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AN INDUSTRY VIEW OF THE SATELLITE EXPORT LICENSING PROCESS

HEARING

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL SECURITY, PROLIFERATION, AND FEDERAL SERVICES

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

ONE HUNDRED FIFTH CONGRESS

SECOND SESSION

JULY 29, 1998

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WEDNESDAY, JULY 29, 1998

U.S. SENATE,
SUBCOMMITTEE ON INTERNATIONAL SECURITY,
PROLIFERATION, AND FEDERAL SERVICES,
OF THE COMMITTEE ON GOVERNMENTAL AFFAIRS
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:02 p.m. in room SD–342, Senate Dirksen Building, Hon. Thad Cochran, Chairman of the Subcommittee, presiding.

Present: Senators Cochran, Domenici, Specter, Stevens, Levin, Durbin, Cleland, and Thompson [ex officio].

OPENING STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. The Subcommittee will please come to order.

I would like to welcome everyone to today's hearing of our Governmental Affairs Subcommittee on International Security, Proliferation, and Federal Services. Our subject today is "An Industry View of the Satellite Export Licensing Process."

This hearing is a continuation of our Subcommittee's review of the export control policies of this administration to determine if they were designed and administered to protect our national security interests as well as to promote exports.

We have recently concentrated specifically on the commercial satellite industry because of the proliferation concerns that surround the transfer of militarily useful missile and satellite technology that can occur when our U.S.-manufactured satellites are exported to or launched by other countries.

We have learned from witnesses that, in the process of launching a satellite, technology can be transferred to other countries, such as China, that could be useful in improving their space launch vehicles and ballistic missiles. This is particularly troubling when these other countries have sold missiles or missile components to hostile, rogue nations for delivering weapons of mass destruction.

The experience and perspectives of the U.S. business sector must be taken into account as we try to understand all sides of this issue. Therefore, the viewpoint of current and former executives of the Hughes Electronics Corporation, one of the leaders of the aerospace industry, will be heard today.

We're pleased to have before the Subcommittee two distinguished officials who have served in the highest offices of Hughes Electronics Corporation, C. Michael Armstrong and Steven D. Dorfman.

Mr. Armstrong is chairman and chief executive officer of AT&T Corporation and chairman of the President's Export Council, and he is the immediate past chairman and chief executive officer of Hughes Electronics Corporation. Mr. Dorfman is vice chairman of Hughes Electronics Corporation. He has been with the company since 1957.

Gentlemen, we appreciate very much your attendance and your assistance to our Subcommittee. We have copies of your prepared statements, which we thank you for and we will include in the record in their entirety at this point. We invite you to make whatever comments you would like to make, summarizing your statement or reading it, as you like.

Mr. Armstrong, you may proceed.

STATEMENT OF C. MICHAEL ARMSTRONG,[1] CHAIRMAN AND CEO, AT&T, AND CHAIRMAN, PRESIDENT'S EXPORT COUNCIL

Mr. ARMSTRONG. Thank you, Chairman Cochran, and Senator Stevens.

I appreciate the opportunity to participate in this hearing on industry's view of the commercial satellite export process.

It appears there are currently three issues being examined on the commercial satellite export licensing process. One, what is the right jurisdiction for export licensing of commercial communicating satellites. Two, was the process violated due to the handling of the Loral launch failure analysis report. And three, did campaign contributions influence the process.

Mr. Chairman, let me state first, foremost and unequivocally that as a recent past chairman of Hughes, I know that its leadership, its people, its values and its technology are firmly committed to the national security of the United States of America. So much of this company's life, history and future are dedicated to that purpose, that Hughes would never endanger the security of this country.

In response to the last question on campaign contributions, as I recall, my only Presidential contributions were $1,000 to George Bush in 1991, and, though frankly, I didn't recall it until preparing for this hearing, $1,000 as well to Bill Clinton in 1995. And Hughes, while I was chairman, contributed only PAC money, split about 50–50, between the political parties.

Regarding the handling of the Loral failure analysis, I have no personal knowledge of how the Loral failure report was handled. I was aware that two Hughes scientists were on the Loral team but have no personal knowledge of what function they performed.

As to the correct jurisdiction for export licensing of commercial communicating satellites, my response is that it's in the Commerce Department and that's where it should be. From August 1993 to 1996, I worked to convince many in Washington to transfer commercial communicating satellites from the munitions list, where they are under State Department jurisdiction, to the commerce control list which is administered by the Commerce Department.

There's a fundamental reason for this. I felt strongly, and still feel, that commercial communicating satellites are not munitions,

[1] The prepared statement of Mr. Armstrong appears in the Appendix on page 47.

and should not be treated by the government as if they are. Doing so has in the past only hurt American companies and helped our foreign competitors. And in the end, after a long and careful review, the U.S. Government ultimately agreed. May I explain why I believe our government made the right decision.

First, all satellites are not the same. Some satellites can perform tasks that should not be considered for export. Hughes and others build these only for United States national security interests.

However, a commercial communicating satellite performs no tasks that are a threat to our national security interests. A commercial communicating satellite is the equivalent of a telephone wire or a television cable. The satellite only enables video, voice and data that transmits up to reflectors in the sky and down to receivers on the ground. It's like a big mirror that reflects communications.

It competes with wires and cables and cellular. In fact, commercial communications satellites carry television, fax, e-mail and telephony that today are doing so much to open societies and bring people around the world closer together.

For example, back in 1972 when President Nixon went to China, Hughes deployed its satellite resources into China to broadcast to the world this historic American step to begin the opening of China. It was a big step in history, not only because President Nixon was there, but because Hughes and its satellites enabled us all to be there.

However, besides being convinced that a commercial communicating satellite is a commercial product and is not a munition, a little history may explain why I worked for consideration to move jurisdiction to the Commerce Department. When I joined Hughes as chairman in 1992, America had won the cold war. The Defense budget was being cut in half. And this proud defense firm had to lay off tens of thousands of people, people whose only reason for their layoff slip was that they had worked hard and successfully to our victory.

People were devastated. Los Angeles was suffering economically and the company was in serious decline. We had to change and change fast. Change from mostly defense to commercial, change from primarily domestic to global, change from being technology-driven to market-driven, and change from mainly government satellites to also commercial satellites. And I'm proud to say, change we did.

As borders around the world came down, as societies opened, as countries sought to participate in the global economic order, they needed a communications infrastructure to participate commercially. Commercial communicating satellites are essential in doing that job.

Our commercial satellite backlog began to grow as we invested to expand our commercial satellite products and modernize our factory. Then in August, 1993, we were notified the State Department had implemented category 2 MTCR sanctions against China. I learned that this meant we could not export commercial satellites to China for launch or for use.

As a result, two of our customers in Australia and Hong Kong who had selected China launches could not launch. In addition, the

two satellites we were building for China's banking system, worth approximately $100 million, were canceled and given to our competitor, DASA, in Germany.

This was followed by China canceling a memorandum of understanding that could potentially have totaled over a billion dollars of satellite work. They also gave that to DASA. China simply replaced American-built satellites with German-built satellites. China was not hurt, but America was.

Billions of dollars lost, thousands of jobs affected, and an uncertain future at a very critical time. Of course, I wondered how the American workers and companies building a commercial product got singled out by these sanctions. And I wondered, what was the rationale to internally penalize when trying to influence external errant behavior.

I learned that the State Department judged the commercial communications satellite to be the munitions list items due to embedded technology. I never learned why satellites were singled out, since there are other products with embedded technology. And I never understood why penalizing our country's exports made any sense versus punishing the errant country's export to us.

So with Hughes people being laid off by the thousands, with the company trying to survive the cold war victory, with our sitting in double digit unemployment and slowly climbing back from riots as we worked to rebuild Los Angeles, something had to be done. We needed help from Washington.

About that time, December 4, 1993, President Clinton came to Los Angeles to see and learn about the economic problems of Southern California. I was asked to participate with a group in an economic roundtable with the President. This was a very open and public roundtable, in fact, it was televised on C–SPAN.

When it came my turn to speak on what could be done to help Southern California, I shared the plight of the thousands of workers affected due to the application of sanctions to our commercial satellite products. The President agreed to look into the situation.

However, besides just asking the President, I thought it was necessary to share our situation with Congress and the Federal agencies involved, and to respond to any questions or concerns. So I went to Washington in pursuit of four objectives.

One, to promote an understanding that a commercial communicating satellite was not a munition and did not belong on the munitions list. Two, to request permission to let the Australia and Hong Kong companies launch their satellites. Three, to explain why the satellite embedded technology was secure, protected, guarded and not a national security risk if launched from China. And four, to obtain predictability in the licensing process, to seek support to transfer commercial communicating satellites from State Department munitions list to the Commerce Department's commerce control list.

Before setting up these Washington appointments, I again reviewed the security implemented in our China launches, and the review confirmed that the satellite was boxed, freighted and locked for shipment. That Hughes people accompanied and oversaw all handling and storage, that the satellite, upon arrival at the launch site, was under lock and that we had continual video surveillance

of the satellite. And that the mounting of the satellite on the rocket was under our surveillance, and that there was no opportunity for access, intrusion, or understanding of the embedded technology.

So I came to Washington to share my story. And I met with Dr. Bill Perry, Secretary of Defense; Jim Woolsey, Director of the CIA; Mickey Kantor and Charlene Barshefsky, USTR; Admiral McConnell, NSA; Senator Sam Nunn; Secretary Lloyd Bentsen; Secretary Ron Brown; Sandy Berger, National Security Advisor; Bob Rubin, National Economic Advisor; Peter Tarnoff, Under Secretary of State; Senator John McCain; Speaker Newt Gingrich; Senator Diane Feinstein; Congressman Toby Roth; Congresswoman Jane Harman and many members of the California delegation, as well as numerous others.

During each of these discussions, I would pursue two questions. Would you agree that a commercial communicating satellite is a commercial product, and not a national security risk? And if you are asked to get involved, would you give your support for jurisdiction transfer?

After discussion, no one expressed disagreement with the explanation, and I left believing I had their support. Indeed, 30 members of the California delegation of both parties signed a letter to Secretary Christopher in support of excluding commercial satellites from any list of sanctionable items. Certainly the situation was known, it was openly discussed, and I was encouraged by the support and the lack of opposition from those that I spoke with.

I spoke out publicly. I testified before the Congressional committee which was rewriting the Export Administration Act. And I wrote letters to government officials. In addition, since 1994, I have had the honor of chairing the President's Export Council. The PEC, as it is most often called, is comprised of nearly 50 men and women drawn from business, industry, agriculture and labor as well as from the executive and legislative branches.

By charter, the PEC advises the President and the government on export matters and recommends ways of expanding U.S. exports. Our goal is to find ways to promote American exports, to identify any problems and to recommend solutions. As intended, the PEC has advised the government on a full range of issues regarding the expansion of America's exports, including submitting a report on unilateral sanctions prepared by PECSEA. The PECSEA, a separately chartered subcommittee on export administration, which is chaired by Michael Jordan of Westinghouse, and now of CBS, also addressed the question of commodity jurisdiction with the PEC.

Also, I was on Secretary of State Warren Christopher's advisory council. And I asked the Secretary if he would review the sanctions process, or really a lack of a sanctions process, and he agreed to initiate a review.

The Secretary never told me the outcome of his review. Of course, I learned later that the President, in consultation with his cabinet and advisors, approved the change in jurisdiction to Commerce. And I believe this was the right decision.

But there is a key question. Did it work? Was it worth it to transfer jurisdiction from State to Commerce? The answer is yes. I believe this change in jurisdiction, moving commercial commu-

nicating satellites from the munitions list to the commerce control list sent three messages around the world. One, that the United States would not compromise its nonproliferation principles. MTCR sanctions did not change, and wrong behavior still brings U.S. sanctions.

Two, that the U.S. has not compromised its national security. The process and U.S. agencies are in place to protect it. If the process needs to be tightened, this country, this Congress, the companies involved, can tighten it. There must not be any question that the satellite licensing and failure review processes assure our national security.

And three, that the countries that need commercial communicating satellites to open their society internally and compete in the world economic order externally can now have more confidence in buying U.S. commercial communications products.

Certainly, the results support that the communications market is there and this change has helped U.S. companies participate. U.S. satellite exports are growing, and the prospects for continued U.S. satellite leadership are supported by the industry's commercial growth.

As we're discussing these three important issues, I hope this Subcommittee will keep in mind the underlying reasons U.S. companies have been forced to look overseas for launch capacity. The failure to develop a U.S. launch industry had resulted in an inadequate launch capacity to meet worldwide demand for commercial satellites. The two main launch providers, Lockheed Martin in the United States, and France's Arianne, did not plan to invest to expand capacity. China and Russia have U.S.-imposed launch quotas, and the United States was not interested in investing in additional launch capacity.

Therefore, to expand U.S. launch capability, Hughes initiated and committed hundreds of millions of dollars in future launch contracts, future contracts, so that McDonnell Douglas would develop the new Delta 3, and Boeing the new Sea Launch. As a result of Hughes initiatives, new U.S. launch technology is being developed, a more competitive market is unfolding. U.S. launch supply is going up, and launch lead times are coming down.

It was Hughes that took the risk, that committed the capital, to improve this country's launch technology capability. But in my opinion, the need for further investment in U.S. rocket systems and alternative launch technologies is still warranted.

In summary, Mr. Chairman, I submit Hughes would not and did not violate any national security interests or process. The commercial communicating satellite is not a munition and does not belong on a munitions list. As a commercial product and with embedded technology fully protected, commercial communicating satellites belong on the commerce control list administered by the Commerce Department.

If the licensing or failure review process needs to be tightened, government and industry should tighten them. And if this country is concerned about its rocket and launch technology, then we must invest in it, just as Hughes did.

I hope that this provides the Subcommittee with an understanding of the problems we faced and my efforts to seek, by peti-

tioning the decision makers in Washington, an appropriate solution. Thank you for listening to me.

Senator COCHRAN. Thank you for your statement, Mr. Armstrong.

Before proceeding to hear from Mr. Dorfman, I'm going to yield to the distinguished Senator from Michigan, the Ranking Member, for any opening statement he might have to make, and then to other Senators who are here as well.

Senator Levin.

OPENING STATEMENT OF SENATOR LEVIN

Senator LEVIN. Thank you, Mr. Chairman. And thank you for holding these hearings. We've had numerous hearings over the past few months that have examined the issue of whether the current export control process for communications satellites is adequate to protect our national security and to promote our national interests.

Under the current system established by executive order in 1995, and made effective in 1996, the Department of Commerce issues license for exports of U.S.-made satellites through a multi-step process that both requires interagency agreement and provides for a multi-level appeal process when full agreement isn't reached. Each agency, including the Departments of State, Defense, Commerce and Energy, and ACDA, the Arms Control Disarmament Agency, has an opportunity to object to the issuance of the communications satellite license and the decision to license can ultimately be elevated by any of those agencies to the President.

Companies like Hughes lobbied to get communications satellites off the State Department munitions list where they were subject to State Department licensing and onto the commerce control list because they wanted greater certainty and a quicker timetable on their business operations. Unlike the State Department, when it comes to export licenses, Commerce operates openly and with deadlines. Items on the commerce control list are not subject to automatic sanctions in the event a country violates our anti-proliferation policy. Moreover, no other country treats communications satellites as munitions.

But the telecommunications industry was not the only voice that was heard in the Executive Branch advocating this position a few years ago. Congress, in 1993, also expressed its interest in modifying the export control process for communications satellites. In a letter dated September 20, 1993, to the President, then House Minority Whip Gingrich, then Majority Leader Gephardt, the chairman and ranking member of the key trade Subcommittee in the House, Sam Gejdenson and Toby Roth, respectively, urged "dramatic reform in U.S. export control policy" to enhance the ability of the United States to compete overseas.

The letter explains that by "imposing controls we are limiting the ability of the American businesses to export some of their most marketable items." The letter goes on to recommend the "decontrol of all telecommunications equipment for civilian end users," and in closing, the authors ask the President, "to take the immediate steps necessary to remove these unnecessary and burdensome obstacles to U.S. competitiveness."

Some may want to attribute sinister motives to those who lobbied hard for communications satellites to be licensed by the Commerce Department. And there are some who argue that satellite licensing decisions made by the Clinton administration were affected by campaign contributions. Yet the witnesses here today are persons who helped lead the effort to change the licensing process, to assist their business's ability to compete. Individually and as a company, they gave campaign contributions almost equally to both parties.

What's really at issue here is a public policy question. By preventing our own companies from selling their latest equipment abroad, when companies in other countries are eager to take up the slack, are we protecting or hurting our national interests? Is placement of satellite licensing in Commerce, with the additional control by executive order, a good one with respect to our national interest?

How we balance our interest in protecting our technology with our interest in selling our technology is no easy answer. And there are legitimate arguments on both sides of the issue. We have four or five committees in the Senate alone probing those questions.

Today, we have the opportunity to hear the views of one of the major companies in the telecommunications industry, and the insights of our witnesses developed during years of experience in manufacturing and selling U.S.-made satellites internationally, and lobbying Congress and the Executive Branch will be valuable to the Senate as we grapple with this issue.

And again, I want to thank you, Mr. Chairman, for your leadership in this area.

Senator COCHRAN. Thank you, Senator Levin.

Senator Stevens.

OPENING STATEMENT OF SENATOR STEVENS

Senator STEVENS. Mr. Chairman, I'm pleased I was able to come and hear this statement by Mr. Armstrong, because I have had some questions in the past about this practice, not about the export of commercial satellites, but about the definition of what is a commercial satellite. I think that Mr. Armstrong properly raises the question of having that defined by our security people, rather than having it defined by the State Department in terms of a munitions list that's not applicable, obviously, to commercial satellites.

And I think that it is a very timely subject, because we're going to have this amendment on the Floor tomorrow, I'm sure you know, concerning the question of where that authority should be, whether it should be in the State Department or the Commerce Department.

I do believe we have to draw the line between those satellites which have embedded technology which is highly classified and those that have embedded technology which unfortunately is in the whole range of things. I had one of the computer experts of the country, if not the world, tell me the other day that we have embedded technology in ovens and in the thermostats and even in some of the small objects we take for granted, such as our fax machines and our machines to print out the product of our computers.

It is not an easy question. We must protect our national security. But I believe Mr. Armstrong has made the point about protecting our commercial ventures overseas, too. So I congratulate you for your statement, and I thank you very much.

Senator COCHRAN. Thank you, Senator Stevens.

Senator Specter, do you have an opening statement? We are interrupting our witnesses to take opening statements from any Senators at this point.

OPENING STATEMENT OF SENATOR SPECTER

Senator SPECTER. Thank you very much, Mr. Chairman.

I would like to make a few comments, and shall be relatively brief. I commend you, Senator Cochran, for chairing these hearings, and your initiative on this important matter.

As we all know, Justice and Pentagon officials have advanced the proposition that during the exchange of information, Loral may have given the Chinese restricted information that could improve the guidance system of their rockets. This is similar technology to that which guides long range nuclear missiles to their targets.

When Mr. Armstrong has testified that "a commercial communicating satellite performs no tasks that are a threat to our national security interests," as I understand it, he has taken up only one aspect of that capability inherent in the satellite itself. There are a couple of other factors. Technological know-how that can be transferred in the process of ensuring the satellite and launch vehicle are properly integrated before launch, and in the case of a failure, recovery of useful satellite components and using the launch failure analysis to perfect the country's ballistic missiles.

The testimony also relates to discussion with the President and others in Washington on the economic impact to Hughes of the August 1993 MTCR munitions technology control regime imposed against China. I think it's of interest to the Subcommittee to know about any discussions with Chinese officials, about the relationship between the sanctions and their proliferation behavior.

Then there is the overarching question, although not touching Mr. Armstrong, the issue that has been before this full Committee in some detail on campaign finance reform about Loral's chairman and CEO, Bernard Schwartz, and the large contribution which he made and the largest personal contributor to the Democratic National Committee last year.

So there are a number of very important issues which we have to take up. I'm delighted to see Mr. Armstrong and Mr. Dorfman here today. Not unexpectedly, I have other commitments, so I'll be submitting a number of questions in writing. Thank you very much.

Senator COCHRAN. Thank you, Senator Specter.

Senator Cleland, we have interrupted our witnesses' testimony for any opening statements from Senators. You are recognized for that purpose, if you would like to make a statement at this time.

OPENING STATEMENT OF SENATOR CLELAND

Senator CLELAND. Thank you very much, Mr. Chairman.

I'd like to thank you for taking the time to continue the examination of the adequacy of satellite export controls. An issue of this

magnitude certainly requires a thorough investigation before any conclusions can be reached. We have previously heard testimony from the Departments of Commerce, State, and Defense on this issue. Safeguarding our national security interest while striving for economic growth can be a challenging balance to achieve.

Mr. Chairman, all three of the departments have discussed the procedures in the licensing process and the obligation industry incurs in protecting militarily sensitive technology. Earlier this year the news broke regarding allegations that Loral and Hughes provided technical information to China, triggering widespread concern about the question of technology or technical expertise being transferred to China.

There is, however, disagreement as to the extent of such transfers and their impact on our national security. For example, concern was raised regarding three satellites launched by Hughes in 1995 and 1996 which were not monitored by the Department of Defense personnel. Satellites did not require the State Department's license and monitoring had been tied to licenses for munitions list items.

Ideally, we would like to create policies and procedures that would preclude every possibility for the potential of militarily sensitive technology transfer or any other disastrous outcome. Unfortunately, that's not realistic. Then how do we ensure against technology transfer or any compromise to national security? I'll be interested in what our witnesses have to say in regard to that, some of your ideas. We'll appreciate those ideas.

A critical part of investigating this issue is to address improving our export control policies and procedures as well as exploring the immediate response required should, say, an incident occur. What lessons have we learned and how can we use them to improve the way we conduct business?

It's interesting to me that on June 22 of this year in that issue of *Defense Daily*, Major General Robert Scales, Commandant of the Army War College, was noted to have said that China is the top visitor to the Fort Leavenworth Center for Army lessons learned web site. Well, if China is willing to learn from our shortcomings, perhaps we can, too.

I look forward to hearing from our witnesses, and Mr. Chairman, again, thank you very much for these hearings. In terms of campaign finances, I'm an original co-sponsor of efforts to reform our ways in which we raise money in terms of running for offices in this Congress.

Thank you very much, Mr. Chairman.

Senator COCHRAN. Thank you, Senator Cleland.

Senator Thompson.

OPENING STATEMENT OF SENATOR THOMPSON

Senator THOMPSON. Thank you very much, Mr. Chairman. I appreciate your continued leadership in this important matter. You've been dealing with this issue for some time, in fact, some time before many people were paying much attention to it in terms of overall proliferation policy and issues. And I appreciate that very much.

I do think what we're dealing with here today is within the broader context of our relationships to countries such as China and Russia. I certainly have no quarrel with a business that is in business to make money by legitimate means however they can. You owe it to your stockholders. I expect you to be a forceful advocate for the things that you believe which will also put money into the pockets of the corporation. The missile business, or the satellite business is a very important and lucrative business, and as long as you keep your cards on the table, I have no problem with that. I think you're looking out for the legitimate interests of the corporation.

In cases like this where companies deal with countries such as the Chinese, I have no problem with them looking out for their legitimate interests. However, American corporations should not serve as mini-state departments. While I have no problem with them looking out for their legitimate interests and trying to make sales and put forth the points that support the sale, when you've got billions of dollars at stake, it makes it even more important that we have a system and that we have people inside our government that can take an objective look at this thing, take what you say into consideration, weigh that, and make an objective determination.

We've heard some evidence that with regard to the transfer of responsibility, with regard to the downsizing of the significance of the agencies within the government that look out for the military significance of these things, look out for the proliferation aspects, that they have been downgraded and commerce and economic situations have been upgraded.

That's not a balance I understand you gentlemen to make, as I say. But it's very, very important for our government to make it. And it's also important, I think, to keep in mind that we're dealing with countries that are proliferators of weapons of mass destruction. Again, as long as you're abiding by the rules, that's not solely your determination to make.

But as I look at the documentation, it's clear, Mr. Armstrong, that you had quite a few discussions with the Chinese. That's fine, that you were trying to seek agreements, that you were trying to maybe work out disputes between our government and their government on occasion. It was your opinion November 16, 1993 that the Chinese were committed not to proliferate missile technology.

But as late as last year, our own CIA says the Chinese are the greatest proliferators of weapons of mass destruction in the world. So your perception, while not correct, certainly did not stand alone. I think there were many in our government who made the same kind of mistake.

But as I say, it's within a larger context and my concern is when you've got an important commercial venture, and you're dealing with an important commercial customer such as the Chinese or the Russians, how do you maintain that when more and more we know, from the Rumsfeld Report, from our CIA report, that they are continuing to transfer missile parts, missile technology, biological and chemical capabilities, to nations that we deem proliferators?

So again, that's not your ultimate responsibility, but it's something that I think corporate America needs to be mindful of, it's something that those who administer these matters have to balance, and it's something that the Congress of the United States certainly should take very seriously from an oversight responsibility. So I'll look forward to exploring these issues with you.

Thank you.

Senator COCHRAN. Thank you, Senator Thompson.

Senator Durbin, you are recognized for any opening statement you'd like to make.

OPENING STATEMENT OF SENATOR DURBIN

Senator DURBIN. I'll be very brief, Mr. Chairman. I apologize for being late. I thank Mr. Armstrong and Mr. Dorfman for joining us today.

From what I have learned, the decision during the Reagan administration for the United States to forswear its commercial launch capability really put American business at facing a challenge and maybe somewhat of a disadvantage, in shopping around the world for adequate launch capacity. I think we all have come to appreciate the importance of satellite technology in our daily lives, and the quality of life in America.

What the Subcommittee is trying to do is make certain there is a national security balance, that in no way do we compromise national security in the name of expanding our economy or expanding this new technology.

I'm glad that we're having these hearings. I've joined the chairman in previous amendments to try to hold back the proliferation of technology that might assist those who would use it the wrong way. I believe the questions that we'll now promulgate and the testimony which will be elicited will help us reach that conclusion.

Thank you.

Senator COCHRAN. Thank you, Senator.

Senator Domenici.

Senator DOMENICI. Mr. Chairman, I have no opening statement. I just congratulate you for holding these hearings, and I appreciate that Mr. Armstrong and Mr. Dorfman are here. I think you can help us, if we can discuss facts and if you will discuss thoroughly with us your understanding in these areas. I think it will be very helpful for us to try to determine some policy changes if they are necessary, or perhaps look back on some things that were done in a mistaken way in the administration of our current laws.

Thank you very much.

Senator COCHRAN. Thank you, Senator.

Mr. Dorfman, you may now proceed with your statement.

STATEMENT OF STEVEN D. DORFMAN,[1] VICE CHAIRMAN, HUGHES ELECTRONICS

Mr. DORFMAN. Thank you, Mr. Chairman, Members of the Subcommittee, Senator Levin, Senator Durbin, Senator Cleland, Senator Thompson, and Senator Domenici. I appreciate hearing the introductory comments that you've made. And I'll try to pick up at

[1] The prepared statement of Mr. Dorfman appears in the Appendix on page 54.

least some of the questions you raised in my prepared testimony and then I will be glad to answer more detailed questions as we go along.

As vice chairman of Hughes Electronics, I represent 15,000 employees who are manufacturing satellite and telecommunications equipment internationally and for the U.S. Government and providing telecommunications services around the world. Hughes' heritage in the satellite communication business touches back to the launch of the first communications satellite 35 years ago in 1963, and today close to half the communications satellites, the commercial communications satellites in orbit, are built by Hughes Electronics.

Our heritage as a defense contractor goes back even further, to our original roots in the 1940's. Hughes was built on a strong commitment to preserving the national security of the United States. And that commitment continues as a significant component to our corporate culture.

It is largely for this reason that both Hughes management and employees have been deeply distressed by the allegations that Hughes had engaged in activities with respect to our satellite launches in China that have strengthened the Chinese military capability and weakened the national security of the United States.

I welcome this opportunity to set the record straight. We at Hughes have undertaken a thorough examination of our actions and conduct and we have found no, underscore no, evidence that Hughes employees have transferred any missile technology to the Chinese. I realize that there are several Congressional committees looking into the relevant facts. I am confident when all the facts are out in the open, Hughes will be exonerated of any wrongdoing.

The second point I'd like to make today is that in the interest of national security, it's good to have a strong, competitive domestic satellite manufacturing industry. I strongly urge the members to take particular care when legislating in this area. It is all too easy to sacrifice for the sake of perceived short-term security benefits the long-term ability of our country to be preeminent in the critical technology of satellite communications.

I believe Senator Thompson properly raised the question about profits being more important than national security. And of course, we at Hughes need to turn in profits for our shareholders. They expect it as part of the capitalistic system that we've worked so hard and so long to defend against the communist system during the cold war. No apologies.

But I do want to make it clear, Senator Thompson, that at Hughes, we would never compromise the U.S. national security, would never tolerate an employee compromising the U.S. national security.

Senator THOMPSON. I've never suggested that you would.

Mr. DORFMAN. And that's kind of the persona of Hughes Electronics.

For example, as Mr. Armstrong sketched it out, satellites are delivered to China intact, with any potential sensitive technology already embedded in the satellite, not available. For the short period they are in China, the satellites are guarded 7 days a week, 24 hours a day, by a team of security specialists. In fact, approxi-

mately a quarter of the Hughes people that are at the launch site are security personnel.

Any employee who fails to comply with the Hughes plan is subject to disciplinary action. And I would add that Hughes has always followed the same security procedures, whether or not DOD monitors were present at the time.

We believe the decision made in 1996 to transfer leadership of the interagency process to Commerce was a correct one. That being said, we believe there are improvements that can be made. One serious area where security can and should be improved and tightened is that in the context of launch failure reviews. I think in truth when the regulatory process was set up, launch failure reviews were just not anticipated.

As this Subcommittee is aware, the most serious allegations relating to technology transfers to the Chinese have occurred in the context of Loral, Loral's review of a Chinese launch failure, or I should say Loral's leadership of a review of the Chinese launch failure. This is an area that is presently not explicitly regulated, and this deficiency in the regulatory framework must be filled.

And Hughes suggests that this Subcommittee consider legislation or urge administrative changes that would firmly place the jurisdiction for launch failure reviews in the Department of State with strong participatory role from the Department of Defense. I think that would improve the current system and give everybody more confidence that there is no inadvertent exchange of technology.

A second change that Hughes would strongly support would be the presence of DOD monitors at all China launches. This was also mentioned in the preliminary statements. It is true that there were three Hughes launches in which there were no DOD monitors there. And incidentally, the DOD was welcome to attend, and the process permitted them to attend. They elected not to attend for their own purposes, I don't know why they didn't come, but they weren't there, and I think we should fix that.

And the presence of DOD monitors would be one more layer of protection that Hughes believes is well advised, and in case, in the event that the failure of DOD to show up was for budgetary reasons, I want to say here and now that Hughes will pay for the costs of DOD surveillance during the launches as an extra layer of protection against inadvertent transfer of information.

And I might add, having looked at the records, I see no sign that any technology was transferred, even though the DOD monitors weren't there. Because we followed the same exact procedures and processes that were followed when the DOD monitors were there.

Now, as this Subcommittee is well aware, we've discussed Hughes' support of the transfer of licensing jurisdiction to the Department of Commerce. This was not based on preference for one government department over another. Rather, it was concern based on a series of issues that deserve consideration as you consider changing jurisdiction.

The most important one is in the past when satellites were licensed by the Department of State, this was because they were on the munitions list. Hughes supported removing commercial satellites from the munitions list for the simple reason that commercial satellites are not weapons. Commercial communications

satellites are not munitions. They have no inherent military characteristic.

And that is, if they were military satellites, they should be on that list. But they are not. They are commercial. Their generic electronic communication functions make them overwhelmingly civilian in nature, and treating them that way is not special treatment, it is normal and realistic treatment, just like it would be for telephone switches or cellular telephone equipment.

As the Members of this Subcommittee know well, the effort to rationalize licensing policy took many, many years, and was thoroughly debated. There were plenty of glitches along the way, but we presently have a process in which all interested departments and agencies have a participatory role. This is an important characteristic of the present structure that Congress should endeavor to preserve. To simply reverse policy now without due consideration to preserving those aspects of the current regulatory framework that are positive and make the system workable and balanced would reintroduce some of the same problems that we worked so hard to fix in the middle 1990's.

If we raise unnecessary barriers to satellite exports, we will jeopardize the continued U.S. preeminence in this critical technology. And I believe putting satellites back on the munitions list will raise just such barriers. As we move out, European manufacturers will move in. One less American-made satellite positioned over the globe means one more non-American made one.

I believe this will damage national security, not enhance it. I also believe it's in our national security interests to have modern communication technology sending information into countries, such as China, or the former Soviet Union, that were previously closed. I believe it enhances our national security when Chinese citizens can receive CNBC, CNN, BBC, and other western programming. And that's just what's happening as we speak, through Hughes-built satellites, some of them launched on the Long March–2E launch vehicle.

Today, it is even possible that these hearings or part of them will be seen in China, so that Chinese people can view the American political process.

There are two additional specific items that the Subcommittee asked me to address, and I will briefly. There is more in the record. And that is the 1995 APSTAR 2 launch failure investigation and the second is the pending contract between Hughes and a company called APMT.

Insofar as the APSTAR 2 launch failure investigation, I have a fuller account in my testimony. I think if you read it, you'll find that we took a very thorough investigation and coordinated it very closely with the U.S. Government. The APSTAR 2 launch involved a Chinese launch vehicle that exploded while carrying one of our satellites.

We notified the State Department within 24 hours. We began collecting debris using a plan that had been worked out with the State Department and the Defense Department in an earlier launch failure. We informed the Commerce Department when we sent a review team to China and reaffirmed that we would conduct our review by the terms of our export license.

During the review, we met with Commerce officials to present materials we planned to share with the Chinese. After the review, we met again with Commerce officials to discuss findings we planned to share with our international customers, the insurance community, and the Chinese. In each case, Commerce gave us the approval to go ahead.

And of course, the simple fact is, in this operation, as always, we were working as partners with the U.S. Government, sharing responsibility for the national security and relying on the government's judgment and guidance. As I've said before, with that experience behind us, I would propose that we do even more for launch failure reviews, and get greater participation from DOD and State.

The Subcommittee has also asked that I discuss the Hughes satellite contract with the Asia Pacific Mobile Telecommunications Satellite Company, which is APMT. APMT is a partnership of affiliates of the Chinese government and private companies in Singapore and soon Japan and Thailand. If APMT follows the same course as other similar systems, it will eventually be listed on either the New York Stock Exchange or NASDAQ and publicly traded in stock markets in the United States and elsewhere.

There's been a lot of erroneous reports about the APMT system and its capability. So I'd like to speak for just a moment about it.

The APMT system, when deployed, will be providing satellite mobile telephone service to over 20 countries in the Asia Pacific region. It's basically a cellular phone system in the sky. It turns out it's identical to a satellite we're building for a Middle East consortium called Thuraya, for which we have been fully licensed by the licensing process.

The system is designed so that anyone with a satellite phone can make a call to anywhere on Earth. This is true for the Chinese military if they choose to use it, or for that matter, any military that has a phone and the amount of money necessary to make the telephone call. And of course, it's really aimed at commercial customers, entrepreneurs, students, journalists, intellectuals, anybody with a phone and enough money to make a call, just like any cellular phone system.

It is also true that the APMT satellite to perform this function, along with its clones, requires a large reflector and some on-board processing. That makes it a little bit more sophisticated than some of the other satellites. And thus it has some more advanced technology.

We have safeguards to keep design details from any unauthorized people, any foreigners, to protect this design information. The State Department has approved our processes for protecting the sensitive design information for APMT and Thuraya. We do not want to release any design detail on this sensitive information.

Hughes received critical approvals for APMT from State and Commerce in 1996. This included the approvals that I mentioned for safeguards of sensitive technology. Minor design changes now require we get a renewal of this license. And I hope this Subcommittee will encourage the Departments of State and Commerce to act promptly so that we can meet our contractual obligations with APMT.

Once again, I thank the Subcommittee for the opportunity to be here today and discuss these issues which are so critical to our Nation's competitive strength and to our national security and to our company. And I look forward to your questions.

Thank you very much.

Senator COCHRAN. Thank you, Mr. Dorfman, for your statement, and for your continued assistance in trying to give us answers to questions that we advanced to you before the hearing. We thank you for that as well.

One thing that occurs to me at the outset is that when the changes were made in the export control policies and the Commerce Department was given the lead role on issuing licenses, one thing we learned from our government witnesses at an earlier hearing was that it was the Commerce Department that really made the decision as to whether a license was required or not, which was an interesting thing for us to find out. And that there really was not an interagency review process in place to review that decision.

It was an interesting anomaly, it seemed to me, in the process. And Hughes must have been troubled by that, too. Because back in October 1997, a letter was written. And I'm going to ask the staff to hand Mr. Armstrong and Mr. Dorfman a copy of this letter. It's dated October 8, 1997.[1] And it expresses concerns and questions about whether or not certain satellite components and satellites required a license to be issued.

And this calls to the attention of the Commerce Department that Hughes had asked questions about whether a license was required, and they hadn't gotten an answer. And they wrote again and hadn't gotten an answer.

Well, this letter dated October 8, 1997, according to the Commerce Department, still hasn't been answered. And we raised this question on July 8 with Under Secretary William Reinsch.

So we're coming up on 10 months since the letter was written. And Hughes, as far as we know—maybe you can tell us different—still hasn't heard from Commerce. And it seems to me that if the rules about issuing licenses for these satellite exports are so ambiguous that Hughes, which is the leading company in this area, doesn't understand what's covered and what's not covered, and the Commerce Department can't figure out how to answer the letter, we've got a problem.

I wonder what your reaction is, Mr. Armstrong, to this situation. And whether this is an indication of a part of the process that needs to be fixed right away.

Mr. ARMSTRONG. Mr. Chairman, I never saw this before the staffer just handed it to me. So I wasn't aware of a letter sent by Hughes that had not been answered by the Commerce Department. I don't think specifically I have any insight to bring to the situation per se. I guess I would go back that if the assertion is that there's an October 8 letter that the process doesn't serve in terms of getting an answer, that would serve the licensing process, that ought to be part of tightening the licensing process.

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[1] Letter dated October 8, 1997 to the U.S. Department of Commerce from M.E. Mersch, Manager, Export Compliance, Hughes Space and Communications Company appears in the Appendix on page 70.

Senator COCHRAN. Mr. Dorfman, what's your reaction?

Mr. DORFMAN. Well, I'm just reading this letter as we talk. But what I think we see here is an effort by Hughes to get answers and details on licensing that Hughes is, I believe, reading this thing, is doing its utmost to get the clarification it needs to get on with its job.

Senator COCHRAN. Well, this is an example, it seems to me, of the fact that even putting the responsibility at Commerce, where industry says we get more response, we get specific time tables and all the rest, that we've still got a problem with this administration in export licensing. If this industry, if your company can't get an answer to straightforward inquiries about what's covered and what isn't covered by a license requirement, I don't know how anybody else is going to understand the regulations.

Has this not come to your attention, Mr. Dorfman?

Mr. DORFMAN. I'm aware of continued discussions as the agencies in the new environment trying to comply with the licensing process is working out, how to operate. So I am aware of that in general. I think it's constructive in that people are moving forward with good intentions.

The process of licensing technology, as I think was said earlier, is not a simple one. It's not a black-white one. It's got some grays to it. I think what we're seeing here is Commerce's striving to deal as Hughes is with the new arena of licensing.

Senator COCHRAN. I know there might be some reluctance to criticize the Commerce Department, if you're having to deal with this regulatory regime every day. But could you tell us of any other difficulties that your company has had in trying to comply with Commerce Department regulations in this area?

Mr. DORFMAN. I have some advisors here who do know about this thing, and they have advised me there is an explanation for this letter which I'm not aware of, but we'll certainly be glad to supply this to the Subcommittee.

Senator COCHRAN. That would be very helpful.

What about any other problems that have come to your attention as a result of Commerce Department having the responsibility for administering this regulatory regime?

Mr. DORFMAN. Well, I've already referenced one of them. I think, in hindsight, even though we did everything properly, it would have been better and made everybody feel more comfortable if there was more DOD activity in launch failure reviews. I mean, that's an area that's come to my attention, I think I've explained, described my views on the subject.

Other than that, I know of no specific complaints that Hughes has to make about the performance of the Commerce Department.

Senator COCHRAN. We've talked about this problem of launch failure review. And I noticed in your comments, Mr. Dorfman, you mentioned that a launch failure review is not specifically regulated. At our last hearing, Acting Under Secretary Holum from the Department of State, when discussing this business of launch failure review, said that in his judgment, the work done by U.S. companies in connection with reviewing the launch failure, would be a defense service. And as a defense service, would require State Department approval before providing that service.

It raises a question to me, again, whether or not there is a breakdown in communication or understanding between the companies that are being regulated and the agencies that have responsibility for administering those regulations. Here we have on the one hand the State Department saying, that's a defense service, and therefore you have to come to the State Department to get approval before you engage in a launch failure review where you are providing information and you interact with, for example, the Chinese in the case of this APSTAR 2 launch failure.

What is your reaction to that difference of opinion that we obviously have between you and Secretary Holum?

Mr. DORFMAN. I do not see that as a difference of opinion. I wasn't aware of that testimony, but if that was the interpretation, that would be entirely consistent with my suggestion that the State Department take an active role in administering launch failure reviews, which is one area where I think a tightening up of the process should be done.

So I don't know the details of that statement, but it sounds like it's consistent with what I am proposing here, in an administrative way.

Senator COCHRAN. We've heard that some companies, where there is some question about whether the State Department or Defense Department ought to be involved, have voluntarily invited them to participate or send monitors. I think this has occurred in the case of launching U.S. satellites in China, where it was not certain whether DOD monitors were required. They were invited.

In the case of the APSTAR launch failure investigation, you could have invited the Department of Defense or the Department of State to participate or to review what you were doing. But you did not, is that right?

Mr. DORFMAN. Well, as I said earlier, the Department of State was aware that there was such a failure and a failure review underway. We did not invite them, to my knowledge, that may have happened and I'm just not aware of it. But I'm here today publicly saying, as vice chairman, I want them there.

Senator COCHRAN. Mr. Armstrong, you were the CEO at the time. What is your recollection about that event? Do you recall there being any discussion at Hughes about whether the State Department or Defense Department ought to be involved in the launch failure review?

Mr. ARMSTRONG. No, sir, I do not. I would receive reports as to the progress of the review from time to time. They were verbal reports, as you might expect, as the situation related to the company. But the details of what was going on and how it was being conducted was not something that I was personally involved in.

Senator COCHRAN. There was a launch failure back in 1992, I think it's referred to as the Optus B2 launch investigation. Are you familiar with that, Mr. Dorfman?

Mr. DORFMAN. Yes, I am, sir.

Senator COCHRAN. That first launch failure in 1992 resulted in a review, and Hughes participated in that, did it not?

Mr. DORFMAN. Yes, it did.

Senator COCHRAN. And in that instance, I'm told that monitors were present. And that reports, as they were developed, were given

to the Department of Defense or the Department of State or both. And they were reviewed before they were released to the Chinese.

Why wasn't that same procedure followed in the APSTAR 2 launch failure review?

Mr. DORFMAN. As I said, that was under the jurisdiction of the Department of Commerce. We had all of our coordination with the Department of Commerce, who was in charge of that process.

Senator COCHRAN. OK, now, that leads me to the inescapable conclusion, and I'm going to ask Mr. Armstrong if you agree, that having the Department of Commerce with the primary responsibility for licensing has spilled over to include—in the view of the regulated companies as well as the Department, the responsibility to supervise, a launch failure review, if any supervision is given. Is that your conclusion?

Mr. ARMSTRONG. Well, I think there's a lot of homework being done by some of the committees that are looking into this. From what I know, on launch failure reviews, it does not appear that the process is as it should be. And that more designed involvement, rather than invited involvement, would really be the right steps to tighten that. So I guess I would have to agree with that, on the review process.

Senator COCHRAN. Looking back over it all, do you agree that it would have been the better practice to communicate that view to the Department of Defense or to the State Department or to the President in your capacity as president of the Export Council? Or as a citizen of the United States where you see the possibility of the conveyance of information or technology to China in an unauthorized way?

Mr. DORFMAN. Mr. Chairman, I would like to make it clear that I have gone back over what was done, not in detail, but enough detail to convince me there was no improper technology exchange, in the sense of no material technology was transmitted to the Chinese that would help them build missiles. I want to start from that point, because that's an important point to keep up with.

But in hindsight, I think the DOD should have been there. I can't tell you what the reasons were that they weren't asked. They certainly were invited to be there by the whole licensing process. They didn't show up.

Perhaps we should have then taken a more active role in getting them there, only for the reason to make absolutely sure and make everybody feel good that there was no improper technology transfer. But I don't believe there was any improper technology transfer, anyway.

Senator COCHRAN. Senator Levin.

Senator LEVIN. Thank you.

Just on that point, according to your testimony, Mr. Dorfman, you said that immediately after that flight failure that the Department of State was notified, is that correct?

Mr. DORFMAN. Yes.

Senator LEVIN. So they knew about that. And then your next sentence is that your recovery program was conducted according to a debris recovery contingency plan worked out with the State and Defense Departments following a previous launch failure. So apparently at a previous launch failure, State and Defense had worked

out some kind of a contingency play to recover debris with you, is that correct?

Mr. DORFMAN. That's correct, sir.

Senator LEVIN. So at some point, then, State and Defense were involved in approving a contingency plan following a launch failure, is that safe to say? But not in this particular launch failure?

Mr. DORFMAN. There was a very similar launch failure in 1992. We worked out a plan, it was approved by DOD and State. That was the same plan that we went forward with in a similar failure in 1995.

Senator LEVIN. Now, you're suggesting that formally, the launch recovery, excuse me, the launch failure review, be basically under State Department jurisdiction, or in effect be on the munitions list for State Department approval. I think that makes a lot of sense, by the way, just the way State and Defense were involved in producing that plan following the previous review. There's no reason why they shouldn't be in charge, it seems to me, following any launch failure of any approval of recovery plans. So I think that makes a lot of sense.

Why do you stop there, though? Why do you both believe, which you obviously do, that the licensing to begin with should remain with Commerce, rather than being transferred back to the munitions list? That is the issue which was voted on by the House of Representatives overwhelmingly to transfer back, despite the fact that the House of Representatives put tremendous pressure on the President to transfer those same satellites to the commerce control list just a few years before.

Now, following these events, we've got the House of Representatives voting overwhelmingly to transfer satellites back. But you think that would be a mistake, and the Senate is going to be facing that issue either on the Floor or in our defense authorization bill, which we're currently negotiating, or both. So I'd like to hear a little further explanation as to what difference does it make, and more important, is national security protected as much with satellites on the commerce control list as it would be on the State Department munitions list? Because that may be our interest, it's surely mine.

Mr. ARMSTRONG. Exactly the question I had coming to Washington. Because I had gone through, of course, my own briefings, both on what was the embedded technology, how was it protected and guarded, and what risks would we have. Because as we've already tried to both explain, we're very sensitive to national security.

The first people that I called on, I think you could tell from the testimony, were Dr. Perry, Dr. Kaminsky, the DOD staff, CIA, the National Security Advisor, ERO, and NSA. And Senator Levin, I asked the same question, is there some risk, is there some process, or is there some procedure. Because this is not about us trying to in any way jeopardize or put at risk national security. This is about a commercial product that goes up there and competes with other commercial products.

And I asked them for their questions, their concerns, their input. And then if they would support it, their support. And anything in the process that they wished to change, that this company, in this case I'm talking when I was with Hughes, was prepared to do.

Because we were not trying to transfer the oversight of national security. We were trying to get a commercial product that was competing with other commercial products to go through a review process that would not be a munitions process that would be subject to sanctions. Because sanctions cost us very dearly, not only in China in terms of launch or China in terms of a customer, but throughout the world. If the commercial products of this country, in this case satellites, were subject to those sanctions, the degree of uncertainty in dealing with us and all the companies that build satellites, was there.

So it was all about moving it as a commercial product off a munitions list, not in any way, shape or form attempting to in any way diminish national security. That's why I started there, and that's what they told me.

Senator LEVIN. Why is national security protected to the same degree with satellites on the Department of Commerce control list as they would be on the munitions list?

Mr. ARMSTRONG. When I called on the respective security agencies, I did not assume that was Hughes' job to put forward, but rather to offer that Hughes, whatever the national security interests of those particular agencies would be, that we would absolutely comply with them and to make sure that they understood that we would not resist or try to change.

Senator LEVIN. I just have two questions more for this round. One argument that is heard is that when American companies are required by their clients to use Chinese launch vehicles, that American companies then have an irresistible incentive to help the Chinese engage in successful launches so that their satellites aren't blown up.

What's your response, then, to the argument that Hughes, like other companies, has this irresistible incentive to help launch Hughes satellites successfully, and that necessarily contributes to the knowledge of launching rockets?

Mr. DORFMAN. Well, of course we want the rockets to work and the launch vehicle to perform its job. But we've never, and would never, go beyond working with the interface that we have. We wouldn't go through, in fact we have really at Hughes no knowledge of launch vehicle technology to improve their launch vehicles. We understand that if we improve their launch vehicles, it could improve missile technology.

But we have rules, regulations, procedures, processes that prohibit specifically anything that would transfer missile or launch vehicle technology to the Chinese. We don't do it.

I would also like to add to the point that Mike made, which was a passionate advocacy for why it should be in the Commerce Department. The Commerce Department is really leading an interagency operation here, so that all agencies do participate in the process. And I think the process can be improved, in the ways that I suggested.

But I don't think the fix is to move it back to State. I think the fix is to improve the process, the interagency process that Commerce has going now.

Senator LEVIN. An article on June 25 this year quoted an unnamed Hughes official as follows: "Hughes followed all the cor-

rect procedure. We just didn't want somebody from DOD looking over our shoulder." That's the quote, *New York Times,* June 25. Could you comment on that quote? I assume it wasn't you.

Maybe I shouldn't assume it wasn't you. [Laughter.]

Would you comment on that quote, please?

Mr. DORFMAN. First of all, it's not my policy or Hughes' policy, and I'd like to find out who said it, if anybody from Hughes said it, so maybe if the *New York Times* could help me by divulging the name, I'd be happy to talk to that person. It is not Hughes' policy.

Senator LEVIN. I think you'd better move on to a different part of the answer, though.

But are you saying then that is not accurate, that you had no problem with DOD looking over your shoulder? Since 1996, DOD is monitoring every launch. It's only true since 1996, since that executive order. Now every launch is being monitored. Whereas when the satellites were divided between the two lists, that was not true.

Now, my question to you is, that statement, do you have any objection whatsoever to the Department of Defense monitoring every one of these launches or doing anything else that it determines to be in this national security interest, and if so, please let us know now.

Mr. DORFMAN. Not only do I have no objections, I encourage it. And I don't rule out the possibility that some of the Hughes people out there in the field, trying to get their job done, would have problems. Nobody likes people looking over their shoulder, whether it's Hughes' security people or DOD security people. So that's a natural fact of life, Senator Levin.

But that's where the leadership and the management of the company has to step in. And as a policy, I would support DOD monitoring launches, even if there are some people at the working level that find it objectionable for the reasons that I've described.

Mr. ARMSTRONG. Senator Levin, if I may just reiterate, because I don't want it to be remembered that that is something we thought up today, when I called all those top security officials that I went through, I offered, we would cooperate with whatever security that they would wish to apply to the process. And every person, I think if you would like to call them back, would attest to that, in that Hughes was never resisting anything to be imposed in terms of national security.

Senator COCHRAN. Thank you, Senator Levin.

Senator Thompson.

Senator THOMPSON. Thank you.

Could we have our exhibits, four and five, eight and nine, given to Mr. Armstrong? I believe these are all Mr. Armstrong's documents. Mr. Armstrong, these are all letters that you wrote back in 1993.[1] And it has to do with our sanctions policy. And you were encouraging the administration, I think it's fair to say, to reconsider sanctions that had been imposed on China or Chinese entities. Let me give you a few minutes.

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[1] Letters dated September 7, October 21 and 29, and November 16, 1993 appear in the Appendix on page 62–67.

Letters dated September 7, October 21 and 29, and November 16, 1993—have you checked over them? If you need any more time, I'm not going to dwell on any particular language here, too long.

I just think it's important to note that you were concerned and advised the administration of your concern about their sanction policies toward China. This is something that we're still dealing with today as far as our sanction policies with regard to various countries, especially those who have proliferation problems.

And this goes back to 1993, and you're writing the President, second paragraph, on September 7: "However, I have a problem at Hughes, and would appreciate your help. The State Department has recently imposed category 2 MTCR sanctions against China, significantly impacting Hughes, and potentially could cost us thousands of California jobs. While we support the objective of controlling the spread of nuclear delivery systems, the Hughes communication satellites in no way contribute to nuclear proliferation. In fact, our satellites will be transmitting CNN, HBO, ESPN, BBC, and other western programs directly to the Chinese people."

So here I take it you're pointing out that the things the Chinese are being sanctioned for have nothing to do with what you're trying to sell them, is that the point?

Mr. ARMSTRONG. Yes, that's the point. It's not a munition, it's a commercial product doing commercial stuff.

Senator THOMPSON. Yes. You see, that raises a policy question for us that we're going to have to deal with as to whether or not, let's just take a hypothetical situation, you have a country that we're carrying on commercial activity with, but we know that they're carrying out major proliferation activities.

But our commercial activity has nothing to do with those items. It could be anything from grain to commercial satellites. And we have a determination to make as to whether or not there needs to be a direct relationship.

My own opinion is, if you wait for a direct relationship, you never will have sanctions. But this points out, I think, the policy question that we have, and the perspective of industry and the communications that industry has with this administration and perhaps any other administration.

October 29, on down the line here, "I am respectfully requesting your involvement to resolve the China sanctions at the upcoming Seattle APEC meeting November 18–19."

In the October 21 letter, you tell Secretary Christopher Warren, second paragraph, "Counselor Song, as well as Vice Minister Wong of the Ministry of Aerospace both stated, China is prepared to recommit to the MTCR, this is with regard to the missile policy, if the United States will drop sanctions. As best I can understand what we're trying to accomplish, this would enable the President to make a positive foreign policy announcement, put a difficult industrial technology and jobs issue behind us, and communicate to the world that the United States and China can agree on something that's important."

So you were getting an opportunity for an input with the Secretary of State with some pretty broad national policy questions, weren't you there, Mr. Armstrong?

Mr. ARMSTRONG. Yes, sir, Senator, I was. I would have to share that the State Department had asked me to have conversations. And in all cases, before I left I was briefed. When I arrived in the countries, I went to the embassy and met with the ambassadors. Before I left the country, I met with the ambassador. When I came back I was briefed or debriefed by appropriate officials.

Senator THOMPSON. Right. In other words, you served as an intermediary with regard to some of these things? Between the two governments?

Mr. ARMSTRONG. On some very limited, one or two points, I was asked to.

Senator THOMPSON. And in your November 16 letter, you're writing to Sandy Berger and Leon Fuerth, Assistant to the Vice President, National Security Affairs, second paragraph: "I briefly described that in meetings with the Chinese and the USG over the past several months, it was obvious that both sides were in agreement, i.e., one, the Chinese are committed not to proliferate missile technology, and two, with the Chinese commitment, the USG is prepared to drop sanctions. The problem is, who and when, who takes the first step?"

I think we know now that of course, the Chinese apparently were not committed to stopping their proliferation policy. But I think there's a broader question here. Again, I would expect you or anyone else in industry to make your case as you saw it. But it really does point out the need for a strong counter-balance within our government.

I think many of us, certainly I feel that we have not judiciously used our sanction policy when we should have. You take the Chinese for example, members had concerns about the only time this administration has ever imposed sanctions on China. And they were category 2 sanctions, which were milder than they could have been.

And they lifted those sanctions. And the Chinese violated their agreement again.

The background of that, of course, had to do with the M–11 missiles. We caught them sending M–11 missiles to Pakistan. However, our administration's conclusion was that we could only prove M–11 missile canisters, that we didn't know whether or not there were missiles in those canisters. Therefore, we would only impose the level 2 sanctions.

Later on, we found out they were sending ring magnets to Pakistan, which could only be used for uranium enrichment that would go into a bomb. Our administration concluded then that we couldn't prove that people at high levels in the Chinese government knew about it. No sanctions.

Then they shipped anti-ship cruise missiles to the Gulf, to Iran, and a pretty clear violation of the Gore-McCain Act. The administration there concluded that they were not destabilizing, as required by the statute.

So the policy issue really is set out in stark terms. On instance after instance after instance of proliferation up to the present time, sanctions have not been imposed. Yet where they did, they run right headlong into a very, very real industry concern. My concern

is that industry is getting its input, but where is the input coming from the other side?

That's what we have to contend with. If you have any ideas on that, I would welcome them. It's not your job. This transfer to the Commerce Department, it may be interagency, but we've heard testimony from witnesses from DTSA and others who have the responsibility of raising warning signals when sensitive military related technologies are transferred. They say that Commerce controls the process, it's on a real fast turnaround, that there is a prejudice against appeal. It's made very difficult to appeal up during the process and so forth.

So I think that's something we're going to have to address. I know that's more a statement than a question. But any comments or observations either of you have on that?

Mr. DORFMAN. I might respond a little bit, Senator, because I was very much involved during that time period. And I have a series of thoughts on that. The first one is, why satellites? Satellites, as I said before, it's just like a telephone switch. It's not an aerospace device, it's a telephone switch. Why not IMUs that go on Boeing 747 airplanes, which probably have more technology in it than do satellites? That's the first thought I have, why satellites? They are really commercial items.

Second is——

Senator THOMPSON. Well, can I interrupt you there?

Mr. DORFMAN. Sure.

Senator THOMPSON. At least up until the time of the transfer, there were apparently significant players within the government, within the State Department, who thought that there was sensitive militarily relevant technology within these commercial satellites. They even had a criteria that if you had any of these nine features in this commercial satellite, that it had military sensitivity, and therefore would remain on the munitions list.

At least I think we can say that there has been, apparently for some time over administrations, a disagreement as to whether or not that is really militarily significant. Prior administrations have thought there was, this administration continued the same policy for a while, then this administration made the change.

You can argue a case that the change should have been made. But I don't think that you can really raise the question as to why there's any sensitivity there simply because they're commercial satellites. Because people of more than one administration have concluded in times past that there was military sensitivity there. Wouldn't you agree with that?

Mr. DORFMAN. I would like to get to that point, but I think there's also another, a second point, which I think the people who are meeting on discussing the very important issue that you raised about sanctions and their effectiveness. I do want to make the point that what happened here, and I think it would happen in any other instance in which commercial satellites were used as sanctions, is that the party that was to be punished had a very simple solution, which is just to buy satellites from the Europeans.

The European satellites I believe are not as good as our satellites, but they're pretty close. We're in a very competitive environment. And the simple solution, which is what was done, as a mat-

ter of fact, back a few years ago, was just to go buy from the Europeans who have no such sanctions and were willing to sell a satellite.

So satellite sanctions or any sanctions, I think, need to be multilateral. But of course, that's another subject. I want to point out, there's two levels. First, satellites didn't belong there on the sanctions, and second, they were ineffective in any leverage at all, because it's easy to go and buy European satellites.

Getting back to your point about the nine items, it is correct, there were nine items that were identified as potentially military technology. And none of the satellites that were considered for sanctions had any of those nine items on the satellite. So we went ahead and proceeded to launch.

Today we have a process where if any of those sensitive items are on a satellite, that we go through a process with the State Department, this is part of the interagency agreement where the State Department then does have a licensing process for those components.

And I need to make one more point here. Because I want to do this all from the standpoint that we at Hughes, and I personally, are very much opposed to proliferation of weapons of mass destruction. I think the situation in the world is still dangerous. It's not so much the cold war any more, but it's dangerous to come from any place.

So we strongly support that policy, individually and collectively. But going through these nine items, which include things like encryption, include things like extra large antennas and others which might be used for military satellites, that when the satellite has completed its construction, they're embedded, you can't see them, you can't do anything about it, you can't learn anything about it. The current process has a way of dealing with those nine items.

Senator THOMPSON. Then why do you insist that DOD monitors should be present for launches and involved in failure analysis?

Mr. DORFMAN. Frankly, just to eliminate any concerns of the kind that you raised, which is that there might be conflicts with Hughes people, I don't believe there are any such conflicts, sir. But I don't want to have any inference, any concern, any doubt about the efficacy of Hughes in controlling technology. That's the only reason.

The processes we use would be the same in either event. There was no missile technology transferred, even though the DOD people weren't there. But I feel in order to make sure everybody is comfortable that there is no technology transfer, that we go ahead and voluntarily pay for DOD monitors.

Senator THOMPSON. Thank you.

Mr. ARMSTRONG. Senator Thompson, could I make a comment, please?

Senator THOMPSON. Sure.

Mr. ARMSTRONG. I just learned more about the Chinese activities than anybody ever told me at the time. Because I always assumed that the Chinese had violated and deserved the sanctions. And that was always the premise from which I dealt.

Second, disagreement about the embedded technology. The Department of Defense didn't disagree. The CIA didn't disagree. The NRO didn't disagree. And when I called on Admiral McConnell, the only thing that he offered, he said, Mike, I'd really like to work with you all on how we can get this encryption thing properly controlled, and that's my greatest concern. And I don't know how it worked out between agencies, and we had some people assigned to it. Evidently it did work out.

But I think the whole security establishment and national defense establishment understood that this embedded technology could be protected and supported it, the disagreement was the State Department. And within the State Department, there was division as well.

Senator COCHRAN. Thank you very much.

Senator Cleland.

Senator CLELAND. Thank you very much, Mr. Chairman.

Mr. Armstrong, nice to be with you. Mr. Dorfman, thank you very much.

I'm trying to, as somewhat of an amateur here, make sense of this. I'm an old Army signal officer, so I understand a little bit about telecommunications, but not much. Things have changed dramatically since I was in the military and dealing with some satellite technology.

I might just talk about launch capability just for a second. I understand that there's maybe a backlog of some 2,000 satellites now over the next few years that American industry would like to launch. In other words, that there is a backlog, a market, a need out there for launch. Is that basically true?

Mr. DORFMAN. Well, I can't vouch for the total number. I can tell you for sure that today the demand for launches exceeds the supply for launches.

Senator CLELAND. And I understand that the U.S. capability to launch is only about 40 percent of the need to launch or the desire to launch. In other words, as you say, Mr. Dorfman, the demand exceeds the ability to supply, the need for launch capability.

Did we, as a country, get off track back in the late 1980's when President Reagan decided that this country, in effect, would abdicate to other nations launch capability for commercial satellites, and then in effect open it up to the Chinese, the French and the Russians? Is that where we got off track and is that how we got into this question ultimately of this piece or that piece or that satellite or that embedded technology or whatever being transferred over to some missile launch capability, then that helped some country's nuclear proliferation? Is that how we got to here?

Mr. DORFMAN. I would like to step back a few years to the mid-1980's, as you suggest. In 1986, January 1986, the Challenger exploded, and six people were killed, including a friend and colleague from Hughes. Prior to that explosion, it was the policy of this government that all commercial communications satellites were to be launched in the shuttle. In effect, the U.S. expendable launch vehicle industry was dismantled.

Shortly after that failure, that policy was reversed, and no commercial communications satellites were to be launched on the shut-

tle. And this was a terrific blow to Hughes, because we had a handful of satellites that needed launching.

What that started was, Hughes started to have to go overseas. And at that point in time, it was only the Arianne spots that were available to us. And the U.S. industry scrambled to try to recreate the launch capability. Even today, many years later, there is only one U.S. expendable launch vehicle that's in the category of most of our launches, which is the Atlas, currently run by Lockheed Martin.

During that time period, Hughes, myself personally and Mike Armstrong, went here to Washington to urge expenditures on developing a next generation launch vehicle. Lockheed Martin and McDonnell Douglas felt like it would be imprudent to make a major investment. Their perception of the world, for whatever reason, was that there wouldn't be a tremendous demand for satellites. That was different than our perception. We saw an increased need for satellites, which I have to say today, even I underestimated, to be frank with you.

So here we were talking to the major companies saying, invest in launch vehicles, U.S. Government, and there was not a lot of sympathetic response. So of necessity, we were forced to go overseas.

Now, I have to say at the same time, roughly, the cold war ended. And now, the policy of constructive engagement with the former Soviet Union and China took place. And that was a national policy which I think was the background for Ronald Reagan and subsequently George Bush to say, on balance, national security interests, it would be prudent to allow launching from China and Russia, effectively it's Kazakhstan, and we and others started launching.

But that wasn't all we did. Because I still feel personally that it's important for the United States to have a strong launch vehicle capability for government reasons as well as commercial. So we went as Mike Armstrong alluded earlier, he was our leader at that point in time, and strongly endorsed us going to our board for permission to make a major commitment, which now is over, he mentioned hundreds of millions, it's been going up since he left, it's over two billion of commitment, first to McDonnell Douglas for the Delta 3. Then to Boeing for the Boeing Sea Launch. And our way of committing was to buy 10 launches at a time to give their board the confidence to make their own investment in launch vehicle capability.

We've done a similar thing in Japan with the H2A rocket. So we are now the world's biggest buyer of launch vehicles around the world, including the Long March–2E. But the Long March–2E is really a small part of it. It's really more of the others that I've mentioned.

Senator COCHRAN. Senator Cleland, we've had the second bell on a vote. I'm going to go over and vote, and yield the duties of the chair to the Senator from New Mexico, Mr. Domenici, who has some questions. If you have further questions, we'll entertain those.

Senator CLELAND. Well, I do, but I'll go over with you to vote.

Senator COCHRAN. We'll protect your right to ask questions when you come back.

Senator CLELAND. Thank you very much.

Senator COCHRAN. Senator Domenici.

Senator DOMENICI [presiding]. Mr. Chairman, I thank you. When I go vote, I cannot come back, I'm sorry about that.

For you all, you haven't seen me ask very many questions on this subject because I have been unable to attend these hearings until this date.

But let me say, Mr. Armstrong, I am concerned as I read the letters that preceded your appointment to the chairmanship of the Export Council relating to these issues. I don't find them in similar language with statements about, "I support you, you support me," after you became chairman. But I assume that perhaps you didn't have to do that then, because you were chairman and in contact with the White House.

But I think it is important that we understand this issue as best we can. Most of us are free enterprisers, and I am proud of what you do. I am on your side. You can check my votes around here. I would rather have the private sector assume responsibilities in these fields than I would the government of the United States.

But we have a very serious issue here, because however confused it is, somebody has to determine whether these licenses are in the best interests of the United States. Not only because of jobs in California, which you are concerned about in one of these letters, but because the security interests of the United States may be involved. And I am ready to admit that it's not easy to determine when the security interests of the United States are involved.

But I am concerned when I read a letter from somebody like you, who then becomes chairman of the Export Council the President puts in charge of the licensing issue, when you say: "You asked me to improve the economic environment through legislative change, I did." This is October 29. "You asked me to support your changes in export policies, I did." This is directed to the President.

"You asked me to support NAFTA more strongly, I did." And then you say, "I most respectfully request your involvement to solve the China sanctions at the upcoming Seattle APEC meeting, the PRC state counselor Song has told me that you are 'positive to do this,'" and then you go on to some other statements.

Now, I think we have a responsibility to find out, in the process that we are using, wherein we involve businessmen, and there are a number of business executives from the satellite communications industry that are on this council. And I'm not saying they shouldn't be there. I think they should be on it, just as other people should, because we need their expertise.

But I'm somewhat concerned about whether or not there is undue pressure on the system to determine whether or not our national security interests are at stake, if in fact we have people there who are very powerful and in political contact with the President, urging that we do certain things. While I trust business implicitly, and I'm not arguing that you would ever intentionally do anything to jeopardize our national security, I do believe the power to get your business with the Chinese and the Russians is a very powerful force.

Then when we find that the satellite export process gets a little bit looser when we give it to Commerce than when it was at State, and when you are willing to admit there's at least one major thing

that wasn't occurring when it got to State that you'd like to see changed, I just wonder, and I lay it before the Subcommittee and before you, I wonder if we ought not be more concerned about who serves on these advisory groups and what their relationship is to the Executive Branch of Government, because of the undue influence that might occur.

And I'm not accusing anyone. But as I read your letters it strikes me that there was an awful lot of politics involved prior to your becoming chairman. And I would logically assume there would be as much or more when you're chairman, unless I'm grossly mistaken about human nature, or you quit being whatever you were and got mad at the President, which I assume you aren't, even as of today.

So would you comment for one minute?

Mr. ARMSTRONG. Yes, sir, Senator, I'd like to. First, before I came to Hughes, I did not have any activities, per se, in Washington. I cannot remember meeting the President, I think I shook George Bush's hand once. But that was it.

And when I wrote that, in fact, the first time I ever met President Clinton was with that group at that economic roundtable that I mentioned, where he came to Los Angeles to look into Southern California, because we were really having tough times out there. And that was the first time I had a real opportunity to express myself directly to him, please look into this.

When I was writing that letter, the President had asked me, as the chairman of Hughes, not to do with the chairman of the Export Council, as you rightly state, would I look at the policy relative to economic development. He had asked me, and I responded positively to it. And he had asked me to look at the NAFTA situation and the policy on NAFTA. And I positively responded to it.

All I was doing as the chairman of Hughes, not as the chairman of the Export Council, was asking him to look at this policy. It doesn't belong on the munitions list.

Mr. DOMENICI. Well, Mr. Armstrong, let me just say, I've been at it a little longer than you up here, not as long making the equipment that you make in your company. But at the bare minimum, you need some help in letter writing. That is not the way to write a letter to the President that is going to be made public seeking relief with reference to something that is pending in the Federal Government, in my humble opinion.

And this is causing as much concern as many of the other things. Because the politics of all this, while we aren't talking about it much today, is in the air. And it might be nothing. There may be no politics to any of these changes in policy, and yet there may be some. And the letter just plants the seed that——

Mr. ARMSTRONG. Well, I'm sorry it does that, because it was all about policy. I was not involved in the politics of it.

Mr. DOMENICI. Thank you very much.

He gave me the Chair, so we're in recess until he arrives.

[Recess.]

Senator COCHRAN [presiding]. The Subcommittee will please come to order. I apologize for the interruption of our hearing, but it was probably nice to have a little break.

I know other Senators have other questions, and while they are coming back from the Senate floor, from this vote that we've just

had, let me ask Mr. Dorfman this question about the APSTAR 2 launch failure analysis. I talked about that some before yielding to other Senators for their questions.

And in the lessons learned section of the launch failure analysis, there is this quote, and I'm going to read it: "It also appears that HSC,"—that's Hughes Space and Communications—"has limited understanding of CALT's,"—that's Chinese Academy of Launch Technology—"real capabilities. For example, in the area of aerodynamic buffeting analysis loading, they are in the launch business. They know their job, and it's their problem. Cannot be an acceptable position in future use of Chinese launch services."

It raises the question in my mind: What does it mean? "They are in the launch business, they know their job, it's their problem, cannot be acceptable in future use of Chinese launch services? Doesn't that really suggest that the problems with the Chinese launch vehicle, which in many ways are indistinguishable from an ICBM, will become problems for Hughes to help resolve in future Chinese launches of Hughes-built satellites?

Something, in other words, has to be done by Hughes or by the United States. You can't just leave it up to China in the future.

Am I correct in assuming that's what that means?

Mr. DORFMAN. Well, this is the first time I've seen this document, Mr. Chairman, so I'd only be speculating about what was intended by these statements. I will say the following, because I do have knowledge at least at a higher level. And that is the issue with the APSTAR 2 failure was most likely the satellite fairing.

The satellite fairing is something that's unique to launch vehicles in that it protects the satellite on its ascent into orbit. It has nothing to do with missile launches, for example, which is of course the concern that all of us have, that there not be any technology transfer to improve missile launching.

So it appears from the discussion here that it probably dwelt on the fact that the failure of the APSTAR 2 was most likely a failure of the satellite protection fairing. And I can't comment on the other parts of that document. I can say, as a general statement, that Hughes is also not knowledgeable about satellite fairings, so we would be depending upon the Chinese to solve that problem, if they did solve that problem.

Senator COCHRAN. It seems like it's just the opposite, that you can't depend upon the Chinese to solve the problem. Somebody's got to do something about it.

Mr. ARMSTRONG. Let me just put it in context, not that I am above in terms of understanding fairings. But I remember back then, there was this big dispute, and the Chinese were pointing to Hughes that our satellite caused the explosion. And he was saying, that just doesn't make sense. And they were doing technical work on the satellite, to determine, how could the satellite possibly have caused this explosion to happen.

And although I've never seen this either, I might speculate that whoever wrote this was quoting the Chinese, who are saying, it's your fault, Hughes, that this happened. And that they were saying about themselves, the Chinese, that they're in the launch business and they know it's their job, it's their problem, and they're going to blame Hughes, it's their job, they'll blame Hughes.

Senator COCHRAN. So there was some question of liability, then, in effect? Or who would bear the financial consequences of the launch? Was that at issue at all in this?

Mr. DORFMAN. Well, I can tell you one thing that resulted from that is, we have an agreement, an option for future launches. But from a business practice standpoint, we have said that there has to be a proven success rate before we'll launch. That doesn't mean we're helping them figure out how to solve the problem. It means that we're asking them to demonstrate they can indeed successfully launch.

These problems have to be fixed by the launch vehicle provider, and all systems. There's problems with European satellites, too, and we expect them to fix their own problems. And that's the situation we have today with the Chinese launch vehicle. We have a contract, we have a right to buy more launch vehicles, but only after they prove that they have reliability.

Senator COCHRAN. There's another question or two on this subject that I'm going to ask. We were talking about the Loral-led launch failure review, that was really caused by the insurance carriers who were sustaining the risk of failure, in effect insisting that there be an investigation to determine what caused the launch to fail. And expecting that somebody was going to do something about that.

How does China in this situation improve its likelihood of success without the benefit of advice or assistance from some outside entity, whether it's Hughes or Loral or someone who's technically capable of giving them advice about how to improve their launch vehicles? Isn't it something that just necessarily follows from that exercise?

And the insurance company had to be told by somebody that the problem had been fixed, or it's less likely in the future that this is going to happen. As a practical matter, isn't that correct?

Mr. DORFMAN. To answer that question, I think it would be useful to go back to what happened in 1996. As you know, there was a failure of a launch of an Intelsat satellite. And the launch vehicle went out of control very early in the mission.

The Chinese did their internal inquiry on the cause of failure. And they went to the insurance company and said, here is why this launch vehicle failed, and it's something we intend to fix before our next launch.

Hughes had nothing to do with that launch. It was a Loral satellite launched for Intelsat. So we really weren't involved. But the insurance company said, in effect, we don't trust your conclusions. There's been too many failures. We'd like to subject your conclusions to an independent review committee to validate that, your conclusion. And such an independent review committee, called the IRC, was formed.

Loral, because it was their satellite, assumed leadership. They asked if Hughes would participate. On balance, I wasn't enthusiastic about it personally. But on balance, we had the insurance companies, which were important to us. We had the Chinese and some agencies of the Chinese government were in the process of buying Hughes satellites.

So we said we would participate. I accepted that with the understanding our only role was to look at whether or not the Chinese evaluation was something we could agree with, and really whether the data they presented was consistent with their conclusions.

And that's what happened. And our people, who are pretty well versed in export controls, sat in on these meetings. It was really relatively short compared to the ordinary failure investigation. It was just a few meetings.

And the report, which was inappropriately released prior to State Department approval, I think Loral has voluntarily disclosed that to be the case, was in essence a statement that the reviewers agreed with the data that was presented to validate the Chinese conclusion.

That was the practical matter, sir. And the people that we sent to participate really weren't launch vehicle experts, probably couldn't have contributed in any even. But they were there to do nothing more than look at the data.

Senator COCHRAN. In connection with the licensing process, we've heard from agency witnesses who told us about the practical ways the process works. And I've heard you both describe it today in the context that both the State Department and Defense Department have a role to play in the review process. And if they disagree with the issuance of a license then they have an opportunity to say so. And that can be appealed.

And as a practical matter, in the case of Tiananmen Square sanctions, it can be appealed all the way to the President, who's got to find that it's in the national interest to give a waiver.

So there are two kinds of processes at work here, the licensing process and then the waiver process, to get around sanctions that may have been imposed. But what happens as a practical matter, according to Defense Department witnesses who testified at our last hearing, is that it's designed to keep dissent under control and to prevent it going up the ladder.

You have a certain period of time within which to voice an objection. And if you're not satisfied and can't work it out with those at your level, to go to the next level, you've got to act pretty quickly, get a letter signed, sent up the line.

Anyway, after we heard the details about this procedure, some serious questions arose as to whether this really gives Defense and State equal opportunity to analyze and actually make their views known and to have any influence in the process. The Department of Commerce really does dominate the process, the procedure. And the impression I get is that's what you wanted, that's what the industry wanted in the beginning.

And in connection with communications satellites, it's a very compelling and persuasive argument that you make that this is harmless communications, like a telephone line system. You can put the quarter in the slot, you ought to be able to make a call. So what's the harm in that. And that's easy to understand.

But I guess we get to the problem of embedded technology. There is some question about whether the encryption information in one of those failed launches was actually ever found, and did the Chinese end up with that. I think one witness said everything pretty well burned up. And it wouldn't be useful and wouldn't be helpful

to anybody, and you wouldn't notice it if you found it, you wouldn't even know what it was.

Well, I don't know that we'll ever find out the real answer to that. But the other issue that I want to raise now is, we heard recently that the Chinese military has had a breakdown in its own communications system, and that one of these satellites is going to provide an opportunity for the Chinese military to reinvigorate and bring up to higher standards its own communications capabilities. And here we are permitting an export of a communications system that is certainly going to be militarily useful to the Chinese.

The question is, does that threaten our national security? Does that put at risk the security of American citizens?

I'm not capable of making that judgment, but I don't think the Commerce Department is, either. Now, maybe the Defense Department would have a better understanding of how communications capabilities can be used, without which you couldn't operate an intercontinental ballistic missile system, or a command and control system. I don't know the answers to that.

But I would trust somebody, I think, from the Defense Department, to make a judgment on that issue. Not somebody from the Department of Commerce, necessarily.

Am I being unrealistic in making that assumption about a sophisticated new communications system for the Chinese military to use?

Mr. DORFMAN. Mr. Chairman, I'd like to make one comment there. It's possible that the Chinese military will be using communications satellites, commercial communications satellites. But it's also likely they will be using the telephony system, for which Lucent and others are providing telecommunications capability for via line. It's also likely that they will be using cellular systems that Motorola is building.

So I want to make one point that I made to Senator Thompson, which is why select satellites as the thing to worry about? I think you've got to really at that point in time talk about the communications infrastructure that is being commercially marketed in China, which goes well beyond just satellites. Because the satellites are, I mean, it may be I'm doing ourselves a disadvantage for making it seem so simple, but basically, they are communications switches, just like the switches that are on the ground. The only difference is you've got to get them up into orbit on top of a rocket.

So I would first start off with saying, I don't think it's proper or appropriate to pick just on satellites for the issue that you raised about the Chinese military using commercial communications technologies.

Senator COCHRAN. Mr. Armstrong, do you have a reaction to that?

Mr. ARMSTRONG. Steve makes, of course, a very valid point. I happen to be in the business of cellular today, and lots of wires today. I think I can tell you, Mr. Chairman, from being in both businesses, his observation is right on the point. All of these technologies are commercial technologies. I think as you said, if a general or soldier, let alone a student or a scholar, can put a quarter in, they can use any one of them.

As far as the Defense Department review, I really hope you take from both our testimony that we have no objection at all to any level of Defense Department review of any licensing process. From the outset, I have tried to make that clear, on my calls and on my questions. I think that's why there was support.

And second, if there is something you found in this process that's not working, then we ought to fix it, we ought to tighten it, we ought to make it work. Just don't put it back on the munitions list.

Senator COCHRAN. I understand, too, from Mr. Dorfman's statement, that there is a pending request for a license that relates to the APMT license application.

Mr. DORFMAN. Yes, sir.

Senator COCHRAN. My understanding is there's a question about whether it's a renewal of an existing license that was issued in 1996, or whether it is really in effect an application for a license of a new satellite. Tell us about this and whether that has anything to do with this new regulatory regime and process. Wasn't this satellite changed and shouldn't it require a new license?

Mr. DORFMAN. Yes, sir, and it does require a new license. I want to make that clear. We have applied for a new license. The only point I would make is the critical issues on that satellite have hardly changed at all.

For example, in the original license which was approved, there was a 12.25 meter antenna that was on board the satellite. That's a major item, because it's one of the nine items on the list. So we went to the State Department to get approval to proceed with that antenna and start having design reviews with the APMT customer, which includes Chinese.

And they approved it. We had a process and approval for proceeding on with that design, and the design reviews for that system. Then as part of the design process, we made changes which I would like to describe to you as insofar as the items on the munitions list, the changes were almost nothing. The changes were mostly on the satellite structure and the satellite portion of the system, the bus, the power.

And that was designed to make it compatible with the other system, which was purely a commercial interest in making all the satellites the same for the Mid-East, for Africa, for the APMT. This was just a practical consideration.

We made those changes, and to the credit of our people, they immediately displayed these changes to State Department and Commerce, and applied for a new license, even though I believe, and we believe, that the changes are, insofar as sensitive technology practically none. And we're now awaiting the granting of that license.

I'm concerned because State Department and Commerce and the other departments are watching this hearing. And in fact, many of them are participating in presenting data in this hearing. And this has clearly slowed down the granting of the license.

Now, Mr. Chairman, you've got to understand the practical business relationships we have with every customer we supply internationally. Every contract we negotiate has in it a clause which says, you, Hughes, and I think the same thing will probably apply for Lockheed Martin and Loral, are responsible for getting all the

U.S. licenses necessary. And if you don't do that, you default. That means we give back all the money.

In each case, we say, this is an unreasonable request, we can't afford to take that much risk, and they consistently, every customer says, in the U.S. Government we can't depend upon you getting the licenses, there's been too much problem in the past. This is one of the barriers that both Mike and I alluded to. And it's exacerbated when it's in the Department of State and the licensing is part of an instrument of national policy, which is appropriate when it's in the Department of State.

So we finally agree, in every instance, we have to agree, OK, it's reasonable that we take responsibility for the licenses, if we don't get them, we default. We were in a situation like that back in 1993 or 1994 when Mike was properly advocating the licensing of APSTAR 2, and we're in the same situation with APMT, the same exact situation. If we don't get the license in a fairly short period of time, we are in serious trouble, from a business standpoint. It's possible that we will have to default.

And that means jobs, it means damage to Hughes shareholders. And it likely means the job is going to go to the Europeans. That's why I'm concerned about that particular APMT program. And I hope that the State Department and the Commerce Department, while this group is considering what to do, proceeds with business as usual and grants us a license, which I think on the surface of it should not be a problem.

Senator COCHRAN. At this point, this is in the hands of the regulators at the Department of Commerce, I presume?

Mr. DORFMAN. No, this is specifically Department of State. That's the area. This is on the list of nine items that we said. So we go to the Department of State. Recall, this still is an interagency operation. And so all the appropriate agencies get involved. It's under the leadership of the Department of Commerce, but everybody participates, there's a process, and everybody has the opportunity to participate.

So this is under John Holum, who I think testified not too long ago. And so it is at Department of State.

And Mr. Chairman, if you'll permit, because I want to tag onto something that Mike Armstrong said, which I also passionately believe in, we're learning as we go about the system. I believe there are improvements that can be made. I suggest the way to improve the system is not to transfer back to the State Department and put it on the munitions list. I think the munitions list is the thing that concerns me and Mike also the most.

Fix up the problems with the system now rather than changing it.

Senator COCHRAN. You may have seen an article that James Baker wrote on July 5, printed in the *Washington Post*.[1] The subject is "Blueprint for a China Policy." A copy is being handed to you and will be included in the record. He talks about the different aspects of current policy and the commitment to engagement with China, rather than isolation or containment.

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[1] The article from the *Washington Post* appears in the Appendix on page 68.

And he supports that engagement commitment, but he also concludes that many in Congress and various interest groups, particularly on the left of the Democratic party and the right of the Republican party when they talk about containing rather than engaging China, are trying to find an enemy.

But then he concludes by saying, "the President must reverse his highly questionable decision, made against the express counsel of his Secretary of State, Secretary of Defense and Director of Central Intelligence, to vest in the Department of Commerce lead agency authority for satellite launch exemptions relating to China."

I think the interesting thing here is that he's not criticizing necessarily the export of communications satellites, which is what's been the subject of much of your statements today. But he's talking about the launching of U.S. satellites, and that is a different thing, it seems to me.

Couldn't we make as a part of our national priorities the development of more launch capacity here in the United States? That's been brought up, I think Senator Cleland was discussing that when we went over to vote. And Mr. Armstrong talked about the fact that we must do more in that regard.

Do you know of any movement in the President's Export Council or within U.S. industry to get behind a new commitment to develop U.S. launch capacity, so we don't have to run the risk of turning over the launching of U.S. satellites to other countries?

Mr. ARMSTRONG. Mr. Chairman, I can make a couple comments, please. I certainly wasn't even given information or insight as to how the vote took place around the President's table. I was led to believe, however, with all the interaction I had with the Secretary of Defense, Dr. Perry, and Jim Woolsey, the Director of Central Intelligence, that they very much supported the transfer to Commerce, and worked hard to make their presence in the process the appropriate presence.

So I would take issue with this author, although I'm sorry I never saw this article or this statement. On the other hand, I would stand corrected if that table, indeed, those gentlemen expressed a different opinion than I was led to believe that they had.

Second, Steve and I called on a lot of people. Some people think we called on too many people. But there's a lot of people on an important issue like this who should be part of the process. I did my best to call on all of them.

And during that process, there was a terrific debate in the government and in industry that the satellite industry was going to go into decline after the turn of the century. This was back in 1992, 1993, and 1994. And in fact it was a declining industry.

What really needed to be done was not promote investment in more, but protect the launch capability of what was here.

We could not convince people otherwise. And so we took it on our own risk, our own balance sheet, our own board of directors, to make those ten PACs. We went to McDonnell Douglas, and they would not have invested in the Delta 3 without the commitment for 10 launches. And Boeing thought it was a terrific idea to have a Sea Launch, but they had to have an underpinning order.

And we put our money on the table and we took the risk that we were right, that we needed launch capability and the country

needed launch capability and we would commit our company to that. And I've seen no movement since then.

Mr. DORFMAN. I would add that we continue to strongly support the U.S. Government investing in expendable launch vehicles. I think it's prudent for two reasons. One is, I think it's important for the U.S. Government program, that the U.S. Government have an efficient, reliable, affordable, available launch vehicle capability. That position, which I have personally advocated for about 10 years now, since shortly after the Challenger failure, has not gotten a lot of encouragement until recently.

That's why we went to McDonnell Douglas directly and to others directly, to start taking the demand capacity curve to be in balance. Because we still have more demand for launches than capacity.

So I would recommend the Senators here support, when it comes up, for funding for the EELV, the expendable launch vehicle that has been proposed under Secretary Widnall's leadership, and Art Money now in the Department of Defense, to come up with a next generation launch vehicle that will have the characteristics that I described. And we are very strongly supportive of it, we're in discussions with Boeing and Lockheed Martin to encourage them to go ahead with this new investment, and we are even discussing additional commitments beyond what we have now as a possibility to do our part.

The plan is that there be government investment and commercial investment. The government investment is needed, and the government will be a beneficiary. Our role is to make sure everybody understands there's a commercial application for this launch vehicle.

After a long time, I finally decided that the reason the government was reluctant to invest in an expandable launch vehicle was because the benefits to the government would come later. The investments would be now, and would be substantial. The benefits would come to government programs later, and the existing capacity was probably adequate for all government needs. And you know how difficult it is to spend money now to save later.

So we brought up the additional issue of making U.S. expendable launch vehicles competitive in an international environment, so it wasn't 30 or 40 percent of the world market, but it would get to the stature of the satellite industry, which would be 70, or 75 percent, which I think is doable. That game is not over with, but it's in process.

I think the Senate and the House should support DOD in investing in this next generation launch vehicle, which they call the EELV. And I think that will bring more launches home to the United States. And if the characteristics or the virtues of the system that's been described are there, I think both the U.S. Government programs and the commercial programs will be a beneficiary.

So we continue to support this program. I would point out the program is presently going to come on line in the year 2002 to 2004. We started our advocacy in 1988, shortly after the policy decision that caused us so much trouble in regard to the shuttle. That's taken a long time. We could not afford to wait, our business would be dead if we waited that long.

So we needed to go, and have gone to launching around the world, until the demand-supply gets more in balance.

Mr. ARMSTRONG. In fact, following up on Senator Cleland's point about back when the Challenger failed, that redefined the launch industry in the United States. As a consequence, the French stepped in and made significant investments with the Arianne. I know when I left Hughes, they were like 60 percent or so of the launch capacity, and really had the most advanced technology at the time.

So somebody did step in and make the investment.

Mr. DORFMAN. The Europeans have put in probably $6 billion or $7 billion of investment for its next generation launch vehicle, which is called the Arianne 5.

Senator COCHRAN. Senator Cleland.

Senator CLELAND. Yes, sir, thank you very much, Mr. Chairman. Fascinating discussion. I have to put it in context, because I was just a young sophomore in college when I watched that little Atlas booster go up down at Titusville that had John Glenn on it in February 1962. And it's quite ironic to be sitting in the Senate now with him going up on the crew of Discovery 7, all seven astronauts at the same time in one vehicle.

So as we talk about satellite technology, I still have to pinch myself sometimes that we regard it as almost a happenstance. It hasn't always been that way. And it was this government that pioneered the technology here.

But as I understand it from your discussion, basically it's the private sector now that is bearing the brunt, taking the risk of filling a need, a demonstrable need out there, if we are to keep up with our role in the world as preeminent in terms of technology and telecommunications. Is that correct, the private sector is now bearing that burden?

Mr. DORFMAN. I would say the principal burden, yes.

Senator CLELAND. I'd like to shift to just two more points for clarification. One is the whole concept, the question of satellite or payload and the rocket itself. If we acknowledge that we should have more lift capacity, more launch capacity, there's an obvious need to this Senator that we need that, not only for trade, but for our own national security purposes as well.

But if someone else launches our payload, or our domestic payload from a domestic company here, do you feel that there's enough guarantees basically on a commercial satellite launch that it doesn't risk national security or threaten commercial espionage or shall we say, security leak that might be possible? Do you feel that the payload itself is separate enough and protected enough from the rocket that all of a sudden, you can't get technology embedded secrets or whatever in the satellite, and all of a sudden it transfers to the rocket, and the Chinese have their whole missile capacity perfected?

Is that easy to do? Is that hard to do? Or do we have enough controls, the way you see it, Mr. Armstrong, start off if you will.

Mr. ARMSTRONG. Well, you can start off with me and I can tell you what I have learned and known in my 6 years at Hughes. And sitting next to me is a man who has built them all his life and knows them so much better.

But absolutely, Senator, I checked that out both by the review that I mentioned in my testimony, about the security on a satellite

when it goes to either China or Russia. It's locked, it's crated, the crate is locked, it's packaged in a way that it's not penetrable. We put Hughes security people with it. It's under surveillance. It goes into a building that is under lock. It has television cameras on it 24 hours a day, 7 days a week, I understood.

I also visited the floor many times of our satellite manufacturing facility, and observed the embedded technology. And I cannot think, I cannot imagine a way that the embedded technology could be penetrated. The satellite is moved from the building under Hughes surveillance to the launch site under our surveillance during its mounting. Of course, then it's locked in, and once it's up there, it's up there.

So I would answer your question very simply, I don't know of any way for embedded technology to be exposed to national security.

Mr. DORFMAN. Let me give a slightly different perspective with the same conclusion. The sensitivity is in the detailed designs and the processes for making the various components. By observing the satellite, it is impossible to figure out how to design one. You might get a few clues by looking at it, but those clues are not more than you can get by reading the journals, the trade journals associated with the business.

That is to say, *Aviation Week*, as an example. On their cover and in their magazine, it often has pictures of our satellites and other satellites. And you can look at the pictures and you can get about as much detail as if you walk through our facility or look at it at the launch site.

So you can get a feeling with the satellite, it's a box and there are solar panels that are folded in, and there are reflectors folded in. But how to design those devices and the processes, the very sophisticated processes that design reflectors or traveling wave tubes, you can't deduce that by looking at the satellite.

Now, in order to assure that nobody pokes around, steals something, we have guards. They can't do that, there's people there 24 hours a day, making sure that nobody has access to the satellite to try to steal or get a closer look at any of the components. To be frank with you, even then I think it would be difficult to capture the design details you'd need to build a satellite.

Now, I think everybody focuses on missile technology. There is nothing in the satellite that teaches you how to do missile technology. There's nothing on a satellite that does that. And as I said earlier, there's probably more sensitive technology on the inertial measurement unit in the Boeing aircraft that fly all over China. It's been a good source of business for Boeing and Airbus and McDonnell Douglas before they folded. Those have very sophisticated devices. You can touch them, you can take them apart. They have full access to them for the whole time.

The satellite, the Chinese see it, or whoever's launching it sees it, you put it on top of the launch vehicle, there's a very simple attachment process, and it's gone in space. You have no access to it. No way of touching it, feeling it. You have ways of sending command signals to it, but that's it.

And since I mentioned command signals, I also want to talk a little bit about encryption. Because there is encryption on some of our satellites for commanding purposes. And some people don't

really understand what the substance of the encryption issue is. The concern that people have about encryption is when you're encrypting data, data usually goes at a very high data rate, and security systems have that kind of encryption.

The encryption for command is much simpler, and the data rate is very slow. It's bits per second to issue commands. And there is encryption there for a specific reason. Operators of satellites don't want somebody else to control their satellites. That's why an encryption chip gets in a satellite. It's only a distant cousin to the encryption that people worry about for national security purposes.

Senator CLELAND. If I could just shift now to how the U.S. Government in its function of licensing or certifying commercial satellites to then be launched by foreign nations, by that lift capacity that other nations have, I wonder, are we in just a catch–22 here? I mean, between State and Commerce, are we fighting the wrong battle here, Mr. Armstrong? It seems to me there's back and forth and kind of who shot John.

Given the fact we're all interested in national security and nobody wants to jeopardize it, we're all acting in good faith, and you've dealt with this process for a number of years and are intimately familiar with it, given the realities that we have, that we have to depend on other nations to launch some of our satellites, how do you feel about the present process, and are there some areas that you might want to see it strengthened?

Mr. ARMSTRONG. I'm 10 months old, and sometimes out of date if I am. I left Hughes in October of 1997.

But in hindsight, I think that the licensing process between, that I understood when I left with Commerce on the launch licensing, was adequate and the Defense Department, I thought, and the State Department, as Steve was referencing in the APMT case today, has full access to the license review process. And so if there is something in that process that needs to be fixed, I'm not aware of it, but it ought to be fixed.

Now, what seems to have happened is the launch failure review process. It appears to have worked in the 1995 case with the APSTAR 2. The right processes were followed, the right agency designate was asked for review, and the right approvals were given before the report for insurance purposes was let out.

But in the case of the Loral situation, it exported a flaw. And that is that there's not enough oversight in the launch review process. And I respectfully submit it ought to be fixed, and that opening ought to be closed.

Senator CLELAND. Mr. Dorfman, any suggestions on what you know about the current process, given our realities, and any way that you'd like to see the process strengthened, tightened, or improved?

Mr. DORFMAN. Senator, I would like to see the DOD witness all launches, so that removes any doubt there would be an inadvertent technology transfer. I don't think there has been any, but this would make us all feel more comfortable, including this Subcommittee.

And I think we should have a special process for launch review failures. I think State should specifically be involved, and DOD. I

don't think that's been covered. It was an oversight, I believe, because nobody anticipated these failures.

Those are two explicit fixes I think could be done either by legislation or by administrative steps. I think we see here an interagency process that's led by Commerce. As you know, all interagency processes have interface issues between the various parties. It's possible that one issue is that the agencies involved may need more funding to do their job properly. And I would support that.

I think maybe the Subcommittee should ask the various agencies the same question that you've asked us, including if maybe a few more people would help expedite the process. I don't think the baby should be thrown out with the bath water. I don't think the solution of putting communications satellites back on the munitions control list is the way to solve any of the improvements that have to be made. We think the openness and the speed of the process and it not being on the munitions control list are important attributes that should be retained. And in that context, to see if we can improve it. And I think there's at least a couple of improvements that I mentioned.

Senator CLELAND. Thank you very much. That's an insight.

Senator Levin wanted me to ask just a couple of questions. Mr. Dorfman, you mentioned in your testimony, I think I'm quoting it right, one less American-made satellite positioned over the globe means one more non-American made one. You said, I believe this will damage national security, not enhance it.

I'd like for you just to share with us a little bit about what you mean, and how less secure are we if one less American-made satellite is in operation. Just fill us in a little bit there.

Mr. DORFMAN. Sure. I'd first like to start by saying that satellite communications is currently viewed as a very attractive business. We find more and more people anxious to get into it, which is going to make the competition even tougher. That includes countries.

So even though I focus on Europe and in Europe there's two very powerful consortiums, and this is really analogous to Airbus, the Europeans are forming consortiums, and they are trying to get increased market share. One is Matra and DASA, and it's a British-French-German consortium. The other one is Aerospatiale and Alcatel, very active, very capable, strong support from their governments.

But that's not the end of it. The Japanese are also seeking to become prime suppliers of satellite communications, and there's no question in my mind that both the Chinese and the Russians would like to have their aerospace industry be competitive in this field. So it's not just the Europeans. I think there's lots of people interested in this area.

And so now I want to talk about national security at several different levels. There's one that everybody understands, that in our new environment, the strength of the economy is important. And the ability for Americans to have knowledge-based high technology jobs is going to be a way for us to maintain our standard of living as we get more and more in a global economy.

I think the kind of jobs that Hughes and Loral and Lockheed Martin are doing are those kinds of jobs. We want to have a good balance of exports to imports. And even though the industry has

been buying launch vehicles from the Chinese, we are still in a position where Chinese purchases of satellite communications equipment from Hughes and others exceeds western purchases of launch vehicles. That is to say, we have a positive balance of trade in China and certainly around the world.

So I say from a national economy standpoint, and that definition of national security, it's also important that we have American satellites. I think it's important for national pride. When I got to Narita airport, as many of you do, the place is filled with Boeing airplanes. I love it. And I count those versus the Airbus. I think a lot of Americans feel that way. So there's a kind of national pride issue.

And then we get to the military. And it's an interesting situation here, and 10 or 15 years ago, the most advanced technologies were developed by the military and migrated to commercial. The military procurement process is admittedly, by the military, and Bill Perry and Dr. Kaminsky and others tried to change it, it's being changed but it's so slow that the speed of commercial had us really doing more technology development on the commercial side than on the military side.

So our space and communications company, which in 1980, mid-1980's, was about 75 percent government, 25 percent commercial, it's now almost turned around completely. And our commercial satellite business is actually supporting, in that sense, our military communication satellite business and our government business.

So if that goes down, I think it will weaken our ability to support the U.S. Government needs for communications satellites. So that's what I mean in that simplistic statement that it's bad to reduce the number of U.S. satellites over the globe.

Senator CLELAND. Powerful statement. Thank you very much.

Just one more question Senator Levin wanted me to ask. Can you ever export a satellite with one of the nine characteristics without having a license from the State Department for the data? Apparently there are nine basic qualifications, I guess, on their munitions list. And if you trigger one of the nine, you have to have a license from the State Department. Is that my understanding? Am I understanding correctly?

Mr. DORFMAN. Somebody told me never to say never. And this is an area where I don't have expertise. But I can say that to release any data on those devices, we ask for and hopefully receive, a State Department license to release any data.

Senator CLELAND. Thank you all very much. You've been very helpful to me in helping me understand this complex issue, and we thank you for coming.

Mr. Chairman, I have no further questions.

Senator COCHRAN. Thank you, Senator Cleland, for your participation in this hearing, and your assistance in helping us develop a record on which we can make better policy decisions on these issues.

I'd like to thank both of our witnesses today and all of our Senate colleagues for participating in what I think has been a very useful and informative hearing. We have been able to determine, I think, how we can better ensure that U.S. national security is

properly safeguarded when our aerospace industry sells and launches satellites abroad.

I appreciate the witnesses providing us with industry's perspective. We all know that trade is a very important interest of the United States, and it must be considered as we make decisions in the national interest. But trade is not our only interest. Our Nation's security interest cannot be sacrificed when a conflict arises between those interests.

Mr. Armstrong's suggestion that more investment needs to be made in the space launch capabilities of the United States must be given careful consideration by this Congress. And Mr. Dorfman's plea that we support the expendable launch vehicle appropriations has to be carefully considered as well. Along with his suggestion that Department of Defense monitors ought to be involved in the processes leading up to a foreign launch, and in the event of an accident investigation.

We've completed four hearings now over the last 3 months on various issues related to the export from the United States of commercial satellites for launch in foreign countries. We've learned that one, reliably launching commercial satellites in a country like China requires the perfecting of the space launch vehicle that carries the satellite into space.

Two, there is substantial applicability of space launch vehicle technology to ballistic missiles. The CIA gave us this information, which we displayed in an open hearing with charts. Three, there is great incentive for industry to ensure that space launch vehicles work before the launch, and in the event of failure, industry has participated in accident investigations without U.S. Government agency participation in some cases, or supervision.

National security interests have been given lesser weight in the administration's licensing process. As a matter of fact, the Department of Commerce has been given the challenging and conflicting task of both export control and export promotion. Ultimately, our export control policies and processes must operate to protect the national security interests of the United States. The deficiencies we have identified show that changes in the current policies need our immediate attention.

The hearing is adjourned.

[Whereupon, at 5 p.m., the Subcommittee was adjourned, to reconvene at the call of the Chair.]

APPENDIX

Testimony of C. Michael Armstrong

Thank you Chairman Cochran, Senator Levin and members of the Subcommittee on International Security, Proliferation and Federal Services for the opportunity to participate in this hearing of industry's view of the satellite exporting process.

It appears there are currently three issues being examined on the satellite export licensing process:

(1) What is the right jurisdiction for commercial communicating satellites?

(2) Was process violated due to the handling of the Loral launch failure analysis report?

(3) Did campaign contributions influence the process?

Let me state first, foremost and unequivocally, that as a recent chairman of Hughes, I know that its leadership, its people, its values and its technology are firmly committed to the national security of the United States of America. So much of the company's life, history and future is dedicated to that purpose, that Hughes would never knowingly endanger the security of this country.

In response to the last question on campaign contributions, I personally gave no money to the Clinton campaign or National Democratic Party. My only presidential contribution was $1,000 to George Bush. Hughes, while I was Chairman, contributed only PAC money split about 50/50 between the political parties.

Regarding questions concerning to the handling of the Loral failure analysis, I have no personal knowledge of how this Loral failure report was handled. I was aware 2 Hughes scientists were on the Loral team but have no personal knowledge of what function they performed.

As to the correct jurisdiction for export licensing for commercial communicating satellites, my response is that it is and should be the Commerce Department. From August 1993 to 1995 I worked to convince many in Washington to support jurisdiction being moved from the State Department to the Commerce Department, and I'd like to explain why.

First, all satellites are not the same. Some satellites can perform tasks that should not be considered for export. Hughes and others build these only for U.S. national security interests.

However, a commercial communicating satellite performs no tasks that are a threat to our national security interests. A commercial communicating satellite is the equivalent of telephone wire or television cable. The satellite only enables video, data and voice transmission up to reflectors in the sky, and down to receivers on the ground. It's like a big mirror that reflects communications. It competes with wires, cables and cellular communications.

In fact, commercial communicating satellites carry TV, Fax, E-mail and telephony that today is doing so much to **open** societies and bring people around the world **closer** together. For example, back in 1972 when President Nixon went to China, Hughes deployed its satellite resources into China to broadcast to the world this historic American step to begin the opening of China. It was a big step in history not only because President Nixon was there, but because Hughes was there, we were **all** there.

However, besides being convinced that a commercial communicating satellite is a commercial product, and is not a munition, a little history may help explain why I worked for consideration to move jurisdiction to the Commerce Department.

When I joined Hughes as Chairman in 1992. America had won the Cold War, the defense budget was being cut in half and this proud defense firm had to layoff tens of thousands of people. People whose only reason for their layoff slip was that they had worked hard and successfully for our victory. People were devastated, L.A. was economically suffering and the company was in serious decline. We had to change, and change fast.

- Change from mostly defense to commercial
- Change from primarily domestic to global
- Change from technology driven to market driven
- And change from mainly government satellites to commercial satellites

And, I am proud to say, change we did. As borders around the world came down, as societies opened, as countries sought to participate in the global economic order, they needed a communications infrastructure to commercially participate. Commercial Communications Satellites are essential in doing that job.

Our commercial satellite backlog began to grow as we invested to expand our commercial satellite products and modernize our factory. Then in August 1993 we were notified the State Department had implemented Category 2 MTCR sanctions against China. I learned this meant that we could not export satellites to China, for launch or for use.

As a result, two of our customers in Australia and Hong Kong, that had selected China launches, could not launch. In addition, the two satellites we were building for China's banking systems, worth $100M, were canceled and given to our competitor, DASA in Germany. This was followed by China canceling an MOU that could potentially total over a billion dollars in satellite work, and they gave the MOU also to DASA.

China simply replaced American-built satellites with German-built ones. China was not hurt, but America was.

Billions of dollars lost, thousands of jobs affected and an uncertain future at a very critical time. Of course I wondered how the American workers and companies building a commercial product got singled out by these sanctions; and I wondered what was the rationale to internally penalize when trying to influence external errant behavior.

I learned the State Department judged that the Commercial Communications Satellite was a munition list item due to embedded technology. I never learned why satellites were singled out, as there are other products with embedded technology; and I never understood why penalizing **our** exports made any sense versus punishing the errant country's exports to us.

So, with Hughes people being laid off by the thousands, with the company trying to survive the Cold War victory, with our city in double digit unemployment and slowly climbing back from riots as we worked to rebuild L.A., something had to be done. We needed help from Washington. About this time, December 4, 1993, President Clinton came to L.A. to see and learn about the economic problems of Southern California. I was asked to participate with a group in an economic roundtable with the President. This was a very open and public roundtable, televised on C-SPAN. When it came my turn to speak on what could be done to help Southern California, I shared the plight of the thousands of workers affected due to the application of sanctions to our commercial satellite products.

The President agreed to look into the situation.

However, besides just asking the President, I thought it was necessary to share our situation with Congress and the federal agencies involved - and to respond to any concerns or questions. So, I went to Washington in pursuit of four objectives:

(1) To promote an understanding that a Commercial Communications Satellite was not a munition and did not belong on the munitions list

(2) To request permission to let the Australia and Hong Kong companies launch their satellites

(3) To explain why the satellite embedded technology was secure, protected, guarded and not a national security risk if launched from China

(4) And as a commercial product, to seek support to transfer jurisdiction for Commercial Communications Satellites from State to Commerce to obtain predictability in the licensing process.

Before setting up Washington appointments I again reviewed the security implemented on our China launches. The review confirmed:

(1) That the satellite was boxed, crated and locked for shipment

(2) That Hughes people accompanied and oversaw all handling and storage

(3) That the satellite upon arrival at the launch site was under lock and that we had continual video surveillance of the satellite

(4) That the mounting of the satellite on the rocket was under our surveillance and there is no opportunity for access, intrusion or understanding of the embedded technology

So, I came to Washington to share my story; I met with Dr. Bill Perry, Secretary of Defense, Jim Woolsey, Director of CIA; Mickey Kantor and Charlene Barshefsky, USTR, Admiral McConnell, NSA, Senator Sam Nunn, Secretary Lloyd Bensten, Secretary Ron Brown, Sandy Berger, National Security Advisor; Bob Rubin. National Economic Advisor; Peter Tarnoff, Under Secretary of State; Sen. John McCain; Speaker Newt Gingrich; Sen. Diane Feinstein; Congressman Toby Roth; Congresswoman Jane Harman; and many other members of the California delegation as well numerous others. And after each of our discussions, I would pursue two questions:

(1) Would you agree that a commercial communications satellite is a commercial product and not a national security threat?

(2) If you are asked to get involved, would you give your support for jurisdiction transfer?

After discussion, no one expressed disagreement with the explanation and I left believing I had their support. Certainly the situation was known, openly discussed and I was encouraged by the support and lack of opposition from those I talked to.

I spoke out publicly, testified before the Congressional Committee which was rewriting the Export Administration Act, and I wrote letters to government officials.

Since 1994 I have had the honor of chairing the President's Export Council. The PEC, as it is most often called, is compromised of nearly fifty men and women drawn from business, industry, agriculture and labor as well as the executive and legislative branches. By charter the PEC is intended to advise the President and the government on export matters and to recommend ways of expanding US exports. PEC is specifically charged with bringing to the government's attention the experiences and efforts of the business community and to identify and examine specific problems that governmental practices may cause for export trade.

As intended, the PEC has advised the government on a full range of issues regarding the expansion of America's exports. It is my understanding that the PECSEA, a separately chartered subcommittee on Export Administration chaired by Michael Jordan of Westinghouse, and now of CBS, did address the question of commodity jurisdiction.

Also, I was on Secretary of State Warren Christopher's Advisory Council, and I asked the Secretary if he would review the sanctions process, or really, lack of a sanctions process. He agreed to initiate a review.

The Secretary never told me the outcome of his review. Of course I learned later that the President, in consultation with his cabinet and advisors, approved the change in jurisdiction to Commerce. I believe this was the right decision. But there is a key question: did it work? Was it worth it to transfer jurisdiction from State to Commerce?

I believe this change sent three messages around the world:

One, that the US would not compromise its non proliferation principles....MTCR sanctions did not change, and wrong behavior still brings US sanctions.

Two, that the US has not compromised its National Security. . .the process and

US agencies are in place to protect it. If the process needs to be tightened, this country, this Congress and the companies involved, should tighten it. There must not be any question that the satellite licensing and failure review processes assure our national security.

And three, countries that need commercial communications to open their society internally, and compete in the world economic order externally, could **now** have more confidence in buying US commercial communications products.

Certainly the business results support that the communications market is there and this change has helped U.S. companies participate:

- Hughes Commercial Communicating satellite backlog is at an all time high
- U. S. Satellite exports are growing
- Hughes satellite employment has increased
- and the prospects for continued U.S. satellite leadership are supported by the industry's commercial growth

However, there emerged one other important issue: adequate launch capacity to meet worldwide demand for commercial satellites. The two main launch providers, Lockheed Martin in the U.S., and France's Arianne, did not plan to invest to expand capacity. China and Russia have U.S. imposed launch quotas and the U.S. was not interested in investing in additional launch capacity.

Therefore, to expand U.S. launch capability, Hughes initiated and committed hundreds of millions of dollars in future launch contracts so that MacDonald Douglas would develop the new Delta 3, and Boeing the new Sea Launch. As a result of Hughes initiatives, new U.S. launch technology is being developed, a more competitive market is unfolding, US launch supply is going up and launch lead times are coming down. It was Hughes who took the risk, who committed the capital to improve this country's launch technology capability. But, in my opinion, the need for further investment in US rocket systems and alternative launch technologies is warranted.

In summary Mr. Chairman, I believe:

- Hughes would not and did not violate any national security interest or process

- A commercial communications satellite is not a munition and does not belong on our munitions list

- As a commercial product, and with embedded technology protected, jurisdiction for commercial communicating satellites belongs in the Commerce Department.

- If the licensing or failure review processes need to be tightened, Government and industry should tighten them

- And if this country is concerned about its rocket and launch technology, then we must invest in it just as Hughes invested.

I hope this provides the Committee with an understanding of the problems we faced and my efforts to seek, by petitioning the decision makers in Washington, an appropriate solution. Thank you for listening to me.

TESTIMONY OF STEVEN D. DORFMAN
VICE CHAIRMAN, HUGHES ELECTRONICS
TO THE SUBCOMMITTEE ON INTERNATIONAL SECURITY, PROLIFERATION, AND FEDERAL SERVICES
COMMITTEE ON GOVERNMENT AFFAIRS
THE UNITED STATES SENATE
WASHINGTON, D.C.
JULY 29, 1988, 2:00 p.m.

Mr. Chairman, Members of the Committee: thank you for the opportunity to appear here today.

My name is Steven D. Dorfman. As Vice Chairman of the Hughes Electronics Corporation, I represent 15,000 employees manufacturing satellite and telecommunications products and providing telecommunications services worldwide as well as for the U.S. government. Hughes' heritage in the communications satellite business stretches back to the launch of the first commercial satellite in 1963. Close to half of all the communications satellites orbiting the Earth were manufactured by Hughes Electronics.

Our heritage as a defense contractor goes back even further. Hughes was built on a strong commitment to preserving the national security of the United States and that commitment continues as a significant component to our corporate culture. It is largely for this reason that both Hughes management and employees have been deeply distressed by the allegations that Hughes has engaged in activities with respect to our satellite launches in China that have strengthened Chinese military capability and weakened the national security of the United States.

I welcome this opportunity to set the record straight. We, at Hughes, have undertaken a thorough examination of our actions and conduct and we have found no, let me underscore, no evidence that Hughes employees have transferred any missile technology to the Chinese. I realize that there are several Congressional Committees looking into the relevant facts. I am confident that when all the facts are out in the open, Hughes will be exonerated of any wrongdoing.

A second point I want to make today is that it is in the interests of national security to have a strong, competitive domestic satellite manufacturing industry. I

strongly urge the members to take particular care when legislating in this area. It is all too easy to sacrifice for the sake of perceived short-term security benefits, the long term ability of our country to be preeminent in the critical technology of satellite communications.

HUGHES' COMMITMENT TO NATIONAL SECURITY

Mr. Chairman, I want to affirm to you and Committee as clearly as I possibly can that Hughes would never compromise the U.S. national security and would never tolerate an employee compromising the U.S. national security.

It is Hughes' policy to follow scrupulously all export control laws and regulations, and we have a well-developed internal compliance program to assure that this is the case. With respect to our launches in China, our security precautions are grounded in an agreement between the Governments of the United States and China first entered into in 1988 which specifies the overall scope of the required security. With the guidance of the U.S. Department of Defense, Hughes developed a detailed handbook of operating procedures to implement the terms of that agreement.

Satellites are delivered to China intact with any potentially sensitive technology already embedded. For the short period they are in China, the satellites are guarded 7 days a week, 24 hours a day by a seasoned team of security specialists. In fact approximately 25% of Hughes' workforce at a China launch are security personnel. Any employee who fails to comply with the Hughes plan is subject to disciplinary action. And I would add that Hughes has always followed the same security procedures whether or not DoD monitors were present at the launch.

That being said, we at Hughes believe that there is one very serious area where security can and should be substantially tightened, and that is in the context of a launch failure review. As this Committee is aware, the most serious allegations relating to technology transfers to the Chinese have occurred in the context of a U.S. company's review of a Chinese launch failure. This is an area that is presently not explicitly regulated. This deficiency in the regulatory framework must be filled, and Hughes

suggests that this Committee consider legislation or urge administrative changes that would firmly place the jurisdiction for launch failure reviews in the Department of State with a strong participatory role assigned to the Department of Defense.

A second change that Hughes would strongly support would be the presence of DoD monitors at all China launches. Although Hughes is confident that we both know what the rules are with respect to technology transfers and that we make every effort to follow those rules scrupulously, we also recognize that we are dealing with human beings who might inadvertently say or do something inappropriate. The presence of DoD monitors is one more layer of protection that Hughes believes is well advised and one for which we, as a company, are willing to bear the financial burden if budget limitations are a problem.

EXPORT LICENSING ISSUES

As this Committee is well aware, Hughes aggressively supported the transfer of licensing jurisdiction to the Department of Commerce. However, this was not based on a preference for one Governmental Department over another. Rather, it was a concern based on a series of issues that deserve some present consideration as the possibility of changing jurisdiction is contemplated by Congress.

First, in the past, when satellites were licensed by the Department of State, this was because they were included on the munitions list. Hughes supported removing commercial satellites from the munitions list for the simple reason that they are not weapons. They have no inherent military character. Their generic electronic and communications functions make them overwhelmingly civilian in nature. Treating them that way is not special treatment. It is normal and realistic treatment.

The distinction between munitions and commercial items is and always has been fundamental to the U.S. export control structure and essential to its effective operation. The State Department regulates arms and munitions. It has no experience regulating – and is not set up to regulate – items of civilian commerce. To give it such a

responsibility would inevitably lead to confusion, eroding the effectiveness of the entire export control system.

I should add that treating commercial satellites as munitions would conflict with international practice. No nation treats commercial satellites as military articles. International regimes to which the United States is party – the current Wassenaar Arrangement and the former CoCom regime – have always treated commercial satellites as commercial items. And satellites are not considered "missile tech" items under the Missile Technology Control Regime.

Among the reasons some wish to shift satellites back to the munitions list is to allow satellite sales to become "teeth" for sanctions punishing nations that proliferate missile technology. But the simple fact is that our allies won't play by these rules. If we step out of the satellite market, they will step in. There is no practical way to get leverage against proliferation by linking satellite sales to sanctions.

Finally, I should add a strictly commercial concern. The Commerce Department process has firm timetables, and Commerce will actually tell us why particular decisions are made. Commerce's process is far more suited to the planning required to manufacture and sell communications satellites systems.

As the members of this Committee know well, the effort to rationalize licensing policy took ten years. It was thoroughly debated. There were plenty of glitches along the way, but we presently have a process in which all interested departments and agencies have a participatory role. This is an important characteristic of the present structure that Congress should endeavor to preserve. To simply reverse policy now without due consideration to preserving those aspects of the current regulatory framework that are positive and make the system workable and balanced would reintroduce the same arbitrary classifications of systems and technologies that led us to reform the licensing process in the first place.

If we raise unnecessary barriers to satellite exports, we will jeopardize the continuing U.S. preeminence in this critical technology. As we move out, European manufacturers will move in. One less American-made satellite positioned over the

globe means one more non-American-made one. I believe this will damage national security, not enhance it.

In the century to come, it is vital to the security and continued freedom of the American people that, so far as possible, the satellites circling the earth should be U.S.-made, rather than made by other countries -- no matter who owns and operates them. I believe it is important to this country to maintain American preeminence in space and our leadership in space and satellite technology.

It is also in our national security interest to have modern communications technology sending information into countries that were previously closed to outside influences. It enhances our national security when Chinese citizens can receive CNBC, CNN, the BBC and other western programming. These programs are transmitted by Hughes satellites launched on China's Long March launch vehicles. Thanks to these satellites, it is even possible that these hearings or parts of them will be seen in China so that the Chinese people can view the American political process.

There are two additional specific issues that this Committee has asked me to address. The first is the 1995 Apstar 2 launch-failure investigation conducted by Hughes, and the second is the pending Hughes contract for and APMT communication satellite. I will now turn to those issues.

THE 1995 APSTAR 2 LAUNCH FAILURE INVESTIGATION

In accord with the Committee's interests, I would like to offer a brief chronology of events related to the APSTAR 2 launch failure investigation, which took place in 1995. This is a good opportunity to show the care Hughes takes in observing all relevant technology security protocols in its dealings with China.

The APSTAR 2 launch took place January 26, 1995. It involved the launch of a Hughes HS601 communications satellite aboard a Chinese Long March-2E launch vehicle. We participated under an export license issued by the U.S. Department of Commerce in February 1994. The customer was Asia Pacific Telecommunications Satellite Company, Ltd., of Hong Kong.

Approximately 50 seconds into the flight, the launch vehicle failed, destroying both itself and the satellite. Debris collection began as soon as our team reached the crash site. Within 24 hours, we notified the Department of State. Our recovery program was conducted according to a debris recovery contingency plan worked out with the State and Defense departments following a previous launch failure.

One week following the launch failure, Hughes wrote the Department of Commerce indicating our intent to send a team to China to review the debris, and obtain from the Chinese telemetry data that might help us reconstruct an account of the launch. In that letter Hughes also attested that all discussions with the Chinese would be strictly limited, according to the terms of the Department of Commerce's existing APSTAR 2 export license.

Hughes officials met with Chinese counterparts in Beijing on February 13 and 14 to establish procedures for conducting the investigation. On March 3, 1995 Hughes' representatives met in Washington with Commerce officials to outline the material we had prepared with the intention of providing it to the Chinese. That material included: one, a briefing chart describing the review activities as of that date and future plans; two, a summary paper describing the launch failure investigation; three, minutes from the February 13 and 14 meetings with the Chinese; and four, Hughes' draft answers to questions posed by the Chinese during those meetings.

Department of Commerce officials confirmed that all of the information Hughes proposed to provide the Chinese was permissible under the APSTAR 2 export license.

On April 28, 1995 Hughes representatives notified Commerce that the review was completed, and sought approval to transmit the results of the analysis to the Chinese. Commerce granted its approval. In mid-August, Hughes notified Commerce that the final review was ready. We expressed our interest in releasing that review to our international customers, the insurance community and also the Chinese. Again, as before, Commerce granted its approval.

And as it has at all times, Hughes took care to comply with every aspect of the law protecting U.S. national security interests. We relied on the government's judgments and guidance, which were communicated to us as we went through three

export reviews and approvals. We have always viewed ourselves as partners with the United States Government, sharing responsibility for the national security with the government.

THE APMT CONTRACT

The Committee has also asked that I discuss the Hughes satellite contract with Asia Pacific Mobile Telecommunications Satellite company -- APMT. APMT is a partnership of affiliates of the Chinese government and private companies in Singapore. Japanese and Thai companies may soon invest, as well. If APMT follows the same course of similar systems, it will eventually be listed on either the New York or NASDAQ exchanges and publicly traded in the United States.

Hughes won the APMT contract in an international competition. The contract, signed in May 1998, covers a $450 million satellite system capable of providing telephone service to millions of subscribers in the Asia-Pacific region. In China principal control of the project is under the civilian Ministry of Post and Telecommunication. APMT plans to launch its satellite on the Long March launch vehicle.

The APMT satellite is identical to a satellite we are building for a Middle East consortium called Thuraya, for which we are fully licensed. We also have discussions underway with an African consortium. This type of system is useful for developing countries with limited communications infrastructures.

Mr. Chairman, there has been much erroneous reporting about the APMT system and its capabilities. I'd like to speak for a moment about what the system will do once it is in place.

The APMT satellite is for providing mobile telephone service. It is true that a member of the Chinese military could use an APMT-supported mobile phone -- just as the military in any nation can use commercially available wire-line phones today. But with the APMT system in place, it isn't just the military that will be able to put calls through on mobile phones. So too will entrepreneurs, students, local journalists, intellectuals, virtually anyone with the money to make a phone call.

It is also true that the APMT satellite and its clones require a large reflector and on-board processing and thus are a more advanced type of satellite. We have safeguards to keep design details from any unauthorized people, including foreign nationals. The State Department has approved our processes for protecting sensitive design information on APMT and Thuraya.

Hughes received the critical approval for APMT from State and Commerce in 1996. This included approval for the safeguards for sensitive technology. Minor design changes now require that we get a renewal of this license. If this license is delayed or not granted, the immediate effect will be lost jobs, significant financial penalties to Hughes and one more satellite opportunity for the European industry. That will not enhance the national security. I hope this committee will encourage the departments of State and Commerce to act promptly.

Once again, I thank the Committee for the opportunity to appear here and to discuss with you issues so critical to our nation's competitive strength and to our national security. I look forward to your questions.

Thank you.

# # #

HUGHES

Subsidiary of GM Hughes Electronics

C. MICHAEL ARMSTRONG Chairman and Chief Executive Officer

7 September 1993

The President
The White House
Washington, D. C. 20500

Dear Mr. President:

Thank you for your thoughtful letter. I was proud to support you in achieving the best package politically possible to reduce the deficit and incent investment. You can count on my continued support as you attack further entitlement reduction, government restructuring and incentivize investments to stimulate growth.

However, I have a problem at Hughes and would appreciate your help. The State Department's recently imposed Category 2 MTCR sanctions against China significantly impact Hughes, and potentially could cost us thousands of California jobs. While we support the objective of controlling the spread of nuclear delivery systems, the Hughes communications satellites affected in no way contribute to nuclear proliferation. In fact, our satellites will be transmitting CNN, HBO, ESPN, BBC and other western programs directly to the Chinese people.

Unfortunately, European suppliers are anxious to pick up the business and the California jobs lost.

Fortunately, with reasonable interpretation of the sanctions, the business and jobs need not be lost and at the same time the State Department's message and effectiveness sustained.

My request is to ask for your support for such an interpretation so that Hughes may proceed with its satellites and the State Department with the China negotiations. I strongly believe both are doable.

I very much appreciate your consideration.

Sincerely yours,

Mike Armstrong

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7200 Hughes Terrace, Los Angeles, CA 90045
PO Box 80028, Los Angeles, CA 90080-0028
(310) 568-6117

HUGHES
Subsidiary of GM Hughes Electronics

C. MICHAEL ARMSTRONG Chairman and Chief Executive Officer

21 October 1993

The Honorable Warren Christopher
The Department of State
2201 C Street, N.W.
Washington, D.C. 20520

Dear Mr. Secretary:

The enclosed copy of my letter to State Councilor Song of the PRC State Council is to confirm our discussion that China will take an active positive approach to reconciling the sanction situation by the Seattle APEC meeting November 18-20.

Councilor Song as well as Vice Minister Wang of the Ministry of Aerospace both stated China is prepared to recommit to the MTCR if the U.S. will drop sanctions. As best I can understand what we are trying to accomplish, this would enable the President to make a positive foreign policy announcement, put a difficult industrial technology and jobs issue behind us and communicate to the world that the U.S. and China can agree on something important.

I would hope that a top level person can be assigned to negotiate immediately and that U.S. satellite launches from China be approved and Optus B3 license released.

Sincerely yours,

C. M. Armstrong

cc: President Clinton
Vice President Gore

Enclosure

bcc: G. C. C. Chang
S. D. Dorfman
W. D. Merritt
Scott Hallford-Min.Councilor
USA Embassy

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HUGHES
Subsidiary of GM Hughes Electronics

C. MICHAEL ARMSTRONG Chairman and Chief Executive Officer

21 October 1993

Doctor Song Jian
Councilor, State Council
China State Council
Chairman of State Science & Technology Commission
Fu Xing Lu Yi 15
Beijing, China

Dear Doctor Song:

I appreciated the opportunity to meet with you on Monday, October 17, 1993, and found our discussion to be of great interest and very worthwhile. Hughes has a very long history in China and we share many mutual benefits as we contribute to the development and growth of your country. We work hard to be both a good customer and valued supplier. Given the USG sanction situation, I was encouraged by your statements that China will take a positive approach to reconciling this situation and will work toward a successful reconciliation by the Seattle APEC meeting November 18-20. As I committed, I have communicated your comments to the USG and they responded positively. It would appear that meaningful discussions should begin soon to assure success by the APEC meeting. I must leave these discussions to you and the USG. In addition, I have initiated discussion with the USG as you and Vice Minister Wang requested, on approval of U.S. satellite launches from China and the release of the Optus B3 license.

With your agreement, I will stay involved as much as possible to help in any way possible to resolve this situation so we may continue our business and progress.

As I mentioned, you have an open invitation to visit Hughes as it would be my honor to host you and show you our technology and facilities.

Sincerely yours,

C. Michael Armstrong

bcc: G. C. C. Chang
S. D. Dorfman
J. E. Koehler
W. D. Merritt

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HUGHES
Subsidiary of GM Hughes Electronics

C. MICHAEL ARMSTRONG Chairman and Chief Executive Officer

29 October 1993

The President
The White House
Washington, D. C. 20500

Dear Mr. President:

You asked me to support your economic package. I did.

You asked me to work hard to improve the California economic environment through legislative change. I did.

You asked me to support your changes to export policy and controls. I did.

You asked me to support NAFTA more strongly in California. I am.

I am respectfully requesting your involvement to resolve the China sanctions at the upcoming Seattle APEC meeting November 18-20. PRC State Councilor Song has told me they are "positive to do this". It's a tragic situation that potentially thousands of California people could lose their jobs, hundreds of millions of dollars of American business lost and a potential strategic alliance forced on our competitors in order to send a foreign policy message.

The economic consequences are already beginning to turn into reality. We have recently learned that the Chinese government is now in the process of sourcing two Hughes satellites to the Germans (DASA) that are worth $80-100M and hundreds of California jobs. In addition, we are spending $250,000 a day on another satellite that could be canceled. Due to the circumstances, this will be public and political shortly.

Thank you for your consideration.

Sincerely yours,

Mike Armstrong

C. Michael Armstrong

cc: R. Brown
W. Brown
~~D. Feinstein~~
A. Gore
J. Harman
P. Wilson

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HUGHES
Subsidiary of GM Hughes Electronics

C. MICHAEL ARMSTRONG Chairman and Chief Executive Officer

16 November 1993

The Honorable Samuel Berger
Deputy Assistant to the President
for National Security Affairs
Washington, D.C. 20501
Fax: 202/456-2883

Mr. Leon Fuerth
Assistant to the Vice President
for National Security Affairs
Washington, D.C. 20501
Fax: 202/395-6042

Subject: Visit 11/16/93 at Hughes with PRC Vice Premier Qian Qichen

This will confirm my conversation Tuesday AM 11/16/93 with PRC Vice Premier Qian Qichen.

I briefly described that in meetings with the Chinese and the USG over the past several months, it was obvious that both sides were in agreement i.e., (1) the Chinese are committed not to proliferate missile technology (2) and with the Chinese commitment, the USG is prepared to drop sanctions. The problem is who/when takes the first step.

I related the recent press reports that the U.S. was considering initiating a waiver, if serious negotiations could take place. Vice Premier Qian then asked "should we consider these press reports as representative of Washington position". I replied yes, the press reports are valid.

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I asked the Vice Premier that I would like to pass on to Washington, unofficially, the Chinese response to such a first step by the USG.

Vice Premier Qian replied that "it would be very helpful, quite significant — indeed very useful". I replied that I would convey his response to Washington.

He also added that there was, of course, many broad issues to discuss between the two countries.

I acknowledged the broader issues, but expressed hope that both parties would not let the opportunity for specific success, and such a positive step, to be lost.

Independently, we learned from Chinese sources that Vice Premier Qian is authorized and prepared to negotiate. I have also learned from Washington sources that the Administration is considering permitting the waivers to apply to several satellites that are under the Commerce Department's jurisdiction. It is important to Hughes that one of the satellites that is granted a waiver is APT-2. This is a commercial communications satellite for China currently under construction that is designed to carry TV (including American programming), fax and data. It appears we have lost two China satellites and $80-100M of business to DASA in Germany due to sanctions and we cannot afford another loss and more jobs.

I hope this information is useful and can be used to resolve the situation.

Sincerely yours,

C. Michael Armstrong

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Blueprint for a China Policy

By James A. Baker III

Sunday, July 5, 1998; Page C07

It is time to remove China policy from our domestic political debate. The situation cries out for an effort by the president and Congress to negotiate a bipartisan accord on China policy, the way we in the Bush administration did in 1989 with respect to Central America.

My first negotiation as secretary of state was with Congress. Once we were able to eliminate Central American policy as a divisive issue in our domestic political debate, the foreign policy problems were relatively easy to manage. In the aftermath of President Clinton's visit to China, this should not be all that difficult now.

I believe there is in Congress, as in the country, a majority in the center who can agree upon the fundamentals. Forget about the fringes of both major parties who will not be satisfied with anything less than an absolutist approach. We need a policy as complex and nuanced as our interests -- not a policy based on a single issue, whether it be human rights, commercial advantage for U.S. firms, anti-proliferation concerns or something else. That policy would require:

A commitment to engagement with China, rather than isolation or containment of China.

An acknowledgment that engagement can include symbolic gestures such as summits, but must involve more, particularly from a president who accused his predecessor of "coddling dictators" because of his policy of engagement. We must encourage China to move in directions that promote U.S. goals and interests. President Clinton's visit to China met that test, because he spoke out for freedom and human rights in much the same way as President Reagan did on his 1988 trip to the Soviet Union.

A recognition that we must be firm, consistent and principled in the four areas of our significant concern: trade, human rights, proliferation of weapons of mass destruction and Taiwan.

On trade, in working out the terms of China's membership in the World Trade Organization, we must insist on baseline obligations for transparency, protections for investors, market access, intellectual property protection, dispute resolution and limitations on prison labor exports. We should not agree to China's demand that it join the WTO before Taiwan.

On human rights, the American people are rightfully outraged by China's treatment of political prisoners. Observance of human rights

will improve dramatically only if there is systematic economic and political reform. Increased cultural, legislative and high-level diplomatic exchanges, along with greater economic interaction, will work better than expanding economic and political sanctions.

On proliferation, we should encourage China to join the Missile Technology Control Regime, to abandon what in the past were irresponsible military sales to rogue states and to cooperate with us to confront nuclear threats on the Indian subcontinent and the Korean peninsula.

On Taiwan, we should make clear that we will support any peaceful resolution of differences between the People's Republic of China and the people of Taiwan. We should leave no doubt we will continue to assist our friends in Taipei to have an adequate defense, and will consider unspecified actions in the event of an attack by China on Taiwan, all as called for in the Taiwan Relations Act.

We must maintain a credible military presence in the Pacific to promote peace and stability and to guard against any other country's temptation to think in hegemonistic terms.

We should also understand that the best way to find an enemy is to look for one. That is what we do when we talk about containing rather than engaging China. Many in Congress and various interest groups, particularly on the left of the Democratic Party and the right of the Republican Party, are doing precisely this.

The president must reverse his highly questionable decision, made against the express counsel of his secretary of state, secretary of defense and director of central intelligence, to vest in the Department of Commerce lead-agency authority for satellite-launch exemptions relating to China.

The other two issues creating problems for the administration in its policy of engagement arise from possible Chinese efforts to interfere in or influence the 1996 elections and from possible unauthorized transfers of technology related to the launch of U.S. satellites. Both of these disturbing matters are under investigation by the Department of Justice. The executive branch must guard against any repeat of events such as those triggering these investigations.

The policy I suggest is in the national interest of the United States. Polls indicate it would be supported by a majority of the American people. Instead of whining about some members of Congress doing to President Clinton on China policy what he did to President Bush, the White House should show more leadership and engage Congress in formulating a bipartisan policy. The congressional leadership should cooperate. The American people want to see the executive and legislative branches working together to meet our nation's foreign policy and security challenges, not playing politics with them.

The writer was secretary of state in the Bush administration.

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HUGHES
SPACE & COMMUNICATIONS
A HUGHES ELECTRONICS COMPANY

October 8, 1997

Export Classification Request

U.S. Department of Commerce
14th St. and Pennsylvania Ave. NW
Room H1099D
Washington, DC 20230

SUBJECT: Commerce Dept. Jurisdiction Technical Data
Delivered Under Notes 2 & 6 to ECCN 9A004

To Whom It May Concern:

In accordance with EAR Part 748.3, Hughes Space and Communications Company requests the ECCN and License Exception for the following technical data which is provided to the launch service provider for the launch of commercial communications satellites controlled by ECCN 9A004:

form, fit and function
mass
electrical
mechanical
dynamic/environmental
telemetry
safety
facility
launch pad access
launch pad parameters

All of this data generated by Hughes (the spacecraft manufacturer) describes the interface requirements for the mating of the satellite to the launch vehicle and parameters for the launch. We believe that this data is classified as EAR99, exportable under Commerce License Exception NLR.

In addition, Hughes Space and Communications Company requests the ECCN and License or License Exception for the technical data which is normally delivered to customers/operators of commercial communication satellites, described in CCATS #33173 dated 1/25/93(copy attached). Per the technical data description attached to the CCATS this data includes Telemetry, Tracking and Control(TT&C) Maintenance Data, Satellite System data such as power, weight and fuel budgets, observance of satellite test, operational training for customer personnel .

Since there is some difference of opinion as to what event triggers the ability to utilize a Commerce Dept. License Exception, please clarify conditions under which the exception is applicable.

If you have any questions, please feel free to contact me at (310)364-6868.

Sincerely,

M. E. Mersch

M.E. Mersch
Manager, Export Compliance
Hughes Space and Communications Company