to being able to predict, in 1900, that the coming of the automobile is going to lead to the suburb, or to drive-through fast food stands. . . .

I'm a bit reluctant, then, about trying to predict or describe what 2038 might look like. But I can describe what I'd like it to look like.

STRATEGIC U.S. GOALS IN SPACE FOR THE NEXT 40 YEARS

The committee has asked, ''What should be the strategic goals of the U.S. in space for the next forty years?'' I think that there are four overarching goals. (1) Foster a commercial space industry. (2) Explore the Solar System. (3) Settle the Solar System. (4) Explore the Universe.

For the first time, there now exists a nascent commercial launch services industry. It came slowly into existence during the last part of the 1990s, and it came into existence primarily because, for the first time, NASA didn't try to strangle this new industry in its cradle. The foremost thing a medical doctor learns is ''First, do no harm.'' This prime principle of medicine should also become the foremost policy of the Federal Government with respect to the newborn commercial launch industry.

Exploration of the Solar System will be done by robots and by humans. In the case of robots, these missions will be primarily scientific, and could be pursued by the Government, or by academia, or both. Commercial data purchase is one method that either or both could pursue as a means to achieve their exploration goals, and at the same time save money, and again at the same time help to foster a commercial space sector.

Exploration by humans will probably be confined to the inner Solar System over the next forty years—i.e., Luna, Mars, and the small bodies (asteroids). These explorations will also be primarily scientific, certainly so in the case of Mars, but in the case of Luna and the asteroids, one can easily see economic rationales. There are thus business cases that can be made and that will be pursued.

Settlement of the Solar System may begin with Luna. There's lunar water ice at both poles, making settlements and outposts on Luna tremendously easier to accomplish than might have been otherwise. Lunar water ice, in a phrase, changes everything. One might even speak of a lunar ''Cold Rush. . . .''

The exploration of the Universe is primarily a scientific one, using space-based astronomy facilities. Such work, of course, is done to ''do'' science, but a lot of this science will begin to lay the ground work for the first robotic missions to the near stars, possibly in the 22nd Century.

THE SINGLE ISSUE THAT MUST BE ADDRESSED

But before any of the above can be attempted, much less accomplished, there must be Cheap Access to Space. You need to be able to get to low Earth orbit (''LEO'') easily, frequently, reliably, and cheaply. There is no inherent technical barrier to the creation of such a capability—''only'' engineering development need occur for cheap, easy to operate, robust access to low Earth orbit to become available.

And as has been pointed out, once you're in LEO, in terms of energy, you're halfway to anywhere else in the Solar System.

ROLES OF THE FEDERAL GOVERNMENT

The second issue the Subcommittee wished addressed is ''What are the appropriate roles of the federal government in pursuing those goals?'' I would argue that there are four roles for the Federal Government. The first appropriate role is to support and encourage science, both directly funding it as well as helping to encourage and underwrite its accomplishment by the private sector and academia. This also applies to exploration activity, both human and robot. The Government ought to help academia and the private sector explore, through underwriting, partnerships, tax credits, and other such mechanisms. In some rare cases, the Government itself might also mount its own explorations. These were the patterns and methods of exploration employed by Spain and England in the 1500s and 1600s, as well as by the United States in the 1800s.

The second appropriate role of the Federal Government in my opinion is to foster long-term, high-risk technology development. The Federal Government should strongly invest in next generation technology, including experimental reusable launch vehicles and military demonstration hardware.

The third activity that I feel is appropriate for the Federal Government to pursue is that of the use of space for the defense of the United States.

Finally, the Federal Government has, I believe, an important, if not critical, role in the encouragement and incentivization of the growth of the nascent entrepreneurial commercial launch industry.

SHORT TERM POLICIES TO ACCOMPLISH THESE GOALS

''What policies and priorities should Congress and the Administration be putting in place in the near term to begin the transition to the future?''

Here are a few of the possible options I think would go a long way in the short term for encouraging and incentivizing the growth of our emerging commercial launch industry.

NASA and the Air Force should procure all launch services via competitive bids that are truly open to all companies, not just the largest defense contractors. These ''fly before buy'' launch service contracts must not develop new launch vehicles; instead, they should be structured like the Air Mail ''service'' contracts of the 1930s to encourage private investment. During the next forty years NASA should transition totally out of operating space launch vehicles, or of on-orbit support infrastructure.

Space science data should be purchased by NASA in order to help to support science and the development of a commercial space sector. Resupply and support of the International Space Station should be provided commercially by the private sector, so as to also help support the development of a commercial space sector. The International Space Station should also be commercially operated.

In parallel, Congress can also pass legislation providing incentives to the commercial space transportation sector. One possibility is investment tax credits to incentivize the creation of launch service providers. Such credits ought to be able to be traded. Other possibilities include interest write-offs, legislated market incentives like ''air-mail,'' and regulatory improvements. All of these incentives can help give birth to a thriving commercial launch industry modeled after today's aviation industry. The one thing we must not do is create a monopoly where a single company controls the ability to launch critical commercial and military assets into space. Guaranteeing government loans or market share for a single company would be catastrophic to the emerging commercial industry.

In the future tax credits may also be an appropriate mechanism for helping to encourage long term goals, such as Lunar missions and settlement.

A third policy thrust should be to robustly invest in the experimental technology and military demonstration hardware that supports truly low cost space launch vehicles. No technology investment is required for expendable launch vehicles, as the commercial sector is well positioned to develop such vehicles today. Instead, the government should be investing in the longer term, higher risk reusable launch vehicle technologies that promise to reduce launch costs by two orders of magnitude.

Mr. Goldin at NASA has already done a good job with his early investments in experimental vehicles, but it's just the first step. NASA's early, but underfunded plan to fly many ''Future-X'' experimental vehicles is an excellent blueprint for the future. In the past, Mr. Goldin has shared his vision of ''blackening the sky with X-vehicles''—not prototypes or commercial vehicles, but pure experimental demonstrators. If we truly want low cost launch vehicles, it will require the flight of many experimental vehicles built by many different companies.

The policy goal of flying X-vehicles for technology demonstrations should become the basic way that the government (and NASA) should approach technology development. Build 'em, fly 'em, and break 'em—both by intent and accident, this approach has led to today's thriving commercial aviation industry.

In coordination with NASA, DoD should also be investing in their own experimental vehicles and early military demonstration hardware. Either the Air Force or the Navy should develop a Military Spaceplane capability that supports global reach and the ability to defend U.S. interests ''anywhere, anytime,'' with dramatically smaller force structures than exist today. Blue ribbon panel after blue ribbon panel has advocated the need for such technology investments starting with General Moorman's Space Launch Modernization Panel in 1994. Most recently, the Defense Science Board is recommending an ongoing investment in the Space Maneuver Vehicle flight tested at Holloman AFB just last month.

Finally, while institutional changes are not necessarily required at NASA, the mindset must change. NASA should be the leading advocate of change and the transition to a primarily commercial space industry. Nonetheless, the real change is up to Congress. NASA, the Administration, and Congress must decide to place funding and budget priorities on the side of change. The Government should be investing in technology, experimental vehicles, and military hardware for the defense of the country.

2038: FREE PEOPLE IN FREE SPACE

The United States is at a seminal point in our transition to a commercial space industry. If we choose to encourage and incentivize the move towards a commercially based space industry we can accelerate and fundamentally enable America's move into space. We did this once before when America invested in the technology of commercial aviation, and it paid handsome dividends. Now it's time to build the same bridge to the future of commercial space.

Thank you, Mr. Chairman, for this opportunity to present USL's views. I would be pleased to answer any questions you or any other Members might have.

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Florida (Mr. HASTINGS) is recognized for 5 minutes.

(Mr. HASTINGS of Florida addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

COMMON STATE PROPOSAL BETWEEN NAGORNO KARABAGH AND AZERBAIJAN

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from New Jersey (Mr. PALLONE) is recognized for 5 minutes.

Mr. PALLONE. Mr. Speaker, I wanted to spend just a short amount of time this evening talking about the optimism that many of us are seeing as a result of the meeting that took place in Geneva last week between President Kocharian of Armenia and President Aliyez of Azerbaijan.

I am sure that many people know, particularly those of us who have been involved with the Armenia Caucus for many years, that we are very hopeful that, as a result of this meeting and some other activities that have taken place over the last few months, that we could see a resolution of the conflict in Nagorno Karabagh, which has been basically a bone of contention, if you will, between the two countries for some time.

I think many people know that Nagorno Karabagh is an independent republic that is Armenian speaking, ethnically Armenian, that fought a war, if you will, about 10 years ago that at the time when the Soviet Union broke up, and even though it has been independent and has been a state for all practical purposes, for about 10 years it is not recognized by the United States and there is a continued conflict, albeit mostly peaceful conflict, between Armenia and Azerbaijan over the future of Nagorno Karabagh.

It would certainly behoove anyone who is concerned about peace in the Caucasus region to see if these two countries could come to an agreement over the future of Nagorno Karabagh that, of course, involves the people of Nagorno Karabagh, as well.

The Presidents of Armenia and Azerbaijan met last week in Geneva for talks that seek a political settlement of the Nagorno Karabagh conflict. President Robert Kocharian of Armenia went to Geneva directly from Warsaw, where he had been for other business, and while there he told the news conference that he was optimistic about the meeting with President Aliyev. He said that there had been serious progress since active talks have begun with President Aliyev, most recently in April during the NATO summit conference when both leaders were here in Washington.

I must say also and give praise to U.S. Secretary of State Madeleine Albright, who had written to both presidents after those Washington talks urging further direct discussions between the two presidents.

The latest proposal of the OSCE Minsk Group, and the Minsk Group has been set forth by the United States and other countries to try to come to a settlement of the Nagorno Karabagh conflict, basically last fall the Minsk Group put forth a proposal called the ''common state proposal,'' which essentially sets up a sort of confederation, if you will, between Nagorno Karabagh and Azerbaijan where the two countries would be part of a confederation or common state with equal status.

We know that Azerbaijan very quickly after that announcement last fall by the Minsk Group rejected the common state proposal. But there have been strong indications recently that if it was not for the actual label ''common state'' that Baku and Azerbaijan essentially might be willing to accept the idea of what the common state proposal is all about.

In other words, they may not like the term ''common state,'' but if another term like ''confederation'' or ''free association'' or something like that was used that they might be willing to go along with it.

I must say, Mr. Speaker, that what I am hoping and I think the atmosphere is ripe for it is that after this meeting of the two presidents that it might be possible to engage in some kind of direct negotiations between the three parties, between Armenia, Azerbaijan, and Nagorno Karabagh, which is something that I and most members of the Armenia Caucus have been talking about for some time, that we can see the three sides, if you will, get together perhaps at some point nearby and simply start negotiations using the common state proposal or something like it and ultimately come up with a peaceful settlement.

I wanted to praise our own House of Representatives and particularly the House Committee on Foreign Operations Appropriations because in the bill that they reported out of the subcommittee last week and I think will be considered by the full committee on appropriations tomorrow that bill incorporated several constructive initiatives to help jump start the Karabagh peace initiative.

□ 2115

If I could just give some examples, in the report language for the Foreign Ops bill, it specifically says that the primary national interest of the United States in the Southern Caucasus is peace, and it recommends continued support for the people of Armenia and Azerbaijan, and says that the extent and timing of United States assistance should depend on whether or not the parties move towards a peaceful settlement.

I want to commend our own Foreign Operations appropriations subcommittee for what it did and that this leads in the long run to a peaceful settlement of the conflict.

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Washington (Mr. METCALF) is recognized for 5 minutes.

(Mr. METCALF addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Guam (Mr. UNDERWOOD) is recognized for 5 minutes.

(Mr. UNDERWOOD addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

TRIBUTE TO ASTRONAUT PETE CONRAD, AMERICAN HERO

The SPEAKER pro tempore (Mr. OSE). Under a previous order of the House, the gentleman from California (Mr. ROHRABACHER) is recognized for 5 minutes.

Mr. ROHRABACHER. Mr. Speaker, earlier the gentleman from California (Mr. CALVERT) spoke about Pete Conrad whom we laid to rest today in Arlington National Cemetery, an American hero and a member of the team that walked on the Moon, in fact the third man to have walked on the Moon. It was my honor to have represented Mr. Conrad in Congress. In fact, he lived in Huntington Beach, California. I had many, many meetings with Pete. I was very honored to not only know him but I was very, very pleased to have had the guidance that he gave me over the years in dealing with American space policy. Now as the chairman of the Subcommittee on Space and Aeronautics, that advice that he was giving me was of real importance and of real value. Pete was such a wonderful person. It was a sad day, but then again knowing Pete and his spirit, it was a day that we know that the spirit of Pete Conrad lives on.

Over the years, I have observed that real heroes do not look like the ones in the movies. John Wayne never risked his life for his country, but he was certainly tall and handsome. No, the real heroes that I have met generally have been short and balding. Jimmy Dolittle was like that. I met Jimmy Dolittle on one occasion. And so was Pete Conrad.

If Pete were here today, he would be really embarrassed to hear me compare him to such a courageous and heroic man as Jimmy Dolittle. But that trait of being humble was one of the traits that made Pete Conrad himself such a great man.

When you think about it, great people, the great people of our country, just what is Americanism, who are these great Americans that people have thought about? In the past, the personification of the American ideal, perhaps let us say back in the 19th century, one would have to say that the personification of the American ideal was the pioneer or the frontiersman, with perhaps a little bit of cowboy or industrialist thrown in as well. Well, in this century, we need look no further than Pete Conrad, the man whom we laid to rest in Arlington today.

Pete Conrad was the quintessential 20th century American hero. It is fitting, then, that Pete was buried today among America's most noble champions in Arlington National Cemetery.

Pete's accomplishments in the space program, of course, speak for themselves. He was the third human being