are to be conducted in States which, due to chronic economic disadvantages, lack the resources necessary to establish and sustain such programs. In carrying out this paragraph, the Secretary shall encourage such activities as cooperation between States and may award a State a one-time grant, not to exceed $500,000, to support, in close coordination with appropriate segments of private industry, the development of an advanced manufacturing technology program referred to in subsection (b)(1).

"(j) The Secretary shall prescribe regulations to carry out the Program. The regulations shall include the following:

"(1) A description of the Program.

"(2) Procedures for submitting applications for financial assistance.

"(3) Criteria for selecting applicants for award of financial assistance.

"(4) Support levels expected to be available for recipient programs.

"(k) In this section:

"(1) The term 'foundation firm' means a company or other business entity that, as determined by the Secretary of Commerce—

"(A) engages in manufacturing;

"(B) has less than 500 employees;

"(C) conducts a significant level of its research, development, engineering, and manufacturing activities in the United States; and

"(D) is a company or other business entity the majority ownership or control of which is in United States citizens or is a company or other business entity of a parent company that is incorporated in a country the government of which—

"(i) encourages the participation of firms so owned or controlled in research and development consortia to which the government of that country provides funding directly or provides funding indirectly through international organizations; and

"(ii) affords adequate and effective protection for the intellectual property rights of companies incorporated in the United States.

"(2) The terms 'Interagency Council on Manufacturing Extension' and 'Council' each mean the Interagency Council on Manufacturing Extension established by section 303 of the Advanced Manufacturing Technology Act of 1991.

"(3) The term 'Program' means the National Manufacturing Extension Program established pursuant to subsection (a).

"(4) The term 'Regional Center for the Transfer of Manufacturing Technology' means a Regional Center for the Transfer of Manufacturing Technology referred to in section 25(a).".

(b) REGULATIONS.—The Secretary of Commerce shall publish the proposed regulations required by section 31 of the National Institute of Standards and Technology Act (as added by subsection (a)) in the Federal Register not later than 120 days after the date of the enactment of this Act. The period for public comment on such regulations shall be 30 days. The Secretary shall issue the final regulations within 60 days after the end of the period for public comment.

SEC. 303. INTERAGENCY COUNCIL ON MANUFACTURING EXTENSION.

(a) ESTABLISHMENT OF INTERAGENCY COUNCIL.—There is an Interagency Council on Manufacturing Extension.

(b) MEMBERSHIP.—The Council is composed of ten members as follows:

(1) Three members designated by the Secretary of Commerce from among officers and employees of the Department of Commerce.

(2) Three members designated by the Secretary of Defense from among personnel in the Department of Defense.

(3) One member designated by the Secretary of Energy from among officers and employees of the Department of Energy.

(4) One member designated by the Secretary of Labor from among officers and employees of the Department of Labor.

(5) One member designated by the Administrator of the National Aeronautics and Space Administration from among officers and employees of the National Aeronautics and Space Administration.

(6) One member designated by the Director of the National Science Foundation from among officers and employees of the National Science Foundation.

(c) CHAIRMAN.—The Secretary of Commerce shall designate a member of the Council to serve as Chairman.

(d) ACTIVITIES AND RESPONSIBILITIES.—The Council shall—

(1) advise the Secretary of Commerce regarding the establishment and conduct of the National Manufacturing Extension Program required by section 31 of the National Institute of Standards and Technology Act, as added by section 302;

(2) provide for the coordinated implementation of the National Manufacturing Extension Program by the Department of Commerce and the Department of Defense;

(3) serve as a means for coordinating the National Manufacturing Extension Program with related programs conducted by the Department of Energy, the Department of Labor, the National Aeronautics and Space Administration, the National Science Foundation, and other departments and agencies of the Federal Government;

(4) consult with representatives from States, localities, private, nonprofit entities, United States industry, and other appropriate groups on the policies and procedures prescribed to implement the National Manufacturing Extension Program; and

(5) develop a long-range strategic plan for the National Manufacturing Extension Program and, in developing such plan, devote particular attention to linkages between the Program and other programs and activities of the Federal Government.

(e) STRATEGIC PLAN NOT TO DELAY IMPLEMENTATION OF NATIONAL MANUFACTURING EXTENSION PROGRAM.—Implementation of the National Manufacturing Extension Program shall not be delayed in order for the Council to complete the development of the strategic plan referred to in subsection (d)(5).

SEC. 304. AUTHORIZATIONS OF APPROPRIATIONS.

(a) DEPARTMENT OF COMMERCE.—Funds are hereby authorized to be appropriated for the Department of Commerce to carry out the responsibilities of the Secretary of Commerce and under section 31 of the National Institute of Standards and Technology Act (as added by section 302(a)) and under section 303 as follows:

(1) For fiscal year 1992, $30,000,000.
(2) For fiscal year 1993, $50,000,000.
(3) For fiscal year 1994, $60,000,000.
(4) For fiscal year 1995, $75,000,000.

(b) DEPARTMENT OF DEFENSE.—Funds are hereby authorized to be appropriated for the Department of Defense to carry out the responsibilities of the Secretary of Defense under section 31 of the National Institute of Standards and Technology Act (as added by section 302(a)) and under section 303 and for transfer to the Department of Commerce for the conduct of the National Manufacturing Extension Program established by section 31 of such Act, as follows:

(1) For fiscal year 1992, $50,000,000.
(2) For fiscal year 1993, $65,000,000.
(3) For fiscal year 1994, $80,000,000.
(4) For fiscal year 1995, $100,000,000.

TITLE IV—MANUFACTURING EDUCATION AND TRAINING

PART A—DEFENSE MANUFACTURING ENGINEERING EDUCATION

SEC. 401. FINDINGS AND PURPOSES.

(a) FINDINGS.—Congress makes the following findings:

(1) A strong defense industrial base is essential for the maintenance of the national security of the United States.

(2) Significant improvements in the productivity of the defense industrial base of the United States can be made if the manufacturers in the defense industrial base take full advantage of the rapid advancements that are occurring in manufacturing technology.

(3) Improved education and training of United States engineers, technicians, and workers in modern manufacturing techniques is vital to the ability of manufacturers in the defense industrial base of the United States to take advantage of advances in manufacturing technology.

(4) Federal Government support for State, local, and private sector initiatives is needed to stimulate improvements in manufacturing engineering education and training.

(b) PURPOSES.—The purposes of this title are to encourage the development of undergraduate and graduate level programs of education and research in manufacturing engineering at institutions of higher education in the United States and to increase the number of persons educated in the techniques and disciplines of manufacturing engineering through—

(1) the expansion of Federal Government support for programs of manufacturing engineering education in the United States;

(2) the provision of financial support for the establishment of new programs of manufacturing engineering education across the United States;

(3) the improvement of existing programs in manufacturing engineering education in the United States;

(4) the encouragement of increased participation of women, members of minority groups, and disabled persons in manufacturing education and training; and

(5) the active involvement of the Federal Government, States, and local governments along with institutions of higher education and private industry in cooperative undertakings to establish and support such programs.

SEC. 402. MANUFACTURING ENGINEERING EDUCATION GRANT PROGRAM.

(a) ESTABLISHMENT OF GRANT PROGRAM.—The Secretary of Defense, in consultation with the Director of the National Science Foundation and the Director of the Office of Science and Technology Policy, shall establish a program for the Secretary to make grants to institutions of higher education for the following purposes:

(1) To support the enhancement of existing programs in manufacturing engineering education that are conducted by grantee institutions and that meet the requirements of section 403.

(2) To support the establishment at grantee institutions of new programs in manufacturing engineering education that meet such requirements.

(b) NEW PROGRAMS IN MANUFACTURING ENGINEERING EDUCATION.—For the purpose of subsection (a)(2), a program in manufacturing engineering education to be established at an institution of higher education may be considered new regardless of whether the program is to be conducted—

(1) within an existing department in a school of engineering of the grantee institution of higher education;

(2) within a manufacturing engineering department to be established separately from the existing departments within such school of engineering; or

(3) within a manufacturing engineering school or center to be established separately from an existing school of engineering of such institution.

(c) MINIMUM NUMBER OF GRANTS FOR NEW PROGRAMS.—Of the total number of grants awarded pursuant to this section, at least one-third shall be awarded for the purpose stated in subsection (a)(2).

(d) GEOGRAPHICAL DISTRIBUTION OF GRANTS.—In awarding grants under this subsection, the Secretary shall, to the maximum extent practicable, avoid geographical concentration of grant awards.

(e) INITIAL GRANTS.—Within one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Director of the National Science Foundation, shall award grants under the program to at least 10 institutions of higher education across the United States.

(f) COORDINATION OF GRANT PROGRAM WITH THE NATIONAL SCIENCE FOUNDATION.—The Secretary of Defense and the Director of the National Science Foundation shall enter into a written agreement for carrying out the grant program established pursuant to this section. The agreement shall include the following matters:

(1) Procedures to ensure that the grant program is fully coordinated with similar existing education programs of the National Science Foundation.

(2) Provisions for the National Science Foundation to assist in the administration and management of grants made by the Secretary under the program.

SEC. 403. COVERED PROGRAMS OF MANUFACTURING ENGINEERING EDUCATION.

(a) IN GENERAL.—A program of engineering education supported with a grant awarded pursuant to this title shall meet the requirements of this section.

(b) LEVEL OF HIGHER EDUCATION FOR WHICH PROGRAM IS OFFERED.—The program of education shall be conducted at the undergraduate level, the graduate level, or both the undergraduate and graduate levels.

(c) COMPONENTS OF PROGRAM.—The program of education shall be a consolidated and integrated multidisciplinary program of education having each of the following components:

(1) Multidisciplinary instruction that encompasses the total manufacturing engineering enterprise and that may include—

(A) manufacturing engineering education and training through classroom activities, laboratory activities, thesis projects, individual or team projects, and visits to industrial facilities, consortia, or centers of excellence in the United States and foreign countries;

(B) faculty development programs;

(C) recruitment of educators highly qualified in manufacturing engineering;

(D) presentation of seminars, workshops, and training for the development of specific research or education skills; and

(E) activities involving interaction between the institution of higher education conducting the program and industry, including programs for visiting scholars or industry executives.

(2) Opportunities for students to obtain work experience in manufacturing through such activities as internships, summer job placements, or cooperative work-study programs.

(3) Faculty and student research that is directly related to, and supportive of, the education of undergraduate or graduate students in advanced manufacturing science and technology because of—

(A) the increased understanding of advanced manufacturing science and tech-

nology that is derived from such research; and

(B) the enhanced quality and effectiveness of the instruction that result from that increased understanding.

(d) SIGNIFICANT INVOLVEMENT OF INDUSTRY.—The program shall be conducted with a significant level of involvement of private sector manufacturing firms having major manufacturing operations in the United States and a significant level of collaboration between the firms so involved and the institution of higher education conducting the program.

SEC. 404. GRANT PROPOSALS.

(a) PROPOSAL REQUIREMENTS.—The Secretary of Defense, in coordination with the Director of the National Science Foundation, shall solicit from institutions of higher education in the United States proposals for grants to be made pursuant to this title for the support of programs of manufacturing engineering education that are consistent with the purposes of this title.

(b) CONTENT OF PROPOSALS.—Each proposal submitted by an institution of higher education shall include the following:

(1) A description of the program proposed to be supported by the grant.

(2) A discussion of the institution's experience and demonstrated capabilities that qualify the institution to conduct the proposed program.

(3) A discussion of how industrial experience, expertise, and facilities will be integrated into the proposed program.

(4) A description of the anticipated curriculum.

(5) A description of the research proposed to be conducted pursuant to the proposed program, including how the research will support the instructional content of the program.

(6) A commitment by the non-Federal Government participants in the proposed program to contribute financial or in-kind support sufficient to defray at least 50 percent of the total cost of the program during the period covered by the grant, including a description of the cost-sharing arrangements provided to carry out the cost-sharing commitment.

(7) A description of the specific benefits the proposed program will provide for the improvement of the defense industrial base of the United States and the education and training of engineers in manufacturing methods, techniques, and technology in the United States.

(8) A plan to achieve a significant level of participation by women, members of minority groups, and disabled persons through active recruitment of students from among such persons.

SEC. 405. GRANT AWARDS.

(a) MERIT COMPETITION.—Grants shall be awarded on the basis of merit competition in accordance with procedures prescribed by the Secretary of Defense in coordination with the Director of the National Science Foundation.

(b) SELECTION CRITERIA.—The Secretary may select a proposal for the award of a grant pursuant to this title if the proposal, at a minimum—

(1) promotes the achievement of the purposes of this title;

(2) contains innovative approaches for improving engineering education in manufacturing technology;

(3) demonstrates a strong commitment by the proponents to apply the resources necessary to achieve the objectives for which the grant is to be made;

(4) provides for the conduct of research that supports the instruction to be provided in the proposed program and is likely to improve manufacturing engineering and technology;

(5) demonstrates a significant level of involvement of United States industry in the proposed instructional and research activities;

(6) is likely to attract superior students;

(7) proposes to involve fully qualified faculty personnel who are experienced in research and education in areas associated with manufacturing engineering and technology;

(8) proposes a program that, within three years after the grant is made, is likely to attract from sources other than the Federal Government the financial and other support necessary to sustain such program; and

(9) proposes to achieve a significant level of participation by women, members of minority groups, and disabled persons through active recruitment of students from among such persons.

SEC. 406. DEFINITION.

In this title, the term "institution of higher education" has the meaning given such term in section 1201(a) of the Higher Education Act of 1965 (20 U.S.C. 1141(a)).

SEC. 407. AUTHORIZATION OF APPROPRIATIONS.

There is hereby authorized to be appropriated to the Department of Defense for each of fiscal years 1992 and 1993, $25,000,000 to carry out the provisions of this title.

PART B—MANUFACTURING MANAGERS IN THE CLASSROOM

SEC. 421. MANUFACTURING MANAGERS IN THE CLASSROOM PROGRAM.

(a) ESTABLISHMENT OF PROGRAM.—The Secretary of Defense, in close consultation with the Secretary of Commerce, shall conduct a program to be known as the "Manufacturing Managers in the Classroom Program."

(b) PURPOSES.—The purposes of the program are as follows:

(1) To provide Federal financial assistance to community colleges and other institutions of higher education in the United States to support the employment of experienced manufacturing managers and experts as teachers in such institutions.

(2) To strengthen the capabilities of such institutions to serve the education and training needs of firms that manufacture items for commercial and military use and are located in the same geographic regions as such institutions, including the needs for worker training, human resource management training, and labor-management training.

(3) To attract high-quality manufacturing managers and experts from leading United States manufacturing firms and Federal laboratories to teach in such institutions on a temporary or permanent basis.

(4) To improve the quality and relevance of education and training programs available to United States manufacturing firms from community colleges and other institutions of higher education located in the same geographic region as such firms.

(5) To increase the awareness that United States manufacturing firms have of the potential for such institutions to serve the needs of such firms for education and training.

(c) PROGRAM ACTIVITIES.—Financial assistance provided for an institution of higher education under the program shall be used to support the following activities of one or more manufacturing managers and experts at such institution:

(1) Identifying the education and training requirements of United States manufacturing firms located in the same geographic region as such institution.

(2) Assisting in the development of teaching curricula for classroom and in-factory education and training classes.

(3) Teaching such classes and overseeing the teaching of such classes by others.

(4) Improving the knowledge and expertise of permanent faculty and staff of the institution.

(5) Marketing the programs and facilities of the institution to United States manufacturing firms located in the same geographic region as the institution.

(6) Coordinating the activities described in the other provisions of this subsection with other programs conducted by the Federal Government, any State, any local government, or any private, nonprofit organization to modernize United States manufacturing firms, especially the Regional Centers for the Transfer of Manufacturing Technology and programs receiving Federal financial assistance under the National Manufacturing Extension Program.

(d) PROPOSALS FOR FEDERAL SUPPORT.—Each application of an institution of higher education for Federal financial assistance under this section shall include the following:

(1) A statement of goals and objectives for the use of such financial assistance that are consistent with the purposes of this section.

(2) A program strategy for achieving such goals and objectives that includes—

(A) a description of the activities proposed to be supported in part by such financial assistance;

(B) a discussion of how the expertise of a manufacturing manager will be institutionalized through activities described in subsection (c)(4) and by other means; and

(C) a discussion of the means by which the institution will help the manufacturing manager become an effective teacher.

(3) A description of the nature and extent of involvement in, and support for, the proposed activities by United States industry, industry associations, and other appropriate organizations located in the same geographic region as the institution.

(4) The demonstration of financial commitment required by subsection (e).

(e) COST-SHARING REQUIREMENTS.—Each application for financial assistance under this section shall demonstrate a commitment by the applicant to contribute resources sufficient to defray at least 50 percent of the total cost of the activities proposed to be supported in part with such financial assistance. In the determination of the contribution made by an applicant, there shall be included the fair market value of the applicant's contributions of hardware and software, services, materials and other assets directly related to the costs of the proposed activities.

(f) MERIT COMPETITION.—Applications for financial assistance under this section shall be evaluated on the basis of merit pursuant to competitive procedures prescribed by the Secretary.

(g) SELECTION CRITERIA.—In selecting applications for the award of financial assistance under this section, the Secretary shall select applications that demonstrate—

(1) significant promise for achieving the purposes of this section;

(2) evidence that the proposed activities are of an appropriate scale and a sufficient quality to ensure long term improvement in the applicant's capability to serve the edu-

cation and training needs of United States manufacturing firms in the same region as the applicant;

(3) a significant level of industry involvement and support;

(4) attention to the needs of any United States industries that supply manufactured products to the Department of Defense or to a contractor of the Department of Defense; and

(5) evidence of vision, leadership, direction, and skill in the management of the proposed activities.

(h) FEDERAL SUPPORT.—The amount of financial assistance furnished to an institution under this section may not exceed 50 percent of the estimated cost of carrying out the activities proposed to be supported in part with such financial assistance for the period for which the assistance is to be provided. In no event may the amount of the financial assistance provided to an institution exceed $250,000 per year. The period for which financial assistance is provided an institution under this section shall be at least two years unless such assistance is earlier terminated for good cause determined by the Secretary.

(i) REGULATIONS.—(1) The Secretary shall prescribe regulations to carry out this section. The regulations shall include the following:

(A) A description of the program.

(B) Procedures for submitting applications for financial assistance.

(C) Criteria for selecting applicants for award of financial assistance.

(D) Amounts expected to be available for award to applicants.

(2) The Secretary shall publish the proposed regulations in the Federal Register not later than 120 days after the date of the enactment of this Act. The period for public comment on such regulations shall be 30 days. The Secretary shall issue the final regulations within 60 days after the end of the period for public comment.

(j) DEFINITIONS.—In this section:

(1) The term "Regional Center for the Transfer of Manufacturing Technology" means a Regional Center for the Transfer of Manufacturing Technology referred to in section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k).

(2) The term "National Manufacturing Extension Program" means the National Manufacturing Extension Program conducted pursuant to section 30 of such Act (as added by section 301).

SEC. 422. AUTHORIZATION OF APPROPRIATIONS.

(a) DEPARTMENT OF DEFENSE.—Funds are hereby authorized to be appropriated to the Department of Defense to carry out the responsibilities of the Secretary of Defense under section 421 and for transfer to the Department of Commerce for the conduct of the Manufacturing Managers in the Classroom Program conducted pursuant to such section, as follows:

(1) For fiscal year 1992, $5,000,000.

(2) For fiscal year 1993, $10,000,000.

(b) DEPARTMENT OF COMMERCE.—Funds are hereby authorized to be appropriated to the Department of Commerce to carry out the responsibilities of the Secretary of Commerce under the provisions of this part as follows:

(1) For fiscal year 1992, $5,000,000.

(2) For fiscal year 1993, $10,000,000.

TITLE V—INTERNATIONAL ACTIVITIES IN ADVANCED MANUFACTURING

SEC. 501. FINDINGS AND PURPOSE.

(a) FINDINGS.—Congress makes the following findings:

(1) Foreign institutions (including firms, government laboratories, and universities) have a leadership position in the development and application of certain advanced manufacturing technologies.

(2) The United States can benefit significantly from the increased access to foreign sources of advanced manufacturing technology that can result from international cooperation in activities of the Federal Government and United States industry relating to advanced manufacturing technology.

(3) A strong Federal Government program to improve domestic capabilities in advanced manufacturing technology can increase the benefits to be derived from such international cooperation.

(b) PURPOSE.—The purpose of this title is to facilitate international cooperation in activities of the Federal Government and United States industry relating to advanced manufacturing technology.

SEC. 502. INTERNATIONAL COOPERATION IN RESEARCH AND DEVELOPMENT.

(a) DEPARTMENT OF DEFENSE.—(1) Of the amounts authorized to be appropriated to the Department of Defense under section 203 of this Act, there is authorized to be appropriated for each of fiscal years 1992 and 1993, $5,000,000 for activities relating to advanced manufacturing technology that are carried out by United States industry, institutions of higher education in the United States, or Federal laboratories under the authority of bilateral or multilateral technology agreements entered into by the United States and other nations.

(2) The amount of such funds allocated for each such activity may not exceed one-third of the total estimated cost of carrying out that activity for the period for which the funds are to be provided.

(b) DEPARTMENT OF ENERGY.—(1) Of the funds authorized to be appropriated to the Department of Energy under section 231(c) of this Act, there is authorized to be appropriated for each of fiscal years 1992 and 1993, $5,000,000 for activities relating the advanced manufacturing technology that are carried out by United States industry, institutions of higher education in the United States, or Federal laboratories under the authority of bilateral or multilateral technology agreements entered into by the United States and other nations.

(2) The amount of such funds allocated for each such activity may not exceed one-third of the total estimated cost of carrying out that activity for the period for which the funds are to be provided.●

By Mr. HOLLINGS (for himself, Mr. GORE, Mr. BINGAMAN, Mr. NUNN, Mr. MITCHELL, Mr. ROCKEFELLER, Mr. KENNEDY, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1329. A bill to strengthen Federal strategy for the development and deployment of critical advanced technologies, and for other purposes; to the Committee on Commerce, Science, and Transportation.

By Mr. HOLLINGS (for himself, Mr. GORE, Mr. BINGAMAN, Mr. NUNN, Mr. ROCKEFELLER, Mr. KENNEDY, Mr. DIXON, Mr. LEVIN, Mr. DODD, Mr. SHELBY, Mr. DASCHLE, Mr. LIEBERMAN, and Mr. RIEGLE):

S. 1330. A bill to enhance the productivity, quality, and competitiveness of U.S. industry through the accelerated development and deployment of advanced manufacturing technologies, and for other purposes; to the Committee on Commerce, Science, and Transportation.

FEDERAL TECHNOLOGY STRATEGY ACT AND THE MANUFACTURING STRATEGY ACT

● Mr. HOLLINGS. Mr. President, today several of our colleagues and I are introducing a comprehensive package of bills to help American industry restore this Nation's sagging leadership in manufacturing and critical emerging technologies.

I, joined by Senator GORE and others, have authored two of the bills: the Federal Technology Strategy Act of 1991, which would improve the coordination of Federal technology efforts; and the Manufacturing Strategy Act of 1991, which would expand the Department of Commerce [DOC] efforts to help industry develop prototype manufacturing technologies for the 21st century and also would expand the DOC's existing technology extension activities. I am pleased that Senators BINGAMAN and NUNN are cosponsoring these bills.

Senators BINGAMAN and NUNN have authored two other bills, the Critical Technologies Act of 1991 and the Advanced Manufacturing Technology Act of 1991. Senator GORE and I have cosponsored these important initiatives. In addition, Senator NUNN has a fifth bill regarding manufacturing education programs at the Department of Defense [DOD], which I am pleased to cosponsor.

The two sets of bills complement each other, and reflect work done over the past year by the leaders of both the Commerce Committee and the Armed Services Committee. The fact that the chairmen of the two committees, plus the chairmen of their two technology subcommittees, have joined together today to introduce this package indicates the importance we attach to manufacturing and critical technologies.

THE FUNDAMENTAL ISSUE

I consider the issue addressed by these bills to be the central issue of our time. Will this government sit by, complacent and inactive, as we continue to lose ground to other countries in one industry after another; as our manufacturing base shrinks and more good jobs go overseas; and as our national defense becomes more and more dependent on technology from countries that may not always share our foreign policy aims? Or will this government, in partnership with American industry and labor, make a true commitment to restoring U.S. economic competitiveness and long-term economic growth? At a time when other countries are working hard to take the lead in key industries and key technologies, will

our government fight to maintain the U.S. technology base?

The Members who are introducing these bills today have taken a clear stand on this fundamental issue—our government must not sit by. We know that the United States is lagging behind. A private group, the Council on Competitiveness, stated the problem well in a report that they presented to the Commerce Committee on March 20:

The U.S. position in many critical technologies is slipping and, in some cases, has been lost altogether. Future trends are not encouraging. America pioneered such technologies as numerically controlled machine tools, robotics, optoelectronics, and integrated circuits only to lose leadership in them to foreign competitors. * * * The erosion of the U.S. position in critical technologies has helped to highlight an important lesson about industrial competition in the late 20th century: a lead in science is not sufficient to sustain technological leadership. Science excellence also must be supplemented by a strong position in critical technologies and by the ability to convert these technologies into manufactured products, processes and services that can compete successfully in the marketplace. Otherwise, America's jobs, standards of living and national security will be in jeopardy. * * *

Governments in other major industrialized countries have used research and development [R&D] incentives, public-private technology consortia, infrastructure programs, tax policy, trade policy and regulations to improve the technological competitiveness of their industries. * * * Problems arising from foreign government actions have been compounded by the lack of a timely, coordinated, and effective U.S. industry and government response.

WHAT SHOULD BE DONE?

Over the past few years, Congress has worked with the administration to create the framework of a new national technology policy. In the area of civilian technology, I authored the Technology Competitiveness Act, the part of the 1988 Omnibus Trade and Competitiveness Act which upgraded the old National Bureau of Standards into a full-fledged civilian technology agency, the National Institute of Standards and Technology [NIST]. Under that law, NIST conducts laboratory research to provide industry with the support technologies needed to boost quality and productivity, supports technology extension efforts such as the five new manufacturing technology centers, and operates an Advance Technology Program to support industry-led technology development projects. On the defense side, Senator BINGAMAN, Senator NUNN, and others expanded the technology development efforts of the Defense Advanced Research Projects Agency [DARPA], supported the manufacturing technology [Mantech] programs, and created innovative projects such as Sematech.

The Commerce and Armed Services Committee both have worked to improve the coordination of the Federal Government's diverse technology programs. Senator GORE and I have authored bills to institutionalize interagency planning processes for global change research and high-performance computing. Senator BINGAMAN, with my support, has authored legislation requiring biennial national critical technology reports and creating a Critical Technologies Institute to provide staff support to the White House Office of Science and Technology Policy [OSTP].

Last year, the administration finally did endorse a government role in working with industry on precompetitive research to develop generic, enabling technologies. The administration has come to somewhat recognize that government has a responsibility to help industry develop those new basic technologies, which offer great potential benefits to the Nation but which are viewed as too long-term and too risky for any one company or even a group of companies to fund entirely on its own.

The question now is whether the new consensus on national needs and technology policy will be matched with a serious commitment of resources. Will we make technology and manufacturing major national priorities, commensurate with their importance to our standard of living and national defense?

The Council on Competitiveness, I believe, has stated what needs to be done.

The Federal Government should view support of generic industrial technologies as a priority mission. * * * The President should move quickly to * * * announce his intention to increase dramatically the percentage of Federal R&D expenditures allocated to support for critical generic technologies and present a five-year implementation plan as part of his fiscal year 1993 budget.

In the bills my colleagues and I are presenting today, we are moving to implement these recommendations. We are proposing major initiatives in both manufacturing and other critical technologies, with some proposals covering fiscal year 1992 and others focused on fiscal year 1993. We sincerely hope that the administration will join us in this important effort. All Americans are concerned about the Nation's economic and military future, and these issues are too important to be ignored. My colleagues and I intend to push for action in this area, and we invite the President's participation.

THE FEDERAL TECHNOLOGY STRATEGY ACT

I now will briefly summarize the intent and provisions of the two bills, which I am introducing with Senator GORE and others. My proposed Federal Technology Strategy Act has two main provisions and several important reporting requirements. The first major provision would direct the President, through the OSTP Director, to prepare interagency plans to coordinate Federal activities in the major technical areas identified in the recent first biennial report of the National Critical Technologies Panel. In effect, we have taken the idea of interagency plans—codified for example in other legislation that I authored, and that is now law, on global changes research—and directed that these plans focus on a specific list of critical technologies. The bill would require Federal technology development plans in areas such as manufacturing technology, advanced materials, information and communications, and biotechnology.

Second, the Federal Technology Strategy Act states that it will be a mission of each Federal R&D agency to support the development of generic technologies upon which both the agency and the private sector depend. As the Federal Government becomes more a purchaser of private sector technology, and less the source of new technologies, it is in the interest of the Government to work with industry to create new technologies, as Federal agencies, including DOD, need the innovative products that commercial companies produce. Also, clearly new technology brings many general national benefits.

Next, the bill establishes a process for reviewing the participation of federally aided research groups in R&D projects funded by foreign governments—particularly governments with which the United States has formal science and technology agreements. We want to make sure that any U.S. participation in these foreign projects is consistent with overall U.S. policy.

Finally, the bill requires several reports. One provision asks the Secretary of Commerce for a one-time report on options and recommendations for increasing private investment in both new factories and the development and commercialization of new products. The bill also requires an annual report from the Secretary of Commerce to appropriate congressional committees on executive branch positions taken in international negotiations that might affect the size, activities, and eligibility requirements of Federal R&D programs.

THE MANUFACTURING STRATEGY ACT

My second bill focuses on the important issue of manufacturing, which remains the core of our national economy. The service sector and raw materials are of course vital, but to be rich and strong a nation must be able to produce manufactured goods. A nation which loses its capacity to manufacture loses good jobs, loses the ability to produce major export earnings, and loses one major component for its national security.

Thanks to a lower U.S. dollar and improvements made by many American firms, U.S. manufacturing exports have increased. However, all of us know that much more is needed—we need to pursue efforts to improve manufacturing technology, to modernize factories, to use new production techniques, and to

reach world-class levels of quality and efficiency. Congress, and the States, have shown increasing concern about the health of U.S. manufacturing, and both also have learned a great deal in recent years about how to work with private industry to develop and to deploy advanced manufacturing technology. In my view, and I believe in the view of my colleagues who join me in introducing this legislation today, we now all have a special opportunity to work with industry to bring about an entirely new era of productive American manufacturing.

My proposed Manufacturing Strategy Act would expand existing DOC manufacturing programs in three areas. First, it would expand work to develop new manufacturing technologies for the 21st century by creating a new advanced manufacturing systems and networking project. This important technology development project would include one or more industry-led testbeds to refine, test, and demonstrate prototypes of advanced technology. I know that this can be done, because I have seen an earlier defense-oriented version of this work in my own State of South Carolina, at the rapid acquisition of manufactured parts [RAMP] project run by the Navy, NIST, several companies, and the State of South Carolina. The new technology exists; we need to refine it and get it to civilian as well as defense manufacturers.

Second, the bill would expand NIST's current technology extension efforts to help firms, especially smaller firms, to modernize their factories. NIST already operates five manufacturing technology centers [MTC's] to help companies. Along with creating more centers, I propose the creation of small satellite manufacturing centers to work with the existing MTC's as well as a new set of national centers for manufacturing and process technology to help meet the needs of specific U.S. industries. Third, the bill would create a new industry-led national quality laboratory at NIST to help Baldrige Award winners and our other best companies to pass on their lessons and best practices to a wide range of American managers and workers.

Finally, the Manufacturing Strategy Act also would require most other Federal research agencies to spend a small percentage of their R&D budgets to work with industry to develop new generic technologies, especially manufacturing and process technologies. Agencies would be encouraged to work through NIST's Advanced Technology Program.

Under our bill, most of these new DOC programs would start in fiscal year 1993. In the meantime, I will continue to work for strong fiscal year 1992 funding for NIST's important existing programs, including its laboratory research, the manufacturing technology centers, and the Advanced Technology Program.

CONCLUSION

Mr. President, I have a passionate belief that the United States should not settle for the status of a second-class economic power. I feel strongly that the Federal Government's annual $70 billion R&D investment should be made useful to industry and reoriented to meet the major world challenge now facing the United States—the contest to see which country or countries will dominate the industries and economies of the 21st century.

I want to compete, and I want the United States to win. I do not want to sit back and do nothing as the Japanese and others beat us in one industry after another. I am not angry with the Japanese. They are competing to win, while we are not even in the game. While other governments back their companies, our government sits by while we literally go out of business. These bills are an effort by the leaders of the two Senate committees most involved in technology to put at least the R&D parts of the Federal Government back into the game, back into helping our companies compete and helping them succeed.

Mr. President, I look forward to working with Senators GORE, BINGAMAN, and NUNN and others to refine and coordinate our respective bills. I also invite our other Senate colleagues, as well as the administration, to join us in passing legislation which will ensure that the Federal Government does its part to make the United States second to none in manufacturing, in critical technologies, and in prosperity and national strength.

Mr. President, I ask unanimous consent that the full text of my two bills, with accompanying summaries, be included in the RECORD at the conclusion of my remarks.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

S. 1329

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Federal Technology Strategy Act of 1991".

SEC. 2. FINDINGS AND PURPOSE.

(a) FINDINGS.—The Congress finds and declares the following:

(1) It is vital for the Nation to maintain strong capabilities in generic technology, in order both to meet the mission needs of Federal agencies and to help the private sector stay competitive in world markets. Both the Nation's prosperity and national security require a strong national technology base.

(2) Through the biennial reports of the National Critical Technologies Panel, the President and other Federal officials are well informed about which technologies are most critical to the Nation.

(3) In addition to the Federal Government's responsibility to support basic research, Federal agencies have a responsibility to participate with the private sector in precompetitive research on generic, enabling technologies which have the potential to contribute to a broad range of government and commercial applications. Federal support is appropriate and necessary for those technology development projects that offer the potential of large benefits to the economy but which are sufficiently risky and long-term that profits are distant and companies by themselves cannot justify funding them.

SEC. 3. TECHNOLOGY DEVELOPMENT PLANS AND FUNDING FOR CRITICAL TECHNOLOGIES.

Title VI of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6681 et seq.) is amended—

(1) in the title heading by striking "PANEL";

(2) by inserting immediately after the title heading the following new subtitle heading:

"Subtitle A—National Critical Technologies Panel"; and

(3) by adding at the end the following new subtitle:

"Subtitle B—Technology Development

"FEDERAL TECHNOLOGY DEVELOPMENT PLANS

"SEC. 621. (a)(1) The President, through the Director and, as appropriate, through such interagency entities as the President or Director may designate, shall—

"(A) develop, within one year after the date of enactment of this section, Federal technology development plans for each of the following major areas of technology—

"(i) advanced manufacturing;

"(ii) advanced materials;

"(iii) information and communications;

"(iv) biotechnology and life sciences; and

"(v) such other technologies as the President or the Director may deem appropriate;

"(B) work, as appropriate, with leaders of United States industry and labor to identify the Nation's needs and options in those areas of technology;

"(C) consider, as appropriate, the findings of the biennial reports of the National Critical Technologies Panel; and

"(D) provide for interagency coordination of Federal agency activities in each such area of technology.

"(2) The purpose of the Federal technology development plans shall be to strengthen the Federal Government's technology strategy so as to ensure that Federal research and development programs, to the maximum extent feasible—

"(A) meet the current and projected mission needs of the Federal Government; and

"(B) create generic technologies that will help United States companies to be competitive in world markets.

"(3) Each such Federal technology development plan shall, for its given area of technology—

"(A) establish the goals and priorities for Federal activities for the fiscal year in which the plan is submitted and for the succeeding four fiscal years;

"(B) summarize the principal technical and other barriers to the development of a domestic United States technological capacity that is equal to or exceeds that of other major industrialized countries;

"(C) summarize what the United States Government and major foreign governments, as well as private United States and foreign companies, have spent annually in recent years in the given area of technology, and summarize how much of the spending by governments has focused on solving generic technical problems rather than on meeting specialized mission requirements;

"(D) set forth, in terms consistent with subsection (b) (2) and (3), the role of each Federal agency and department in implementing the plan; and

"(E) describe the levels of Federal funding for each agency and department required to achieve the goals and priorities established under subparagraph (A).

"(b)(1) The Director shall serve as the lead Federal official responsible for coordinating the preparation of Federal technology development plans under this section.

"(2) The Department of Commerce, particularly the Technology Administration, shall serve as the lead civilian agency for promoting the development and deployment of advanced generic civilian technologies and shall, subject to guidance from the Director and the Secretary of Commerce, be lead agency for coordinating the formulation of the civilian components of the Federal technology development plans. The Director and the Secretary of Commerce are authorized to create joint industry-government councils to help prepare the Federal technology development plans.

"(3) The Department of Defense shall serve as the lead Federal agency on issues of defense manufacturing and technology and shall, subject to guidance from the Director and the Secretary of Defense, be lead agency for coordinating the formulation of the defense components of the Federal technology development plans.

"(4) Prior to the President's submission of each annual budget estimate, the Director shall review each departmental and agency budget estimate in the context of the Federal technology development plans and shall make the results of that review available to the Office of Management and Budget and other appropriate elements of the Executive Office of the President. The Director of the Office of Management and Budget shall review each such report in light of the goals, priorities, and agency and departmental responsibilities set forth in the Federal technology development plans.

"(c)(1) The Director shall, upon request, make the Federal technology development plans available to committees or Members of Congress.

"(2) The Federal technology development plans shall be updated after the release of each biennial critical technologies report written by the National Critical Technologies Panel pursuant to section 603.

"(3) The Secretary of Commerce and the Secretary of Defense are authorized and directed to provide such assistance and resources as the President, the Director, or the Director of the Office of Management and Budget may require in order to prepare the Federal technology development plans.

"(d) In a statement accompanying the President's annual budget submission, the Director shall summarize the amounts of Federal research and development funding proposed for each of the critical technologies or groups of technologies identified in the most recent biennial critical technologies report.

"FEDERAL FUNDING FOR CRITICAL TECHNOLOGIES

"SEC. 622. (a) It shall be a mission of all Federal research and development agencies to support the national technology base upon which both the Federal Government and United States industry draw. Federal agencies shall, as appropriate, support—

"(1) industry-led projects to develop new generic enabling technologies; and

"(2) efforts in collaboration with the States and industry to accelerate the commercialization and use of new advanced technologies.

"(b) As part of its actions to support industry-led technology development projects and to contribute to the national technology base, each Federal research and development agency may provide funds to support activities under the Advanced Technology Program established under section 28 of the Act of March 3, 1901 (15 U.S.C. 278n).

"INTERNATIONAL COLLABORATION IN THE DEVELOPMENT OF ADVANCED TECHNOLOGY

"SEC. 623. (a) No Federal department or agency, nor any organization in the United States which receives Federal research and development funding, shall participate in or assist any bilateral or international technology development project that is operated by or receives funds from a foreign government with which the United States Government has formal science and technology agreement unless such proposed participation is approved in advance by the Director or, by serving as the Director's designee, the Secretary of Commerce.

"(b) If a recipient of Federal research assistance violates the requirements of subsection (a), the Director may ban that recipient for two years from receiving additional Federal research assistance.

"(c) If, after meeting the requirements of subsection (a), any Federal department or agency provides funding to support a bilateral or international advanced technology research, development, or testing project, that department or agency shall, to the extent practicable, channel such funding through one or more United States-based joint research and development ventures, as defined in section 2(a)(6) of the National Cooperative Research Act of 1984 (15 U.S.C. 4301(a)(6)).".

SEC. 4. REPORT ON INCREASING PRIVATE INVESTMENT IN MANUFACTURING AND THE COMMERCIALIZATION OF TECHNOLOGY.

"(1) REQUIREMENT.—Within one year after the date of enactment of this Act, the Secretary of Commerce, acting through the Under Secretary of Commerce for Technology and such other officials as appropriate, shall submit to Congress a report on actions that can be taken by private industry, the States, and the Federal Government to increase private investment in—

(1) the development and production of new commercial technologies; and

(2) the use and application of advanced manufacturing and process technologies.

(b) CONTENTS.—The report shall include, but not necessarily be limited to, an analysis of the following issues:

(1) the role that strategic partnerships between larger United States companies and innovative smaller firms can play in increasing investment in the commercialization of new technologies developed by those smaller firms;

(2) what incentives, technology information programs, and possible reforms in accounting standards would encourage large institutional investors in the United States to encourage firms in which they hold shares to make long-term strategic investments in research and development, product commercialization, and advanced production equipment and facilities;

(3) what factors generally affect the cost, availability, and the long-term or short-term orientation of capital available to United States companies;

(4) the feasibility and advisability of establishing, within the Department of Commerce, a clearinghouse which provides—

(A) information to interested manufacturers, to Regional Centers for the Transfer of Manufacturing Technology, and to the States on the types of financing available to acquire advanced manufacturing equipment, including loans for purchases and leasing arrangements;

(B) information to banks, leasing companies, and other financing sources on the types of advanced manufacturing technology currently available in the marketplace and the range of services, including Regional Centers for the Transfer of Manufacturing Technology, available to help small and medium-sized manufacturers understand and utilize these technologies; and

(C) a forum for discussions among manufacturers, equipment vendors, financiers, and accounting experts on how to make advanced manufacturing equipment more financially available to small and medium-sized manufacturers; and

(5) how Federal research and development programs, particularly programs aimed at aiding the development of new generic technologies, might be improved so as to increase the probability that generic technologies developed through such programs will actually be commercialized by United States companies and the resulting products manufactured within the United States.

SEC. 5. ANNUAL REPORT ON NEGOTIATIONS POTENTIALLY AFFECTING FEDERAL RESEARCH AND DEVELOPMENT PROGRAMS.

The Secretary of Commerce, after consultation with the Director of the Office of Science and Technology Policy, shall report annually to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives on any current or planned Executive Branch positions in international negotiations, including negotiations regarding subsidies or government procurement, which would affect the activities, funding levels, or eligibility requirements of Federal domestic research and development programs.

FEDERAL TECHNOLOGY STRATEGY ACT OF 1991—BILL SUMMARY

Technology Management and Planning—In order to improve the coordination of Federal technology development programs, and to help ensure that the Nation has the generic technologies necessary to assist both agency missions and U.S. economic competitiveness, the bill directs the President, through the Director of the Office of Science and Technology Policy, to prepare five-year Federal technology development plans for key areas of technology, including manufacturing, advanced materials, information and communications, and biotechnology. (These interagency plans are similar to ones required under P.L. 101-606, the Global Change Research Act of 1990, and S. 272, the High-Performance Computing Act of 1991.)

Technology Development—States that it shall be a mission of all Federal research and development agencies to support the national technology base and, as appropriate, to support industry-led projects to develop new generic technologies. As part of these efforts, authorizes Federal agencies to provide funds to support industry-led projects under the Commerce Department's Advanced Technology Program. Authorizes expanded collaboration with U.S. industry and the States. Establishes a process for reviewing any proposed use of Federal funds in bilateral or international technology development projects supported by foreign governments

with which the U.S. has a formal science and technology agreement.

Reports—Requires the Secretary of Commerce to submit to Congress a report on increasing private investment in manufacturing and in the commercialization of new technologies. Requires annual reports from the Secretary of Commerce on any position that the Executive Branch is taking in international negotiations that would affect the operation of Federal domestic research and development programs.

S. 1330

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Manufacturing Strategy Act of 1991".

SEC. 2. FINDINGS AND PURPOSE.

(a) FINDINGS.—Congress finds and declares the following:

(1) The development and deployment of advanced manufacturing technologies and other process technologies is vital to the Nation's economic growth, standard of living, competitiveness in world markets, and national security.

(2) New developments in flexible computer-intergrated manufacturing, electronic manufacturing networks, and other new technologies make possible dramatic improvements across all industrial sectors in productivity, quality, and the speed with which manufacturers can respond to customers and changing market opportunities.

(3) The United States currently leads the world in research on advanced manufacturing technologies, but often lags behind other nations in the full development, deployment, and use of these new technologies.

(4) Among the steps necessary for the United States to reap the full benefits of advanced manufacturing technology are further research and development activities, testbed projects to test and validate new technology, programs to accelerate the deployment of both new advanced technologies and valuable off-the-shelf equipment, full development of digital product data technology, enhanced transfer of federally-funded technology to industry, and increased cooperation among the Federal Government, industry, and the States.

(5) The Department of Commerce, in cooperation with the Department of Defense and other Federal agencies, has played and can continue to play an important role in assisting United States industry to develop, test, and deploy advanced manufacturing technologies.

(c) PURPOSE.—It is the purpose of Congress in this Act to enhance the ability of the Department of Commerce's technology programs to assist the efforts of private industry in manufacturing and, in the process, to help ensure the continued leadership of the United States in advanced manufacturing technologies.

SEC. 3. AMENDMENT TO THE STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) is amended by adding at the end the following new title:

"TITLE III—MANUFACTURING TECHNOLOGY

"SEC. 301. STATEMENT OF POLICY AND PURPOSE.

"(a) STATEMENT OF POLICY.—Congress declares that it is the policy of the United States that—

"(1) Federal agencies, particularly the Department of Commerce, shall work with industry to ensure that within 10 years of the date of enactment of this title the United States is second to no other nation in the development, deployment, and use of advanced manufacturing technology.

"(2) because of the importance of manufacturing and advanced manufacturing technology to the Nation's economic prosperity and defense, all the major Federal research and development agencies shall place a high priority on the development and deployment of advanced manufacturing technologies, shall increase the percentage of their research and development budgets devoted to manufacturing technology, and shall work closely with United States industry to develop and test those technologies;

"(3) the Department of Commerce, particularly the Technology Administration, shall serve as the lead civilian agency for promoting the development and deployment of advanced manufacturing technology, and other Federal departments and agencies which work with civilian industry shall be encouraged, as appropriate, to work through the programs of the Department of Commerce; and

"(4) the Department of Defense shall serve as the lead Federal agency for working on defense manufacturing matters.

"(b) PURPOSE.—It is the purpose of Congress in this title to help ensure, through the programs and activities of the Department of Commerce and other Federal agencies, continued United States leadership in the development and deployment of advanced manufacturing technologies and their applications.

"SEC. 302. ROLE OF THE DEPARTMENT OF COMMERCE.

"(a) MISSION IN MANUFACTURING.—The Department of Commerce shall be the lead civilian agency of the Federal Government for working with United States industry to—

"(1) develop new generic advanced manufacturing technologies; and

"(2) encourage and assist the deployment and use of advanced manufacturing equipment and techniques throughout the United States.

"(b) DUTIES.—The Secretary shall, through the Under Secretary and the Director and, as appropriate, in coordination with the heads of other Federal agencies and with industry, design and manage programs that—

"(1) accelerate the development of advanced manufacturing technologies in such areas as computer-integrated manufacturing, advanced robotics, concurrent engineering, enterprise integration, communications networks for manufacturing, other advanced process technologies, computer software, and quality assurance techniques;

"(2) support projects, centers, and other mechanisms to help United States industry develop, test, and deploy advanced manufacturing and process technologies;

"(3) assist United States industry to—

"(A) develop and disseminate generic manufacturing process models and related techniques, including expert systems and benefit/cost analyses, that significantly increase quality, productivity, and flexibility;

"(B) expand and speed the use of the best current manufacturing practices, such as total quality management, concurrent engineering, and just-in-time delivery; and

"(C) develop techniques which help companies define their manufacturing technology needs and select production equipment;

"(4) increase coordination with industry for identifying the need for both interface and systems standards in manufacturing and, as appropriate, support testbeds so that industry can determine at early stages whether new technologies and prototypes are compatible with new standards; and

"(5) accelerate, in partnership with the States and industry, the broad deployment and adoption of advanced manufacturing technologies by medium and small, as well as large, manufacturers throughout the United States.

"(c) RELATION TO NATIONAL PLANS.—The Secretary, Under Secretary, and Director shall, as appropriate, ensure that Department of Commerce advanced manufacturing technology activities are conducted in a manner consistent with any national advanced manufacturing technology development plans that may be developed by the President or the Director of the Office of Science and Technology Policy.

"(d) COORDINATION WITH OTHER AGENCIES.—(1) the Secretary and the Secretary of Defense shall coordinate their policies and programs to promote the development and deployment of advanced manufacturing technologies. The two Secretaries shall, as appropriate, form joint working groups or special project offices to coordinate their manufacturing activities.

"(2) In order to avoid unnecessary duplication of efforts, the Secretary of Defense, as well as the heads of other departments and agencies, shall, whenever appropriate, conduct their technology extension activities through the technology extension programs created under sections 25 and 26 of the Act of March 3, 1901 (15 U.S.C. 278k and l), and their technology development activities through the Advanced Technology Program established under section 28 of the Act of March 3, 1901 (15 U.S.C. 278n).

"SEC. 303. ADVANCED MANUFACTURING SYSTEMS AND NETWORKING PROJECT.

"(a) ESTABLISHMENT OF PROJECT.—(1) In addition to such technology development responsibilities as may be set forth in other Acts, the Secretary, through the Under Secretary and the Director, shall establish an Advanced Manufacturing Systems and Networking Project (hereafter in this title referred to as the 'Project').

"(2) The purpose of the Project is to create a collaborative multi-year technology development program involving the Institute, United States industry, and, as appropriate, the States in order to develop, refine, test, and transfer advanced computer-integrated, electronically-networked manufacturing technologies and associated applications.

"(b) PROJECT COMPONENTS.—The Project shall include—

"(1) an advanced manufacturing research and networking activity at the Institute;

"(2) one for more technology development testbeds within the United States, whose purpose shall be to develop, refine, test, and transfer advanced manufacturing and networking technologies created at the Institute and elsewhere and to assist industry in the implementation of these technologies and the development of associated applications; and

"(3) one or more information dissemination contracts with nonprofit organizations with experience in assisting small and medium-sized manufacturers, for the purpose of providing information and technical assistance regarding advanced manufacturing and networking technologies to these small and medium-sized manufacturers.

"(c) ACTIVITIES.—The Project shall, under the coordination of the Director, undertake the following activities:

"(1) test and, as appropriate, develop the equipment, computer software, and systems

integration necessary for the successful operation within the United States of advanced manufacturing systems and associated electronic networks;

(2) establish at the Institute and the technology development testbed or testbeds—

"(A) prototype advanced computer-integrated manufacturing systems; and

"(B) prototype electronic networks linking the manufacturing systems;

"(3) assist industry to implement voluntary consensus standards relevant to advanced computer-integrated manufacturing operations, including standards for integrated services digital networks, electronic data interchange, and digital product data specifications;

"(4) help to make high-performance computing and networking technologies an integral part of design and production processes;

"(5) conduct research to identify and overcome technical barriers to the successful and cost-effective operation of advanced manufacturing systems and networks;

"(6) facilitate industry efforts to develop and test new applications for manufacturing systems and networks;

"(7) involve, to the maximum extent practicable, both those United States companies which make manufacturing and computer equipment and those companies which buy the equipment; with particular emphases on including a broad range of company personnel in the Project and on assisting small and medium-sized manufacturers;

"(8) train, as appropriate, company managers, engineers, and employees in the operation and applications of advanced manufacturing technologies and networks;

"(9) work with private industry to develop standards for the use of advanced computer-based training systems, including multimedia and interactive learning technologies; and

"(10) exchange information and personnel, as appropriate, between the technology development testbeds and the Regional Centers for the Transfer of Manufacturing Technology created under section 25 of the Act of March 3, 1901 (15 U.S.C. 278k).

"(d) AWARDS.—The Secretary shall make awards for the testbed or testbeds and for the information dissemination contracts created under subsection (b) of this section through competitive, merit-based procedures. Any joint research and development venture (as defined in section 2(a)(6) of the National Cooperative Research Act of 1984; 15 U.S.C. 4301(a)(6)), university, non-profit research organization, or Regional Center for the Transfer of Manufacturing Technology (as created under section 25 of the Act of March 3, 1901), within the United States, shall be eligible to apply to be selected as a testbed or to receive an information dissemination contract under the Project and to receive up to 6 years of funding from the Secretary, if such venture, university, organization, or Center at least matches the amount of funding sought from the Secretary. The Secretary shall give particular consideration to applicants that have existing expertise with digital data product technologies and with working with United States industry to develop and implement such specifications.

"(e) RELATIONSHIP TO HIGH-PERFORMANCE COMPUTING PROGRAM.—(1) The Project shall be considered one of the Department of Commerce's activities under the Federal high-performance computing program and shall be considered a 'Grand Challenge', as that term is defined under that program. The Project shall remain under the jurisdiction of the Secretary, although the Secretary may, as appropriate, invite the participation of other Federal departments and agencies.

"(2) The Secretary and Director, in consultation with the Director of the Office of Science and Technology Policy, shall, as appropriate, direct that the Project conduct manufacturing networking experiments in partnership with the operators of the National Research and Education Network.

"(f) ADVICE AND ASSISTANCE.—(1) Within 6 months after the date of enactment of this title, and before any request for proposals is issued, the Secretary, through the Under Secretary and Director, shall hold one or more workshops to solicit advice from United States industry and from other Federal departments, particularly the Department of Defense, regarding the specific missions and activities of the reseach testbeds.

"(2) The Secretary may request and accept funds, facilities, equipment, or personnel from other Federal departments and agencies in order to carry out responsibilities under this section.

"SEC. 304. OTHER AGENCY SUPPORT FOR INDUSTRY-LED RESEARCH IN MANUFACTURING AND PROCESS TECHNOLOGY.

"(a) SUPPORT OF NATIONAL TECHNOLOGY BASE.—It shall be a mission of all Federal research and development agencies to support the national technology base upon which both the Federal Government and United States industry draw.

"(b) REQUIRED SUPPORT.—(1) In order to contribute to the national technology base, each Federal department and agency (with the exception of those agencies excluded by paragraph (6) of this subsection) shall expend, in addition to such sums as are spent pursuant to the Small Business Innovation Development Act of 1982, not less than 0.5 percent of its annual research and development budget in fiscal year 1993 and in each fiscal year thereafter to support industry-led research technology development projects whose purpose is the development of critical generic technologies, particularly manufacturing and processing technologies, which are identified in the biennial critical technologies reports prepared pursuant to section 603 of the National Science and Technology Policy, Organization, and Priorities Act of 1976 (42 U.S.C. 6683).

"(2) Each Federal department and agency subject to the requirements of paragraph (1) of this subsection may meet those requirements by either—

"(A) channelling its funds to support industry-led technology development projects through the Advanced Technology Program established under section 28 of the Act of March 3, 1901 (15 U.S.C. 278n); or

"(B) using or establishing its own program or programs to support industry-led technology development projects.

"(3) In order to avoid unnecesary duplication and to reduce the Federal Government's overall administrative costs in carrying out the requirements set forth in paragraph (1) of this subsection, Federal departments and agencies are encouraged to meet these requirements by working through the Advanced Technology Program. Any agency working through the Advanced Technology Program shall have the right—

"(A) to help select which technical areas will receive support from that agency's contributions; and

"(B) to be represented on the review panels which competitively review applications for the funds that came from that agency.

"(4) If a Federal department or agency subject to the requirements of paragraph (1) of this subsection uses one of its own programs to support industry-led technology development projects, the department or agency shall make awards under that program to industry through a competitive, merit-based review process.

"(5) As used in this section, the term 'industry-led technology development projects' means research and development projects in which individual United States companies or joint research and development ventures (as defined in section 2(a)(6) of the National Cooperative Research Act of 1984; 15 U.S.C. 4301(a)(6)) apply, on a cost-sharing basis, for Federal funding to develop generic, precompetitive technologies.

"(6) The requirements of this subsection shall not apply to the Department of Defense, the Department of Energy, the National Science Foundation, or any Federal department or agency whose annual research and development budget totals less than $50,000,000.

"(c) REQUIRED SUPPORT BY DOD, DOE, AND NSF.—(1) The Department of Defense and the Department of Energy shall, as appropriate, support the development of generic dual-use technologies which both assist those departments with their missions and help the private sector. The Secretary of Defense and the Secretary of Energy may, as appropriate, support industry-led technology development projects through the Advanced Technology Program.

"(2) The Director of the National Science Foundation shall continue to provide for the support of basic engineering research in manufacturing and manufacturing-related disciplines at colleges and universities throughout the United States.

"(d) TERMINATION.—The requirements under this section shall expire at the end of fiscal year 2000.

"SEC. 305. INSTITUTE FELLOWSHIPS IN MANUFACTURING ENGINEERING.

"(a) GRADUATE FELLOWSHIPS.—(1) The Under Secretary and Director shall establish a program to provide fellowships to graduate students at institutions of higher education within the United States who choose to pursue masters or doctoral degrees in manufacturing engineering. The purpose of the program is to encourage larger numbers of highly-qualified graduate students to enter manufacturing engineering and thereby help improve manufacturing within the United States. Such fellowships shall be awarded through a competitive, merit-based selection process.

"(2) In order to be eligible to receive one of the graduate fellowships established by this subsection, a student must attend or be admitted to a university graduate program which has been certified by the Director as meeting the following criteria:

"(A) at least several manufacturing companies have a continuing relationship with the program;

"(B) the program has at least several faculty members with expertise in manufacturing; and

"(C) the program encourages its graduate students to acquire experience in industry before enrolling for graduate study.

"(b) MANUFACTURING MANAGERS PROGRAM.—The Under Secretary and Director also shall establish a program to provide fellowships, on a matching funds basis, to industrial executives with experience in manufacturing to serve for one or two years as instructors in manufacturing at two-year community and technical colleges in the United States. Fellowships shall be made through a competitive, merit-based process. In selecting fellows, the Under Secretary and Direc-

tor shall place special emphasis on supporting individuals who not only have expertise and practical experience in manufacturing but who also can serve as bridges between two-year colleges and manufacturing firms in their areas.

"SEC. 306. NATIONAL QUALITY LABORATORY.

"(a) ESTABLISHMENT.—(1) There is hereby established, under the supervision of the Director, a National Quality Laboratory (hereafter in this section referred to as the 'Laboratory'). The purpose of the Laboratory is to disseminate information and materials and promote educational and research activities regarding ways in which United States companies and organizations can improve their quality management programs and productivity and, if they so desire, improve their ability to compete for the Malcolm Baldrige National Quality Award established under section 107 of this Act.

"(2) The Director may, under appropriate contractual arrangements, select one or more managers to operate the Laboratory, selecting such manager or managers from among broad-based nonprofit entities which are leaders in the field of quality management and which have a history of service to society.

"(b) ACTIVITIES.—The Laboratory shall—

"(1) develop industry-led workshops, seminars, and other mechanisms to disseminate broadly to United States companies and organizations the best practices available in total quality management, including the practices and quality improvement strategies successfully employed by those firms that have won the Malcolm Baldrige National Quality Award, as well as best practices in the fields of lean production, market-driven product improvement, and customer-supplied relations;

"(2) work with industry leaders and others to develop both measures of quality and recommendations concerning what skills employees should have in order to participate effectively in company quality programs;

"(3) explore, with private industry, other Federal agencies, and State and local government, innovative ways, including model curricula, in which two-year colleges and other educational institutions can teach quality assurance techniques and related background skills to industrial workers in both manufacturing and services; and

"(4) operate, at the Institute, at Regional Centers for the Transfer of Manufacturing Technology, or at other appropriate sites, summer courses and workshops to train teachers from high schools, two-year colleges, and other educational institutions in quality assurance techniques, advanced manufacturing, and related areas.

"(b) FUNDING.—The Secretary and the Director are authorized to seek and accept gifts from public and private sources to help fund the activities of the Laboratory. The Secretary and the Director also are authorized to use appropriated funds to assist the operations of the Laboratory.

SEC. 4. TECHNOLOGY EXTENSION AND DEPLOYMENT ACTIVITIES OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.

(a) MANUFACTURING TECHNOLOGY CENTERS.—Section 25 of the Act of March 3, 1901 (15 U.S.C. 278k), is amended—

(1) by amending the section heading to read as follows: MANUFACTURING TECHNOLOGY CENTERS";

(2) in subsection (c)(5), by inserting ", except for contracts for such specific technology extension services as the Director may specify" immediately before the period at the end;

(3) in subsection (c)(6), by inserting ", or by National Centers for Manufacturing and Process Technology," immediately after "Centers";

(4) by striking subsection (d); and

(5) by adding at the end the following new subsections:

"(d)(1) If a Center receives a positive evaluation after its third year of operation, the Director may, any time after that evaluation, contract with the Center to provide additional technology extension or transfer services above and beyond the baseline activities of the Center. Such additional services may include, but are not necessarily limited to, the development and operation of—

"(A) prototype regional teleconferencing and digital communications networks for the purpose of expanding the number of States and companies which can receive a Center's baseline services; and

"(B) programs to assist small- and medium-sized manufacturers in the Center's region to learn and apply the technologies and techniques associated with systems management technology.

"(2) In addition to any assistance provided or contracts entered into with a Center under this section, the Director is authorized to make separate and smaller awards, through a competitive process, to nonprofit organizations within the region served by a Center to enable those organizations to provide additional outreach services, in collaboration with the Center, to small- and medium-sized manufacturers. Organizations which receive such awards shall be known as Satellite Manufacturing Centers. No single award for a Satellite Manufacturing Center shall be for more than three years, awards shall be renewable through the competitive awards process, and no award shall be made unless the applicant provides matching funds at least equal to the amount requested from the Director.

"(e)(1) In addition to providing assistance for Regional Centers for the Transfer of Manufacturing Technology, the Secretary, through the Director, also shall provide assistance for the creation and support of National Centers for Manufacturing and Process Technology (hereafter in this Act referred to as 'National Centers'). Such National Centers shall be affiliated with any United States-based joint research and development venture (as defined in section 2(a)(6) of the National Cooperative Research Act of 1984; 15 U.S.C. 4301(a)(6)) that applies for and is awarded financial assistance under this subsection in accordance with a description that the Secretary shall publish in the Federal Register. Individual awards shall be selected on the basis of merit, through a competitive selection process.

"(2) The objective of the National Centers program is to enhance manufacturing productivity and quality in the United States through—

"(A) the creation of a series of industry-led National Centers, each focused on the testing, deployment, and application of manufacturing process technologies within a specific technical field such as advanced materials, electronics fabrication, or general manufacturing, for the purpose of assisting United States companies, both large and small, throughout the Nation to improve manufacturing, product design, and production in that specific technical field;

"(B) the transfer of manufacturing technologies and process techniques developed at the Institute to the National Centers and, through them, to manufacturing companies throughout the United States; and

"(C) the active dissemination of scientific, engineering, technical, and management information about manufacturing and process technology, including existing state-of-the-art technology as well as new advanced technologies.

"(3) The Secretary may provide financial support to any National Center created under this subsection for a period not to exceed 10 years. The Secretary may not provide to a National Center more than 50 percent of the capital and annual operating and maintenance funds required to create and maintain such National Center. The Secretary shall award to a National Center funding for the sixth through tenth years of that National Center's operation only if that National Center successfully passes an evaluation by the Secretary made during the fourth or fifth year of operation.".

(b) STATE TECHNOLOGY EXTENSION PROGRAM.—(1) Section 26(a) of the Act of March 3, 1901 (15 U.S.C. 278*l*(a)), is amended—

(1) by inserting immediately after "(a)" the following new sentence: "There is established within the Institute a State Technology Extension Program."; and

(2) by inserting "through that Program" immediately after "technical assistance".

(2) Section 26 of the Act of March 3, 1901 (15 U.S.C. 278*l*) is amended by adding at the end the following new subsection:

"(c) In addition to the general authorities listed in subsection (b) of this section, the State Technology Extension Program also shall, as authorizations and appropriations permit—

"(1) make awards to States and conduct workshops, pursuant to section 5121(b) of the Omnibus Trade and Competitiveness Act of 1988, in order to help States improve their planning and coordination of technology extension activities;

"(2) support pilot projects in the States to develop and test innovative ways to help small and medium-sized manufacturers improve their technical capabilities, including innovative methods for transferring Federal technology, for encouraging business networks and shared facilities among small manufacturers, and for working with the States and, as appropriate, private information companies, to provide small and medium-sized firms with access to data bases and technical experts;

"(3) support cooperative research and technology assistance projects between the Institute and the States, particularly projects, funded on a matching basis, to help firms within the States to improve their manufacturing and process technologies;

"(4) support, on a matching funds basis, regional industrial modernization demonstration projects; and

"(5) as appropriate, promote the creation of industry-led State quality laboratories or institutes affiliated with the National Quality Laboratory established by section 307 of the Stevenson-Wydler Technology Innovation Act of 1980.".

SEC. 5. NATIONAL COMMISSION ON INDUSTRIAL MODERNIZATION.

(a) ESTABLISHMENT AND PURPOSE.—There is established a National Commission on Industrial Modernization (hereafter in this section referred to as the "Commission"), for the purpose of examining what steps must be taken by industry and government to ensure that within a decade the United States has a modern industrial infrastructure, including research and development capabilities and equipment and facilities, second to no other option.

(b) ISSUES.—The Commission shall address, but not necessarily limit itself to, the following issues:

(1) What range of factors affect how willing and able United States companies are to invest in new research, product development, and equipment and facilities, and how do those factors compare with conditions in other major industrialized countries?

(2) How do the cost, availability, and long-term or short-term orientation of capital in the United States affect the ability of companies to make investments and modernize industrial equipment and facilities?

(3) What are the particular industrial modernization problems, including capital problems and insufficient information, faced by small and medium-sized manufacturing firms in the United States?

(4) How feasible and appropriate would it be to create a privately-sponsored or government-sponsored enterprise which would serve as a secondary market for private loans for the purchase or lease of advanced manufacturing technology by small and medium-sized manufacturers within the United States, and could an insurance premium provision be built into such an enterprise to ensure that a sufficient financial reserve would exist to cover any losses incurred by the enterprise?

(5) In general, what steps could the Federal Government, the States, and the private sector take to accelerate the modernization of United States industry, particularly manufacturing firms?

(c) MEMBERSHIP.—(1) The Commission shall be composed of 12 members, none of whom shall serve as full-time Federal employees during their term of service on the Commission, who are eminent in such fields as advanced technology, manufacturing, finance, and international economics and who are appointed as follows:

(A) Four individuals shall be appointed by the President, one of whom shall be designated by the President to chair the Commission.

(B) Four individuals shall be appointed by the Speaker of the House of Representatives, one of whom shall be appointed upon the recommendation of the minority leader of the House of Representatives.

(C) Four individuals shall be appointed by the President pro tempore of the Senate, three of whom shall be appointed upon the recommendation of the majority leader of the Senate and one of whom shall be appointed upon the recommendation of the minority leader of the Senate.

(2) Each member shall be appointed, within 60 days after the date of enactment of this Act, for the life of the Commission. A vacancy in the Commission shall be filled in the manner in which the original appointment was made.

(d) PROCEDURES.—(1) The chairman shall call the first meeting of the Commission within 90 days after the date of enactment of this Act.

(2) Recommendations of the Commission shall require the approval of two-thirds of the members of the Commission.

(3) The Commission may use such personnel detailed from Federal agencies, particularly the Department of Commerce, as may be necessary to enable the Commission to carry out its duties.

(4) Members of the Commission, while attending meetings of the Commission while away from their homes or regular places of business, shall be allowed travel expenses in accordance with subchapter I of chapter 57 of title 5, United States Code.

(e) REPORTS.—The Commission shall, within one year after the date of enactment of this Act, submit to the President and Congress a report containing legislative and other recommendations with respect to the issues addressed under subsection (b).

(f) TERMINATION.—The Commission shall terminate 6 months after the submission of its report under subsection (e).

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section such sums as may be necessary for the fiscal years 1993 and 1994.

SEC. 6. AUTHORIZATION OF APPROPRIATIONS.

In addition to such other sums as may be authorized to be appropriated to the Secretary and the Director by this or any other Act, there is authorized to be appropriated to the Secretary and the Director—

(1) to carry out responsibilities under section 303 of the Stevenson-Wydler Technology Innovation Act of 1980 (as added by this Act), $50,000,000 for fiscal year 1993, $100,000,000 for fiscal year 1994, and $75,000,000 for fiscal year 1995;

(2) to carry out responsibilities under section 305 of the Stevenson-Wydler Technology Innovation Act of 1980 (as added by this Act), $20,000,000 for fiscal year 1993, $30,000,000 for fiscal year 1994, and $30,000,000 for fiscal year 1995;

(3) to carry out responsibilities under section 306 of the Stevenson-Wydler Technology Innovation Act of 1980 (as added by this Act), $5,000,000 for fiscal year 1993, $5,000,000 for fiscal year 1994, and $5,000,000 for fiscal year 1995; and

(4) to carry out responsibilities under subsections (d) and (e) of section 25 of the Act of March 3, 1901, (as added by this Act), $30,000,000 for fiscal year 1993, $60,000,000 for fiscal year 1994, and $50,000,000 for fiscal year 1995.

SEC. 7. MISCELLANEOUS AND CONFORMING AMENDMENTS.

(a) DEFINITIONS.—Section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703) is amended—

(1) by adding at the end the following new paragraphs:

"(14) 'Director' means the Director of the National Institute of Standards and Technology.

"(15) 'Institute' means the National Institute of Standards and Technology.

"(16) 'Assistant Secretary' means the Assistant Secretary of Commerce for Technology Policy.

"(17) 'Advanced manufacturing technology means—

"(A) numerically-controlled machine tools, robots, automated process control equipment, computerized flexible manufacturing systems, associated computer software, and other technology for improving manufacturing and industrial production; and

"(B) techniques and processes designed to improve manufacturing quality, productivity, and practices, including quality assurance, concurrent engineering, shop floor management, inventory management, and upgrading worker skills.".

(b) REDESIGNATIONS.—The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) is amended—

(1) by inserting immediately after section 4 the following new title heading:

"TITLE I—DEPARTMENT OF COMMERCE AND RELATED PROGRAMS";

(2) by redesignating sections 5 through 10 as sections 101 through 106, respectively;

(3) by redesignating sections 11 through 15 as sections 201 through 205, respectively;

(4) by redesignating sections 16 through 18 as sections 107 through 109, respectively;

(5) by striking section 19;

(6) by redesignating section 20 as section 110;

(7) by inserting immediately after paragraph 110 (as so redesignated) the following new title heading:

"TITLE II—FEDERAL TECHNOLOGY TRANSFER";

(8) in section 4—

(A) by striking "section 5" each place it appears and inserting in lieu thereof "section 101";

(B) in paragraphs (4) and (6), by striking "section 6" and "section 8" each place they appear and inserting in lieu thereof "section 103" and "section 105", respectively; and

(C) in paragraph (13), by striking "section 6" and inserting in lieu thereof "section 102"; and

(9) by adding at the end of section 201 (as redesignated by paragraph (3) of this subsection) the following new subsection:

"(h) ADDITIONAL TECHNOLOGY TRANSFER MECHANISMS.—In addition to the technology transfer mechanism set forth in this section and section 202 of this Act, the heads of Federal departments and agencies also may transfer technologies through the technology transfer, extension, and deployment programs of the Department of Commerce and the Department of Defense.".

MANUFACTURING STRATEGY ACT OF 1991—BILL SUMMARY

National Goal—States that it shall be the policy of the United States Government, and particularly the Department of Commerce (DOC), to work with industry to ensure that within 10 years the United States is second to no other nation in the development, deployment, and use of advanced manufacturing technology.

Department of Commerce Role—States that DOC shall be the lead civilian agency of the Federal Government for working with United States industry to develop new generic manufacturing technologies and to encourage and assist in their deployment throughout the country. States that the Department of Defense (DOD) is the lead agency for defense manufacturing matters, and directs the Secretaries of Commerce and Defense to coordinate their policies and programs.

Technology Development—Advanced Manufacturing Systems and Networking Project: Creates, under the Director of DOC's National Institute of Standards and Technology (NIST), an industry-NIST collaborative project to develop and test new generic computer-controlled manufacturing systems and associated manufacturing communications networks. The aim is to create prototype manufacturing systems of the future.

Agency support of generic technologies: Requires all Federal agencies with over $50 million a year in research and development (R&D) to earmark 0.5 percent of their R&D budgets to support industry-led projects to develop new generic technologies, particularly manufacturing and process technologies. Excludes the Defense Department, the National Science Foundation, and Energy Department defense activities because these agencies have well-developed existing programs. Authorizes and encourages agencies to channel such funds through NIST's existing Advanced Technology Program.

Technology Extension and Development—Satellite Manufacturing Centers and National Centers for Manufacturing and Process Technology: Establishes, in addition to NIST's existing Manufacturing Technology Centers, a program of small Satellite Manufacturing Centers to work with the existing manufacturing centers. Also establishes a new program of National Centers for Manufacturing and Process Technology to help industry

with the process technology needs of specific technical fields.

State Technology Extension Program: Clarifies title and expands mission of NIST's existing State Technology Extension Program.

National Quality Laboratory: Creates an industry-led National Quality Laboratory, in affiliation with NIST's Baldrige National Quality Award Program, to share the nation's best manufacturing practices with a wide range of U.S. firms. In effect, companies and groups who are leaders in total quality management and other best practices would help teach other firms.

Fellowships—Establishes NIST fellowships both for graduate students in manufacturing and for industry managers who would spend one or two years teaching manufacturing in community colleges.

National Commission on Industrial Modernization—Establishes 12-member National Commission on Industrial Modernization to analyze and make recommendations regarding how to increase investments in the development and application of new technologies, modernize facilities, and thus contribute to U.S. economic competitiveness.

Authorizations of Appropriations—Authorizes the following funds for the new programs created under this bill (funds in addition to authorizations for existing NIST programs):

[In millions of dollars]

	Fiscal year—		
	1993	1994	1995
Manufacturing project	50	100	75
Manufacturing fellowships	20	30	30
Quality laboratory[1]	5	5	5
Satellite and national centers	30	60	50
Total	105	195	160

[1] Most support for the Quality Laboratory will come from private sources.•

• Mr. GORE. Mr. President, I am pleased to join my colleagues in introducing these important bills to help restore U.S. leadership in technology and manufacturing.

As chairman of the Senate's Subcommittee on Science, Technology, and Space, and as a member of both the Commerce Committee and Armed Services, I know firsthand how important technology is to this Nation's future. I know that industry-government cooperation in technology has built entire American industries, including aircraft, computers, and biotechnology. I know, as do my colleagues, that investments made two decades ago in electronics, combined with the skill and dedication of our troops, won the gulf war.

With leadership in technology and manufacturing, the United States will be prosperous and strong with well-paid workers supporting their families with secure jobs. With new technologies, and new industries, and the economic growth they bring, we can keep the American dream alive. But if we continue to lag behind other nations, if we continue our current policy and drift aimlessly into the future, then growth will elude us, our competitors will overtake us, and that future will be marred by what could have been. American workers and America's economy will pay in lost jobs, in lost opportunity, in lost competitive strength.

And, Mr. President, the future is what this debate is all about. In a high technology world, technology policy matters. Technology policy is central to our economic and military well-being, key factors which determine whether our Nation succeeds or fails. And right now, today, we are not doing as well as we should, if our goal is to build economic power.

We should listen to the American people. They're worried. They're telling us, a majority of them, that our country is on the wrong track, that the problems they face are being ignored. There are optimists: Fortune magazine has just proclaimed "the second American century," and I truly hope they are right. But the voices I hear and the statistics I see paint a different picture.

Consider, for example, the voices of young people and teachers who were quoted in Paul Taylor's excellent June 11, Washington Post article about high school graduates of the class of 1991. "Somebody screwed up," one 18-year-old says in the article. "No names, but someone must have made major mistakes, because it seems like we have a lot of things that were just kind of neglected, and now they are cropping up as major problems." The article says that this student is daunted about the size of the Federal debt, worried about the environment, and already has felt the pinch of an inhospitable economy.

The article then quotes a teacher:

All of the appliances in their homes are made in Japan. That simple fact has shaped a lot of their view of the world. It is not an optimistic time, and they are not an optimistic group. * * * These kids have grown up in a pressure cooker. They see the lifestyles their parents have been able to achieve, and they're haunted by the notion that they may not be able to match it.

Mr. President, what legacy have the policies of the past decade left our children? What legacy will today's drift in domestic policy leave them? What will happen if in technology policy—as with the environment, education, and so many other areas—there is only high-sounding but empty rhetoric, unmatched by real commitments?

We must confront the great economic challenge now before the United States. The days are over when the United States automatically led the world economy and had no shortage of high-paying manufacturing. We face stiff competition, from foreign governments and foreign companies determined to be the best. We lag behind in too many critical technologies and too many aspects of manufacturing.

Industry, labor, and government all became complacent and slow to recognize the great challenge before us. But while business and labor have recognized the challenge, tightened their belts, and striven to restore competitiveness as best they could, government—two Republican administrations—failed to do its part. In technology, for example, we invest almost none of our $70 billion annual research and development [R&D] budget to develop the new basic technologies needed by both industry and the military. Some of our leaders even pretend there is no problem, that there is no danger the United States will slip to the status of a second-rate economy of diminished expectations and reduced power.

Successive Republican administrations have failed to respond and failed to shift investment priorities to promote real economic growth in a high technology world. No effort has been made to bring together at the highest levels leaders from industry, labor, and government to craft the strategy necessary to get our economy back on track. No effort has recognized how important it is to try once again to make the American dream a real priority, not an empty slogan.

Mr. President, I believe that we who are introducing these bills today are offering the kind of response that is needed. We do not pretend that we can overnight restore America's leadership in technology or manufacturing, but these bills are a major piece of a long-term policy to bring results. They build upon proven approaches.

For example, both the Federal Technology Strategy Act, which I authored with Senator HOLLINGS, and the Bingaman-Nunn National Critical Technologies Act, call on the Office of Science and Technology Policy [OSTP] to prepare action plans for key technologies. OSTP and its Federal Coordinating Council for Science, Engineering, and Technology began this process in the late 1980's in the computer area, encouraged by legislation I authored in 1986. We have found these plans to be an excellent mechanism to strengthen the focus and interagency coordination of major R&D projects.

Senator BINGAMAN came at this issue from a different but equally important angle. Recognizing the importance of identifying critical emerging technology policy, he required first the Defense Department and then OSTP to identify the key technologies most important to the Nation. Major efforts followed, and now the Government has a much better idea than before which basic technologies are most important.

It is logical, then, to combine the interagency planning idea, which the Commerce Committee has long supported, with the list of critical technologies developed under Senator BINGAMAN's legislation. We are combining the best features of each approach.

Similarly, the leaders of the Commerce and Armed Services Committees are working together to develop the next generation of Federal policies regarding manufacturing technology. For several years, the National Institute of

Standards and Technology [NIST] and the Navy have worked together to develop and demonstrate new manufacturing technologies. Now it is time to take these technologies, along with innovations from other Federal laboratories, and work with industry to create a new generation of American manufacturing technology. The bills we are introducing today will authorize such an effort.

Mr. President, I have young children. I do not want them to grow up in an America of diminishing expectations, reduced opportunities, and increasing bitterness. We need not let our manufacturing base and high technology industries, and the economic prosperity they bring, decline further. We still have great strengths in this Nation, and if we put our minds to it we can once again compete with the best of them. What we lack is willpower and leadership from the administration.

Today, as four of the Senate's leaders on technology policy we are taking a major step to reorient the technology policies and priorities of the Federal Government. Through this legislation we can help make economic growth a priority. The American dream remains irrevocably tied with technology, as it has been since New England built the first mechanized factories in the 19th century and the country built its first canals and railroads. It is time to restore our lead in technology and manufacturing. It is time to work to keep the American dream within reach and the economic growth that makes it possible a long-term reality.•

By Mr. NUNN (for himself, Mr. BINGAMAN, Mr. BYRD, Mr. WARNER, Mr. COATS, Mr. GORE, Mr. THURMOND, Mr. WIRTH, Mr. MCCAIN, Mr. DIXON, Mr. HOLLINGS, Mr. DOMENICI, Mr. HATFIELD, Mr. SMITH, Mr. EXON, Mr. SHELBY, Mr. BUMPERS, Mr. DECONCINI, Mr. GLENN, Mr. LIEBERMAN, Mr. LEVIN, and Mr. KENNEDY):

S. 1331. A bill to require the Secretary of Defense to establish a grant program for the improvement of undergraduate and graduate manufacturing engineering education at institutions of higher education in the United States; to the Committee on Armed Services.

DEFENSE MANUFACTURING ENGINEERING EDUCATION ACT

• Mr. NUNN. Mr. President, I rise today, along with my distinguished colleagues, Senator BINGAMAN, Senator BYRD, Senator BUMPERS, Senator COATS, Senator DECONCINI, Senator DIXON, Senator DOMENICI, Senator EXON, Senator GLENN, Senator GORE, Senator HATFIELD, Senator HOLLINGS, Senator KENNEDY, Senator LIEBERMAN, Senator LEVIN, Senator MCCAIN, Senator SHELBY, Senator SMITH, Senator THURMOND, and Senator WIRTH to introduce the Defense Manufacturing Engineering Education Act of 1991.

Today, Mr. President, the Congress, the administration, and the American people all recognize the need to improve America's manufacturing capabilities. These improvements are critical to maintain national security and our economic vitality in the coming decades. The recent report of the National Critical Technologies Panel, headed by the White House science adviser, has made manufacturing technology one of its top priorities. The Defense Department, in its 1991 defense critical technologies plan, places a heavy emphasis on manufacturing technology. And the Joint Chiefs of Staff 1991 net assessment states that the ongoing loss of U.S. manufacturers is a threat to our ability to field state-of-the-art weapons systems on a timely basis.

Leaders in industry and academia now recognize that American engineering education has for the past several decades tended to neglect manufacturing and production process technology. It has, instead, tended to emphasize product design and engineering analysis. As a direct consequence, manufacturing engineering has somehow acquired a reputation of being a less prestigious occupation. It's been estimated that America devotes fully two-thirds of its engineering effort to product design and only one-third to manufacturing process design. In Japan, that ratio is typically reversed.

The legislation we are introducing today is directly targeted at one of America's most pressing problems, maintaining America's manufacturing essential capabilities in all areas of manufacturing critical to our national security and our economic growth. America needs to relearn how to take the results of its science and technology and effectively convert it into useful applications.

Mr. President, the purpose of this legislation is straightforward. It is intended to increase the number of manufacturing engineering students graduating from our universities and colleges. The proposed legislation will accomplish this by establishing a Defense Department program to make grants to universities and colleges all across America to establish new programs in manufacturing engineering education where none now exist, and to strengthen existing manufacturing engineering programs in universities and colleges that have already established such programs.

The firms that constitute America's defense industrial base provide a significant fraction of America's total manufacturing capability. Further, the advanced manufacturing technologies that the Defense Department has developed, and is continuing to develop, through their MANTECH program have often been the basis for improvements in the commercial sector manufacturing. Today we find that the development and application of defense and commercial advanced manufacturing technologies are becoming fully intertwined and interdependent. What supports one supports the other; what harms one harms the other.

In July 1988, the Under Secretary of Defense for Acquisition described the results of his examination of the problems facing the U.S. manufacturing base in a DOD report entitled "Bolstering Defense Industrial Competitiveness." In that report he noted that—

> The American educational system does not produce the required numbers and skill levels of scientists, engineers, and technicians to support advanced manufacturing needs. Engineering schools in American universities also focus inadequately on manufacturing, instead training engineers for careers in product research and development. Few faculty members have industrial experience or expertise. Emphasis on specialization results in engineering professional who are ill-equiped to understand total manufacturing systems.

The conclusion reached by the Under Secretary of Defense in this 1988 DOD study are as valid today as they were then. Since then, many other groups and committees have studied various aspects of this same problem. All tend to reach the same conclusions. And all conclude that our universities and colleges must, somehow, better balance the education of our engineers between product and process design, between invention and production, so that we can only convert science into technolgy to the battlefield or marketplace more economically, with higher quality, and quicker than any other nation.

Today, approximately 14 percent of all U.S. scientists and engineers are employed in defense related activities. The Department of Defense directly employs more than 100,000 scientists and engineers, approximately 3 percent of the national pool. And appropriately the Department has a large number of different programs supporting science and engineering education at the precollege, undergraduate and graduate levels.

The legislation we are introducing today is intended to build on this substantial Defense Department support of science and engineering education by expanding it into an area that critically needs our attention, and an area that will directly support the mission of the Defense Department.

The United States today graduates a few hundred engineers well-trained in advance manufacturing disciplines from those universities and colleges around the Nation that already have established manufacturing engineering education programs. But if you ask the leaders of industry in America, they will tell you that we should be graduating thousands rather than hundreds of new engineers educated in manufacturing technology each year if we are to

remain a global power. And that we should find ways to reach beyond the traditional demographic group that make up this occupation, white males, and include women, minorities and the disabled.

Mr. President, the Defense Manufacturing Engineering Education Act of 1991 authorizes the Department of Defense to competitively award grants to at least 10 American universities and colleges to support multidisciplinary manufacturing engineering education programs at the undergraduate and/or graduate level. In order to achieve greater dispersion of these programs throughout America, at least one-third of these grants must be used to start new programs and, to the maximum extent practical, geographic concentration of grants should be avoided.

The legislation authorizes the Defense Department to fund this program at a level of $25 million for fiscal year 1992 and another $25 million for fiscal year 1993. To ensure that there is a full commitment to make these programs succeed, the grants will be awarded only when either the State government and the private sector provide matching funds on at least a 50–50 basis.

Programs selected for grants must have three essential elements: a multidisciplinary instruction component, a research component, and an integral work-experience component. The instructional component typically will include a selection of undergraduate or graduate level courses related to manufacturing and also laboratory activities, thesis projects, and visits to industrial facilities.

The research component will be specifically directed at supporting the instruction component through faculty and student performed research. The work-experience component may include internships, summer job placements, or cooperative work-study programs, in order to place the instruction and research elements in a real-world context.

The legislation directs the Defense Department to fully coordinate this program with the National Science Foundation's program to support engineering education to ensure that both programs are well coordinated. It also directs that programs selected have a significant level of participation by women, minorities, and the disabled.

In preparing this legislation, our staff worked closely with several major universities that already have manufacturing engineering programs established to benefit from their experience. Over 30 universities across the Nation were asked to review the draft legislation and recommend changes. Mr. President, I must report that the responses received have been overwhelmingly enthusiastic. Further, many of these responses offered constructive criticism which was incorporated wherever possible.

Mr. President, the legislation that we are introducing today provides a reasonable approach to increasing the number of engineers who think manufacturing, and who will take the lead in improving America's capability to manufacture and sell the things we invent competitively in today's global marketplace. It directly helps America's national security by making more engineering talent available to the defense industrial base to make our future weapons systems more produceable and more affordable. And, more importantly, it supports America's defense industrial base by strengthening America's ability to manufacture the products we need, such as advanced materials, microelectronic components and devices, and tools and test equipment, at home, and globally competitive in price and quality. I believe that the legislation we are introducing will act, in a very significant and important way, to ensure that the United States continues to maintain its leadership position both in the military and economic sectors in this era of advancing technologies.

Mr. President, I respectfully request that the full text of the bill be printed immediately following my statement in the RECORD.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1331

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE

This Act may be cited as the "Defense Manufacturing Engineering Education Act of 1991".

SEC. 2. FINDINGS AND PURPOSE

(a) FINDINGS.—Congress makes the following findings:

(1) A strong defense industrial base is essential for the maintenance of the national security of the United States.

(2) Significant improvements in the productivity of the defense industrial base of the United States can be made if the manufacturers in the defense industrial base take full advantage of the rapid advancements that are occurring in manufacturing technology.

(3) Improved education and training of United States engineers, technicians, and workers in modern manufacturing techniques is vital to the ability of manufacturers in the defense industrial base of the United States to take advantage of advances in manufacturing technology.

(4) Federal Government support for State, local, and private sector initiatives is needed to stimulate improvements in manufacturing engineering education and training.

(b) PURPOSES.—The purposes of this Act are to encourage the development of undergraduate and graduate level programs of education and research in manufacturing engineering at institutions of higher education in the United States and to increase the number of persons educated in the techniques and disciplines of manufacturing engineering through—

(1) the expansion of Federal Government support for programs of manufacturing engineering education in the United States;

(2) the provision of financial support for the establishment of new programs of manufacturing engineering education across the United States;

(3) the upgrading of existing programs in manufacturing engineering education in the United States;

(4) the encouragement of increased participation of women, members of minority groups, and disabled persons in manufacturing education and training; and

(5) the active involvement of the Federal Government, States, and local governments along with institutions of higher education and private industry in cooperative undertakings to establish and support such programs.

SEC. 3. MANUFACTURING ENGINEERING EDUCATION GRANT PROGRAM

(a) ESTABLISHMENT OF GRANT PROGRAM.—The Secretary of Defense, in consultation with the Director of the National Science Foundation and the Director of the Office of Science and Technology Policy, shall establish a program for the Secretary to make grants to institutions of higher education for the following purposes:

(1) To support the enhancement of existing programs in manufacturing engineering education that are conducted by grantee institutions and that meet the requirements of section 4.

(2) To support the establishment at grantee institutions of new programs in manufacturing engineering education that meet such requirements.

(b) NEW PROGRAMS IN MANUFACTURING ENGINEERING EDUCATION.—For the purpose of subsection (a)(2), a program in manufacturing engineering education to be established at an institution of higher education may be considered new regardless of whether the program is to be conducted—

(1) within an existing department in a school of engineering of the grantee institution of higher education;

(2) within a manufacturing engineering department to be established separately from the existing departments within such school of engineering; or

(3) within a manufacturing engineering school or center to be established separately from an existing school of engineering of such institution.

(c) MINIMUM NUMBER OF GRANTS FOR NEW PROGRAMS.—Of the total number of grants awarded pursuant to this section, at least one-third shall be awarded for the purpose stated in subsection (a)(2).

(d) GEOGRAPHICAL DISTRIBUTION OF GRANTS.—In awarding grants under this subsection, the Secretary shall, to the maximum extent practicable, avoid geographical concentration of grant awards.

(e) INITIAL GRANTS.—Within one year after the date of the enactment of this Act, the Secretary of Defense, in consultation with the Director of the National Science Foundation, shall award grants under the program to at least 10 institutions of higher education across the United States.

(f) COORDINATION OF GRANT PROGRAM WITH THE NATIONAL SCIENCE FOUNDATION.—The Secretary of Defense and the Director of the National Science Foundation shall enter into a written agreement for carrying out the grant program established pursuant to this section. The agreement shall include the following matters:

(1) Procedures to ensure that the grant program is fully coordinated with similar existing education programs of the National Science Foundation.

(2) Provisions for the National Science Foundation to assist in the administration

and management of grants made by the Secretary under the program.

SEC. 4. COVERED PROGRAMS OF MANUFACTURING ENGINEERING EDUCATION

(a) IN GENERAL.—A program of engineering education supported with a grant awarded pursuant to this Act shall meet the requirements of this section.

(b) LEVEL OF HIGHER EDUCATION FOR WHICH PROGRAM IS OFFERED.—The program of education shall be conducted at the undergraduate level, the graduate level, or both the undergraduate and graduate levels.

(c) COMPONENTS OF PROGRAM.—The program of education shall be a consolidated and integrated multidisciplinary program of education having each of the following components:

(1) Multidisciplinary instruction that encompasses the total manufacturing engineering enterprise and that may include—

(A) manufacturing engineering education and training through classroom activities, laboratory activities, thesis projects, individual or team projects, and visits to industrial facilities, consortia, or centers of excellence;

(B) faculty development programs;

(C) recruitment of educators highly qualified in manufacturing engineering;

(D) presentation of seminars, workshops, and training for the development of specific research or education skills; and

(E) activities involving interaction between the institution of higher education conducting the program and industry, including programs for visiting scholars or industry executives.

(2) Opportunities for students to obtain work experience in manufacturing through such activities as internships, summer job placements, or cooperative work-study programs.

(3) Faculty and student research that is directly related to, and supportive of, the education of undergraduate or graduate students in advanced manufacturing science and technology because of—

(A) the increased understanding of advanced manufacturing science and technology that is derived from such research; and

(B) the enhanced quality and effectiveness of the instruction that result from that increased understanding.

(d) SIGNIFICANT INVOLVEMENT OF INDUSTRY.—The program shall be conducted with a significant level of involvement of private sector manufacturing firms having major manufacturing operations in the United States and a significant level of collaboration between the firms so involved and the institution of higher education conducting the program.

SEC. 5. GRANT PROPOSALS

(a) PROPOSAL REQUIREMENTS.—The Secretary of Defense, in coordination with the Director of the National Science Foundation, shall solicit from institutions of higher education in the United States proposals for grants to be made pursuant to this Act for the support of programs of manufacturing engineering education that are consistent with the purposes of this Act.

(b) CONTENT OF PROPOSALS.—Each proposal submitted by an institution of higher education shall include the following:

(1) A description of the program proposed to be supported by the grant.

(2) A discussion of the institution's experience and demonstrated capabilities that qualify the institution to conduct the proposed program.

(3) A discussion of how industrial experience, expertise, and facilities will be integrated into the proposed program.

(4) A description of the anticipated curriculum.

(5) A description of the research proposed to be conducted pursuant to the proposed program, including how the research will support the instructional content of the program.

(6) A commitment by the non-Federal Government participants in the proposed program to contribute financial or in-kind support sufficient to defray at least 50 percent of the total cost of the program during the period covered by the grant, including a description of the cost-sharing arrangements provided to carry out the cost-sharing commitment.

(7) A description of the specific benefits the proposed program will provide for the improvement of the defense industrial base of the United States and the education and training of engineers in manufacturing methods, techniques, and technology in the United States.

(8) A plan to achieve a significant level of participation by women, members of minority groups, and disabled persons through active recruitment of students from among such persons.

SEC. 6. GRANT AWARDS

(a) MERIT COMPETITION.—Grants shall be awarded on the basis of merit competition in accordance with procedures prescribed by the Secretary of Defense in coordination with the Director of the National Science Foundation.

(b) SELECTION CRITERIA.—The Secretary may select a proposal for the award of a grant pursuant to this Act if the proposal, at a minimum—

(1) promotes the achievement of the purposes of this Act;

(2) contains innovative approaches for improving engineering education in manufacturing technology;

(3) demonstrates a strong commitment by the proponents to apply the resources necessary to achieve the objectives for which the grant is to be made;

(4) provides for the conduct of research that supports the instruction to be provided in the proposed program and is likely to improve manufacturing engineering and technology;

(5) demonstrates a significant level of involvement of United States industry in the proposed instructional and research activities;

(6) is likely to attract superior students;

(7) proposes to involve fully qualified faculty personnel who are experienced in research and education in areas associated with manufacturing engineering and technology;

(8) proposes a program that, within 3 years after the grant is made, is likely to attract from sources other than the Federal Government the financial and other support necessary to sustain such program; and

(9) proposes to achieve a significant level of participation by women, members of minority groups, and disabled persons through active recruitment of students from among such persons.

SEC. 7. DEFINITION

In this Act, the term "institution of higher education" has the meaning given such term in section 1201(a) of the Higher Education Act of 1965 (20 U.S.C. 1141(a)).

SEC. 8. AUTHORIZATION OF APPROPRIATIONS

There is hereby authorized to be appropriated to the Department of Defense for each of fiscal years 1992 and 1993, $25,000,000 to carry out the provisions of this Act.•

By Mr. BAUCUS (for himself, Mr. GRASSLEY, Mr. SYMMS, Mr. HOLLINGS, Mr. SHELBY, Mr. HARKIN, Mr. WALLOP, Mr. PRESSLER, Mr. SIMPSON, Mr. BOND, Mr. SANFORD, Mr. MCCAIN, and Mr. CHAFEE):

S. 1332. A bill to amend title XVIII of the Social Security Act to provide relief to physicians with respect to excessive regulations under the Medicare program; to the Committee on Finance.

MEDICARE PHYSICIAN REGULATORY RELIEF AMENDMENTS

• Mr. BAUCUS. Mr. President, I am pleased to rise today with my esteemed colleague from Iowa, Mr. GRASSLEY, to introduce important health care legislation, the Medicare Physician Regulatory Relief Amendments of 1991. We are joined by many of our distinguished friends in this effort, namely Senators SYMMS, HOLLINGS, SHELBY, HARKIN, WALLOP, PRESSLER, SIMPSON, BOND, SANFORD, MCCAIN, and CHAFEE.

This legislation continues the work began last year with the first physician regulatory relief bill S. 2591 in the 101st Congress. Congressman ROY ROWLAND introduced similar legislation in the House, H.R. 4475, which had overwhelming support there. Our effort last year was met with tremendous success and we were able to achieve most of what we wanted in the context of the budget reconciliation bill. With passage of those provisions we made some headway in reducing the red tape and paperwork that physicians suffer with every time they see a patient who is covered by Medicare. We achieved establisment of a practicing physicians advisory board; modifications in physicians' rights to appeal Medicare denials; a pilot project to provide physicians with more information on how claims are screened for denial; and modifications in reciprocal billing arrangements. Each of these provisions is needed and will improve Medicare conditions for physicians and patients alike.

But there is much more to be done, and the bill we present today is another step in that direction.

Mr. President, some will say that paperwork burdens are a necessary, if undesirable, byproduct of cost containment efforts in Medicare. They will say we must keep strict control over what Medicare will pay for if we are to prevent costly abuses of the system.

I disagree with that philosophy.

I have no argument with those who say that we need very strong cost controls in the Medicare program. In fact, I have spoken many, many times on the need for cost containment in health care. There is no question that the problem of runaway costs in health care is tightly intertwined with the problem of access to health care.

But I would argue that by requiring physicians to jump through endless Medicare hoops we are not helping anyone: not Medicare beneficiaries, or taxpayers, or physicians. On the contrary, we are jeopardizing good medical care by creating an adversarial relationship between physicians, carriers, and patients. We are strangling physicians in redtape.

Mr. President, the paperwork burden must be cut down. The bill we are introducing today would do this by accomplishing the following:

Amend existing Medicare Secondary Payer [MSP] authority to prohibit the Health Care Financing Administration [HCFA] from denying a physician payment for medically necessary covered services where patient noncompliance with an independently generated questionnaire is in doubt.

Allow HCFA to use extrapolation for case identification purposes but give the physician the option of requiring the carrier to show cause by producing evidence of specific payment errors in a given calendar quarter before actual recoupment going back over a number of years is demanded.

Prohibit HCFA from charging physicians for: First, filing paper claims; second, claim filing errors or claims that are rejected; third, charging physicians or patients for the costs of unsuccessful appeals; fourth, applications for unique provider identification numbers; fourth, medical review requirements.

Require HCFA to consider input from State medical societies in the annual carrier performance evaluations.

Allow physicians to file administrative appeals when the carrier has failed to or improperly implemented Medicare policy as established by the Secretary.

Require that all medical necessity denials under the Medicare program be reviewed by appropriately licensed physicians of the same medical specialty as the physician providing the service.

Prohibit peer review precertifications for 10 procedures.

Allow substitute billing for locum tenens physicians.

Mr. President, these are modest changes that will help ease some of the paperwork burdens plaguing physicians. I hope many of our colleagues will join us in this important effort. Our Nation's physicians, and all Medicare beneficiaries, deserve better than the maze of regulations they suffer under today.

Mr. President, I ask unanimous consent that the text of the bill be printed in the RECORD.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1332

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Medicare Physician Regulatory Relief Amendments of 1991".

SEC. 2. NO MEDICARE SECONDARY PAYOR DENIAL BASED ON FAILURE TO COMPLETE QUESTIONNAIRE.

Section 1862(b)(2) of the Social Security Act (42 U.S.C. 1395y(b)(2)) is amended by adding at the end the following new subparagraph:

"(C) TREATMENT OF QUESTIONNAIRES.—The Secretary shall not fail to make payment under subparagraph (A) based upon the failure of an individual to complete a questionnaire concerning the existence of a primary plan. However, any such payment remains conditional (as provided under subparagraph (B)).".

SEC. 3. LIMITATIONS ON USE OF EXTRAPOLATION.

Section 1842(c) of the Social Security Act (42 U.S.C. 1395u(c)) is amended by adding at the end the following new paragraph:

"(4) In carrying out its contract under subsection (b)(3) with respect to physicians' services—

"(A) the carrier may use extrapolation in order to identify claims for which payment may be disallowed;

"(B) the carrier may not recoup or offset payment amounts based on extrapolation if the physician requests that disallowed claims be identified individually; and

"(C) no refund, offset assessment, penalties, or interest shall accrue with respect to a claim that is disallowed until the date the administrative appeals process has been completed.".

SEC. 4. LIMITATION ON CARRIER USER FEES.

Section 1842(c) of the Social Security Act (42 U.S.C. 1395u(c)) is further amended by adding at the end the following new paragraph:

"(5) Neither a carrier nor the Secretary may impose a fee under this title—

"(A) for the filing of a claim on paper relating to physicians' services,

"(B) for an error in filing a claim relating to physicians' services or for such a claim which is denied,

"(C) for any appeal under this title with respect to physicians' services,

"(D) for applying for (or obtaining a unique identifier under subsection (r), or

"(E) for responding to inquiries respecting physicians' services or for providing information with respect to medical review of such services.".

SEC. 5. INCLUDING PHYSICIAN INPUT IN ANNUAL CARRIER PERFORMANCE REVIEWS.

Section 1842(b)(2) of the Social Security Act (42 U.S.C. 1395u(b)(2)) is amended—

(1) in the second sentence of subparagraph (A), by inserting "(including the reduction of administrative burdens on physicians furnishing services for which payment is made under this part)" after "contract obligations under this section", and

(2) by adding at the end the following new subparagraph:

"(D) In applying the standards and criteria established under subparagraph (A), the Secretary shall consider any evaluations (with respect to such standards and criteria) submitted by medical societies representing physicians who are served by the carrier.".

SEC. 6. APPEALS OF CARRIER VIOLATIONS.

Section 1842(b)(2) of the Social Security Act (42 U.S.C. 1395u(b)(2)) is further amended by adding at the end the following new subparagraph:

"(E) The Secretary shall provide that any individual (including a physician) who—

"(i) is aggrieved by the failure of a carrier to carry out policies established under this part, whether established through the carrier manual, regional office transmittals, central office transmittals, or other means, and

"(ii) establishes that the individual has (or, in the case of a failure affecting more than one individual, the individuals affected by the failure have) suffered damages aggregating at least $500 as a result of the failure, may obtain a hearing before the Secretary respecting such failure. If a carrier is found to have such a failure, the Secretary shall order the carrier to compensate the aggrieved individuals for such failure.".

SEC. 7. REVIEW OF MEDICAL NECESSITY DENIALS BY PHYSICIANS IN SAME SPECIALTY.

Section 1842(b)(2) of the Social Security Act (42 U.S.C. 1395u(b)(2)) is further amended by adding at the end the following new subparagraph:

"(F) In the contract under subsection (c), the Secretary shall require each carrier, in the case of a decision to deny payment for physicians' services under section 1862(a)(1), to provide for review of the decision by a physician in the same medical specialty as the medical specialty of the physician who provided the services.".

SEC. 8. CLARIFICATION OF PERMISSIBLE SUBSTITUTE BILLING ARRANGEMENTS FOR PHYSICIANS' SERVICES UNDER THE MEDICARE AND MEDICAID PROGRAMS.

(a) MEDICARE PROGRAM.—

(1) IN GENERAL.—Clause (D) of section 1842(b)(6) of the Social Security Act (42 U.S.C. 1395u(b)(6)), as inserted by section 4110(a)(2) of the Omnibus Budget Reconciliation Act of 1990, is amended to read as follows: "(D)(i) payment may be made to a physician for physicians' services (and services incident to such services) to be provided by a second physician on a reciprocal basis to individuals who are patients of the first physician if (I) the first physician is unavailable to provide the services, (II) the services are not provided by the second physician over a continuous period of longer than 60 days, and (III) the claim form submitted to the carrier includes the second physician's unique identifier (provided under the system established under subsection (r)) and indicates that the claim meets the requirements of this clause for payment to the first physician; and (ii) payment may be made to a physician for physicians' services (and services incident to such services) which that physician pays a second physician on a per diem or other fee-for-time basis to provide to individuals who are patients of the first physician if (I) the first physician is unavailable to provide the services, (II) the services are not provided by the second physician over a continuous period of longer than 90 days (or such longer period as the Secretary may provide), and (III) the claim form submitted to the carrier includes the second physician's unique identifier (provided under the system established under subsection (r)) and indicates that the claim meets the requirements of this clause for payment to the first physician".

(2) EFFECTIVE DATE.—The amendment made by paragraph (1) shall apply to services furnished on or after the first day of the first month beginning more than 60 days after the date of the enactment of this Act.

(b) MEDICAID PROGRAM.—

(1) IN GENERAL.—Section 1902(a)(32)(C) of such Act (42 U.S.C. 1396a(a)(32)(C)), as added by section 4708(a)(3) of the Omnibus Budget Reconciliation Act of 1990, is amended to read as follows:

"(C) payment may be made to a physician for services furnished by a substitute physician under the circumstances described in clause (D) of section 1842(b)(6), except that, for purposes of this subparagraph, any reference in such clause to 'a carrier' or 'the system established under subsection (r)' is deemed a reference to the State (or other fiscal agent under the State plan) and to the system established under subsection (x) of this section, respectively.".

(2) EFFECTIVE DATE.—(A) The amendment made by paragraph (1) shall apply to services furnished on or after the date of the enactment of this Act.

(B) Until the first day of the first calendar quarter beginning more than 60 days after the date the Secretary of Health and Human Services established the physician identifier system under section 1902(x) of the Social Security Act, the requirement under section 1902(a)(32)(C) of such Act that a claim form submitted must include the second physician's unique identifier is deemed to be satisfied if the claim form identifies (in a manner specified by such Secretary) the second physician.

SEC. 9. REPEAL OF PRO PRECERTIFICATION REQUIREMENT FOR CERTAIN SURGICAL PROCEDURES.

(a) IN GENERAL.—Section 1164 of the Social Security Act (42 U.S.C. 1320c-13) is repealed.

(b) CONFORMING AMENDMENTS.—

(1) Section 1154 of such Act (42 U.S.C. 1320-3) is amended—

(A) in subsection (a), by striking paragraph (12), and

(B) in subsection (d), by striking "(and except as provided in section 1164)".

(2) Section 1833 of such Act (42 U.S.C. 13951) is amended—

(A) in subsection (a)(1)(D)(i), by striking ", or for tests furnished in connection with obtaining a second opinion required under section 1164(c)(2) (or a third opinion, if the second opinion was in disagreement with the first opinion";

(B) in subsection (a)(1), by striking clause (G);

(C) in subsection (a)(2)(A), by striking "to items and services (other than clinical diagnostic laboratory tests) furnished in connection with obtaining a second opinion required under section 1164(c)(2) (or a third opinion, if the second opinion was in disagreement with the first opinion,";

(D) in subsection (a)(2)(D)(i)—

(i) by striking "basis," and inserting "basis or", and

(ii) by striking ", or for tests furnished in connection with obtaining a second opinion required under section 1164(c)(2) (or a third opinion, if the second opinion was in disagreement with the first opinion))";

(E) in subsection (a)(3), by striking "and for items and services furnished in connection with obtaining a second opinion required under section 1164(c)(2), or a third opinion, if the second opinion was in disagreement with the first opinion)"; and

(F) in the first sentence of subsection (b)—

(i) by striking "(3)" and inserting "and (3)", and

(ii) by striking ", and (4)" and all that follows up to the period at the end.

(3) Section 1834(g)(1)(B) of such Act (42 U.S.C. 1395m(g)(1)(B)) is amended by striking "and for items and services furnished in connection with obtaining a second opinion required under section 1164(c)(2), or a third opinion, if the second opinion was in disagreement with the first opinion)".

(4) Section 1862(a) of such Act (42 U.S.C. 1395y(a)) is amended—

(A) by adding "or" at the end of paragraph (14),

(B) by striking "; or" at the end of paragraph (15) and inserting a period, and

(C) by striking paragraph (16).

(5) The third sentence of section 1866(a)(2)(A) of such Act (42 U.S.C. 1395w(a)(2)(A)) is amended by striking ", with respect to items and services furnished in connection with obtaining a second opinion required under section 1164(c)(2) (or a third opinion, if the second opinion was in disagreement with the first opinion),".

SEC. 10. EFFECTIVE DATE.

The amendments made by this Act (other than by section 8) shall take effect on January 1, 1992.●

● Mr. GRASSLEY. Mr. President, I am pleased to join with my colleague, Senator BAUCUS, and several other Senators, in introducing the Medicare Physician Regulatory Relief Amendments of 1991—a bill which we think would reduce some of the redtape with which we have entangled physicians who treat Medicare beneficiaries.

Mr. President, there cannot be a Member of the Senate or House of Representatives who has not had reams of bitter mail from physicians detailing the hassles to which they are subjected by Medicare rules and regulations.

They complain:

Of payment rejections which they must appeal and reappeal with more paperwork before finally receiving payment.

Of letters demanding additional treatment justifications which eventually, after more correspondence, prove to have been unnecessary.

Of constantly changing requirements that have no relationship to the way medicine is really practiced.

Well, why should we care if physicians are upset with the administration of the Medicare Program? After all, one might argue that they are well compensated for their troubles.

The primary reason is that it can be the patient who ultimately suffers because of this kind of hassle. A second important reason is that unnecessary redtape adds to the cost of health care.

It has come to the point in many places that some physicians are simply refusing to take new Medicare beneficiaries. In the Cedar Rapids area of Iowa, for instance, constituents whose physician has died or retired have written to tell me that they are having a very difficult time finding a physician who will accept them.

Furthermore, in some parts of the country, for instance, rural Iowa, it is difficult to recruit physicians. In our State at this moment about 161 communities are looking for about 258 physicians.

The difficulty of getting physicians into rural communities is not entirely attributable to Medicare problems. But the prospect of case loads with large numbers of Medicare beneficiaries must cause physician recruits to pause, and, in many cases, locate somewhere other than rural communities.

In Iowa, part of the problem is that Medicare reimbursement for physicians is among the very lowest in the country.

A big part of the problem in Iowa, however, as elsewhere, is that the program subjects physicians to inordinate hassles through the routine administration by carriers and through the work of the peer review organizations.

In a State like my own, where 50 percent of the case load of a rural physician may consist of Medicare beneficiaries, Medicare administration is a very heavy weight indeed on a practice.

One Cedar Rapids physician said of the effect of the Medicare Program on his practice: "You cannot relax. You're constantly feeling there is somebody peering, probing, questioning. It's kind of like having a giant ant that * * * (is) biting you here and there, causing you a great deal of annoyance, and yet you never catch up with it."

I also want to remind my colleagues of the well-documented costs in our health care system that are attributable to administration. Much of the commentary about this focuses on the overhead associated with multiple private insurance payers active in the health care system.

What is not so frequently stressed is that a good deal of the administrative burden which falls on physicians is created by the Medicare Program through payment administration rules or through the quality review program.

I hope it goes without saying that, in a program which spends $100 billion a year, careful administration is absolutely essential. Unfortunately, we have come to a situation of administrative overkill in the program. As the Cedar Rapids Gazette put it:

> * * * The overall impression is the same: They are sick of the Federal Bureaucracy telling them how to practice medicine, requiring more paperwork, and threatening fines or imprisonment in every letter.

What we have to do is try to remove the hassle factor from the system—not the necessary, careful administration, but the red tape overkill which now seems so much a part of the system. We cannot remove the procedures which guard against waste and fraud, and we must continue to insist on careful quality review. But there is just too much bureaucratic busywork and papershuffling in this system.

In 1988-1989, we spent somewhere in the neighborhood of $300 million a year to oversee the quality of care in the Medicare Program, but found confirmed quality problems in only a little more than 2 percent of cases reviewed, and most of these involved incomplete documentation. Physicians have better thins to do with their time than jump through bureaucratic hoops created in Washington. I think physicians should be spending their time in patient care, not paperwork. And I would rather see them take on an additional nurse who

would spend her time in patient care, rather than have to take on an additional administrative person to do Medicare paperwork.

Last year, Senator BAUCUS and I, with some of the same colleagues who join us today, began a modest effort to reduce some of the most offensive hassles burdening physicians by introducing the Medicare Physician Regulation Relief Amendments of 1990.

That legislation contained five provisions. Four of these were included in their original form or in modified versions in the Omnibus Budget Reconciliation Act of 1990—OBRA 90.

These were:

A provision to require that physicians be provided with more complete information on Medicare utilization review policies. OBRA 90 included a provision to study the effects of such a requirement.

A provision to allow professional organizations to appeal payment denials on behalf of an individual or group of physicians. A study of this possibility was included in OBRA 90.

A provision to allow physicians to use reciprocal billing arrangements with colleagues who may care for patients in their absence. This provision was included in OBRA 90 with certain modifications.

A provision establishing a practicing physician advisory group to the Health Care Financing Administration. This provision was included in OBRA 90.

A provision prohibiting Medicare carriers from charging physicians for information needed to comply with Medicare law and regulation. This provision was not included in OBRA 90.

The legislation we are introducing today has eight provisions:

First, it prohibits the Health Care Financing Administration from denying physician claims because Medicare patients fail to complete and return Medicare secondary payer questionnaires.

Current procedure puts the physician completely at the mercy of the patient's completion of such questionnaires in those cases in which a physician sees a patient for the first time. How many of us would want our compensation for a service rendered dependent on the inclination of those to whom we provided the service to fill out a questionnaire?

Second, it requires carriers to document each specific payment error to determine the actual amount recovered from physicians.

Currently, Medicare carriers use a sampling methodology to compute the total amounts a physician might owe the program because of payment errors. This procedure has the potential to considerably overstate the amount that physicians might owe.

Third, it prohibits the Health Care Financing Administration from charging physicians for filing paper claims, claim filing errors, or rejected claims, from charging physicians or patients for the costs of unsuccessful appeals, charging physicians for unique provider identification numbers, or medical review requirements.

These are all things that should be costs of administering the program. As things stand now, the program requires the physician to pay for such things. In reality, of course, the costs ultimately are paid by other payers through cost-shifting.

Fourth, it requires HCFA to consider comments from State medical societies in the annual carrier performance evaluations; to review current indicators of relations between carriers and providers; to modify current items to provide incentives for carriers to reduce the hassle factor.

Presently, there is no real avenue for physician commentary on carrier performance, and carriers are not evaluated by the Health Care Financing Administration on the basis of their relations with physicians. Nor are they provided any incentives to seek to reduce administrative burdens that they impose on them.

Fifth, it would allow individuals to file administrative appeals when carriers have failed to implement Medicare policy properly.

Presently, there is really no recourse if physicians believe that carriers are not appropriately implementing law and regulation. This provision would open up an avenue of appeal in such situations.

Sixth, it requires that all medical necessity denials under the Medicare program be reviewed by appropriately licensed physicians of the same medical specialty as the physician providing the service.

One of the things most troublesome to many physicians, particularly specialists, is that decisions by carriers that certain procedures may not have been medically necessary, are often made by nonphysicians, physicians no longer actively treating patients, or physicians not of the same specialty as the physician providing the service. This provision would correct this state of affairs.

Seventh, it would prohibit peer review precertifications for 10 procedures.

Eighth, it would allow substitute billing for locum tenens physicians.

The Health Care Financing Administration has determined that the current precertification review of 10 specific procedures ends up costing more than it returns in benefits to the program.

The locum tenens provision parallels the reciprocal billing provision which became law through OBRA 90. In this case, it applies not to colleagues who are informally "covering" for another physician, but physicians who have a contractual arrangement through which they provide services to another physician's patients.

Mr. President, eventually we will have to find a better way to administer this program. For the quality review part of the program, I hope that the Committee on Finance will seriously consider implementing reforms along the lines of those suggested in a recent report to Congress by the Institute of Medicine entitled "Medicare, a Strategy for Quality Assurance."

In the meantime, with the introduction of this bill today, we hope to continue the modest progress we began last year with our 1990 Medicare antihassle legislation.●

● Mr. HOLLINGS. Mr. President, I am pleased to join my colleagues today in legislation to continue the effort begun last year with S. 2591 to reverse some of the useless Medicare regulation that has become the trend with HCFA throughout the 1980's. I was pleased to see many of the provisions contained in S. 2591 included in Reconciliation, and we need to keep moving in the direction of eliminating measures that unduly burden physicians and confuse beneficiaries but provide no corresponding improvement in either cost or quality of care.

Let me emphasize, Mr. President, that this is a very modest effort and in most cases does not go nearly as far as most of us would like in reining in HCFA and contractor abuses. We hope only to push a little on behalf of Medicare beneficiaries and providers with the hope that we can keep reimbursement tolerable enough to allow continued access to services. I don't intend to go into all the provisions of this bill, but I would like to focus on one which has generated a lot of angry mail from my State and which demonstrates the point made earlier that this is a very modest bill.

The bill we introduce today would prohibit HCFA from denying physician payments for medically necessary covered services if patients fail to complete questionnaires. Now, we've all seen the recent media coverage decrying Medicare losses due to failure to collect from primary insurance—that is, claims in which Medicare should have been the secondary payor—and HCFA's promises to collect. You can't blame the media for focusing on these large dollar figures being tossed around by the Department, the inspector general, and others. But has anyone questioned whether these figures are correct? Have you seen any media coverage of how this problem occurred, who was at fault, or how it is going to be corrected? I haven't, but I've been forced to look into the matter because of numerous complaints from Medicare beneficiaries, providers, and most recently from businesses—and they're all fed up. From what I've been able to piece together, the data about secondary payors is questionable at best. HCFA furnished the contractors data regarding beneficiaries who had access

to other insurance that should have been primary; by HCFA's own admission, the data was incorrect in many instances. If losses are based on this erroneous data, who know how much loss if any we are chasing? The real travesty here is that those who are responsible for the problem are in a position to make everybody else pay.

Mr. President, I ask that a letter from Benefit Planning Services, Inc., of Spartanburg, SC, which describes in detail an "employee benefit nightmare" be printed in the RECORD at the end of my statement. This letter relates the extremes to which HCFA is going to collect retroactively from private insurance for possible secondary payor claims. This is another instance in which we are driving business away from the very behavior we are attempting to promote. How can we encourage business to offer health insurance benefits to employees on the one hand, and make those which do so regret it on the other? My preference would be to require HCFA to cease immediately this harassment of business, but this modest bill we propose does not do that.

As I understand it, when a claim is submitted by a Medicare provider it is screened through this HCFA information and is rejected if there is a "hit." The contractor issues a questionnaire to the beneficiary soliciting information about other insurance. When the response is received, if there is no primary insuror the claim can be processed. But, the contractor has no authority to correct the base data, so the next claim submitted goes through the same process of rejection, questionnaire, resubmission. During all this time providers and beneficiaries are left holding the bag. A number of irate beneficiaries have told me they have given Medicare the information, Medicare knows that they have no other insurance, and they are so angry they are destroying the questionnaires. If the provider has agreed to accept assignment, the beneficiary has little concern for his pocketbook. Here again we are discouraging on the one hand the very behavior we are encouraging on the other. What incentive is there here for providers to accept assignment? Neither the contractor nor HCFA has any incentive to do it right the first time or to make timely corrections; in fact, the incentives are all in the reverse. The contractor is able to hold onto its funds longer, and, as these are not clean claims, they do not count against the contractor's time limitation for processing. The longer these claims are tied up in processing, the slower the drain on Treasury. Medicare beneficiaries and providers are also concerned about their budgets, and the Federal Government is in a better position to absorb these cash-flow problems than most providers and beneficiaries. It is unfair and unreasonable to deny payment to providers for medically necessary services because beneficiaries are unable or unwilling to keep paying for HCFA errors.

The other provisions contained in this modest bill are equally deserving, and I urge your consideration and hope for the bill's expeditious passage.

There being no objection, the letter was ordered to be printed in the RECORD, as follows:

BENEFIT PLANNING SERVICES, INC.,
Spartanburg, SC, June 6, 1991.

Hon. ERNEST F. HOLLINGS,
U.S. Senate, Washington, DC.

DEAR SENATOR HOLLINGS: This is an insider tip on an employee benefit nightmare that is about to erupt in business all across the country.

I am writing on behalf of Benefit Planning Services, Inc., a Third Party Administrator (TPA), which represents about 100 employers in five states. They employ approximately 20,000 employees. We design and administer their group health plans. It is estimated that one-third of all U.S. workers are covered by employee benefit plans administered by TPA's. TPA firms operate much like independent CPA or law firms, providing continuing outside claims and plan administration for several client employers and benefit plans. Our clients include every size and type of employment, such as: small business, large corporations, union and association sponsored plans.

My perspective in this letter is based on years of observing the Medicare Secondary Payer program and extends beyond my affiliation with any organization or employer involved.

The purpose of this letter is to convey some of the concerns that employers are expressing about the Health Care Financing Administration's Data Match program which is presently being implemented, and to explain our views and unique problems with the Medicare Secondary Payer (MSP) program, as well as to make recommendations.

What is presently happening to employers under the data match? The Health Care Financing Administration (HCFA) has sent out the first MSP employer questionnaire and is scheduled to begin sending the second one (the long form) this month. HCFA officials have speculated that it will take 40–50 weeks to complete the second mailing. The first questionnaire has not received significant employer opposition, although it has caused some employers anxiety about what will follow.

Benefit Planning Services (BPS) received a draft copy of the second MSP questionnaire along with the instructions. Upon review of the instructions it has become apparent that the time, effort and expense of completing this questionnaire will be a tremendous burden on employers. BPS anticipates that once employers start to receive this form they will desperately seek relief, turning to their Congressmen for help.

EMPLOYER DATA COLLECTION PROBLEMS

The HCFA Data Match assumes employers are guilty until proven innocent. Employers, in many cases, will not be able to defend themselves with adequate documentation since employer information and coverage data dating back to 1983 is not available. While the Data Match coordinates records from 1987, HCFA has the right to seek recovery beginning in 1983. The Data Match questionnaire will provide a list of employees and former employees who worked for an employer during a specified time since 1987 and who incurred claims that triggered Medicare primary payments. The employer is required to check the type of coverage an employee elected during that time period and sign the form underneath a statement saying that the employer certifies the above information.

Employment and coverage data may be fragmented. HCFA seems to operate under the assumption that an employer will have all the information needed to answer the questionnaire. For employers who have contracted with claim processors, the employer may have just the enrollment cards while the claim processors keeps the claim records. Thus, the employer knows who enrolled in the plan but does not know who was covered every day of the year. For example: an employee can enroll and then fail to contribute the employee contribution amount and thereby lose coverage; or, an employee can move from a full-time status to part-time status and lose coverage. In both situations, the employer may not have documentation of these events. While employers are sent bills every month by insurance companies or administrators to fund plans, the bill many times will not include an itemized listing of each participant but just a breakdown (if even that) of the number of employees who have employee-only coverage and family coverage—employers will not know the names of the employees who have dropped out.

Claim processors are equally in the dark. Claim processors who were recently selected by an employer probably will not know the names of participants as they have moved on and off plans since many employers will not have retained this information from 1983. If an employer has remained with the same claim processor since 1983, the chances of having adequate documentation are much better. However, few employers fall in this category.

Even with the combined information from employers and claim processors, accurate certification of HCFA Data Match information will be impossible in many cases due to the inadvertent loss of old enrollment cards. For those employers who have kept enrollment cards, much time and effort will have to be expended in gathering information from various places at large costs to the employer.

1987 employment and coverage data may be trapped on old computer disks that are no longer compatible with a present system. With computer technology improving every year and the constant flow of corporate reorganizations, some employers and claim processors significantly revamp their computer systems yearly. While incompatibility may not be the norm, I have spoken with a few employers who said that 1987 claim data was simply inaccessible.

Recently one of our clients had a request from the HCFA Data Match. Not a simple request or even 2 or 3 requests as HCFA had often suggested would be the maximum on any one employer. This employer had less than three weeks to search files and gather information on 692 employees! You can imagine the expense and manpower this is consuming. The finance and personnel offices have ceased all productive, meaningful work to meet HCFA's request and avoid catastrophic, severe monetary penalties.

TIME AND COST BURDENS

HCFA's average time estimate for employers to complete the questionnaire is three hours—an estimate that demonstrates the lack of understanding HCFA has for em-

ployer data collection problems. Employers are given 30 days to respond to the questionnaire and a toll-free number has been established for employers who need an additional 30 days. If employers can not respond within 60 days, a letter must be sent to the Data Match Contractor requesting more time. Even if employers are able to gather the necessary information, Congress should be concerned about the cost this imposes on business. Retrieving data from inactive files maintained in warehouses can be extremely time consuming and require the labor of numerous employees.

HCFA REQUIRES EMPLOYERS TO CERTIFY DATA: IT'S A TRAP

There is no mention in the Data Match instructions about how employers will be handled if they can not make a good faith effort and certify the data. I recently asked a HCFA staffer if an employer could pay a penalty tax if the data could not be certified; the answer was no. An employer's failure to respond to each employee name listed would result in a subpoena, said the HCFA staffer.

Employers need protection from HCFA in the event information can not be certified.

The situations I have described above (i.e., lost enrollment cards, etc.) are valid reasons for granting some employers relief. If relief is not given, employers will be forced to certify inaccurate data. Once certified, HCFA will use information to seek recoveries and the employer will not be able to dispute the demands made by Medicare for reimbursement. Out of frustation, some employers may feel compelled to check the box on the questionnaire indicating that there is no coverage to avoid recovery activities. CFA has attempted to soft-pedal the legal reality of the certification issue, telling employers that they should do the best job they can with the questionnaire. In fact, the employer is asked to certify that the statements are correct to the best of his knowledge. This is disturbing indeed since whatever the employer certifies will be used in HCFA recovery activities. The information must be verified with accuracy or not at all.

DATA MATCH REPEAL

BPS was originally a supporter of the Data Match in its theoretical stage as we have always been interested in compliance strategies for the MSP laws. However, our latest exposure to the Data Match implementation has caused us to doubt the program's efficacy.

The Data Match was initially passed in OBRA '89 and scheduled to expire on September 30, 1991 for purposes of sending information to employers for verification. The checking of old data was a concern here, but believed to be manageable. Many TPA's and employers had reservations about HCFA's right to a six year period after receiving the data to analyze it and make recovery requests. Since the Data Match employer verification part was extended until September 30, 1995 in OBRA '90, the data collection problems are now considered intolerable.

Paying claims years after an insurance contract has expired can be financially devastating to an employer. Many self-insured plans have a stop-loss reinsurance coverage (i.e., insurance coverage that takes effect after claims reach a certain level) which contain provisions about the timely filing of claims. This is done for bookkeeping reasons and to prevent the potential opening retroactively of all contracts and to limit exposure to fraudulent claims. It basically protects the solvency of the insurance company.

Example: If Medicare discovered an MSP case in 1990 that occurred in 1985, Medicare has until 1996 to seek recovery. A 1996 plan will not be funded to pay claims that occurred in 1985. A small employer could be driven into bankruptcy if forced to pay claims directly out-of-pocket with no stop-loss reinsurance coverage.

BPS now believes the Data Match should be repealed. Alternative or significant changes to the present Data Match should be considered. One approach that warrants careful consideration was introduced by Senator Roth (S. 365). S. 365 amends the W-2 Form by asking a question about employer group health plan coverage and it establishes a data bank to collect this information. While Senator Roth's "Medicare Secondary Payer Reform Act of 1991" deserves consideration, it will not be a panacea.

W-2 FORM REPORTING

BPS recognizes two major drawbacks with the W-2 reporting system. First, it does not account for the fact that Medicare beneficiaries are mobile—a beneficiary may change jobs. Second, it fails to take into account that W-2 Forms may not accurately represent the number of employees employed. A below 20 employer will often appear to have over 20 workers because W-2 Forms are filed for any employee employed at any time during the year. For example: An 18 person employer has three employees leave and replaces them. The employer files W-2 Forms for all 18 of the original employees plus three more W-2 Forms for the employees. The employer appears to the IRS as a 21 person employer covered by MSP "working aged" laws when in fact the employer never had more than 18 workers.

THE SOURCE OF ERRORS

In addition to the W-2 system, BPS believes there needs to be more attention focused at the source of the problem. Were bills sent to the correct payer initially, MSP recovery would not be necessary. The hospital admitting clerks, physician office personnel and Medicare beneficiaries should be better educated about MSP so that their bills can be correctly directed.

Representatives of HCFA testified at a July 1990 hearing before the Permanent Subcommittee on Investigations of the Senate Committee on Governmental Affairs that HCFA has pursued an extensive campaign over the last three years directed at educating State insurance commissioners, insurers, employers and physicians. It was also reported that HCFA has developed a series of radio and television public service announcements designed to raise awareness of Medicare beneficiaries. All these efforts are commendable. However, HCFA's efforts are too little and too late. The "working aged" law took effect in 1983. HCFA has not wanted to listen to solutions or suggestions, and so the avoidable problems have become a crises of their own making.

Despite HCFA's efforts, the losses to the Federal government are still estimated to be as much as $1 billion a year. In some cases, there may be willful intent to avoid payment. In the majority of cases payors have made good faith efforts to comply, but the bills are still not getting to the right payor the first time around.

The Permanent Subcommittee on Investigation staff report prepared for the July 1990 MSP hearing gave insightful reasons why hospitals and physicians have difficulty in routing bills correctly. One of the reasons cited in the report was that Medicare is designed to pay quickly and both hospitals and physicians are concerned about cash flow. Some elderly patients feel they are entitled to Medicare and others are embarrassed to file with their employer plans, according to the report. For these reasons, admitting clerks need to be particularly aggressive in questioning patients about other group health coverage—a difficult task to accomplish with high turnover positions. Ironically, most medical providers charge non-Medicare patients more, so they even have an incentive to bill correctly.

MANY PLAYERS ARE AT FAULT

Let me state here that BPS is in no way attempting to divert your attention solely to the hospitals, providers and beneficiaries. We recognize that the failures of the MSP program cannot be blamed on just a few entities, as many players are involved, including Medicare contractors, private insurance companies, HCFA and Congress. For those who deliberately violate the spirit and the parts of the MSP laws that are clear, justice should be rendered.

Sometimes, however, the complexities of the MSP laws and the lack of guidance make it difficult to distinguish willful violators from unwillful ones. Undoubtedly, if a claim has been sent to a plan and rejected with the intent of having Medicare pay primary and possibly escaping primary payment, the plan should suffer the consequences. However, we find most MSP recovery claims are for charges never originally brought to the plan's attention.

There are grey areas where employers have had to make good faith interpretations of laws that lack sufficient legislative history to predict the final regulations HCFA will issue. I urge you or your staff to scrutinize the MSP statutes and then read the corresponding regulations. You will be surprised at the extent of extrapolation.

The MSP disabled law took effect on January 1, 1987. HCFA issued proposed regulations more than three years later on March 8, 1990 that confused rather than clarified issues. HCFA received many letters requesting clarification in addition to receiving numerous phone calls. HCFA responded to one letter by saying that these issues were under discussion and therefore they could not comment. Phone conversations yielded similar responses. The questions posed were not small technical points but raised substantive issues about the liability of an employer group health plan to pay primary. I know of some employers and clients who live in fear that their understanding of the MSP disabled rules will not coincide with HCFA's eventual regulatory statement. Many professional benefit administrators have taken great effort to read the statute and the proposed regulations, yet remain perplexed.

In response to overwhelming employer opposition, HCFA is presently drafting legislative language to clarify the MSP disabled law. While we are relieved by this development, it can not compensate employers for the lost time and expense in attempting to comply with the proposed rules.

Now I will turn your attention to some of the MSP problems that employers have been battling for years.

PAYING THE SAME CLAIM TWICE

One of the most frustrating tactics in MSP is HCFA's self-proclaimed right to recover from an employer group health plan when the plan has correctly paid primary and Medicare has also paid primary through its own fault but is unable to get its payment back from the beneficiary or provider. In this situation, the plan is required to pay the same claim twice which violates the plan to ERISA fiduciary liabilities.

HCFA uses some twisted logic in the final regulations on this subject. HCFA agrees that an employer group health plan that routinely pays primary benefits on behalf of a Medicare beneficiary without knowledge of Medicare's primary payment has acted responsibly and should not be liable for reimbursing HCFA if HCFA is unable to recover from the party that received the plan's primary payment. Here comes the twist—"However, if a third party pays an entity other than Medicare even though it was, or should have been, aware that Medicare had made a conditional primary payment, the third party must reimburse Medicare." (Wednesday, October 11, 1989, Vol. 54, No. 195, Federal Register, p. 41721). HCFA will tend to answer every plan's protest of ignorance with a "should have been aware" response. How could a plan have known about a claim if the plan was never sent a bill?

Plans are willing to do everything possible to ensure that HCFA knows about a possible MSP situation. BPS believes that plans should not be held responsible for double payment if the plan has notified a Medicare contractor that the employers group health plan has paid primary and Medicare goes ahead and pays primary anyway.

Plans have taken pains to implement procedures to ensure that Medicare does not make a mistaken payment. When claim information suggests a possible MSP situation, some plans respond in the following ways. 1. If a plan receives a hospital bill for a plan participant for whom Medicare should pay secondary but does not get a physician bill which would reflect services performed in the hospital, the plan will call the hospital and ask where the missing bill is. This is very time consuming for plans. 2. If a doctor double-bills (shot-gun duplicate billing is prevalent) and the plan knows that Medicare has already paid primary, plans will write to Medicare contractors and offer to repay Medicare directly if Medicare sends adequate claim documentation.

THE UNKNOWN CLAIM

While steps—such as documentation claims and notifying Medicare—can be taken to defend the plan that paid primary on one claim but didn't receive other related claims, there is no defense against the existence of unknown claims. According to HCFA, a plan is only off the hook if the plan has done everything possible to ensure that Medicare is not the secondary payer. Yet, if the plan receives no clue of a missing claim, then no investigation can be initiated. Plans will go to the limit when claim information suggests a possible MSP situation to ensure that a claim has been paid correctly the first time as it is too expensive to reopen a case. It is in the interest of the plan to do this. No one wants a claims to surface after stop-loss reinsurance coverage has expired.

The annual penalty tax under IRC section 5000—25% an employer's group health plan expenses—seems unjustified in the event of an unknown claim. Employers are being penalized for something they never knew about.

THIRD PARTY ADMINISTRATORS ARE NOT INSURANCE COMPANIES

HCFA has refused to recognize the fundamental difference between a Third Party Administrator and a Third Party Payor. A Third Party Payor, such as an insurance company, pays the claims from its own assets and shares in the risk of funding an employee benefit plan, while also profiting from plan savings. On the other hand, a Third Party Administrator (TPA) is just a service provider, like a law firm or CPA firm. The corporate assets of a TPA will not increase if a TPA pays out fewer claims, unlike an insurance company's assets in case of a full-insured plan. The Third Party Administrator is an agent of the employer hired primarily to process claims.

In the October 11, 1989 HCFA final regulations, TPAs are named repeatedly as liable entities, along with insurers, underwriters and employers. The regulations note that after Medicare recovers directly from a TPA it is appropriate for the TPA to seek whatever recourse is available to it under its contract. In so doing, HCFA openly acknowledges that TPAs are not ultimately responsible for payment. HCFA seems to want it both ways to facilitate recovery activities. If HCFA can't get the money from one source, they reserve the right to go after another even though that entity is not ultimately responsible for payment.

TWO COURTS HAVE AGREED WITH THESE ARGUMENTS

In United States of America vs. Blue Cross and Blue Shield of Michigan, the court held that the United States' right to recover primary payments "is directed at those who are responsible to actually make the payments, i.e., the self-insured employer plan itself, and not those who merely undertake to administer the payment process." In United States of America vs. Provident Life and Accident Insurance Co., the court held that the United States could not recover from the insurer where the insurer was just administering the plan. HCFA is acting exactly contrary to clear judicial decisions.

RECOMMENDATIONS

While Senator Roth's "Medicare Secondary Payer Reform Act of 1991" is a step in the right direction, additional steps need to be taken immediately.

BPS' recommendations are in agreement with most of the suggestions made in the staff report prepared by the Permanent Subcommittee on Investigations and some of the suggestions made by Michael Mangano, Office of Inspector General, Department of Health and Human Services before the Subcommittee on Oversight, Committee on Ways and Means on February 26, 1991.

1. The OBRA '89 Data Match should be repealed. This "pay and chase" approach is far too burdensome on employers, TPAs, insurers, providers and beneficiaries.

2. Hospitals and physicians need to improve the accuracy of data collected from patients. HCFA should be adequately funded so that it can sufficiently train these personnel and enforce the requirements.

3. Pre-claim development should be a priority. Medicare contractors should be adequately funded to enable them to research the accuracy of claims before distributing Medicare payments.

In summary, this MSP process is counterproductive and strongly resented by employers. These employers are fighting to show a profit in these recessionary times. We ask for your help and support. Government policies over time have been varied and conflicting, without any coordination. This new administrative nightmare will force many employers out of business or worse, force them to cancel their employee benefit programs. This in turn will put even more employees and citizens in a situation where they have no health coverage, thus joining the growing number without any type of health benefits.

We ask for your support in relieving employees of all sizes of this irrational and expensive burden. This will ensure they can return to concentrating on productivity rather than transferring funds to financing "search" expeditions for the HCFA.

Best Personal Regards,

J. THOMAS LIGHT.●

● Mr. HARKIN. Mr. President, I rise today to join my colleagues Senators BAUCUS, GRASSLEY, SYMMS, SHELBY, and HOLLINGS in introducing the Medicare Physician Regulatory Relief Amendments of 1991. I want to commend my colleagues, especially Senators BAUCUS and GRASSLEY, for their efforts to bring this legislation forward.

Last year I spoke with Dr. John Ebensberger of Greene, IA. He was the town's only doctor and was giving up dealing with the Medicare Program. He told me that he wanted to stay with Medicare because there were so many older residents of the town that depended on it, but that he simply couldn't put up with the redtape and hassle any more. In Cedar Rapids, IA, most doctors aren't accepting any new Medicare patients due to low pay and excessive paperwork. My health advisory group, many of whom are practicing physicians in Iowa, has reported similar problems in other areas of the State. In fact, all around my State and around the Nation, senior citizens and people with disabilities who rely on Medicare for their health insurance, are having their care threatened by the rising tide of unnecessary redtape in Medicare.

Over the past several years, there has been a dramatic increase in paperwork in the Medicare and Medicaid Programs. Doctors, hospitals, nurses, administrators and other health professionals are spending more and more of their time filling out paperwork and responding to requests for information. The result is that they have less and less time to spend actually providing health care.

Appropriate safeguards and standards are essential to ensure the fiscal integrity of the program and assure high quality care, but these standards must be administered efficiently and effectively. Proper administration would lower paperwork, increase health care quality and reduce health care costs.

As chairman of the Senate Appropriations Subcommittee on Health and Human Services, which funds the administration of Medicare, I have been working to reduce unnecessary redtape in this program. In the fiscal year 1991 appropriations report, my subcommittee called upon the Administrator of the Health Care Financing Administration to work to streamline their regulatory process and to and reduce unnecessary redtape. They have begun this process by establishing a working group of physicians to review regulatory requirements.

But more needs to be done and the bill we are introducing today will do much to improve the conditions facing

doctors, especially those in rural areas. The bill would further reduce bloated redtape and improper bureaucratic administration in the Medicare Program and allow doctors to spend more of their time providing care to older Americans. It would also require that Medicare denials of payment be reviewed by practicing doctors of the same specialty as the physician providing the care in question.

Mr. President, I hope that we will move promptly this year to assure that older Americans and Americans with disabilities have access to quality care and to put more of our health care dollars into health care rather than paperwork.•

By Mr. SASSER (for himself, Mr. JOHNSTON, Mr. HATCH, Mr. DASCHLE, Mr. PRESSLER, Mr. PRYOR, Mr. D'AMATO, Mr. HOLLINGS, AND Mr. LEVIN):

S. 1333. A bill to amend the Federal Property and Administrative Services Act of 1949 to authorize the Administrator of General Services to make available for humanitarian relief purposes any nonlethal surplus property, and for other purposes; to the Committee on Governmental Affairs.

FEDERAL USED PROPERTY FOR HUMANITARIAN RELIEF ACT

• Mr. SASSER. Mr. President, today I rise to introduce the Federal Used Property for Humanitarian Relief Act of 1991. The bill, which is virtually identical to legislation I introduced during the 101st Congress, is cosponsored by Senators JOHNSTON, HATCH, DASCHLE, PRYOR, HOLLINGS, D'AMATO, PRESSLER, and LEVIN.

This legislation is intended to end the unfair preferential treatment given to foreign nations by the U.S. Government in the distribution of surplus Federal property. Currently, Mr. President, the Secretary of Defense has the authority to transfer excess Department of Defense property to the State Department for distribution to other countries under the auspicies of the Humanitarian Assistance Program. My bill would clarify that much of this property, which is all taxpayer-financed, should first be made available to States as well as Federal agencies and States through the General Services Administration [GSA] donation program, before it is given away free of charge to foreign governments.

The Humanitarian Assistance Program was created pursuant to an amendment to the fiscal year 1986 Defense appropriations bill. The original intent of the program was to help supply Afghan and Cambodian refugees and resistance groups with limited categories of Federal surplus property. Some of these items included boots, parkas, clothing items, medical supplies, and communication equipment. However, as the focus of the program expanded to a larger number of developing nations, and now to Eastern Europe and even the Soviet Union, the scope of excess property sought for the Humanitarian Assistance Program has also expanded. Over the past 2 years there has been an increasing emphasis on heavy-duty equipment, including bulldozers, tractors, roadgraders, cranes, backhoes, front loaders, dump trucks, and other equipment, which, before 1986, had been traditionally sought by States through the GSA donation program. In fact, approximately $60 million in Department of Defense excess property was acquired by the Humanitarian Assistance Program from 1986 to the present, with steady and substantial increases occurring each year.

I believe that the Humanitarian Assistance Program has far outgrown its original purpose. The program was designed to meet an immediate need in strife-torn developing countries. But it has since expanded to become a full-fledged foreign assistance program. It provides free to foreign nations valuable surplus construction and engineering equipment paid for by American taxpayers and greatly needed by financially strapped State and local governments.

Each State has an agency for surplus property that is responsible for screening available property and distributing it to various local government entities. In my home State of Tennessee, the State Division of Property Utilization has been able to obtain, for county and city road departments, heavy construction equipment through the GSA donation program. The cost of this equipment was substantially lower than if purchased new. In fact, in one county, the superintendent of highways paid $30,000 for a pan-scraper that would have cost $250,000 new. These State agencies are not only saving taxpayers money, but are providing invaluable source of inexpensive, surplus Federal equipment that greatly benefits thousands of local communities across the country.

Mr. President, the legislation I am proposing today with bipartisan cosponsorship affords us a real opportunity to enable State and local communities to provide vital infrastructure improvements and other Government services. The value of some of this excess surplus property is staggering. My colleagues need only ask their respective State surplus agencies to find out what a difference this surplus equipment can make. I hope they will do so, and that they will choose to cosponsor and support this important initiative.

By Mr. FOWLER:

S. 1334. A bill to provide for the full recovery of the Federal Government's costs of selling timber on national forest lands, to require site-specific identification of national forest lands that are not economically suitable for timber harvesting, to remove that land from the suitable timber base and make associated adjustments in the allowable sale quality, to assist in the economic transition of timber dependent communities, and for other purposes; to the Committee on Agriculture, Nutrition, and Forestry.

NATIONAL FOREST TIMBER SALES COST RECOVERY ACT

• Mr. FOWLER. Mr. President, as chairman of the Subcommittee on Conservation and Forestry, I have held hearing after hearing to unveil a cloud of confusion that has cost the taxpayers of this country more than $2 billion in the last decade.

I am speaking, Mr. President, about the below-cost timber sales made from our national forests. Each year, this abdominal timber program requires direct appropriations from Congress to stay afloat, contributing to our budget deficit, while compromising the ecological integrity of our forests. Below-cost sales are an economic and environmental travesty.

In keeping with its timber-driven motivation, the Forest Service has gone out of its way to justify this program, claiming outlandish benefits and ignoring significant costs. But in a hearing I held earlier this year, the Forest Service acknowledged that instead of returning $660 million to the Treasury—as claimed in their timber sales program report in February—the agency actually turned in a little more than $5 million.

A case can be made for some public lands logging benefits—and no one has suggested that timber operations cease entirely in our national forest. But the fact remains, as many as 101 of 122 administrative forests lost money on their timber sales in 1990. These operations benefit a bloated Forest Service timber bureaucracy—and practically no one else.

The below-cost forests, considered by themselves, lost $350 million for the taxpayers last year. That is an absurdity that ought to stop. I will guarantee we will never miss the mountainside clearcuts or the $200 million logging road budgets that support this boondoggle. We can save money, woods, and wildlife at the same time.

Mr. President, today, in the 100th year anniversary of our national forest system, I am introducing the National Forest Timber Sales Cost Recovery Act of 1991.

This legislation does not shackle the arms and legs of the U.S. Forest Service as some will undoubteldly claim. It will not—I repeat, will not—end timber sales from our national forests.

This legislation simply applies a guideline I believe most Americans will find quite pragmatic—prudence. With the enactment of this legislation, national forests timber may be sold only where cash returns to the U.S. Treas-

ury from timber sales are adequate to cover the cost to the Treasury of growing and selling timber. This will establish a timber program that—at the very least—recovers the Government's full costs of selling timber.

These below-cost sales will be alleviated over 5 years in order to allow the Forest Service sufficient time to reorient its approach to timber sales.

This legislation also addresses a second critical element in reformulating our forest policies: Easing the transition of communities that have become dependent on the current wasteful Federal timber program.

The logging jobs created are the only real benefit of this program. Yet, they are not enough to justify the millions of dollars down the drain, or the ecological costs of inflated timber targets. Sustainable uses like recreation offer greater long-term benefits for most forest communities. Still, we cannot remain blind to the plight of workers who will inevitably be displaced by changing times.

That is why my bill will authorize funding for certified local community development organizations to plan and implement a wide variety of educational and employment training programs, and to reach out to new industries. Displaced workers would also be eligible for low-interest housing and new business loans. It is my hope and belief that many of these workers can remain in the industry to the extent that they can continue to work in and make their living off the forest.

The demands on our forests have never been greater. Simultaneously, the demands on this country's financial resources have never seen the likes of today. As we celebrate the 100th anniversary of our national forest system, let us recognize these constraints and set in place the foundation necessary for the U.S. Forest Service to meet the challenges of the 21st century.●

By Mr. CRANSTON (for himself and Mr. PELL):

S.J. Res. 165. Joint resolution to prohibit the proposed sale to the United Arab Emirates of AH-64 Apache attack helicopters; to the Committee on Foreign Relations.

PROHIBITING THE PROPOSED SALE OF AH-64 APACHE ATTACK HELICOPTERS

Mr. CRANSTON. Mr. President, in the aftermath of the Persian Gulf war, it has become fashionable in Washington circles to express support for halting the proliferation of arms in the Middle East. Proposals and good intentions abound, but the administration is already failing to demonstrate a real commitment to stemming the flow of sophisticated weapons and weapons technology to the region.

Last week, Congress was formally notified that the administration plans to sell 20 AH-64 Apache attack helicopters, 620 Hellfire missiles and related equipment, and spare parts to the United Arab Emirates. Together with training their personnel, the estimated cost will come to $682 million.

It is not clear to me why the UAE needs these sophisticated weapons. The Apache is the most advanced attack helicopter we have. The unclassified justification which accompanied the sale is not very helpful. It says:

> This sale is consistent with the stated U.S. policy of assisting friendly nations to provide for their own defense by allowing the transfer of reasonable amounts of defense articles and services.

Will these weapons be sufficient to enable the Emirates to defend themselves if attacked? Or will the United States again have to send troops over there to do the fighting regardless of how much arms we send them? The UAE's military is relatively insignificant. Even if one considers the UAE's Armed Forces as part of the combined forces of the Gulf Cooperation Council states, this fighting force would not have been enough to defeat Saddam Hussein at the height of his power.

It will take more than helicopters to make the UAE or the Gulf states self-sufficient. How much more gives meaning to the cliche "spiraling arms race." It is my understanding that the UAE would like M1-A1 tanks and Bradley armored fighting vehicles in addition to these helicopters. This sale may be the tip of the iceberg of arms sales to the UAE, and other Gulf nations. Before we move forward on these sales, we need a better understanding of how these sales fit into long-term U.S. strategy for the region—if in fact we have a strategy. I am not ready to approve this sale if it means we are making a commitment to build up the militaries of the nations in the Persian Gulf.

Of even greater interest to me is the issue of threat perception: Exactly who does the UAE need to defend itself against? Where is the threat to the UAE? I find it hard to imagine that anyone will attack this Gulf state nestled between Saudi Arabia and Oman. Not Saddam Hussein. Presumably, we took care of the Iraqi military already.

Finally, I am troubled that at a time the administration has indicated its commitment to peace in the Middle East, selling offensive weapons to an Arab nation that still has not made peace with Israel will hurt, not help, the peace process. Selling arms to the Arabs while pressuring Israel to make concessions is no way to reassure our Israeli ally and advance the peace process.

Mr. President, I rise today to introduce a resolution of disapproval to this proposed sale of attack helicopters and Hellfire missiles to the United Arab Emirates.

Paying lip service to arms control initiatives is not enough. The arms bazaar is open and the customers are lining up. This arms sale comes just days after the administration has called on the major arms suppliers to restrain arms traffic in the Middle East. It is time for our Government to demonstrate real leadership. If we cannot restrain our own arms sales impulses, what message are we sending to the world's major arms suppliers? Have not we learned the lesson that "do as I say and not as I do" will lead us nowhere quickly?

Mr. President, I urge my colleagues to support this joint resolution of disapproval. The companion legislation was introduced in the House last week with 11 cosponsors. Let us end the new arms race in the Middle East before it begins. Let us stop this new round of arms sales now.

ADDITIONAL SPONSORS

S. 10

At the request of Mr. DOLE, the name of the Senator from Utah [Mr. HATCH] was added as a cosponsor of S. 10, a bill to amend title II of the Social Security Act to phase out the earnings test over a 5-year period for individuals who have attained retirement age, and for other purposes.

S. 26

At the request of Mr. MOYNIHAN, the name of the Senator from Colorado [Mr. BROWN] was added as a cosponsor of S. 26, a bill to amend the Internal Revenue Code of 1986 to exclude from gross income the value of certain transportation furnished by an employer, and for other purposes.

S. 193

At the request of Mr. MCCAIN, the name of the Senator from New York [Mr. MOYNIHAN] was added as a cosponsor of S. 193, a bill to provide for the restoration of certain Medicare catastrophic benefits, plus addition of colon cancer screening benefit.

S. 239

At the request of Mr. SARBANES, the name of the Senator from Iowa [Mr. HARKIN] was added as a cosponsor of S. 238, a bill to authorize the Alpha Phi Alpha Fraternity to establish a memorial to Martin Luther King, Jr., in the District of Columbia.

S. 280

At the request of Mr. SASSER, the name of the Senator from Montana [Mr. BURNS]. was added as a cosponsor of S. 280, a bill to provide for the inclusion of foreign deposits in the deposit insurance assessment base, to permit inclusion of nondeposit liabilities in the deposit insurance assessment base, to require to FDIC to implement a risk-based deposit insurance premium structure, to establish guidelines for early regulatory intervention in the financial decline of banks, and to permit regulatory restrictions on brokered deposits.

S. 401

At the request of Mr. DOMENICI, the name of the Senator from Georgia [Mr. NUNN] was added as a cosponsor of S. 401, a bill to amend the Internal Revenue Code of 1986 to exempt from the luxury excise tax parts or accessories installed for the use of passenger vehicles by disabled individual.

S. 446

At the request of Mr. BAUCUS, the name of the Senator from Colorado [1Mr. WIRTH] was added as a cosponsor of S. 446, a bill to amend the Federal Unemployment Tax Act with respect to employment performed by certain employees of educational institutions.

S. 448

At the request of Mr. SYMMS, the name of the Senator from Maryland [Ms. MIKULSKI] was added as a cosponsor of S. 448, a bill to amend the Internal Revenue Code of 1986 to allow tax-exempt organizations to establish cash and deferred pension arrangements for their employees.

S. 474

At the request of Mr. DECONCINI, the names of the Senator from Illinois [Mr. SIMON], and the Senator from Oklahoma [Mr. BOREN] were added as cosponsors of S. 474, a bill to prohibit sports gambling under State law.

S. 480

At the request of Mrs. KASSEBAUM, the name of the Senator from Maryland [Ms. MIKULSKI] was added as a cosponsor of S. 480, a bill to amend the Public Health Service Act to provide grants to States for the creation or enhancement of systems for the air transport of rural victims of medical emergencies, and for other purposes.

S. 651

At the request of Mr. GARN, the name of the Senator from Alaska [Mr. MURKOWSKI] was added as a cosponsor of S. 651, a bill to improve the administration of the Federal Deposit Insurance Corporation, and to make technical amendments to the Federal Deposit Insurance Act, the Federal Home Loan Bank Act, and the National Bank Act.

S. 781

At the request of Mr. SARBANES, the names of the Senator from South Dakota [Mr. PRESSLER], the Senator from Connecticut [Mr. LIEBERMAN], the Senator from North Carolina [Mr. SANFORD], the Senator from Florida [Mr. MACK], and the Senator from Maryland [Ms. MIKULSKI], were added as cosponsors of S. 781, a bill to authorize the Indian American Forum for Political Education to establish a memorial to Mahatma Gandhi in the District of Columbia.

S. 816

At the request of Mr. MOYNIHAN, the name of the Senator from Connecticut [Mr. DODD] was added as a cosponsor of S. 816, a bill to amend the Foreign Assistance Act of 1961 to authorize the provision of medical supplies and other humanitarian assistance to the Baltic peoples to alleviate suffering.

S. 821

At the request of Mr. LIEBERMAN, the name of the Senator from New York [Mr. D'AMATO] was added as a cosponsor of S. 821, a bill to establish the Silvio Conte National Fish and Wildlife Refuge.

S. 866

At the request of Mr. BREAUX, the name of the Senator from Alabama [Mr. SHELBY] was added as a cosponsor of S. 866, a bill to amend the Internal Revenue Code of 1986 to clarify that certain activities of a charitable organization in operating an amateur athletic event do not constitute unrelated trade or business activities.

S. 882

At the request of Mr. SARBANES, the name of the Senator from Michigan [Mr. LEVIN] was added as a cosponsor of S. 882, a bill to amend subpart 4 of part A of title IV of the Higher Education Act of 1965 to mandate a 4-year grant cycle and to require adequate notice of the success or failure of grant applications.

S. 884

At the request of Mr. PACKWOOD, the names of the Senator from Michigan [Mr. RIEGLE], the Senator from Oregon [Mr. HATFIELD], the Senator from South Carolina [Mr. HOLLINGS], the Senator from South Dakota [Mr. PRESSLER], and the Senator from Hawaii [Mr. INOUYE] were added as cosponsors of S. 884, a bill to require the President to impose economic sanctions against countries that fail to eliminate large-scale drift net fishing.

S. 914

At the request of Mr. GLENN, the names of the Senator from Colorado [Mr. WIRTH] and the Senator from New Jersey [Mr. BRADLEY] were added as cosponsors of S. 914, a bill to amend title 5, United States Code, to restore to Federal civilian employees their right to participate voluntarily, as private citizens, in the political processes of the Nation, to protect such employees from improper political solicitations, and for other purposes.

S. 922

At the request of Mr. DASCHLE, the name of the Senator from Connecticut [Mr. LIEBERMAN] was added as a cosponsor of S. 922, a bill to amend the Internal Revenue Code of 1986 to exclude from gross income payments made by electric utilities to customers to subsidize the cost of energy conservation services and measures.

S. 934

At the request of Mr. BUMPERS, the name of the Senator from Connecticut [Mr. LIEBERMAN] was added as a cosponsor of S. 934, a bill to amend the Internal Revenue Code of 1986 to increase to 50 percent and extend for 1 year the deduction for health insurance for self-employed individuals.

S. 985

At the request of Mr. SIMON, the names of the Senator from Washington [Mr. ADAMS], the Senator from Arkansas [Mr. BUMPERS], the Senator from Rhode Island [Mr. CHAFEE], the Senator from California, [Mr. CRANSTON], the Senator from North Dakota [Mr. CONRAD], the Senator from New York [Mr. D'AMATO], the Senator from South Dakota [Mr. DASCHLE], the Senator from Minnesota [Mr. DURENBERGER], the Senator from Nebraska [Mr. EXON], the Senator from Tennessee [Mr. GORE], the Senator from Iowa [Mr. HARKIN], the Senator from Oregon [Mr. HATFIELD], the Senator from Hawaii [Mr. INOUYE], the Senator from Vermont [Mr. JEFFORDS], the Senator from Massachusetts [Mr. KENNEDY], the Senator from Massachusetts [Mr. KERRY], the Senator from Wisconsin [Mr. KOHL], the Senator from Vermont [Mr. LEAHY], the Senator from Rhode Island [Mr. PELL], the Senator from Michigan [Mr. RIEGLE], and the Senator from Minnesota [Mr. WELLSTONE] were added as cosponsors of S. 985, a bill to assure the people of the Horn of Africa the right to food and the other basic necessities of life and to promote peace and development in the region.

S. 1008

At the request of Mr. MCCONNELL, the names of the Senator from Wisconsin [Mr. KASTEN] and the Senator from Kansas [Mrs. KASSEBAUM] were added as cosponsors of S. 1008, a bill to require State agencies to register all offenders convicted of any acts involving child abuse with the National Crime Information Center of the Department of Justice.

S. 1102

At the request of Mr. MOYNIHAN, the name of the Senator from Washington [Mr. ADAMS] was added as a cosponsor of S. 1102, a bill to amend title XVIII of the Social Security Act to provide coverage of qualified mental health professionals services furnished in community mental health centers.

S. 1106

At the request of Mr. HARKIN, the name of the Senator from Kansas [Mr. DOLE] was added as a cosponsor of S. 1106, a bill to amend the Individuals With Disabilities Education Act to strengthen such act, and for other purposes.

S. 1156

At the request of Mr. PACKWOOD, the name of the Senator from Idaho [Mr. CRAIG] was added as a cosponsor of S. 1156, a bill to provide for the protection and management of certain areas on public domain lands managed by the Bureau of Land Management and lands withdrawn from the public domain managed by the Forest Service in the States of California, Oregon, and Washington; to ensure proper conservation of the natural resources of such lands, including enhancement of habitat; to

provide assistance to communities and individuals affected by management decisions on such lands; to facilitate the implementation of land management plans for such public domain lands and Federal lands elsewhere; and for other purposes.

S. 1176

At the request of Mr. DECONCINI, the names of the Senator from Alaska [Mr. MURKOWSKI] and the Senator from North Carolina [Mr. SANFORD] were added as cosponsors of S. 1176, a bill to establish the Morris K. Udall Scholarship and Excellence in National Environmental Policy Foundation, and for other purposes.

S. 1245

At the request of Mr. DASCHLE, the names of the Senator from North Dakota [Mr. BURDICK] and the Senator from Oregon [Mr. HATFIELD] were added as cosponsors of S. 1245, a bill to amend the Internal Revenue Code of 1986 to clarify that customer base, market share, and other similar intangible items are amortizable.

S. 1249

At the request of Mr. KENNEDY, the name of the Senator from Minnesota [Mr. DURENBERGER] was added as a cosponsor of S. 1249, a bill to amend title 28 of the United States Code to prohibit racially discriminatory capital sentencing.

S. 1281

At the request of Mr. RIEGLE, the name of the Senator from Iowa [Mr. GRASSLEY] was added as a cosponsor of S. 1281, a bill to provide for immediate delivery of U.S. Savings Bonds available to the public at the point of purchase.

S. 1301

At the request of Mr. CRAIG, the name of the Senator from Washington [Mr. GORTON] was added as a cosponsor of S. 1301, a bill to establish grant programs and provide other forms of Federal assistance to pregnant women, children in need of adoptive families, and individuals and families adopting children, and for other purposes.

S. 1313

At the request of Mr. BIDEN, the name of the Senator from Washington [Mr. ADAMS] was added as a cosponsor of S. 1313, a bill to improve crime and drug control in rural areas, and for other purposes.

SENATE JOINT RESOLUTION 142

At the request of Mr. SHELBY, the names of the Senator from North Dakota [Mr. BURDICK], the Senator from Texas [Mr. BENTSEN], the Senator from New Mexico [Mr. BINGAMAN], the Senator from Maryland [Mr. SARBANES], the Senator from Minnesota [Mr. WELLSTONE], the Senator from Virginia [Mr. ROBB], the Senator from New Jersey [Mr. BRADLEY], the Senator from Maine [Mr. COHEN], the Senator from Minnesota [Mr. DURENBERGER], the Senator from Indiana [Mr. COATS], the Senator from Kansas [Mr. DOLE], the Senator from Wisconsin [Mr. KASTEN], and the Senator from California [Mr. CRANSTON] were added as cosponsors of Senate Joint Resolution 142, a joint resolution to designate the week beginning July 28, 1991, as "National Juvenile Arthritis Awareness Week."

SENATE JOINT RESOLUTION 151

At the request of Mr. RIEGLE, the names of the Senator from Wisconsin [Mr. KOHL] and the Senator from California [Mr. SEYMOUR] were added as cosponsors of Senate Joint Resolution 151, a joint resolution to designate October 6, 1991, and October 6, 1992, as "German-American Day."

SENATE JOINT RESOLUTION 157

At the request of Mr. ROCKEFELLER, the names of the Senator from Rhode Island [Mr. PELL] and the Senator from Michigan [Mr. LEVIN] were added as cosponsors of Senate Joint Resolution 157, a joint resolution to designate the week beginning November 10, 1991, as "Hire a Veteran Week."

SENATE RESOLUTION 116

At the request of Mr. ROTH, the name of the Senator from Pennsylvania [Mr. SPECTER] was added as a cosponsor of Senate Resolution 116, a resolution to express the sense of the Senate in support of Taiwan's membership in the General Agreement on Tariffs and Trade.

AMENDMENTS SUBMITTED

SURFACE TRANSPORTATION EFFICIENCY ACT

LOTT AMENDMENT NO. 358

Mr. LOTT proposed an amendment to the bill (S. 1204) to amend title 23, United States Code, and for other purposes; as follows:

On page 5, line 4, insert "purusant to section 144 of title 23, United States Code" after "gram".

On page 5, line 11, insert "pursuant to section 119 of title 23, United States Code" after "Highways".

On page 28, stike out lines 2 through 25.

On page 29, line 1, strike out "(c)" and insert in lieu thereof "(a)".

On page 29, line 8, strike out "(d)" and insert in lieu thereof "(b)".

On page 29, line 11, strike out "(e)" and insert in lieu thereof "(c)".

On page 29, line 21, strike out "(f)" and insert in lieu thereof "(d)".

Beginning on page 30, strike out line 20 and all that follows through line 4 on page 35.

MACK (AND OTHERS) AMENDMENT NO. 359

Mr. MACK (for himself, Mr. GRAHAM, Mr. SANFORD, and Mr. HELMS) proposed an amendment to the bill S. 1204, supra, as follows:

On page 22, after line 21, insert the following: "*Provided*, That the Secretary shall use estimates prepared by the Secretary of Commerce to determine the population figures of the individuals states of the fiscal years 1987, 1988, 1989, 1990, and 1991: *And provided further*, That those estimates shall be used to distribute apportionments under this section".

MOYNIHAN (AND SYMMS) AMENDMENT NO. 360

Mr. MOYNIHAN (for himself and Mr. SYMMS) proposed an amendment to the bill S. 1204, supra, as follows:

At the appropriate place in the bill, insert the following new section:

SEC. . NATIONAL POLICY FOR INFRASTRUCTURE REUSE.

(a)(1) STUDY AND REPORT.—(1) Section 307 of title 23, United States Code, is amended by adding at the end the following new subsection:

"(g)(1) Not later than 12 months after the date of the enactment of the Surface Transportation Efficiency Act of 1991, the Secretary shall conduct a study of methods of facilitating the reuse of industrial manufacturing facilities.

"(2) In conducting the study described in paragraph (1), the Secretary shall consult with the heads of such departments and agencies of the Federal Government as the Secretary determines to be appropriate to ascertain regulatory, technical and other problems or constraints associated with the reuse of industrial manufacturing facilities.

"(3) Upon completion of the study described in paragraph (1), the Secretary shall submit a report to the appropriate committees of Congress on the findings of the study, including a summary of any information submitted to the Secretary by the head of a department or agency pursuant to paragraph (2).

"(4) For fiscal year 1992, an amount not to exceed $200,000 shall be taken out of the administration and research funds authorized by section 104 of this title for the purpose of carrying out the provisions of this subsection.".

(2) Section 104 of title 23, United States Code, is amended by striking "authorized by subsections (a) and (b) of section 307" and inserting "authorized by subsections (a), (b), and (g) of section 307".

On page 49, lines 18 through 25, strike "All provisions" and everything that follows and insert in lieu thereof "Sums".

On page 37 of the bill, at the end of section 111, add the following new subsection:

"(e) INDIAN RESERVATION ROADS.—Notwithstanding any other provision of law, funds allocated for Indian reservation roads may be used for the purpose of funding road projects on roads of tribally controlled postsecondary vocational institutions.".

At page 25, line 13 add a new paragraph (4) as follows:

"(4) pursuant to this subsection projects which research, develop and test technologies to control highway related emissions which contribute to the nonattainment of any ambient air quality standard or the impairment of visibility within an urbanized area within the state shall be deemed to be eligible projects."

At page 57, line 7 add a new paragraph (6) as follows:

"(6)(a) The Secretary in cooperation with other appropriate federal agencies, the Governors of Arizona, California, New Mexico and Texas, and the appropriate representatives of the Republic of Mexico, shall assess the need for transportation infrastructure to facilitate trade between the United States

and Mexico. Within 18 months following the date of the enactment of this Act, the Secretary shall report to Congress and the Governors of Arizona, California, New Mexico and Texas on such transportation infrastructure needs and the associated costs."

(b) The Secretary in cooperation with other appropriate federal agencies, the Governors of Maine, New Hampshire, Vermont, New York, Michigan, Minnesota, North Dakota, Montana, Idaho, Washington, and Alaska and the appropriate representatives from Canada, shall assess the need for transportation infrastructure to facilitate trade between the United States and Canada. Within 18 months following the date of the enactment of this Act the Secretary shall report to Congress and the Governors of Maine, New Hampshire, Vermont, New York, Michigan, Minnesota, North Dakota, Montana, Idaho, Washington, and Alaska on such transportation infrastructure needs and the associated costs.

On page 19, between lines 17 and 18, insert the following:

"(c) For purposes of paragraph (1)(A)(i) and paragraph (6) of subsection (b), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 22, between lines 21 and 22, insert the following:

"(D) For purposes of subparagraph (C), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 26, line 3, before the period insert the following: ": *Provided further*, That the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 51, between lines 15 and 16, insert the following:

"(h) For purposes of subsections (b) and (e), the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

On page 77, line 2, before the quotation marks, insert the following: "For purposes of this subsection, the Secretary shall use estimates prepared by the Secretary of Commerce when determining population figures.".

Insert at the appropriate place in title I:

SEC. . DECLARATION OF NONNAVIGABILITY OF PORTION OF HUDSON RIVER, NEW YORK

(a) DECLARATION OF NONNAVIGABILITY.—

(1) IN GENERAL.—Subjection to subsections (b), (c) and (d), the area described in paragraph (2) is declared to be nonnavigable waters of the United States.

(2) AREA DESCRIBED.—The area referred to in paragraph (1) is the portion of the Hudson River, New York, described as follows (according to coordinates and bearings in the system used on the Borough Survey, Borough President's Office, New York, New York).

Beginning at a point in the United States Bulkhead Line approved by the Secretary of War, July 31, 1941, having a coordinate of north 1918,003 west 9806,753:

(1) Running thence easterly, on the arc of a circle curving to the left, whose radial line bears north 3°-44′-20″ east, having a radius of 390.00 feet and a central angle of 22°-05′-50″, 150.41 feet to a point of tangency;

(2) Thence north 71°-38′-30″ east, 42.70 feet;

(3) Thence south 11°-05′-40″ east, 33.45 feet;

(4) Thence south 78°-54′-20″ west, 0.50 feet;

(5) Thence south 11°-05′-40″ east, 2.50 feet;

(6) Thence north 78°-54′-20″ east, 0.50, feet;

(7) Thence south 11°-05′-40″ east, 42.40 feet to a point of curvature;

(8) Thence southerly, on the arc of a circle curving to the right, having a radius of 220.00 feet and a central angle of 18°-37′-40″, 83.85 feet to a point of compound curvature;

(9) Thence still southerly, on the arc of a circle curving to the right, having a radius of 150.00 feet and a central angle of 38°-39′-00″, 101.19 feet to another point of compound curvature;

(10) Thence westerly, on the arc of a circle curving to the right, having a radius of 172.05 feet and a central angle of 32°-32′-03″, 97.89 feet to a point of curve intersection;

(11) Thence south 13°-16′-57″ east, 50.86 feet to a point of curve intersection;

(12) Thence westerly, on the arc of a circle curving to the left, whose radial bears north 13°-16′-57″ west, having a radius of 6.00 feet and a central angle of 180°-32′-31″, 18.91 feet to a point of curve intersection;

(13) Thence southerly, on the arc of a circle curving to the left, whose radial line bears north 75°-37′-11″ east, having a radius of 313.40 feet and a central angle of 4°-55′-26″, 26.93 feet to a point of curve intersection;

(14) Thence south 70°-41′-48″ west, 36.60 feet;

(15) Thence north 13°-45′-00″ west, 42.87 feet;

(16) Thence south 76°-15′-00″ west, 15.00 feet;

(17) Thence south 13°-45′-00″ east, 44.33 feet;

(18) Thence south 70°-41′-45″ west, 128.09 feet to a point in the United States Pierhead Line approved by the Secretary of War, 1936;

(19) Thence north 63°-08′-48″ west, along the United States Pierhead Line approved by the Secretary of War, 1936, 114.45 feet to an angle point therein;

(20) Thence north 81°-08′-00″ west, still along the United States Pierhead Line approved by the Secretary of War, 1936, 202.53 feet;

The following three courses being along the lines of George Sollan Park as shown on map prepared by the city of New York, adopted by the Board of Estimate, November 13, 1981, Acc. N° 30071 and lines of property leased to Battery Park City Authority and B.P.C. Development Corp.

(21) Thence north 77°-35′-20″ east, 231.35 feet;

(22) Thence north 12°-24′-40″ west, 33.82 feet;

(23) Thence north 54°-49′-00″ east, 171.52 feet to a point in the United States Bulkhead Line approved by the Secretary of War, July 31, 1941;

(24) Thence north 12°-24′-40″ west, along the United States Bulkhead Line approved by the Secretary of War, July 31, 1941, 62.28 feet to the point or place of beginning.

(b) DETERMINATION OF PUBLIC INTEREST.—The declaration made in subsection (a)(1) shall not take effect if the Secretary of the Army (acting through the Chief of Engineers), using reasonable descretion, finds—

(1) before the date which is 120 days after the date of the submission to the Secretary of appropriate plans for the proposed project, and

(2) after consultation with local and regional public officials (including local and regional public planning organizations), that the proposed project is not in the public interest.

(c) LIMITATION ON APPLICABILITY OF DECLARATION.—

(1) AFFECTED AREA.—The declaration made in subsection (a)(1) shall apply only to those portions of the area described in subsection (a)(2) which are or will be occupied by permanent structures (including docking facilities) comprising the proposed project.

(2) APPLICATION OF OTHER LAWS.—Notwithstanding subsection (a)(1), all activities conducted in the area described in subsection (a)(2) are subject to all Federal statutes and regulations which may otherwise be applicable to such activities, including as may be applicable.

(A) sections 9 and 10 of the Act of March 3, 1899 (33 U.S.C. 401, 403), commonly known as the River and Harbors Appropriation Act of 1899,

(B) section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1254), and

(C) the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(d) EXPIRATION DATE.—The declaration made in subsection (a)(1) shall expire—

(1) on the date which is 6 years after the date of enactment of this Act if work on the proposed project to be performed in the area described in subsection (a)(2) is not commenced before that date, and

(2) on the date which is 20 years after the date of the enactment of this Act, for any portion of the area described in subsection (a)(2) which on that date is not bulkheaded, filled, or occupied by a permanent structure (including docking facilities).

(e) PROPOSED PROJECT DEFINED.—For purposes of this section, the term "proposed project" means any project for the rehabilitation and development of—

(1) the structure located in the area described in subsection (a)(2) and commonly referred to as Pier A; and

(2) the area surrounding that structure.

On page 162, add after line 9 the following new part:

PART D—RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

SEC. 161. RELOCATION ASSISTANCE REGULATIONS RELATING TO THE RURAL ELECTRIFICATION ADMINISTRATION.

Section 213(c) of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4633) is amended by inserting "and the Rural Electrification Administration" after "Tennessee Valley Authority".

On page 3, insert immediately after the matter before line 1 the following:

PART D—RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION

Sec. 161. Relocation assistance regulations relating to the Rural Electrification Administration.

DOLE (AND MITCHELL) AMENDMENT NO. 361

Mr. SYMMS (for Mr. DOLE, for himself and Mr. MITCHELL) proposed an amendment to the bill S. 1204, supra, as follows:

At the appropriate place, add the following:

It is the sense of the Senate that the conferees on this bill should consider section 159 of title 23, United States Code, as it appears in amendment No. 295 as amended so as to determine each State's total apportionments under section 159 of title 23, United States Code, in a way that reflects each State's total effort for highways as described in amendment No. 334, and including each State's ability to finance its total effort for

highways, as measured by its per capita disposable income as compared to the average State per capita disposable income, as well as taking into account the effect of such apportionment formula on energy conservation, energy security, and environmental quality.

GRAHAM AMENDMENT NOS. 362 THROUGH 364

Mr. GRAHAM proposed three amendments to the bill S. 1204, supra, as follows:

AMENDMENT NO. 362

On page 8, line 21, strike "$15,940,000,000" and insert "$16,721,000,000".

On page 8, line 22, strike "$16,840,000,000" and insert "$18,726,000,000".

On page 8, line 23, strike "$18,410,000,000" and insert "$20,687,000,000".

On page 8, line 24, strike "$20,190,000,000" and insert "$23,467,000,000".

AMENDMENT NO. 363

On page 6 of Amendment No. 295 (as amended), on line 8, in section (d)(1)(A), strike the words "other than" and insert instead "including".

AMENDMENT NO. 364

SEC. 106. SURFACE TRANSPORTATION PROGRAM

Strike lines 14 through 25, page 23, and insert:

Transportation Program funds"; and by striking "75" in two places and inserting instead "80".

SEC. 108. BRIDGE PROGRAM.

Insert a period after "80 per centum" on line 5, page 28 and strike the remainder of lines 5 through 25, page 28.

NOTICES OF HEARINGS

COMMITTEE ON SMALL BUSINESS

Mr. BUMPERS. Mr. President, the Committee on Small Business has scheduled a hearing to receive testimony on the expanding burdens placed upon small business concerns by Government-sponsored paperwork and information collection requirements. More specifically, the committee will again be reviewing the protections afforded small business concerns by the Paperwork Reduction Act of 1980. The hearing is scheduled for Tuesday, June 25, 1991, commencing at 9:30 a.m. It is to be held in the committee's hearing room, SR-428A.

Witnesses from the small business community are expected to include representatives of the National Federation of Independent Business [NFIB], the Small Business Legislative Council [SBLC], and National Small Business United [NSBU] as well as the Small Business Council of the U.S. Chamber of Commerce and the Smaller Manufacturers Council of the National Association of Manufacturers.

The committee intends to transmit the record of this hearing and subsequent hearings, as it did in 1989, to the Committee on Governmental Affairs, to assist the committee of legislative jurisdiction in any forthcoming deliberations of pending legislation to specifically reauthorize appropriations for the Office of Information and Regulatory Affairs within OMB and making substantive amendments to the Paperwork Reduction Act.

Further information concerning the Small Business Committee's hearing may be obtained from the committee's procurement policy counsel, William B. Montalto. Bill may be reached at 224-5175.

AUTHORITY FOR COMMITTEES TO MEET

SELECT COMMITTEE ON INDIAN AFFAIRS

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Select Committee on Indian Affairs be authorized to meet on June 19, 1991, beginning at 9 a.m., in 485 Russell Senate Office Building, on the National Native American Advisory Commission.

The PRESIDING OFFICER. Without objection, it is so ordered.

SPECIAL COMMITTEE ON AGING

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Special Committee on Aging, be authorized to meet during the session of the Senate on Wednesday, June 19, 1991, at 9 a.m. to hold a hearing on the ethics of health care rationing.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON ENERGY REGULATION AND CONSERVATION

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on Energy Regulation and Conservation of the full Committee on Energy and Natural Resources be authorized to meet during the session of the Senate, 2 p.m., June 19, 1991, to receive testimony concerning S. 933, the Natural Gas Ratepayers Relief Act of 1991.

The PRESIDING OFFICER. Without objection, it is so ordered.

COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Committee on Agriculture, Nutrition, and Forestry be allowed to meet during the session of the Senate on Wednesday, June 19, 1991, at 9:30 a.m., in SDG-50, and again at 1:30 p.m., in SR-332, to hold a hearing on dairy supply management options.

The PRESIDING OFFICER. Without objection, it is so ordered.

SELECT COMMITTEE ON INTELLIGENCE

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Select Committee on Intelligence be authorized to meet during the session of the Senate on Wednesday, June 19, 1991, at 2 p.m., to hold a closed hearing on intelligence matters.

The PRESIDING OFFICER. Without objection, it is so ordered.

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Committee on Commerce, Science, and Transportation, be authorized to meet during the session of the Senate on June 19, 1991, at 10 a.m. on the Department of Commerce technology programs.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Committee on Commerce, Science, and Transportation and the National Ocean Policy Study be authorized to meet during the session of the Senate on June 19, 1991, at 10 a.m. on S. 49, Oceans and Coastal Resources Enhancement Act.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON CONSUMER AND REGULATORY AFFAIRS

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on Consumer and Regulatory Affairs of the Committee on Banking, Housing, and Urban Affairs be allowed to meet during the session of the Senate, Wednesday, June 19, 1991, at 10 a.m., to conduct a hearing on real estate asset disposition activities of the RTC.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON GOVERNMENT INFORMATION

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on Government Information and Regulation be authorized to meet on Wednesday, June 19, 1991, at 1:30 p.m., on the subject: The census adjustment.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PRACTICE

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on Courts and Administrative Practice of the Committee on the Judiciary, be authorized to meet during the session of the Senate on Wednesday, June 19, 1991, at 2 p.m., to hold a markup on S. 580, a bill to amend title 11 of the United States Code to exclude from the estate of the debtor certain interests in liquid and gaseous hydrocarbons, S. 653, a bill to prohibit injunctive relief, or an award of costs, including attorney's fees, against a judicial officer for action taken in a judicial capacity, S. 826, a bill to establish a specialized corps of judges necessary for certain Federal proceedings required to be conducted, and for other purposes, S. 862, a bill to provide for a demonstration program for voir dire examination in certain criminal cases, and for other purposes, S. 863, a bill to amend the Federal rules of civil procedure with respect to the examination of prospective jurors, S. 864, a bill to amend the Federal rules of criminal procedure with respect to the

examination of prospective jurors and S. 865, a bill to provide for a demonstration program for voir dire examination in certain civil cases, and for other purposes.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON EUROPEAN AFFAIRS

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on European Affairs of the Committee on Foreign Relations be authorized to meet during the session of the Senate on Wednesday, June 19, at 10 a.m. to hold a hearing on the Soviet crisis and the United State interest, future of the Soviet economy.

The PRESIDING OFFICER. Without objection, it is so ordered.

COMMITTEE ON FINANCE

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Committee on Finance be authorized to meet during the session of the Senate on June 19, 1991, at 10 a.m. to hold a hearing on the President's recommendation that China continue to receive most-favored-nation trade status.

The PRESIDING OFFICER. Without objection, it is so ordered.

SUBCOMMITTEE ON GOVERNMENT INFORMATION AND REGULATION

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Subcommittee on Government Information and Regulation be authorized to meet on Wednesday, June 19, 1991, at 1:30 p.m., on the subject: the census adjustment.

The PRESIDING OFFICER. Without objection, it is so ordered.

COMMITTEE ON GOVERNMENTAL AFFAIRS

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Governmental Affairs Committee be authorized to meet on Wednesday, June 19, at 9:30 a.m., for a hearing on the subject: EPA's environmental protection policy—"forceless enforcement."

The PRESIDING OFFICER. Without objection, it is so ordered.

ADDITIONAL STATEMENTS

NEED A LIFT?

• Mr. STEVENS. Mr. President, in an effort to help the young people of this country, the American Legion has published its 40th edition of "Need a Lift?" It is one of the best informational handbooks I have seen on educational opportunities for scholarships, careers, and loans.

The information in this annually published handbook is useful to students, parents, and school counselors. It is presented in clear and concise terms and is available for a nominal fee of $2 from the American Legion, National Emblem Sales, P.O. Box 1050, Indianapolis, IN 46206.

It is important for students to have as much information as is available about scholarship and financial aid opportunities, and I ask that section IV of the handbook be printed in the RECORD.

The material follows:

SECTION IV—SOURCES OF SCHOLARSHIPS AND OTHER FORMS OF FINANCIAL AID AVAILABLE TO ALL STUDENTS

A. FEDERAL PROGRAMS (LISTED ALPHABETICALLY)

1. U.S. Department of Education provides the largest source of funding for financial aid programs. These programs are listed in the following paragraphs. Applications are available at postsecondary schools and high schools. The "Federal Student Aid Fact Sheet from the U.S. Department of Education, 1990-91" may be obtained by writing to Federal Student Aid Programs, P.O. Box 84, Washington, DC 20044. Federal student aid questions may be directed to the toll-free Federal Student Aid Information number: 1-800-333-INFO.

a. College Work-Study Program (CWSP). This program provides on-campus and off-campus employment to undergraduate and graduate students enrolled in colleges and eligible postsecondary institutions who need financial aid to meet college expenses. The wage paid is at least the current Federal minimum wage, but it may also be related to the type of work and its difficulty. In arranging a job and assigning a work schedule, the aid administrator takes into account the student's health, class schedule and academic progress.

b. Pell Grant Program. Formerly called the Basic Grant Program, this program makes funds available to eligible students attending participating colleges, community/junior colleges, vocational schools, technical institutions, hospital schools of nursing, and other participating postsecondary institutions. To apply for the grant, an applicant must demonstrate need and be an undergraduate student enrolled on at least a half-time basis. For the 1990-91 award period, individual awards will depend on program funding. The maximum award for the 1990-91 academic year was $2,300. To apply for a Pell Grant, a student must complete either the Federal form called "Application for Federal Student Aid" or one of several private or State need analysis applications which are used to determine eligibility for other sources of student aid: the Financial Aid Form (FAF) processed by CSS, the Family Financial Statement (FFS) processed by ACT, the Pennsylvania Higher Education Assistance Agency (PHEAA) form processed by PHEAA, the Student Aid Application for California (SAAC) processed by CSS, the Illinois State Scholarship Commission's form (AFSSA), processed by CSX or the Singlefile Form processed by USAF. Further information may be obtained from the Office of Student Financial Aid at the institution or a high school guidance counselor.

c. Perkins Loan (formerly National Direct Student Loan Program—NDSL). These loans are available to students enrolled at least half-time (and in some cases less than half-time) in a regular program of study at a participating school and who demonstrate need for financial assistance. Aggregate loans may not exceed $18,000 for a graduate student including undergraduate loans; $9,000 for students who have not completed their bachelor's but have completed 2 years leading to a bachelor's degree; $4,500 for any other student. Repayment of the loan begins 9 months after a borrower ceases to carry at least one half the normal academic work load, and is to be repaid within 10 years. Your "grace period" may be different than nine months if you are less than a half-time student. Interest of 5% will begin at the time the repayment period begins. You may defer repayment or have portions of your loan canceled under certain conditions.

d. Plus Loans and Supplemental Loans for Students (SLS). PLUS loans are for parent borrowers. SLS loans are for students. Interest rates are variable (maximum 12 percent). Like Stafford Loans, they are made by a lender such as a bank, credit union, or savings and loan association. It is not necessary to demonstrate need. Parents, graduate students and independent undergraduates may borrow $4,000 per year. In exceptional circumstances, the financial aid administrator may borrow $4,000 per year. In exceptional circumstances, the financial aid administrator may authorize dependent undergraduates to apply for an SLS. All borrowers must begin repaying these loans within 60 days, unless the borrower is entitled to a deferment and the lender agrees to let the interest accumulate until the deferment ends. The negotiation of each loan is between the student and the lending institution. Individuals who desire more information or wish to ir'tiate a loan should discuss the matter with the lender and the school financial aid administrator.

e. Stafford Loan (formerly Guaranteed Student Loan—GSL). This program provides loans to students for educational expenses, and is available from eligible lenders such as banks, credit unions, savings and loan associations, State agencies and schools. Students must be enrolled on at least a half-time basis in participating postsecondary institutions, ranging from vocational and technical schools to degree-granting institutions. All applicants must undergo a needs test. For new borrowers, the interest rate is 8 percent for the first 4 years of repayment and 10 percent after that. A 5 percent origination fee is charged, which will be deducted proportionately from each loan payment. The money is passed on to the Federal Government to help reduce the Government's cost of subsidizing these low-interest loans. Your lender may also charge you an insurance premium of up to 3 percent of the loan principal.

Loans must be repaid. Repayment normally is over a 5-10 year period. The amount of the student's repayment depends on the size of his or her debt. The more the student borrows, the higher the payment will be. Failure to repay on a timely basis can damage a person's credit rating and may lead to legal action to recover the debt.

Deferment of payment may be granted for a variety of reasons. Deferments are not automatic and must be applied for through your lender. Check with your lender for deferment information.

Depending on your need, you may borrow up to $2,625 a year, if you're a first or second-year undergraduate student; $4,000 a year, if you have completed 2 years of study and have achieved third-year status; $7,500 a year, if you're a graduate student. The total Stafford Loan debt you can have outstanding as an undergraduate is $17,250. The total for graduate or professional study is $54,750, including any loans made as an undergraduate.

f. Supplemental Educational Opportunity Grant (SEOG) Program. This grant program is for students with exceptional financial need (priority given to PELL grant recipients). Students must be enrolled as an undergraduate or vocational student in a regular program of study at an educational institu-

tion participating in the program. In some cases, awards may be made to less than half-time students. Graduate students are not eligible. The amount of the award may be up to $4,000 yearly.

**There are other Federal programs you can get information about from your State educational agencies. These programs are:

g. The Paul Douglas Teacher Scholarship. Encourages outstanding high school graduates to pursue teaching careers after they finish postsecondary education. Provides scholarships of up to $5,000 for each year of postsecondary education to students who graduate from high school in the top 10 percent of their class, and who meet other selection criteria their State educational agency many establish. Generally, students are required to teach two years for each year of scholarship assistance they receive. Check with your State Scholarship Agency for information.

h. The Robert C. Byrd Honors Scholarship. Students who demonstrate outstanding academic achievement and show promise of continued excellence may receive $1,500 of their *first year* of postsecondary education. These scholarships are based solely on merit, and are not renewable. Recipients are selected by the agency in the State responsible for supervising public elementary and secondary schools.

2. U.S. Department of Health and Human Services administers programs of assistance for students enrolled in health professions programs.

a. Exceptional Financial Need Scholarship Program [IV-1] provides a scholarship to encourage students with exceptional financial need to pursue careers in medicine, osteopathic medicine, dentistry, optometry, podiatric medicine, pharmacy, or veterinary medicine. Applicants should be citizens, nationals or lawful permanent residents of the United States or District of Columbia, the Commonwealths of Puerto Rico, or the Marianna Islands, the Virgin Islands, Guam, the American Samoa, the Trust Territory of the Pacific Islands, the Republic of Palau, the Republic of the Marshall Islands and the Federated State of Micronesia. Scholarships will cover all or a part of the cost of tuition, and other reasonable educational expenses including fees, books, laboratory expenses and other costs of attending school. No service or financial obligation accompanies the scholarship. For information, write: *Health Resources and Services Administration, Bureau of Health Professions, Division of Student Assistance, Parklawn Building, Room 8-38, 5600 Fishers Lane, Rockville, MD 20857.* To apply for the program, contact the Director of Student Financial Aid at the school where you intend to apply for admission or where you are enrolled.

b. Program of Financial Assistance for Disadvantaged Health Professions Students is a program that provides financial assistance without a service or financial obligation to disadvantaged health professions students who are of exceptional financial need to pursue a degree in medicine, osteopathic medicine, or dentistry by providing financial support to help pay for their costs of education. Federal funds for this program are allocated to participating accredited health professions schools located in the United States and Puerto Rico. These schools are responsible for selecting the recipients of such assistance. You are eligible to apply if you are a citizen, national or lawful permanent resident of the United States or the District of Columbia, the Commonwealths of Puerto Rico or the Marianna Islands, the Virgin Islands, Guam, the American Samoa or the Trust Territory of the Pacific Islands, the Republic of Palau, the Republic of the Marshall Islands, and the Federated State of Micronesia; are accepted for enrollment or are enrolled in a participating health professions school as a full-time student; and are determined by your school's Financial Aid Director to be of "exceptional financial need" *and* to meet "disadvantaged" criteria.

Depending on finding available, a student may receive funds to cover the costs of tuition and other reasonable education expenses including fees, books, laboratory expenses and other costs of attending school.

To apply, contact the Director of Student Financial Aid at the school where you intend to apply for admission or where you are enrolled, or write to the address in (a) above.

c. The Health Education Assistance Loan (HEAL) Program is a federally insured loan program for eligible graduate students in schools of medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, public health, pharmacy, chiropractic, or in programs in health administration, clinical psychology, or allied health.

Eligible borrower—must be a citizen, national or permanent resident of the United States and accepted for enrollment as a full-time student, or already in full-time attendance and in good standing at an eligible HEAL school. Pharmacy students must have satisfactorily completed three years of training toward a pharmacy degree.

Eligible schools—Accredited health professions schools are eligible to participate in the HEAL Program if the school has an agreement with the Secretary. Foreign schools are not eligible under the HEAL Program even though some are eligible for the Guaranteed Student Loan Program.

Eligible lenders—Financial or credit institutions (including banks, savings and loan associations, credit unions, or insurance companies), State agencies, pension funds, eligible HEAL schools, and non-profit private entities designated by a State.

Loan limitations—Medical, osteopathic, dental, veterinary, optometric or podiatric students may borrow up to $20,000 per year, not to exceed $80,000 for all years. Pharmacy, chiropractic, health administration, clinical psychology, public health or allied health students may borrow up to $12,500 per year not to exceed $50,000 for all years.

Loans may be used solely for tuition, other reasonable educational expenses, including fees, books, supplies and equipment, and laboratory expenses, reasonable living expenses, reasonable transportation costs that relate directly to borrowers' educational expenses, and the HEAL insurance premium.

Interest—The HEAL Program does not provide a subsidy payment for interest. The amount of interest which may be charged to the borrower on the unpaid balance of the loan may not exceed the average bond-equivalent rate during the prior calendar quarter for 91-day Treasury bills sold at auction, plus three percent, rounded to the next higher ⅛ of one percent. Payment of principal and interest may be deferred while the borrower is a full-time student and during specific eligible periods of deferment. For more information contact the Director of Student Financial Aid at your school, or write to address in (a) above: Room 8-39.

d. The Health Professions Student Loan Program is a program of long-term interest loans to assist students having need for financial assistance to undertake the course of study required to become a physician, dentist, osteopathic physician, optometrist, pharmacist, podiatrist, or veterinarian. Funds are allocated to accredited schools of medicine, dentistry, osteopathic medicine, optometry, pharmacy, podiatric medicine, and veterinary medicine which are located in the United States and Puerto Rico, and which participate in the student loan program.

Each school participating in this program is responsible for selecting the recipients of loans and for determining the amount of assistance a student requires. Students applying for assistance under this program should apply through the school in which they have been accepted for enrollment or in which they are enrolled.

You are eligible to apply for a loan at a school that participates in the Health Professions Student Loan Program if you are:

1. A citizen, national, or a lawful permanent resident of the United States or the District of Columbia, the Commonwealths of Puerto Rico or the Marianna Islands, the Virgin Islands, Guam, the American Samoa, the Trust Territory of the Pacific Islands, the Republic of Palau, the Republic of the Marshall Islands, and the Federated State of Micronesia;

2. Accepted for enrollment or enrolled as a full-time student in a course leading to a degree of doctor of medicine, doctor of dental surgery or equivalent degree, doctor of osteopathic medicine, doctor of optometry or equivalent degree, bachelor of science in pharmacy or equivalent degree, doctor of pharmacy degree, doctor of podiatric medicine or equivalent degree, or doctor of veterinary medicine or equivalent degree; and

3. In need of the loan to be able to pursue the course of study.

Note: Students enrolled in schools of medicine or osteopathic medicine must demonstrate exceptional financial need.

Pre-professional students, interns, residents, and students seeking advanced training are not eligible for assistance under this program.

The maximum amount you may borrow for each school year is the cost of tuition plus $2,500 or the amount of your financial need, whichever is the lesser. The interest rate is five percent (5%) for all loans made on or after November 4, 1968.

For information, contact the Director of Student Financial Aid at your school, or write to the address in (a) above.

e. National Health Service Corps (NHSC) Scholarships [IV-2] are awarded to U.S. citizens enrolled or accepted for enrollment as full-time students in accredited U.S. schools of allopathic or osteopathic medicine, dentistry, and other health disciplines needed for the mission of NHSC. These scholarships include a monthly living stipend and payment of school tuition. Each year of scholarship support incurs a year of Federal service obligation. The minimum service obligation is 2 years.

The NHSC places full-time primary health care practitioners in selected federally-designated Health Manpower Shortage Areas of the United States. Virtually all of these practitioners owe service obligations of 2 to 4 years due to their participation in the NHSC Scholarship Program.

If appropriated funds are available, applications for competitive awards for the 1990-91 school year may be limited to students who have participated at their schools in the Federal "Scholarship Program for First-Year Students of Exceptional Financial Need."

The scholarship program is administered by the Bureau of Health Care Delivery and Assistance, Division of Health Services

Scholarships. For further information write to: *NHSC Scholarships, Parklawn Building, Room 7-29, 5600 Fishers Lane, Rockville, Maryland 20857. Telephone: (301) 443-1650,* or for toll-free message tape, call 1-800-638-0824 (except Maryland).

f. National Health Service Corps Loan Repayment Program. [IV-2] The NHSC Loan Repayment Program invites applications from licensed allopathic (M.D.) or osteopathic (D.O.) physicians in the specialties of family practice, obstetrics-gynecology, pediatrics, internal medicine, and osteopathic general practice.

This federal program pays up to $20,000 annually toward a participant's qualified medical education loans (including HEAL) in return for 3 or 4 years of full-time professional practice at an approved NHSC Loan Repayment Service Site in the USA. (Two-year agreements will pay up to $13,333 per year.) Over 200 positions are available, mainly at private, non-profit community health centers serving the poor, the homeless, and migrant farm workers and their families. Compensation packages are negotiable and compare favorably with similar physicians in the same geographic area. Matches to sites must be concluded by February 15, 1990 and employment begin no later than August 1, 1990.

For an application, a list of NHSC Loan Repayment Service Sites, and a complete description of the Program, write to: *Division of Health Services Scholarships, Room 7-16, Parklawn Building, 5600 Fishers Lane, Rockville, MD. 20857* or telephone during office hours: 1-301-443-1650.

g. National Health Service Corps Loan Repayment Program for Graduate Nurses [IV-2]

The National Health Service Corps (NHSC) Loan Repayment Program pays for each year of full-time salaried practice at an approved NHSC Loan Repayment Service Site, up to $20,000 (up to $25,000 for certain sites under contract to Indian Tribes) toward a participant's qualified Government and commercial health professions education loans.

Applicants must be nurses who are U.S. citizens, preferably in their last year of graduate training for the M.S.N. A signed NHSC Loan Repayment Contract must be submitted with application agreeing to practice at an approved Site for 2, 3, or 4 years. Preference for selection will be given those who have completed graduate training in certified family nurse practitioners, pediatric nurse or nurse midwives. For applications write to NHSC Loan Repayment Program for Graduate Nurses, Room 7-16, Parklawn Building, 5600 Fishers Lane, Rockville, Md. 20857.

h. Minority Access to Research Careers Program (Marc) Honors Undergraduate Research Training Awards [IV-3]

The Minority Access to Research Careers Program's Honors Undergraduate Research Training Program is designed to increase the number of well-prepared minority students who can compete successfully for entry into graduate programs leading to the Ph.D. in biomedical research. Its goal is also to help develop strong science curricula and research opportunities to prepare students for careers in biomedical research. A formal research experience for the recipient is an essential feature of the program. Summer study and research should be part of the overall training program at outstanding institutions or laboratories selected to enhance and supplement the trainee's formal course work and research training experience. The criteria for selection of trainees includes evidence that the candidate has clear potential to perform at a high level in the biomedical sciences and that the candidate demonstrates a determination to subsequently enter graduate programs leading to the Ph.D. degree. Applicants must be honor students in their third or fourth year of college. The college or university must have an enrollment drawn substantially from ethnic minority groups such as Am. Indians, Blacks, Hispanics, and Pacific Islanders.

Each school will make awards for stipends and tuition support for five or more students. The award may include travel expenses to one national meeting closely related to a project.

Graduates of this undergraduate program are then eligible to compete for a MARC Predoctoral Fellowship which supports 5 years of training toward either the Ph.D. or M.D./Ph.D. at any high quality graduate institution.

Applications may be filed by January 10, May 10 or September 10. Apply for information or application to: United States Department of Health and Human Services, National Institutes of Health, National Institute of General Medical Sciences, Westwood Building, Room 950, Bethesda, Maryland 20892.

3. Other U.S. Department of Health and Human Service Programs are:

a. Commissioned Officer Student Training and Extern Program (COSTEP) [IV-4]. COSTEP is a recruiting device for the Commissioned Corps of the Public Health Service (PHS) which offers excellent opportunities for students in health-related fields to get maximum benefit during free periods (31-120 days) of the academic year. Students may apply for assignments at any time during the year; however, the majority of students are hired for the summer period. To be eligible a student must have completed a minimum of one year of study in a medical, dental, or veterinary school; or have completed a minimum of two years of a professionally accredited baccalaureate program in the following course of study: dietetics, engineering, nursing, pharmacy, therapy, sanitary science, or medical record administration; or be enrolled in a masters or doctoral program in health related field other than those mentioned above. The student must expect to return to college as a full-time student in an accredited field of study following completion of the COSTEP assignment. Students must be free of any obligation that would conflict with extended duty in the PHS Commissioned Corps, may not be a member of another uniformed service nor owe a service obligation to another uniformed service, and must meet the qualifications for appointment in the Commissioned Corps. These include being a citizen of the United States, meeting the physical standards of the corps, and being under 44 years of age. Transportation is paid to and from the location of the assignment. *For applications, contact: Division of Commissioned Personnel, ATTN: COSTEP, Parklawn Building, Room 4-35, 5600 Fishers Lane, Rockville, MD 20857.* Deadline for applications: October 1 for assignments from January through April, February 1 for May through August, and May 1 for September through December. COSTEPs are commissioned as junior assistant health service officers in the Commissioned Corps of the PHS. The pay of a single COSTEP officer is $1,338.90 salary, $268.80 quarters allowance, $119.61 subsistence for a total of $1,726.31 per month. For COSTEP officers with dependents, the quarters allowance is $364.50 for a total of $1,823.01 per month. The quarters and subsistence allowances are not taxable. COSTEPs are eligible for medical and dental care while on duty and receive many of the benefits of commissioned officers. For additional information, you may call the COSTEP office at (301) 443-6324.

b. Professional Nurse Traineeship Program [IV-5]. Professional nurse traineeships are available through participating training institutions to help registered nurses prepare to teach in the various fields of nurse training, to serve in administrative or supervisory capacities, to serve as nurse practitioners, or to serve in other professional nursing specialties requiring advanced training. Traineeships provide a living stipend (not to exceed $6,552) and tuition and fees as set by the participating training institutions. Trainees are selected by the training institutions. Further information is available from: *Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration, Room 5C26, Parklawn Bldg., 5600 Fishers Lane, Rockville, MD 20857.* Students should request information through the Dean of Nursing at their institution. Note: This assistance is only for students studying at the master's or doctoral level or studying to become nurse midwives.

c. Nursing Student Loan Program. [IV-5.1] The program is intended to assist students to achieve careers in nursing by providing long-term, low-interest loans to help meet costs of education.

Federal funds for this program are allocated to accredited schools of nursing education. These schools are responsible for selecting the recipients of loans and for determing the amount of assistance a student requires. Students applying for assistance under this program should apply through the school in which they have been accepted for enrollment or in which they are enrolled.

You are eligible to apply for a Nursing Student Loan if you are a citizen, national, or a lawful permanent resident of the United States or the District of Columbia, the Commonwealths of Puerto Rico or the Marianna Islands, the Virgin Islands, Guam, the American Samoa, the Trust Territory of the Pacific Islands, the Republic of Palau, the Republic of the Marshall Islands and the Federated State of Micronesia; are accepted for enrollment or are enrolled as a full-time or half-time student in a course leading to a diploma in nursing, an associate degree in nursing, a bachelor's degree in nursing or an equivalent degree, or a graduate degree in nursing.

You may borrow $2,500 for an academic year, $4,000 for each of the final two years, or the amount of your financial need, whichever is the lesser. The total amount of a student's loan for all years may not exceed $13,000.

In determining the amount of assistance you may require, the school considers: All financial resources available to you, including other sources of aid, such as scholarships or other repayable loans, and the costs reasonably necessary for attendance at the school.

The interest rate is five percent (5%) for all loans made on or after November 4, 1988. *To apply, contact the Director of Student Financial Aid at your school.*

4. The U.S. Department of Interior Administers a Program of Indian Tribal Grants and Loans. [IV-6.1] Over 45 Indian tribes have established their own grant and loan programs to promote higher education for their members. Contacts for tribal assistance should be made through the U.S. Dept. of the Interior, Bureau of Indian Affairs, Washington, D.C. 20240, or through the Tribal Headquarters.

5. Indians Higher Education Grant Program [IV-6] is a program for students who

are members of a tribal group being served by the Bureau and who are enrolled in accredited institutions of their choice in pursuit of an undergraduate or graduate degree; must demonstrate financial need to the institution they are or will be attending. For information, write to: *Department of the Interior–BIA, Office of Education Programs, MS 3512, Code 522, 18th & C Street, N.W., Washington, D.C. 20240.*

6. The U.S. Information Agency Sponsors: The Fulbright Teacher Exchange Program. [IV–7] Under the Mutual Educational and Cultural Exchange Act, qualified American educators may work in elementary and secondary schools abroad, and, in some instances, institutions of higher education in various countries. To be eligible, an applicant must be teaching currently as an elementary or secondary school teacher, college instructor, assistant, associate or full professor. Candidates must have at least a bachelor's degree, be a U.S. citizen at the time of application, proficiency in the language of the host country and have at least three years of successful full-time teaching experience. Two years are required for participation in summer seminars held in Italy and the Netherlands. Evidence of good health and stability also is required.

Round-trip transportation to some countries for those selected to participate may be provided. A maintenance allowance may also be provided, paid in the currency of the host country, based upon that country's cost of living. For teachers participating in the Exchange Program, the successful applicant's U.S. salary is continued by the participant's own school. Seminar grants may include round trip transportation and tuition costs, but for some, the participants are responsible for their own maintenance expenses. Regional interviewing committees conduct preliminary screening of applicants. Annual application deadline date is October 15. Application forms can be obtained from and then submitted to the *Teachers Exchange Branch, E/ASX, Room 353, U.S. Information Agency, 301 4th Street, S.W., Washington, D.C. 20547.*•

NATIONAL GROCERS WEEK

• Mr. GRASSLEY. Mr. President, the week of June 23 is "National Grocers Week," a time to recognize the entrepreneurial contribution America's retail and wholesale grocers make to keep our economy viable, while providing friendly, hometown service to their customers.

These representatives of our great food distribution industry will be in Washington, DC, during this week, making their concerns and contributions known. "Grocers Care" is the theme of the conference, recognizing their support of "A Healthy America" with involvement in charitable organizations such as the American Cancer and Heart Associations; "A Clean America" with contributions to recycling and the environment; and "A Proud America" with grocers' civic and patriotic endeavors.

I am proud to recognize and include in today's RECORD the activities of Iowa's members:

Mr. James Scheer of Jim & Dean's Market in Council Bluffs is active in community charitable projects through their Jail and Bail Program, and raising funds in support of the American Cancer Society.

Mr. Jim Borders of Jim's Food Mart of Tabor has been a community club member for 20 years, rebates 1 percent o a save-a-tape program for nonprofit organizations, donated food for a tornado cleanup crew, assisted in fundraisers for ambulance and fire departments, supports the sheriff department, and serves on church and Optimist Club boards.

Mr. Robert Hand of Dahl's Foods in Des Moines actively sponsors Iowa Special Olympics and Polk County participants, is a major sponsor of the American Cancer Society golf tournament and their camp for children with cancer, contributes to the United Way, Convalescent Home for Children, and Iowa College Foundation, among others.

Robert Cramer, Fareway Stores of Boone, supported Iowa Hometown Care Package project, by sending care packages to Iowa soldiers in the gulf and serving as the collection point and providing transportation of donations.

Duane Godfrey of Rog & Scotty's Super Valu of Council Bluffs supports Grocers Fight Cancer Program with a percentage donation of 1 day's sales.

Jerry Fleagle of Fleagle Foods of Waterloo contributes computer equipment to local schools through the Computers for Kids Program.

Mick Gabrielson of We Three Market of Belmond supports local schools with an Adopt-a-Class Program, whereby employees interact with reading activities and sponsor holiday parties.

Jim Conrey, Jim's Super Valu of West Liberty, sponsors Little League, Meals on Wheels, school reading programs, MDA, Shrine and Lions Club, et cetera; recycling point and reusable bag promotions; and Red Cross support for families of Armed Forces in the gulf.

Doug Fallgatter of Fallgatters Market in Northwood, Mary Rooney of Payless Foods in Dyersville, and Scott Havens of Plaza Food Center in Norwald are active supporters of their communities and are participating in Grocers Care recognition activities in Washington, DC, during the week of June 23.

The Grocer Association of Iowa represented by Executive Director Trish Smallenberger, promotes community service activity among its members, as well as actively supporting "Our Common Ground"—a project to aid pensioners and orphans in the Soviet Union.

Also recognized for Grocers Care activity are: Dick Maxwell of Joyce's Foodland in Sac City for Grocers Fight Cancer; Ron Pearson of Hy-Vee Food Stores in Chariton for a 14-point environmental program including bag return on shelf tag program; Dave Wilson of Scrivner of Iowa in Laurens for being a major sponsor of Industry Days, which promotes employment opportunities; Chuck Ramsbacher of Nash Finch Co. in Cedar Rapids—their Econofoods stores distributed seedlings to customers to promote tree plantings in conjunction with Earth Day; Gene Foltz of Super Valu Stores in Des Moines for their Protect the Future Environmental Program to educate the consumer on recycled and recyclable packaging; Matt Andersen of Liddle's Super Valu Foods in New Hampton for their Grocers Fight Cancer promotion; Phyllis Pals of P&G Market in Belmond for their Grocers Fight Cancer Program; John Daugherty of Daugherty's Market in Adel sponsored cloth shopping bags which are being sold by students to raise money for environmental projects; and Russ Hale of Fairco-Associated Grocers in Ankeny for being a major sponsor of Red Ribbon Week, which promotes activities to demonstrate a commitment to a drug-free America.

These individuals and their companies deserve our recognition and the support of investing ourselves in our communities, as is their example.•

NATIONAL BEVERAGE CONTAINER REUSE AND RECYCLING ACT—S. 1318

• Mr. HATFIELD. Mr. President, yesterday, Senators PACKWOOD, JEFFORDS, and I introduced the National Beverage Container Reuse and Recycling Act, which is now Senate bill 1318. I now ask unanimous consent that the bill be printed in the RECORD.

There being no objection, the bill was ordered to be printed in the RECORD, as follows:

S. 1318

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.—This Act may be cited as the "National Beverage Container Reuse and Recycling Act".

SEC. 2. AMENDMENTS TO SOLID WASTE DISPOSAL ACT.—Title II of the Solid Waste Disposal Act (42 U.S.C. 3251 et seq.) is amended by adding at the end thereof the following new subtitle:

"Subtitle L—Beverage Container Recycling and Reuse

"SHORT TITLE; FINDINGS

"SEC. 12001. (a) SHORT TITLE.—This subtitle may be cited as the 'Beverage Container Reuse and Recycling Act'.

"(b) FINDINGS.—Congress finds and declares that—

"(1) the failure to reuse and recycle empty beverage containers represents a significant and unnecessary waste of important national energy and material resources;

"(2) nonbiodegradable beverage containers represent a continued threat to the environment;

"(3) solid waste resulting from such empty beverage containers constitutes a significant and rapidly growing proportion of municipal solid waste and increases the cost and prob-

lems of effectively managing the disposal of such waste;

"(4) disposal of such solid waste, which imposes severe problems in both urban and rural aspects of our environment as well as a financial burden on local and State governments, could be minimized by the recycling of empty beverage containers;

"(5) waste resulting from littering or discarding of certain containers constitutes a significant health hazard and poses a threat to children and others due to broken glass, detachable openings and other sharp objects present in recreation and other environments;

"(6) several States have previously enacted and implemented State laws designed to protect the environment, conserve energy and material resources and promote resource recovery of waste by requiring a refund value on the sale of all beverage containers, and these have proven effective as well as inexpensive to administer due to their self-enforcing nature;

"(7) a national system for requiring a refund value on the sale of all beverage containers would act as a positive incentive to individuals to clean up the environment and would result in a high level of reuse and recycling of such containers and help reduce the costs associated with solid waste management;

"(8) a national system for requiring a refund value on the sale of all beverage containers would result in significant energy conservation and resource recovery;

"(9) the reuse and recycling of empty beverage containers would eliminate these unnecessary burdens on the Federal Government, local and State governments, and the environment;

"(10) a national system of beverage container recycling is consistent with the intent of the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 et seq.);

"(11) the provisions of this subtitle are consistent with the goals set in January 1988, by the Environmental Protection Agency, which establish a national goal of 25 percent source reduction and recycling by 1992, coupled with a substantial slowing of the projected rate of increase in waste generation by the year 2000; and

"(12) recycling the beverage containers of this Nation would result in a 6 to 8 percent reduction in the solid waste stream of this Nation.

"DEFINITIONS

"SEC. 12002. (a) DEFINITIONS.—For the purposes of this subtitle, the term—

"(1) 'Administrator' means the Administrator of the Environmental Protection Agency;

"(2) 'beverage' means carbonated or noncarbonated mineral water, water, beer, wine, fruit juice, juice drink, soft drink, malt beverage, mixed beverages, distilled spirits, mixed spirit drink or mixed wine drink;

"(3) 'beverage container' means the individual bottle or can, with a capacity of up to one gallon, in which a beverage is sold, and that is constructed of metal, glass, or plastic, or any combination of these materials. Such term does not include cups or other similar open or loosely sealed containers;

"(4) 'refundable beverage container' means a beverage container which has clearly, prominently, and securely affixed to such container, or printed, embossed, or incised into such container (in accordance with section 12003), a statement of the amount of the refund value of the container, and which is in a condition required by this subtitle;

"(5) 'consumer' means a person who purchases a beverage in a beverage container for any use other than resale;

"(6) 'distributor' means a person who sells or offers for sale in interstate commerce beverages in beverage containers for resale;

"(7) 'retailer' means a person who purchases from a distributor beverages in beverage containers for sale in interstate commerce to a consumer or who sells or offers to sell in interstate commerce beverages in beverage containers to a consumer;

"(8) 'interstate commerce' means trade, traffic, or transportation—

"(A) between a place in a State and any place outside thereof,

"(B) within the District of Columbia or any territory or possession of the United States, or

"(C) which affects trade, traffic, commerce, or transportation described in subparagraph (A) or (B); and

"(9) 'State' includes the District of Columbia, the Commonwealth of Puerto Rico, or any territory or possession of the United States.

"(b) REGULATIONS.—The Administrator shall prescribe such regulations as may be necessary to establish who is a retailer with respect to the sale of beverages in beverage containers to consumers through beverage vending machines. In addition, such regulations shall prescribe the condition in which a beverage container must be submitted in order to be redeemed under the program, and shall provide for the establishment of a refund mechanism necessary to carry out the purposes of this subtitle.

"BEVERAGE CONTAINER PROGRAM

"SEC. 12003. PROGRAM.—Prior to the expiration of the 180 day period following the date of the enactment of this section, the Administrator shall, by regulation, establish a program to prohibit any distributor or retailer from selling or offering for sale, in interstate commerce, a beverage in a beverage container unless there is clearly, prominently, and securely affixed to such container, or printed, embossed, or incised into such container, a statement which includes the refund value. Such program shall take effect in accordance with the provisions of section 12005 and shall require, among other things, that—

"(1) if a consumer tenders for refund a refundable beverage container to a retailer or redemption center, the retailer or redemption center shall promptly pay the consumer the amount of the refund value stated on the container;

"(2) if a retailer, redemption center, or consumer tenders an empty refundable beverage container to a recycling entity for processing, the appropriate State agency or other entity designated by the Administrator, upon application, shall promptly pay the retailer, redemption center, or consumer, as the case may be, the amount of the refund stated on the container pursuant to this subtitle;

"(3) no beverage shall be sold or offered for sale, in interstate commerce, at wholesale, unless the distributor charges and the retailer pays, on each such beverage container, a minimum of 10 cents;

"(4) no such beverage shall be sold or offered for sale, in interstate commerce, at retail, including by vending machines, unless the retailer charges and the consumer pays, on each such beverage container, a minimum of 10 cents;

"(5) the distributor deposits all moneys collected pursuant to such program at such time and place as the Administrator shall direct;

"(6) unclaimed deposits be made available, from time to time, for purposes of paying, subject to the availability of unclaimed deposits, a handling fee up to 2 cents for each beverage container; and

"(7) unclaimed deposits not used toward payment of a handling fee be used to promote comprehensive recycling, such as development of redemption centers, curbside recycling or for other purposes related to recycling.

"PENALTIES

"SEC. 12004. VIOLATIONS.—Whoever violates any provision of section 12003, or regulation or rule issued pursuant thereto, shall be fined not more than $1,000 for each violation.

"EFFECTIVE DATES

"SEC. 12005. EFFECTIVE DATE.—The provisions of section 12003 shall apply, subject to the provisions of section 3 of the National Beverage Container Recycling Act, with respect to beverages sold or offered for sale in interstate commerce on or after the expiration of the 2-year period following the date of the enactment of this subtitle.".

SEC. 3. (a) EXEMPTION FROM APPLICATION OF AMENDMENTS ON THE BASIS OF A 70 PERCENT RECYCLING RATE.—The provisions of subtitle L of the Solid Waste Disposal Act shall not be applicable to any State which demonstrates to the Administrator of the Environmental Protection Agency that, for any period of 18 consecutive months following the date of the enactment of this Act, such State achieved a recycling or reuse rate of beverage containers equal to 70 percent of the beverage containers sold at retail in such State during the preceding 18 consecutive month period. Notwithstanding the preceding sentence, if at anytime following a determination that a State has achieved a 70 percent recycling or reuse rate the Administrator determines that such State has failed, for any 18-consecutive-month period, to maintain at least such a 70 percent recycling or reuse rate of its beverage containers, the Administrator shall notify such State that, upon the expiration of the 90-day period following such notification, the provisions of such subtitle L shall be applicable to that State.

(b) EXEMPTION FROM APPLICATION OF AMENDMENTS ON THE BASIS OF EQUALLY STRINGENT PROGRAM.—Any State which has in effect and is enforcing a program requiring the recycling or reuse of beverage containers may make application to the Administrator of the Environmental Protection Agency requesting that such State be exempted from the application of the provisions of subtitle L of the Solid Waste Disposal Act. If the Administrator determines, on the basis of such application, that the State program—

(1) is equally as stringent as the program provided for by such subtitle; and

(2) substantially complies with the requirements set forth in subsection (c) of this section;

the Administrator shall exempt such State from the requirements of such subtitle for such period as the State program is in effect and enforced. In the event that the Administrator terminates an exemption under this section in connection with any State, subtitle L of the Solid Waste Disposal Act shall, at such time as the Administrator shall determine, be applicable to such State.

(c) REQUIREMENTS FOR STATE PROGRAM.—For purposes of subsection (b), each such State program, in order to qualify for an ex-

emption, shall substantially comply with the following minimum requirements:

(1) A minimum refund value of ten cents for each beverage container.

(2) A requirement that each distributor of beverage containers turn over to the State all deposits collected by such distributor from a retailer pursuant to this section, and that such deposits be deposited in a fund for use in accordance with paragraph (3).

(3) A requirement that upon application to a State, the State shall pay from the fund established pursuant to paragraph (2), a handling fee not to exceed 2 cents for each beverage container redeemed by a retailer or redemption center, and provide for conveniently located redemption services in accordance with paragraph (11). In the event that the unredeemed deposits in the fund are insufficient to pay the stated handling fee, that fee shall be reduced to a level for which there are sufficient funds.

(4) A requirement that, if a retailer, redemption center or consumer returns an empty refundable beverage container to a distributor or a processing facility, the State, upon application, shall promptly pay the retailer, redemption center, or consumer, as the case may be, the amount of the refund value stated on the container pursuant to this Act.

(5) A requirement that the State consider the size of the container in establishing the refund value of a beverage container in excess of 10 cents.

(6) A definition of 'beverage containers' and 'beverage' as provided in section 12002 of the Solid Waste Disposal Act.

(7) Establishment of convenient retailer or redemption center sites.

(8) A requirement that no beverage shall be sold or offered for sale—

(A) at wholesale, unless the distributor charges and the retailer pays, on each such beverage container, a minimum of 10 cents;

(B) at retail, including by vending machines, unless the retailer charges and the purchaser pays, on each such beverage container, a minimum of 10 cents; and

(C) unless the beverage container clearly indicates the refund value.

(9) A prohibition against the post-redemption disposal of any beverage container in a landfill or any other solid waste disposal facility.

(10) A requirement that each beverage container manufacturer shall clearly indicate by engraving, embossing, molding, stamping, labeling, or other appropriate methods, the refund value of the beverage container and the name or abbreviation of the State in which such container is manufactured, but nothing in this subsection shall be construed as prohibiting the reuse of a beverage container.

(11) A requirement that each retailer provide for redemption of beverage containers, including, at the discretion of the retailer, the establishment of redemption centers no more than a ½ mile radius of such retailer.

(12) A requirement that manufacturers, distributors, and processors of beverages or beverage containers shall provide such records and reports as may be necessary to enable a State to carry out its beverage container recycling and reuse program.

(13) A requirement that criminal penalties and civil penalties be provided for violations of State recycling and reuse laws involving empty beverage containers.

SEC. 4. REGULATIONS.—The Administrator of the Environmental Protection Agency shall issue such regulations as may be necessary to carry out the provisions of this Act, and the amendments made by this Act.●

NOTICE OF DETERMINATION BY THE SELECT COMMITTEE ON ETHICS UNDER RULE 35, PARAGRAPH 4, PERMITTING ACCEPTANCE OF A GIFT OF EDUCATIONAL TRAVEL FROM A FOREIGN ORGANIZATION

● Mr. HEFLIN. Mr. President, it is required by paragraph 4 of rule 35 that I place in the CONGRESSIONAL RECORD notices of Senate employees who participate in programs, the principal objective of which is educational, sponsored by a foreign government or a foreign educational or charitable organization involving travel to a foreign country paid for by that foreign government or organization.

The select committee has received a request for a determination under rule 35 for Andrew K. Semmel, a member of the staff of Senator RICHARD G. LUGAR, to participate in a program in Singapore, sponsored by the Institute of Policy Studies, from May 25–June 1, 1990.

The committee has determined that participation by Mr. Semmel in the program in Singapore, at the expense of the Institute of Policy Studies, is in the interest of the Senate and the United States.●

THE INDEPENDENCE OF THE SOUTH DAKOTA ELECTORATE IN PRESIDENTIAL ELECTIONS: A PAPER BY PROF. PHILIP A. GRANT

● Mr. DASCHLE. Mr. President, Philip A. Grant, Jr., professor of history at Pace University, recently provided me with a very informative paper that analyzes both the Republican and Democratic Presidential primaries in South Dakota and stresses the independence of the South Dakota electorate. His paper was delivered at the 1990 Dakota History Conference at Augustana College.

Professor Grant is a scholar very familiar with elections and public officials throughout South Dakota's history. His most recent paper in this area explores the idea that delegates to party conventions should be elected directly by the people, and I commend it to my colleagues' attention. Mr. President, I ask that Professor Grant's paper be included at this point in the RECORD.

The paper follows:

PRESIDENTIAL PRIMARIES IN SOUTH DAKOTA, 1952–80

(By Philip A. Grant, Jr.)

Between 1952 and 1980 millions of American citizens availed themselves of the opportunity to participate in the process of nominating presidential candidates. During these years both the Democratic and Republican Parties engaged in the task of choosing delegates to their respective national conventions. In many states these delegates were elected in presidential primaries. In addition to contributing to the selection of delegates the various primaries frequently indicated the levels of popular support for presidential contenders of the two major parties.[1]

South Dakota was among the thirteen states holding presidential primaries in every national election year from 1952 to 1980. Unlike the states which scheduled their presidential primaries in the late winter or early spring, the South Dakota primary contest always occurred during the first week of June. Between 1952 and 1972 the victor in South Dakota's presidential primary was allotted all of the state's delegates to the Democratic and Republican conventions, while in 1976 and 1980 provision was made for a proportionate split of the delegates of both parties.

In 1952 Senator Estes Kefauver of Tennessee surprised many political observers by challenging Democratic President Harry S. Truman for renomination. It was widely assumed that Truman would seek re-election in 1952 and it was anticipated that the incumbent Chief Executive would encounter only minimal difficulty in disposing of Kefauver. Not only did Kefauver upset Truman in the New Hampshire primary, but also the President startled the nation on March 29 by announcing that he would not be a candidate for re-election. Since Kefauver had already been campaigning in nearly all of the primary states, he enjoyed a distinct advantage over other actual or potential rivals for the democratic nomination. Kefauver proved to be especially popular in the Midwest, winning primaries in Ohio, Illinois, Wisconsin, and Nebraska. The Tennessean climaxed his numerous primary triumphs by scoring a solid victory in South Dakota on June 3. On that date Kefauver's slate of delegates outpolled an unpledged group of delegates by a margin of 22,812–11,741 (65.8%). As a consequence of his impressive primary victory, Kefauver received South Dakota's eight delegates to the Democratic convention.[2]

The 1952 Republican presidential contest involved General Dwight D. Eisenhower and Senator Robert A. Taft of Ohio. Eisenhower, a national hero by every standard, was supported by a bloc of governors from the populous states of the Northeast, while Taft, serving his third term in the Senate, was favored by most of the prominent Republican leaders of the Midwest. Since Taft was an avowed conservative on domestic issues and a steadfast isolationist on foreign policy questions, it was expected that he would easily prevail in the South Dakota primary. Indeed Taft had earlier recorded primary victories in Ohio, Illinois, Wisconsin, and Nebraska. Since Eisenhower was still occupying the post of Supreme Allied Commander in Europe and had not officially announced his candidacy, he was unable to travel to South Dakota and the other primary states. Instead of resulting in an emphatic Taft victory, the South Dakota primary proved to be extraordinarily close in numerical terms. The final outcome was as follows: Taft 64,695 (50.3%)–Eisenhower 64,995 (49.7%). While Taft gained the fourteen delegates to the Repub-

[1] Between 1952 and 1980 58,817,396 Republicans and 71,029,198 Democrats voted in presidential primaries. Altogether one hundred and fifty-eight primaries were held during this twenty-eight year period. James W. Davis, "Presidential Primaries" (Westport, Connecticut: Greenwood Press, 1980); "Guide to U.S. Elections" (Washington: Congressional Quarterly, Inc., 1985), pp. 408–435.

[2] State of South Dakota, "Legislative Manual, 1953" (Pierre: 1953), p. 145; Robert J. Donovan, "Tumultuous Years: The Presidency of Harry S. Truman, 1949–1953" (New York: W.W. Norton and Company, 1982), pp. 394–397; Joseph B. Gorman, "Kefauver: A Political Biography" (New York: Oxford University Press, 1972), pp. 115–141.

lican convention, Eisenhower's campaign received an obvious psychological boost from the General's strong showing in the South Dakota primary.[3]

In 1956 Kefauver launched his second bid for the presidency. Like 1952, the Tennessee senator was determined to win most, if not all, of the presidential primaries. After repeating his New Hampshire primary victory of 1952, Kefauver campaigned vigorously throughout the Midwest. In 1956 Kefauver won primaries in Ohio, Indiana, Wisconsin, Nebraska, and Minnesota. Kefauver in 1956 concentrated on agricultural issues, promising general federal farm subsidies. Kefauver was unopposed in the June 5 South Dakota primary, polling 30,940 votes. While Kefauver withdrew from the presidential race after losing in the Florida, Oregon, and California primaries, he retained the loyalty of South Dakota's eight convention delegates in his successful quest for the Democratic vice-presidential nomination.[4]

Eisenhower, completing his first term in the White House, was unopposed for renomination in 1956. The President, who had carried South Dakota and thirty-eight of the other forty-seven states in 1952, was extremely popular and was heavily favored for reelection to a second term. In sharp contrast to 1952 Eisenhower received all of the 59,374 votes cast in the 1956 South Dakota G.O.P. presidential primary.[5]

In 1960 two Democrats, Senators John F. Kennedy of Massachusetts and Hubert H. Humphrey of Minnesota, competed against one another in the presidential primaries. The youthful Kennedy had attracted nationwide attention by narrowly losing the 1956 vice-presidential contest to Kefauver. Humphrey, a native of Doland, South Dakota, was completing his second term in the Senate. Kennedy, a highly effective campaigner, compiled an unblemished record of success in the ten presidential primaries which he opted to enter. Notwithstanding his distinguished record on Capitol Hill, Humphrey failed to win a single presidential primary and graciously ended his candidacy after losing to Kennedy in West Virginia in May. Humphrey was the sole candidate on the South Dakota ballot in the June 7 primary, but, inasmuch as he had ceased to be a candidate, only 24,773 Democrats bothered to vote in the primary itself. Because Humphrey had released all his delegates, the South Dakotans selected to attend the 1960 Democratic convention were free to vote for any of the several remaining candidates. Four of South Dakota's delegates were aligned in favor of Senator Kennedy, while the other members of the delegation were divided between three of the Massachusetts senator's rivals.[6]

While the Democrats in 1960 had a rather spirited contest for their presidential nomination and did not actually designate their candidate until Wyoming, the final state in the alphabetical listing, cast its vote at the party convention, the Republicans without delay united behind Vice-President Richard M. Nixon. Nixon faced no opposition whatever for the G.O.P. presidential nomination. The Vice-President, who was well-known in South Dakota because of his close friendship with Senator Karl E. Mundt, received 48,461 votes in the state's presidential primary. Since Nixon was mathematically assured of the Republican presidential nomination, he did not find it necessary to appear in South Dakota. Instead by June Nixon was earnestly preparing his campaign for the general election in November.[7]

By 1964 Lyndon B. Johnson had succeeded the late President Kennedy. During the weeks and months following Kennedy's tragic assassination, Johnson had conducted himself with remarkable dignity and had persuaded Congress to pass a substantial number of landmark bills. The public opinion polls established that Johnson in 1964 was likely to be elected to a full term by an overwhelming majority. Unopposed for his party's nomination, Johnson tabulated 28,172 votes in South Dakota's June 2 primary.[8]

The struggle for the 1964 Republican nomination was waged primarily between Senator Barry M. Goldwater of Arizona, an ultra-conservative, and Governor Nelson A. Rockefeller of New York, a self-proclaimed moderate liberal. While Goldwater fared well in several presidential primaries, his supporters were forced to compete with an unpledged slate of delegates in South Dakota. The members of the unpledged slate, while not necessarily hostile to Goldwater, claimed that the Republican Party should seriously consider choosing a compromise candidate as its nominee. In what proved to be somewhat of an upset in 1964, the unpledged slate of delegates crushed the slate committed to Goldwater. The official figures were: Unpledged 57,653 (67.4%)–Goldwater 27,076 (32.6%).[9]

Because of increasing anguish over the nation's prolonged and costly military involvement in Vietnam and the steady decline in President Johnson's popularity, Republicans were genuinely hopeful about their prospects of recapturing the White House in 1968. The major public opinion polls indicated that former Vice-President Nixon was clearly the frontrunner for the 1968 G.O.P. nomination. At the outset of the campaign Nixon's two principal rivals were Governors George M. Romney of Michigan and Nelson A. Rockefeller of New York. Romney, after faltering in the early stages of the New Hampshire primary campaign, withdrew from the presidential race on February 28, while Rockefeller announced on March 21 that he had definitely decided not to be a candidate. Thus, by late March Nixon was unopposed for the Republican nomination. As the only Republican appearing on the ballot, Nixon polled 68,113 votes in South Dakota's June 4 presidential primary.[10]

Unlike the Republicans, the Democratic Party in 1968 was to engage in an acrimonious internal struggle. President Johnson was challenged for renomination by two outspoken critics of his Vietnam policy, Senators Eugene J. McCarthy of Minnesota and Robert F. Kennedy of New York. After Johnson abruptly withdrew as a candidate on March 31, Vice-President Hubert H. Humphrey belatedly entered the presidential contest. By the time Humphrey launched his candidacy the deadlines for participating in the various presidential primaries had passed. McCarthy handily won primaries in Wisconsin, Pennsylvania, Massachusetts, and Oregon, while Kennedy scored impressive primary victories in Indiana, Nebraska, and the District of Columbia. In addition to McCarthy and Kennedy, Johnson was listed on the June 4 primary ballot. The Johnson slate of delegates was led by Robert M. Chamberlain, South Dakota's Democratic State Chairman and the 1966 Democratic nominee for Governor. Chamberlain, an avowed Humphrey supporter, pledged that the Johnson delegates would be available for the Vice-President. While it was generally expected that Kennedy would prevail in the primary, there was some doubt about his projection margin of victory. On June 4 Kennedy overwhelmed Johnson and McCarthy. The result of the primary was as follows:

Kennedy	31,826
Johnson	19,316
McCarthy	13,145

Inasmuch as seventy percent of South Dakota Democrats had voted for either Kennedy or McCarthy, there was a feeling that the primary reflected widespread disillusion with the Vietnam War. After the tragic death of Senator Kennedy, his colleague, Senator George S. McGovern of South Dakota, became a candidate for the presidency in August. At the 1968 Democratic National Convention in Chicago the South Dakota delegation cast all twenty-six of its votes in favor of inserting a peace plank in the party platform and favored McGovern over Humphrey by a margin of 24–2.[11]

In sharp contrast to 1968 the political scene in South Dakota was rather tranquil during the spring of 1972. President Nixon, heavily

[3] Stephen E. Ambrose, "Eisenhower: Soldier, General of the Army, President-Elect" (New York: Simon and Shuster, 1983), pp. 524–536; James T. Patterson, "Mr. Republican: A Biography of Robert A. Taft" (Boston: Houghton Mifflin Company, 1972), pp. 517–536; Philip A. Grant, Jr., "The 1952 Republican Presidential Primary," (South Dakota History, Winter 1977), VII, 46–58; Times, New York, N.Y., June 4, 1952, pp. 1, 22; June 5, 1952, pp. 1, 17.

[4] Charles A.H. Thomson and Frances M. Shattuck, "The 1956 Presidential Campaign" (Washington: The Brookings Institution, 1960), pp. 36–61; John H. Runyon, Jennefer Verdini, and Sally S. Runyon, "Sourde Book of American Presidential Campaign and Election Statistics" (New York: Frederick Ungar Publishing Company, 1971), p. 13.

[5] Elmo Richardson, "The Presidency of Dwight D. Eisenhower" (Lawrence: University of Kansas Press, 1979), pp. 89–92; Malcolm Moos, "Election of 1956," (History of American Presidential Elections, 1789–1968, 4 vols.; New York: Chelsea House Publishers, 1971), IV, 3341–3354.

[6] Carl Solberg, "Hubert H. Humphrey: A Biography" (New York: W.W. Norton and Company, 1984), pp. 199–212; Theodore H. White, "The Making of the President, 1960" (New York: Atheneum Publishers, 1961), pp. 78–114; Times, New York, N.Y., May 11, 1960, pp. 1, 31; Congressional Quarterly, May 27, 1960, p. 926; June 10, 1960, p. 998.

[7] Stephen E. Ambrose, "Nixon: The Education of a Politician, 1913–1962" (New York: Simon and Shuster, 1987), pp. 535–546; George H. Mayer, "The Republican Party, 1854–1964" (New York: Oxford University Press, 1964), pp. 506–510; Richard C. Bain and Judith H. Parris, "Convention Decisions and Voting Records" (Washington: The Brookings Institution, 1973), pp. 306–308.

[8] Michael Amrine, "This Awesome Challenge: The Hundred Days of Lyndon Johnson" (New York: G.P. Putnam's Sons, 1964); Doris Kearns, "Lyndon Johnson and the American Dream" (New York: Harper and Row, Publishers, 1976), pp. 170–209.

[9] Theodore H. White, "The Making of the President, 1964" (New York: Athenuem Publishers, 1965), pp. 98–129; Congressional Quarterly, May 27, 1964, p. 1003; June 5, 1964, p. 1089; Times, New York, N.Y., June 3, 1964, p. 30.

[10] George H. Gallup, "The Gallup Poll, 1959–1971" (New York: Random House, 1971), pp. 2089, 2096, 2102, 2103, 2106, 2108, 2109, 2113; Times, New York, N.Y., February 29, 1968, pp. 1, 22, 23; March 22, 1968, pp. 1, 32, 33, 34, 35; Leonard Levine, "The Running of Richard Nixon" (New York: Coward, McCann and Geoghegan, 1972), pp. 291–296.

[11] "Public Papers of the Presidents of the United States: Lyndon B. Johnson, 1968–1969" (Washington: United States Government Printing Office, 1970), pp. 469–476; Post, Washington, D.C., April 1, 1968, pp. 1, 12, 13, 14, 15; Times, New York, N.Y., April 1, 1968, pp. 1, 26, 27; April 28, 1968, pp. 1, 32; August 11, 1968, pp. 1, 61, 62; Convention Decisions and Voting Records, pp. 322–327; Arthur M. Schlesinger, Jr., "Robert Kennedy and His Times" (Boston: Houghton Mifflin Company, 1978), pp. 880–883; Jules Witcover, "85 Days; The Last Campaign of Robert Kennedy" (New York: G.P. Putnam's Sons, 1969), pp. 128–182.

favored in his quest for re-election, was confronted with only token opposition in the series of Republican presidential primaries between March and June. Indeed Nixon was unopposed in the June 6 South Dakota primary, attracting 52,820 votes. Senator McGovern, while discounted as a serious contender for the Democratic nomination in late 1971 and early 1972, won Democratic primaries in Wisconsin, Nebraska, Massachusetts, Oregon, and Rhode Island. One of McGovern's two major rivals, Senator Edmund S. Muskie of Maine, suspended his presidential candidacy on April 27, while another, Governor George C. Wallace of Alabama, was incapacitated after an assassination attempt on May 13, McGovern faced no opposition in the June 6 South Dakota primary, receiving 28,017 votes. Interestingly, McGovern also won primary victories in New Mexico and California on June 6, virtually guaranteeing that he would secure the Democratic nomination on the first ballot.[12]

In 1976 Gerald R. Ford, who had become the nation's Chief Executive after the resignation of President Nixon in August 1974, was considered politically vulnerable. Ford had not only provoked resentment by his controversial pardon of his disgraced predecessor, but had also encountered numerous difficulties in his relations with Congress. Competing with Ford for the 1976 Republican presidential nomination was former Governor Ronald Reagan of California, and articulate conservative. Reagan charged that Ford had been conspicuously ineffective both in the White House and as the leader of the Republican Party. Reagan's spirited campaign against Ford gained considerable momentum as the Californian defeated the President in the North Carolina, Georgia, Indiana, Nebraska, Arkansas, Idaho, and Nevada primaries. By late May it appeared that Ford was in a highly precarious position. It was generally anticipated that the June 1 South Dakota primary would be fairly close. Instead Reagan outpolled Ford by a tabulation of 43,038–36,976. Reagan's decisive triumph in South Dakota confirmed beyond any doubt that many Republicans throughout the country had lost confidence in President Ford.[13]

Due to the sustained publicity surrounding the Watergate scandal, the adverse impact of the Nixon pardon, and the divisive struggle between Ford and Reagan, Democrats felt that they were in a strong position to win the presidency in 1976. The most visible Democratic contenders were former Governor Jimmy Carter of Georgia, Governor Edmund G. Brown of California, Senator Frank F. Church of Idaho, and Congressman Morris L. Udall of Arizona. Altogether Carter won thirteen primaries over a three month period. Brown was the primary victor in only two states, while Church prevailed in three primary races, including his home state of Idaho. The June 1 South Dakota primary narrowed to a contest between Carter and Udall. Since Udall had not finished first in a single primary, his survival depended on vanquishing Carter in South Dakota. While failing to gain an absolute majority of the popular vote, Carter defeated Udall by a margin of 24,186–19,510. A total of 12,975 South Dakota Democrats, voted either for minor candidates or none of the individuals listed on the ballot. In the aftermath of the South Dakota presidential primary Carter was within a few hundred votes of clinching the Democratic nomination.[14]

In 1980 Ronald Reagan, who had commanded the support of 1,070 delegates at the 1976 Republican National Convention, was again a candidate for the G.O.P. presidential nomination. After easily winning the nation's first primary in New Hampshire, Reagan promptly disposed of most of his Republican competitors. By late April only former C.I.A. Director George Bush had not conceded the nominaiton to Reagan. Reagan accomplished the feat of prevailing over Bush in twenty of the twenty-four presidential primaries between March and May. Inasmuch as Bush trailed Reagan by seven hundred and eighteen delegates and had lost every primary contest west of the Mississippi River, it seemed unlikely that he would make a creditable showing in the June 3 South Dakota primary. Bush, noting the burden of his substantial campaign debt and foreseeing the inevitability of a Reagan nomination, withdrew from the presidential race on May 26. Under the circumstances, it was a foregone conclusion that Reagan would win the South Dakota primary by a landslide margin. The official primary statistics were as follows:[15]

Reagan	72,861
Bush	3,691

While Carter was elected president in 1976, many Democrats were skeptical about the degree of his commitment to the activist tradition of the New Deal, Fair Deal, and New Frontier. During his second and third years in the White House Carter was blamed for the lingering energy crisis, constantly rising inflation, and an apparent inability to communicate with Congress. After hesitating for several months in the spring and summer of 1979, Senator Edward M. Kennedy of Massachusetts decided to challenge Carter for renomination. Kennedy, the last surviving male member of the nation's most illustrious political family, charged that Carter had consciously betrayed the longstanding liberal heritage of the Democratic Party. While Kennedy mounted a vigorous campaign against Carter, the President's statute was temporarily bolstered as the American people rallied behind his leadership during the early months of the Iranian hostage crisis. Kennedy's successes against Carter were limited to primary victories in the densely populated northeastern states of Massachusetts, Connecticut, New York, and Pennsylvania. By the week prior to the June 3 South Dakota primary Carter led Kennedy in convention delegates by a count of 1,386–756. Kennedy's only hope of overtaking Carter was to humiliate the President in all of the final eight primaries scheduled for June 3. In South Dakota Kennedy, carrying thirty-nine of the state's sixty-seven counties, outpolled Carter 33,418–31,231. While Kennedy also won June 3 primaries in Rhode Island, New Jersey, New Mexico, and California, he lacked sufficient delegates to block Carter's renomination. The South Dakota primary result, while embarrassing to Carter, had no bearing on the outcome of the fierce battle within the Democratic Party.[16]

In South Dakota's eight presidential primaries between 1952 and 1980 an average of 88,623 Republicans and 42,731 Democrats were to participate in the balloting. While these figures suggested voter apathy, it must be remembered that four of the eight Republican primaries and five of the eight Democratic primaries were uncontested. The maximum degree of vote involvement for the Republican Party occurred in the 1952 contest between Senator Taft and General Eisenhower, while the largest turnout for the Democrats was tabulated in the race between President Carter and Senator Kennedy in 1980. Among Republicans Ronald Reagan in 1980 received the greatest number of primary votes, while in the same year Edward M. Kennedy attracted a record Democratic vote for a victorious candidate for his party.

There was three principal reasons why the South Dakota primary had only limited influence in the preconvention presidential campaigns of the two major parties. They were as follows: (1) The comparatively small numbers of delegates allotted to South Dakota Republicans and Democrats; (2) The fact that the primary was always held at such a late date in the spring season; (3) The competition provided by such other more populous states as California, Ohio, and New Jersey.

In 1952 South Dakota accounted for only 14 of the 1,206 delegates (1.2%) to the Republican National Convention and a mere 8 of the 1,230 delegates (0.7%) to the Democratic National Convention. As South Dakota's population failed to grow with each passing decade, its political influence decreased in a proportionate manner. In 1980 South Dakota furnished 22 of the 1,994 Republican delegates (1.1%) and 19 of the 3,381 Democratic delegates (0.6%). Between 1952 and 1980 presidential candidates of the two major parties concentrated on winning primaries in such large states as Pennsylvania and California. Pennsylvania had 70 Republican delegates in 1952 and 83 Republican delegates in 1980, while the number of G.O.P. delegates from California increased from 70 to 168. For the Democratic Party the delegate totals were as follows:

	1952	1980
Pennsylvania	70	185
California	88	306

Between 1952 and 1980 the number of South Dakotans voting in presidential primaries dropped from 163,127 to 151,608. During the same period the nationwide total of citizens participating in such primaries increased from 12,729,421 to 31,438,276.

[12] Congressional Quarterly, May 27, 1972, pp. 1204–1205; June 10, 1972, p. 1314; Times, New York, N.Y., April 28, 1972, pp. 1, 72; May 16, 1972, pp. 1, 34, 35; Post, Washington, D.C., April 28, 1972, pp. 1, 2; May 16, 1972, pp. 1, 10; Gordon L. Weil, "The Long Shot—George McGovern Runs for President" (New York: W.W. Norton and Company, 1972), pp. 291–296; Stephen E. Ambrose, "Nixon: The Triumph of a Politician" (New York: Simon and Schuster, 1989), pp. 497–554; Herbert S. Parmet, "The Democrats; The Years After FDR" (New York: Macmillan Publishing Company, Inc., 1986), pp. 269–302.

[13] Lou Cannon, "Reagan" (New York: G. P. Putnam's Sons, 1982), pp. 210–226; Gerald R. Ford, "A Time to Heal; The Autobiography of Gerald R. Ford" (New York: Harper and Row, Publishers, 1979), pp. 333–388; "America Votes, 1976" (Washington: Congressional Quarterly, Inc., 1977), pp. 22–26; Post, Washington, D.C., June 2, 1976, pp. 1, 4; June 3, 1976, p. 16.

[14] Betty Glad, "Jimmy Carter; In Search of the Great White House" (New York: W. W. Norton and Company, 1980), pp. 229–259; Congressional Quarterly, May 15, 1976, pp. 1213–1214; June 5, 1976, pp. 1423–1424; Times, New York, N.Y., June 1, 1976, pp. 1, 42; June 2, 1976, pp. 1, 20; June 3, 1976, pp. 1, 29.

[15] "America Votes, 1980" (Washington: Congressional Quarterly, Inc., 1981), pp. 33–39; Congressional Quarterly, May 31, 1980, p. 1647; Post, Washington, D.C., May 27, 1980, pp. 1, 5; Times, New York, N.Y., May 27, 1980, pp. 1, B–9.

[16] William E. Leuchtenberg, "In the Shadow of FDR: From Harry Truman to Ronald Reagan" (Ithaca: Cornell University Press, 1983), pp. 202–206; Elizabeth Drew, "Portrait of an Election; The 1980 Presidential Campaign" (New York: Simon and Schuster, 1981), pp. 158–187; Congressional Quarterly, May 24, 1980, p. 1423; June 7, 1980, pp. 1949–1550; Times, New York, N.Y. June 3, 1980, pp. 1, B–10; June 4, 1980, pp. 1, 34; Post Washington, D.C., June 3, 1980, pp. 1, 4; June 4, 1980, pp. 1, 16, 17.

Unlike such early primary states as New Hampshire and Wisconsin, South Dakota's presidential primary has often been held either after candidates on the ballot have withdrawn or after the respective nominations have been settled. For the Democrats Senator Humphrey in 1960 and President Johnson in 1968 had withdrawn before the South Dakota primary. For the Republicans George Bush in 1980 had terminated his candidacy prior to the South Dakota primary. In 1956 Adlai E. Stevenson, who refrained from entering the South Dakota primary, was certain to be the Democratic nominee, while four years later John F. Kennedy, who also had not been on the South Dakota primary ballot, was within only a few votes of securing his party's nomination. Ronald Reagan had eliminated all his Republican competitors by the date of the 1980 primary. Only in 1952 and 1976 was the Republican nomination really in doubt by the date of the primary and only in 1968 and 1980 was the identity of the Democratic nominee yet to be determined. Interestingly, South Dakota favored Senator Taft in 1952 and former Governor Reagan in 1976, neither of whom prevailed at the Republican National Convention. Moreover, South Dakota chose Senator Robert F. Kennedy in 1968 and Senator Edward M. Kennedy in 1980, while the Democratic National Convention nominated other candidates.

If South Dakota had been the scene of the nation's only presidential primary in early June, it might have been more meaningful. Unfortunately, South Dakota was competing with populous California in seven of the eight presidential primary contests between 1952 and 1980. Since California was also the home states of such well-known presidential candidates as Richard M. Nixon, Ronald Reagan, and Edmund G. Brown, it attracted disproportionate attention in the media. Furthermore, South Dakota was in direct competition with New Jersey in 1968, 1972, and 1980 and with Ohio in 1980. In 1956 Governor Stevenson, while ignoring South Dakota, gained 68 delegates in the California primary. In 1964 Senator Goldwater lost the South Dakota primary to a slate of unpledged delegates, but won 86 delegates in California. Finally, in 1980 President Carter was defeated in South Dakota, but secured 89 delegates in Ohio. It was quite evident that the South Dakota primary had no harmful effects on Stevenson in 1956, Goldwater in 1964, or Carter in 1980. These candidates instead scored solid primary victories in states containing large blocs of delegates. Indeed by 1980 South Dakota accounted for only 22 of the 418 Republican delegates chosen in primaries on the first Tuesday in June and only 18 of the 696 Democratic delegates.●

REACHING OUT TO ORPHANS

● Mr. SIMON. Mr. President, I would like to recognize the efforts of the Orphan Foundation of America in initiating a program called Congratulate the Graduate. Last May in Illinois, 274 high school seniors prepared to graduate without a family to celebrate with them and recognize their achievement.

The Orphan Foundation of America is an organization dedicated to easing a young person's transition from the social service system to adulthood and independence.

Eileen McCaffrey Camara, the executive director, and Debra Bridgeforth have created a program in which new high school graduates, all orphans, will receive cards from other young men and women. The cards that I have read are warm and supportive, and the writers sincerely congratulate their fellow students on their accomplishment.

In turn, I would like to recognize and congratulate the Orphan Foundation of America for its service.●

TRIBUTE TO DR. ROBERT JENSEN

● Mr. SEYMOUR. Mr. President, I rise today in honor of the chancellor of the Rancho Santiago Community College District, Dr. Robert Jensen. Today in Orange County, a special community reception is being held for Dr. Jensen to congratulate him for his service to education on the occasion of his retirement.

Dr. Jensen and I have worked together on numerous education projects over the years. His dedication to California's community college system has been much appreciated throughout the State, and particularly in Orange County, where he has served the past 6 years.

Dr. Jensen has been chancellor of the Rancho Santiago Community College District since 1984, having come to Orange County from Sacramento, where he was president of American River College.

During his tenure as chancellor, Rancho Santiago College has grown each year in enrollment. In the 1990–91 academic year, it served more than 53,000 Orange County students. The college today also serves the educational needs of the country's diverse population with 40 percent of its student body comprised of Hispanic and Asian-Americans.

Through Dr. Jensen's leadership, Rancho Santiago College has strengthened its reputation as a college providing quality educational opportunities and as a college that cares about serving students. Some of the achievements of the college during Dr. Jensen's tenure include:

Development of the Orange campus, including the master planning of the new campus and the construction of four major buildings;

Expansion of the Centennial Education Center to provide more clasrooms for the college's continuing education program;

Opening of the RSC Transfer Center to assist and encourage students to transfer to 4-year universities and opening of the Tutorial Learning Center to help students succeed at RSC;

Development of several new programs to encourage high school and community college students from low-income families to enroll in college and stay in school, including Career Beginnings, Higher Ground, and STAR;

Development of an honors program at RSC and annual recognition programs for Chicano, Latino, and Asian scholars;

Opening of the Small Business Assistance and Training Center, the first of its kind in an Orange County community college;

Initiation of the 75th anniversary endowment fundraising campaign, which will result in RSC having its first major endowment fund to serve students through scholarships and special projects;

Winning the 1990 and 1991 State men's basketball championships.

Perhaps the most distinguishing feature of Dr. Jensen's tenure at Rancho Santiago College was his concern for students and for ensuring that the college provide services and classroom instruction that made it possible for all students, regardless of their background, to reach their educational and personal goals and to make a positive contribution to their community.

As Thomas Jefferson said: "Education, the ploughing and planting of human thought, produces the universal food of human progress." The fruits of Dr. Robert Jensen's labors have been bountiful.

I ask the Senate to join me in extending our congratulations and best wishes to Dr. Jensen.●

SILVIO CONTE NATIONAL FISH AND WILDLIFE REFUGE ACT, S. 821

● Mr. D'AMATO. Mr. President, I rise today as a cosponsor of the Silvio Conte National Fish and Wildlife Refuge Act, S. 821. This legislation is designed for the preservation of the Connecticut River watershed, and as a dedication to our friend and colleague, Congressman Silvio Conte.

Shortly before his death last year, Congressman Silvio Conte, a man who dedicated much of his efforts toward the restoration of the Connecticut River and its watershed, introduced the Connecticut River National Fish and Wildlife Refuge bill. Mr. Conte's goal was to prevent the impending, spoilation, ecological downgrading, and subsequent removal from public access of the Connecticut River.

The Connecticut River Valley is inhabited by 2 million people and traverses four of the six New England States. The river links the States by commerce, transportation, and energy supply, and empties into the Long Island Sound providing the sound with 70 to 80 percent of its incoming fresh water. The region where the Connecticut River enters the Long Island Sound is also of great significance to the survival of fish and wildlife.

S. 821 directs the U.S. Fish and Wildlife Service to define, designate, and map refuge boundaries within the Connecticut River Valley over the next 3 years in order to save it from potential ruin. I concur with Mr. Conte's belief that it is also critical to the survival of

the region that there be a constituency committed to its health. By providing the public with easy access to the river and establishing public educational systems, this goal can be achieved. In addition, it is wholly appropriate to dedicate this act to Mr. Conte, a man who strived to conserve our country's natural resources.●

IN RECOGNITION OF DONALD F. KARCHER

● Mr. SEYMOUR. Mr. President, on behalf of the Orange County Red Cross and the many, many individuals who have benefited from the services Red Cross provides, I stand today in recognition of Donald F. Karcher, the outgoing chairman of the Orange County chapter's board of directors.

Don Karcher has been a member of the Board since 1978 and has served as chairman from 1989 to 1991. Some of the highlights of his tenure as chairman follow:

The Orange County Chapter Disaster Emergency Services has responded to 398 disasters affecting 303 families and 11,974 individuals;

The chapter processed 17,022 disaster welfare inquiries following the Loma Prieta earthquake;

The Orange County chapter sent and received more than 1,600 emergency communication messages during Operation Desert Storm from family members of military personnel serving in the gulf.

These and numerous other accomplishments can be credited to Don Karcher's years of leadership to the American Red Cross' Orange County chapter.

Albert Schweitzer said, "I have always held firm to the thought that each one of us can do a little to bring some portion of misery to an end." Through his work with the Red Cross, Don Karcher has done a lot to ease the misery caused by disasters, through the Red Cross' well-known efforts to promote disaster preparedness and effectively respond when disasters do occur.

I ask the Senate to join me in thanking Don for his tireless devotion to his fellow man and in upholding him as an example for all Americans to emulate in volunteering freely in service to others.

At this point, in honor of his outstanding service to his community, I would ask that Mr. Karcher's biography be printed in the RECORD.

The biography follows:

DONALD KARCHER PROFILE

Donald Karchar is President and Chief Operating Officer of Carl Karcher Enterprises which, along with its franchisees and licensees, operates more than 580 Carl's Jr. Restaurants in California, Nevada, Arizona and Oregon, Mexico and Japan.

Karcher previously was Executive Vice President, Senior Vice President, and prior to that served as Vice President of Operations for ten years. He joined the company in 1954 when it consisted of five hot dog stands in Los Angeles and a drive-in restaurant in Anaheim.

In addition to his executive responsibilities, Karcher devotes time to a wide variety of civic activities. He is a member of the Board of Directors of Anaheim Visitor and Convention Bureau; National Restaurant Association; California Restaurant Association; Cypress College Foundation; Loyola Marymount University; Orange County Chapter, American Red Cross; Anaheim Stadium, Inc.; United Way; also, Executive Advisory Council, Cal Poly Center for Hospitality Management; University Advisory Board at California State University, Fullerton; Presidential Advisory Council, Chapman College; and Chapman General Hospital Board of Governors.

In 1980 he was honored with a Silver Circle Award by the Foodservice Association of Marketing Executives. The Orange County Chapter, American Red Cross named Karcher the first recipient in 1984 of the Orange County Spirit Award. Cypress College honored him at its Tenth Annual Americana Man-of-the-Year Dinner in 1985. The First Friday Friars organization in Orange County voted him 1989 Man-of-the-Year. The Orange County Chapter National Conference of Christians and Jews awarded Karcher its 1990 Humanitarian Award.

Karcher and his wife, Dorothy, live in Anaheim; they are the parents of four children.

Mr. BYRD. Mr. President, I take the floor at this time to express my appreciation to the distinguished Senator from New York [Mr. MOYNIHAN] and the distinguished Senator from Idaho [Mr. SYMMS] for the preeminently excellent leadership they both displayed during the debate on the highway bill. I found them to be a great team. They were both very considerate of all Senators. I felt they were especially considerate of me, and they were most helpful to me in hammering out the amendment which was adopted by the Senate and which I had offered earlier. I found their advice to be always good. I found them to be stalwarts in their support of the amendment, never wavering in any manner.

And so I am grateful to Senator MOYNIHAN and Senator SYMMS, not only for their help to me and their support of my amendment, but also for the wisdom which they have demonstrated, the leadership they have contributed, and for the dedication to the Nation's interests that they have shown.

The Senator from New York is one at whose patience and equanimity I marveled. He was always in good humor. We all love him for his ready wit. His heart is "as stout as the Irish oak and as pure as the lakes of Killarney."

PAT MOYNIHAN is a very special person in the Senate. He has provided inspiration to me in many ways, and I hope to be able to emulate him in his ability to roll with the punches, listen to the concerns of others, take the criticism of some with respect to the work product, and always smile and show himself to be a good workman and a good sport.

I also thank my leader, Senator MITCHELL, for calling the meetings in his office from time to time with respect to my amendment.

I thank Mr. DOLE, the Republican leader. I especially thank Mr. DOLE for not offering the amendment today which we had understood on yesterday would be offered.

Mr. DOLE is a resourceful, intrepid, skillful fighter when it comes to parliamentary tactics. He is always in good humor, known very much all over the country for his ready wit, and an individual who is so very likable and, as far as I am concerned, my favorite Republican.

I thank all other Senators who have worked hard on this bill, those who won on their amendments and those who lost on their amendments, those who supported me on the amendment I had offered and those who opposed it. Together, we have passed a good bill.●

HAPPY BIRTHDAY TO SENATOR BURDICK

Mr. BYRD. Mr. President, I am glad that the majority leader called attention to the birthday of our venerable colleague from North Dakota, Mr. BURDICK. I served in the House of Representatives a good many years ago with QUENTIN BURDICK'S father. His father was a Republican, a large man, one who often voted with the Democrats, and who was often able to cause the House, with its 435 Members, to laugh.

QUENTIN BURDICK is a valuable member of the Appropriations Committee, which I chair. He is always punctual in his attendance, and he always votes.

I congratulate QUENTIN BURDICK on his birthday, and I shall close my remarks with a bit of verse which I did not compose but which I think all of my colleagues would want to join me in saying:

Count your garden by the flowers,
Never by the leaves that fall;
Count your days by the sunny hours,
Not remembering clouds at all.

Count your nights by stars, not shadows;
Count your life by smiles, not tears;
And on this beautiful June afternoon,
Count your age by friends, not years.

Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER (Mr. AKAKA). The absence of a quorum is suggested by the President pro tempore. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. MITCHELL. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

CONGRATULATIONS TO THE MANAGERS OF THE BILL

Mr. MITCHELL. Mr. President, I want to add just a brief word of congratulations to the managers of the bill, the distinguished Senator from New York and the distinguished Senator from Idaho, for their diligent efforts to bring about final passage of the Surface Transportation Act.

It was a difficult process. It covered a period of nearly 2 weeks. There were many contentious issues, and a long road ahead on this bill because the House has yet to act, and there remains, of course, the conference. But at least we have taken one significant step forward in passing this bill.

And a great deal of the credit deservedly goes to Senator MOYNIHAN and Senator SYMMS. They conceived, wrote, and shepherded this bill through to final passage.

Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. DOLE. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDER OF PROCEDURE

Mr. DOLE. Mr. President, I understand the distinguished Senator from California will be doing what we call wrap-up. I wanted to inform him that I have looked at each of the matters to be processed, and they have all been cleared on this side.

I thank the Senator from California.

Mr. CRANSTON. I thank the distinguished Senator from Kansas, the Republican leader, and I wish him well tonight.

EXECUTIVE SESSION

EXECUTIVE CALENDAR

Mr. CRANSTON. Mr. President, I ask unanimous consent that the Senate proceed to executive session to consider the following nominees, reported today by the Committee on Armed Services:

Donald J. Yockey, to be Under Secretary of Defense for Acquisition;

Gen. Gordon R. Sullivan, to be Chief of Staff of the Army;

Maj. Gen. Horace G. Taylor, to be promoted to lieutenant general;

Gen. Carl E. Vuono, to be placed on the retired list as general;

Maj. Gen. J.H. Binford Peay III, to be lieutenant general.

I further ask unanimous consent that the nominees be considered and confirmed en bloc; that any statements appear as if read in the CONGRESSIONAL RECORD; that the motions to reconsider be tabled; that the President be immediately notified of the Senate's action, and that the Senate return to legislative session.

The nominations, considered and confirmed en bloc, are as follows:

Donald J. Yockey to be Under Secretary of Defense for Acquisition;

Gen. Gordon R. Sullivan to be Chief of Staff of the Army;

Maj. Gen. Horace G. Taylor to be promoted to lieutenant general;

Gen. Carl E. Vuono, to be placed on the retired list as general, and

Maj. Gen. J.H. Binford Peay III, to be lieutenant general.

STATEMENT ON NOMINATION OF GEN. GORDON R. SULLIVAN

Mr. DOLE. Mr. President, the President's nomination of Gen. Gordon R. Sullivan for Chief of Staff of the U.S. Army, having been reported out without a single dissenting vote by the Committee on Armed Services, now comes before the full Senate for consideration. I strongly urge his immediate and unanimous confirmation.

General Sullivan is no stranger to this body nor to me. His over 30 years of service to our Nation are marked by excellence and superior judgment. His decorations include the Distinguished Service Medal, the Defense Superior Service Medal, the Legion of Merit, the Bronze Star, and Purple Heart. These are just a few testimonies to his dedicated service.

We are confronted with rapid change and uncertainty. General Sullivan brings the right combination of hands-on experience and thoughtful perspective that are vital to meeting the challenges of these volatile times.

With 11 years of service in Europe and 4 years in the Asian theater, General Sullivan understands the fundamental changes that are taking place in the international environment.

He is personally responsible for developing the outstanding leadership, joint operational doctrine, and tactical proficiency that were the key to our success in the Persian Gulf.

As the Vice Chief of Staff of the Army during Desert Shield and Desert Storm, General Sullivan maintained close personal contact with the field commanders, ensuring they had what was needed to do the job. His support and guidance were critical elements to that victory.

It is command that truly distinguishes great leaders. And General Sullivan's record as commander of the 1st Brigade, 3d Armored Division, commander of the 4th Battalion, 73d Armored, 1st Infantry Division, and commanding general of the 1st Infantry Division speak for themselves.

But most of all, Gen. Gordon Russell Sullivan is a soldier's soldier. He has continuously worked to improve the quality of life of our Army personnel and their families.

The challenges ahead are, indeed, difficult and complex: A dynamic international environment, a shrinking defense budget, and perhaps new and emerging threats in the world. But in my view, Gen. Gordon Sullivan is exactly the right man at exactly the right time to lead the Army into the future.

I urge my colleagues to join me in supporting the President's nomination of Gen. Gordon Russell Sullivan as the next Chief of Staff of the U.S. Army.

LEGISLATIVE SESSION

The PRESIDING OFFICER. The Senate will now return to legislative session.

ORDER FOR SENATE ACTION ON HOUSE SURFACE TRANSPORTATION MEASURE

Mr. CRANSTON. Mr. President, I ask unanimous consent that upon the receipt from the House of a surface transportation measure not containing a revenue component provision, without intervening action or debate, all after the enacting clause of said House measure be stricken; the text of S. 1204, as passed by the Senate, be inserted in lieu thereof; and the act be deemed read three times, passed, and the motion to reconsider be laid upon the table; and that the Senate at that point be deemed to have insisted upon its amendment, requested a conference with the House, and that the Chair be authorized to appoint conferees on the part of the Senate.

I further ask unanimous consent that should the House return S. 1204, the Surface Transportation Efficiency Act of 1991, with any amendment, the Senate, without any intervening action or debate, disagree to the amendment or amendments of the House, and either agree to a conference or request a conference, as may be appropriate, on the disagreeing votes of the two Houses, and that the Chair be authorized to appoint conferees on the part of the Senate.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDER TO PRINT S. 1204

Mr. CRANSTON. Mr. President, I ask unanimous consent that S. 1204, as passed, be printed.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDERS FOR TOMORROW

Mr. CRANSTON. Mr. President, I ask unanimous consent that when the Senate completes its business today, it stand in recess until 10 a.m., Thursday,

June 20; that following the prayer, the Journal of the proceedings be deemed approved to date, and that the time for the two leaders be reserved for their use later in the day; that there then be a period for morning business, not to extend beyond 10:30 a.m., with Senators permitted to speak therein; that during the period for morning business, Senator BINGAMAN be recognized to speak for up to 30 minutes; further that at 10:30 a.m., the Senate proceed to the consideration of Calendar No. 110, S. 1241, the crime bill; that once the bill is before the Senate on Thursday, there be debate only from 10:30 to 1 p.m.

The PRESIDING OFFICER. Without objection, it is so ordered.

RECESS UNTIL TOMORROW AT 10 A.M.

Mr. CRANSTON. Mr. President, if there is no further business to come before the Senate today, I now ask unanimous consent that the Senate stand in recess, as under the previous order, until 10 a.m., Thursday, June 20.

There being no objection, the Senate, at 8:12 p.m., recessed until Thursday, June 20, 1991, at 10 a.m.

NOMINATIONS

Executive nominations received by the Senate June 19, 1991:

THE JUDICIARY

EUGENE E. SILER, JR., OF KENTUCKY, TO BE U.S. CIRCUIT JUDGE FOR THE SIXTH CIRCUIT VICE HARRY W. WELLFORD, RETIRED.

JORGE A. SOLIS, OF TEXAS, TO BE U.S. DISTRICT JUDGE FOR THE NORTHERN DISTRICT OF TEXAS VICE ROBERT W. PORTER, RETIRED.

DEPARTMENT OF JUSTICE

KAREN K. CALDWELL, OF KENTUCKY, TO BE U.S. ATTORNEY FOR THE EASTERN DISTRICT OF KENTUCKY FOR THE TERM OF 4 YEARS VICE LOUIS G. DEFALAISE, TERM EXPIRED.

JOHN F. HOEHNER, OF INDIANA, TO BE U.S. ATTORNEY FOR THE NORTHERN DISTRICT OF INDIANA FOR THE TERM OF 4 YEARS VICE JAMES G. RICHMOND, RESIGNED.

IN THE ARMY

THE FOLLOWING NAMED OFFICER TO BE PLACED ON THE RETIRED LIST IN THE GRADE INDICATED UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 1370:

To be general

GEN. JOHN W. FOSS [redacted] U.S. ARMY.

THE FOLLOWING NAMED OFFICER TO BE PLACED ON THE RETIRED LIST IN THE GRADE INDICATED UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 1370:

To be lieutenant general

LT. GEN. DONALD W. JONES [redacted] U.S. ARMY.

THE FOLLOWING-NAMED OFFICER FOR APPOINTMENT IN THE REGULAR ARMY OF THE UNITED STATES TO THE GRADE INDICATED, UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTIONS 611(A) AND 624:

To be permanent major general

BRIG. GEN. SIDNEY SCACHNOW [redacted] U.S. ARMY.

THE FOLLOWING NAMED OFFICER FOR APPOINTMENT TO THE GRADE OF BRIGADIER GENERAL WHILE ASSIGNED TO A POSITION OF IMPORTANCE AND RESPONSIBILITY UNDER TITLE 10, UNITED STATES CODE, SECTION 628:

To be brigadier general

COL. JAMES J. STEELE [redacted] U.S. ARMY.

IN THE MARINE CORPS

THE FOLLOWING NAMED OFFICER, UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 601, FOR ASSIGNMENT TO A POSITION OF IMPORTANCE AND RESPONSIBILITY AS FOLLOWS:

To be general

LT. GEN. JOSEPH P. HOAR [redacted] USMC.

THE FOLLOWING NAMED OFFICER TO BE PLACED ON THE RETIRED LIST UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 1370:

To be lieutenant general

LT. GEN. ERNEST T. COOK, JR. [redacted] USMC.

THE FOLLOWING NAMED OFFICER, UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 601, FOR ASSIGNMENT TO A POSITION OF IMPORTANCE AND RESPONSIBILITY AS FOLLOWS:

To be lieutenant general

MAJ. GEN. ROBERT B. JOHNSTON [redacted] USMC.

THE FOLLOWING NAMED OFFICER, UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 601, FOR ASSIGNMENT TO A POSITION OF IMPORTANCE AND RESPONSIBILITY AS FOLLOWS:

To be lieutenant general

MAJ. GEN. WILLIAM M. KEYS [redacted] USMC.

THE FOLLOWING NAMED OFFICER, UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 601, FOR ASSIGNMENT TO A POSITION OF IMPORTANCE AND RESPONSIBILITY AS FOLLOWS:

To be lieutenant general

MAJ. GEN. ROYAL N. MOORE, JR., 545-40-0929, USMC.

CONFIRMATIONS

Executive nominations confirmed by the Senate June 19, 1991:

DEPARTMENT OF DEFENSE

DONALD JAY YOCKEY, OF CALIFORNIA, TO BE UNDER SECRETARY OF DEFENSE FOR ACQUISITION.

THE ABOVE NOMINATION WAS APPROVED SUBJECT TO THE NOMINEE'S COMMITMENT TO RESPOND TO REQUESTS TO APPEAR AND TESTIFY BEFORE ANY DULY CONSTITUTED COMMITTEE OF THE SENATE.

IN THE ARMY

THE FOLLOWING NAMED OFFICER TO BE PLACED ON THE RETIRED LIST IN THE GRADE INDICATED UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 1370:

To be general

GEN. CARL E. VUONO [redacted] U.S. ARMY.

THE FOLLOWING NAMED OFFICER FOR APPOINTMENT AS CHIEF OF STAFF OF THE ARMY AND REAPPOINTMENT TO THE GRADE OF GENERAL WHILE SERVING IN THAT POSITION UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTIONS 601 AND 3033:

To be chief of staff of the Army

To be general

GEN. GORDON R. SULLIVAN, [redacted] U.S. ARMY.

THE FOLLOWING NAMED OFFICER FOR APPOINTMENT TO THE GRADE OF LIEUTENANT GENERAL WHILE ASSIGNED TO A POSITION OF IMPORTANCE AND RESPONSIBILITY UNDER TITLE 10, UNITED STATES CODE, SECTION 610(A):

To be lieutenant general

MAJ. GEN. HORACE G. TAYLOR, [redacted] U.S. ARMY.

THE FOLLOWING NAMED OFFICER FOR APPOINTMENT TO THE GRADE OF LIEUTENANT GENERAL WHILE ASSIGNED TO A POSITION OF IMPORTANCE AND RESPONSIBILITY BY THE PRESIDENT UNDER THE PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 601(A), AND TO BE APPOINTED AS SENIOR ARMY MEMBER OF THE MILITARY STAFF COMMITTEE OF THE UNITED NATIONS UNDER PROVISIONS OF TITLE 10, UNITED STATES CODE, SECTION 711:

To be lieutenant general

To be senior Army member of the Military Staff Committee of the United Nations

MAJ. GEN. J.H. BINFORD PEAY, III [redacted] U.S. ARMY.