

# OVERSIGHT OF SATELLITE EXPORT CONTROLS

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## HEARING

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL ECONOMIC  
POLICY, EXPORT AND TRADE PROMOTION

OF THE

COMMITTEE ON FOREIGN RELATIONS

UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

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WEDNESDAY, JUNE 7, 2000

U.S. SENATE,  
SUBCOMMITTEE ON INTERNATIONAL ECONOMIC  
POLICY, EXPORT AND TRADE PROMOTION,  
COMMITTEE ON FOREIGN RELATIONS,  
*Washington, DC.*

The subcommittee met at 2:33 p.m., in room SD-419, Dirksen Senate Office Building, Hon. Chuck Hagel (chairman of the subcommittee) presiding.

Present: Senator Hagel.

Senator HAGEL. Good afternoon.

Today's hearing is this subcommittee's second oversight hearing on commercial satellite export controls since the Congress transferred responsibility for licensing for commercial satellites from the Commerce Department to the State Department in March 1999. This hearing will focus on what progress has been made in improving the system since our last hearing in June 1999.

On our first panel, we welcome Under Secretary of Commerce for Export Administration, the Honorable William A. Reinsch. Before coming to the Commerce Department, Secretary Reinsch served as a senior legislative assistant to Senator Jay Rockefeller and also served on the staff of the late Senator John Heinz. Welcome, Secretary Reinsch.

Our second witness is the Honorable John D. Holum, Senior Adviser for Arms Control and International Security Affairs at the Department of State. Mr. Holum has been nominated to be Under Secretary for Arms Control and International Security Affairs. Mr. Holum served as Director of the Arms Control and Disarmament Agency from 1993 to 1999, when that Agency merged with the State Department. Previous to that, Mr. Holum practiced law in Washington, DC, and served on the staff of former Senator George McGovern. Welcome, Mr. Holum.

Mr. HOLUM. Thank you, Mr. Chairman.

Senator HAGEL. Our third witness is the Honorable James M. Bodner, Principal Deputy Under Secretary of Defense for Policy and Counselor to the Secretary of Defense. Previously Mr. Bodner served as Special Assistant to the Secretary and Deputy Secretary of Defense, responsible for coordinating issues and projects throughout the Department.

From 1983 to 1996, Mr. Bodner served as then Senator Cohen's legislative assistant for national security, foreign affairs, inter-

national trade, and science and technology. Welcome to you, Secretary Bodner.

On our second panel, we welcome Mr. Clayton Mowry, executive director of the Satellite Industry Association. Prior to joining SIA, Mr. Mowry worked as a satellite industry analyst and senior international trade specialist for the Office of Telecommunications in the Department of Commerce. Mr. Mowry served as the International Trade Administration Representative to the 1992–1994 U.S.-Russia, U.S.-EU, and U.S.-China commercial launch services negotiations. Before joining the Commerce Department, Mr. Mowry served on congressional staffs on both the House and the Senate sides. Welcome to you, Mr. Mowry.

The fiscal year 1999 Defense Authorization Act moved jurisdiction over commercial satellites and related items from the Commerce Department back to the State Department, where it had traditionally resided. This was done out of national security concerns. Commercial satellites and their components are now controlled on the State Department's Munitions List.

Through our hearing today, the subcommittee will hear from the various Government agencies with current and past responsibility for handling commercial satellite exports, as well as from the satellite industry itself, as to whether the current system is working. Is the current system protecting national security and allowing American companies to still do business? Is the State Department capable of undertaking this difficult and complicated responsibility?

My understanding is that other colleagues will join us during the course of the hearing, and with that, I again welcome our distinguished witnesses. The committee is grateful for your taking your time to come this afternoon, and I once again apologize for having to cancel our hearing a couple of weeks ago. But democracy rolled on and we continued to do good for the world with insightful and important votes. I feel that we will be spared that high burden over the next 2 hours. We have had a series of votes already and some, as a matter of fact, in the general arena of your responsibilities. And I can assure you we all voted right.

Now, with that, let me ask, by the order of the lineup here, Mr. Holum to begin his testimony and thank you for coming.

**STATEMENT OF HON. JOHN D. HOLUM, SENIOR ADVISER FOR ARMS CONTROL AND INTERNATIONAL SECURITY, DEPARTMENT OF STATE, WASHINGTON, DC**

Mr. HOLUM. Thank you, Mr. Chairman. Thank you for the opportunity to provide the subcommittee with the Department of State's views today.

The topic of commercial communications satellite export licensing is very important to our national security and foreign policy interests. It is also important to our economic strength and technological leadership, particularly in an age when our security interests and our technological leadership are increasingly dependent on the health and innovation of our telecommunications and aerospace industries and not, as previously, on government funded research and development. So, we need export licensing policies and procedures that safeguard our security interests, but also ensure that the right things get to the right people in a global economy in

which international competition has become tougher, delivery schedules have been compressed, and multinational teaming of U.S. companies with foreign firms continues to expand.

Slightly more than 1 year after the return of comsats to State's jurisdiction, as legislatively mandated by Congress, it is appropriate to examine how well this change in jurisdiction has been implemented and is working in practice. I will get right to the main points of what we wish to highlight specifically, where we feel we have met the goals we have set out to accomplish last year, what issues or problems we have identified, and what we are doing to resolve them.

First, the overarching national security objectives of the legislation, which transferred licensing jurisdiction back to State, are being met. More than 2,000 export license applications have been considered. In each case, as Congress mandated, there has been thorough and consistent consideration of U.S. national security interests. Export license applications are now receiving all of the scrutiny and control that is reserved under U.S. law for articles on the United States Munitions List. This includes expanded oversight by Congress with regard to major exports.

Second, we are taking full advantage of the additional budgetary resources Congress has provided for State's defense trade control program. Prior to 1999, the authorized full-time complement for our Office of Defense Trade Controls [ODTC] was set at 45 employees, divided among licensing, compliance, and support functions. The personnel allotment for ODTC has been increased by 23 new positions, the lion's share of those being deployed in the Arms Licensing Division, which will essentially double in size.

We have already brought on board seven new licensing officers and are awaiting security clearances on several others. Active recruitment efforts continue toward the goal of filling out the ranks by the end of the calendar year.

Third, we have not only met but significantly bettered in most cases the 90 working day goal we established as an average time for processing satellite related cases. Many in industry expressed concern that license decisions for satellites, under the State export licensing system, would be protracted and greatly exceed the 90-day average established for Commerce licenses. Some predicted the process would take two to three times as long.

In the first 6 months of State's jurisdiction, satellite related licenses averaged 70 working days for exports requiring interagency review and 18 working days for exports licensed by State without review by other agencies. In the most recent 8 months, the average times have improved to 50 working days for interagency reviewed cases and 17 working days for those reviewed only by State. This improvement has been due to concerted efforts by both State and Defense to deploy more personnel. Processing times for State, in particular, will continue to improve as new licensing officers are brought on board.

It is worth noting that these figures are true averages from start to finish and include cases requiring mandatory intelligence community review, Missile Technology Export Committee review, and congressional notification. The State Department does not stop the clock or discount days while waiting for other agency views or addi-

tional information from companies or because there may be complex policy issues involved.

Fourth, we have fulfilled the commitment we made last year to work with the Senate and House committees to expedite cases requiring notification to Congress under section 36 of the Arms Export Control Act. Thanks to the excellent cooperation we received from Congress, these major U.S. satellite exports, valued at \$3 billion, went smoothly over the past year, some in very impressive times when necessary to meet changes in launch schedules. For example, space system Loral's Telstar 7 satellite was notified to Congress in about 32 working days. Lockheed Martin's New Skier satellite sale to The Netherlands was notified in about 35 working days, Lockheed Martin's NSTAR satellite sale to Japan in about 30 days, Hughes' Galaxy IVR satellite launched earlier this year from French Guiana required 36 days, and Hughes' Panama sat-9 satellite took 20 working days. A complete list of satellite exports notified to Congress since State assumed jurisdiction is annexed to my prepared statement.

Fifth, some manufacturers clearly have experienced problems in transition to control under the U.S. Munitions List [USML]. This was particularly true for component and system-level manufacturers. Many components, parts, and systems specifically designed for commercial communication satellites and their associated technical data became subject to a requirement for an export license for the first time in several years.

So, no matter what our average processing times were, they would always require more time than in the previous environment in which no license was required for things like plant visits, requests for proposals [RFP's] involving technical data, acceptance testing, and the like. The result has been a difficult transition for certain U.S. suppliers and frustration and delays for their partners abroad, possibly reinforcing a tendency in Europe to bias procurement toward other European suppliers through such actions as shortened deadlines for U.S. companies in responding to RFP's.

To address these problems, Mr. Chairman, we have designed a special regulatory regime for satellite-related exports to U.S. allies.

Before I describe that, I would like to digress briefly to caution against exaggerating the impact of these problems in terms of lost sales and market share for the U.S. satellite industry. I fully understand the opposition of the U.S. industry to the control of commercial communications satellites on the U.S. Munitions List. The State Department neither sought nor welcomed this decision. But I also do not believe it is useful to interpret every development in the international satellite market solely on the basis of the U.S. Government's export licensing policy.

Mr. Chairman, section 1309(a) of the Foreign Relations Authorization Act for Fiscal Years 2000 and 2001 authorized the Department to establish a regime for the expeditious export licensing of commercial satellites, satellite technologies, and their components to U.S. allies. We welcome this mandate which is complementary to several initiatives State and Defense have developed to deepen defense cooperation in other areas with our allies in Europe and Asia.



The regime we have designed, with invaluable assistance from our industry advisory committee, as well as from our colleagues at Defense, has several important distinguishing features. The main one is the ability to use high volume export licenses for components, systems, accessories, and technical data, known in the trade as bulk licenses, which will be valid for 4 years for multiple shipments to any of the NATO or major non-NATO allies on the basis of a preapproved list of foreign aerospace firms and satellite projects. The list will be scrutinized carefully and then be made a matter of public record.

Another important feature is that it will not be necessary to provide in advance the details of purchase orders or contracts or re-transfer and end-use certificates where required. All of this documentation will continue to be mandatory, but it will only be required to be furnished to the State Department within 15 days following shipment from the United States. So, for appropriate products and approved firms, instead of submitting an export license application to the State Department after receiving a purchase order or signing a contract, they will be prepositioned with one or more export licenses for a 4-year period that will cover most of their business transactions with our allies in Europe and Asia.

A further feature of the special regime is that, within the defined territory of the 19 NATO member countries and the 8 countries that have been designed major non-NATO allies, retransfers of most U.S.-origin components and technical data licensed for export under this regime will also be permitted without individual written, prior U.S. Government consent for the entire approved list of satellite programs and for use by one or more approved foreign companies.

For more sensitive components, such as missile technology control regime [MTCR] controlled items, the State Department's long-standing controls, including non-transfer and end-use certificates, parts control plans, and the like, will continue to be required. But a means will be provided by which this documentation can be furnished electronically, in most cases within 15 days of shipment, again for approved products and firms. Restrictions may be imposed on the license in certain cases in view of the specific items proposed for export and consistent with our missile technology control policies.

Of course, none of the special procedures will apply should the transaction at any stage involve an activity beyond the territories of U.S. allies, such as space launches from the People's Republic of China or Russia.

The regulations for the new regime were published in the Federal Register on May 26, and they will take effect on July 1. Between now and then, we will continue to work with industry in preparing detailed guidelines that will assist in the preparation of license applications. We also plan an industry workshop on June 28 to answer questions and discuss all the details associated with electronic license submissions, electronic reporting, and the use of the new regulations.

Mr. Chairman, this concludes my remarks, and I look forward to address any questions you may have. Thank you.

[The prepared statement of Mr. Holum follows:]

## PREPARED STATEMENT OF HON. JOHN D. HOLUM

Mr. Chairman, I thank you for the opportunity to provide the Subcommittee with the Department of State's views today on the subject of commercial communications satellite export licensing. This matter is very important to our national security and foreign policy interests, as well as to our economic strength and technological edge. Indeed, in today's international security environment these areas—national security, leading edge technological development, and healthy telecommunications and aerospace industries—are mutually dependent, and we need to ensure in our policy development and execution that they are mutually supportive.

Recalling that the State Department neither sought nor welcomed the decision of Congress to return control of commercial communications satellites to the U.S. Munitions List, we, nevertheless, committed to administer this responsibility in accordance with well-established policies and practices that characterize the strong control our Government has always exercised over the international export or transfer of defense articles and services, especially when it comes to protecting U.S. national security interests.

We also said that, within the overall context of U.S. Munitions List control and the standards and practices of the International Traffic in Arms Regulations (ITAR), we would do our best to ensure that legitimate exports to U.S. friends and allies went forward in a timely manner by taking certain steps to establish average processing times as a goal within a 90 working day period; to expedite major satellite exports involving foreign launches in view of the additional requirement in law for congressional notification of exports exceeding \$50 million; and, to deploy additional resources in the State Department's Office of Defense Trade Controls in order to meet these objectives.

With about fifteen months experience since commercial communications satellites were returned to State Department jurisdiction, we are in a good position to provide you with a report on where we have met the goals we set out to accomplish, where we have identified issues or problems, and what we are doing to resolve them. In this regard, the solution to several issues we have identified lies in an amendment to our regulations (ITAR) that we will be promulgating in the coming days in order to implement section 1309(a) of the Foreign Relations Authorization Act for Fiscal Years 2000 and 2001, concerning the establishment of a special regime in order to expedite satellite related exports to U.S. friends and allies. As I know this is a subject of interest to Congress, to our aerospace industry, and to our allies, I will also describe the new approach we have developed in some detail later in my statement.

That said, please allow me to touch on several aspects of how we view the overall scorecard for export licensing of comsats over the past year.

## NATIONAL SECURITY INTERESTS AS TOP PRIORITY

First, the overarching national security objectives of the legislation transferring export licensing jurisdiction back to the Department of State effective March 15, 1999, are being met consistently. More than two thousand export license applications have been considered. There has been thorough and consistent consideration of U.S. national security interests in all instances. And, in each case considered, priority has been given to our national security interests and to our obligations under the Missile Technology Control Regime. Commercial communications satellites and related items, associated technical data, and all foreign launches of U.S. communications satellites licensed by the State Department are now receiving all of the scrutiny and control, including expanded congressional oversight, that are reserved under U.S. law and regulation for the export of articles on the United States Munitions List. This includes the expanded controls set forth in detailed provisions of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999.

On a related point, the Department has also implemented fully the Administration's response to recommendations in this area falling under our purview that were set forth in the House Select Committee on U.S. National Security and Technology Transfer to the People's Republic of China ("Cox-Dicks"), such as those related to the control of satellite technical data to foreign insurance companies.

## AUGMENTATION OF DTC RESOURCES

Second, we are taking full advantage of the additional budgetary resources Congress has provided for the administration of our defense trade control program. Prior to 1999, the authorized full time complement for our Office of Defense Trade Controls was set at 45 employees, divided among licensing, compliance and support functions. The personnel allotment has been increased by 23 new positions, with the lion's share of the new slots deployed in the Arms Licensing Division. That division,

formerly comprised of 14 State Department licensing officers, four military officers on detail from the Military Departments, and three supervisory officers, will essentially double in size.

We have already brought onboard seven new licensing officers and have awaiting security clearances on several others. Active recruitment efforts continue to fill the remaining vacancies. In addition, we have made some progress in establishing two of the new licensing positions at higher grade levels (GS-14) in an attempt to stem the continuing loss of experienced personnel to higher-graded jobs at DOD and in the defense industry. We are also optimistic about prospects for having several additional positions upgraded. But, candidly, this is a problem we need to continue to work hard at solving for the long term.

#### 90 WORKING DAY GOAL FOR AVERAGE PROCESSING TIME MET

Third, we have not only met, but significantly bettered in most cases, the 90 working day goal we established as an average time for processing satellite-related cases in the Secretary's report to Congress last year concerning our plans for implementation of the NDAA. Many expressed the concern that license decisions for satellites under the State export licensing system would be protracted and greatly exceed the 90-day process established for Commerce licenses. Indeed, some predicted the process would take two to three times as long.

In the first six months we had jurisdiction (March-September 1999), an export license for a satellite-related case averaged 70 working days (98 calendar days) if it required inter-agency review and 18 working days (25 calendar days) if it did not, and could be decided by State, alone. Over the past eight months (September 16, 1999-May 10, 2000), average processing times have improved to 50 working days (70 calendar days) for inter-agency reviewed cases and to 17 working days (24 calendar days) for those reviewed only by State. This improvement has been due to concerted efforts by both State and Defense to deploy more personnel. Processing times for State, in particular, will continue to improve throughout this year and into 2001 as our expanded licensing officer complement becomes fully staffed.

#### CONGRESSIONAL NOTIFICATION OF MAJOR SALES

Fourth, we made a commitment last year to work with the appropriate committees of Congress, the Foreign Relations Committee and the House International Relations Committee, in order to expedite cases requiring notification to Congress under section 36 of the Arms Export Control Act before an export license may, by law, be issued. Thanks to the excellent cooperation we have received from Congress, not only have we been able to expedite these major sales and satellite exports for launch abroad, we have succeeded in doing so in several cases in record times when necessary to meet urgent launch schedules.

To date, cases requiring congressional notification account for approximately \$3 billion in contracts. The details of these cases are set forth in a fact sheet annexed to my statement. Notably, although we excluded such cases from the 90 working day goal we established last year because of the extensive higher level coordination that takes place within the Administration and because of the statutory waiting periods (15 days for NATO, Australia, New Zealand or Japan; 30 days for all others), the cases requiring congressional notification to date meet the 90 working day average.

#### TRANSITION TO USML CONTROLS FOR COMPONENTS PRODUCERS

Fifth, while our average processing times were even better than expected, and while all of the major satellite exports proceeded smoothly through the export licensing and congressional notification processes, manufacturers, particularly component and system level manufacturers, experienced a number of problems in the transition to State Department export licenses. This is because many components, parts, and systems specifically designed for commercial communications satellites, and their associated technical data, became subject to a requirement for an export license for the first time in several years.

As a result, no matter how promptly we processed these licenses, they would always require more time than in the previous environment in which no license was required. According to reports from various U.S. firms throughout last year, this resulted in some delays or disruptions in certain areas, e.g., supply relationships, acceptance testing of equipment, plant visits and the like. In response, it may also have reinforced, also as reported by U.S. firms, a tendency on the part of certain European companies to shorten deadlines provided to U.S. suppliers for responding to requests for proposals or requests for prices, particularly if the item was available from another European company.

We concluded after some considerable analysis with aerospace industry representatives on our federal advisory committee for defense trade matters (the Defense Trade Advisory Group) that we needed to devise a new licensing vehicle that would provide U.S. manufacturers with much greater flexibility to exchange technical data and with more speed to fill orders. While doing so, we still have to ensure application of the same strict standards and practices of the Arms Export Control Act and the International Traffic in Arms Regulations as intended by Congress when enacting the NDAA for FY 1999. This is why the State Department strongly supported enactment of Section 1309(a) of the Foreign Relations Authorization Act for Fiscal Years 2000 and 2001.

#### SPECIAL REGIME FOR NATO AND MAJOR NON-NATO ALLIES

Section 1309(a) of the Foreign Relations Authorization Act for Fiscal Years 2000 and 2001 authorized expressly the Department of State to establish a regulatory regime for the expeditious export licensing, as appropriate, to U.S. allies of commercial satellites, satellite technologies, and their components. At the same time, it provides for ensuring priority in the evaluation of licenses to "national security and U.S. obligations under the Missile Technology Control Regime." The Department welcomed this mandate, which provides a clear expression of Congress' view that exports to U.S. allies should be expedited consistent with our international security interests.

This mandate is also fully in keeping with a variety of initiatives the Administration has been developing to deepen defense cooperation in other areas with our allies in Europe and Asia, and to establish special channels and procedures in order to expedite exports of defense articles and services which advance our common security interests.

In order to enlist the assistance and expertise of the U.S. aerospace industry in implementing this new mandate for satellites, State and Defense asked the Defense Trade Advisory Group (a federal advisory committee to the State Department) to form a task force of its members last January. Since then, the task force has been working with experts from State and Defense to design an approach that accomplishes the specific objectives of the legislation, taking into account the experience gained and issues identified since the transfer of licensing jurisdiction to State. The main elements and conceptual framework were mapped out during January-March through a series of meetings between industry representatives and State and Defense, and the draft proposal previewed in April at the Spring conference held in Laguna Beach, California of the Society for International Affairs, an association of about two hundred defense and aerospace firms that specializes in symposia and workshops covering export licensing and compliance.

I am pleased to report to you that the new regulation implementing this new regime was published in the Federal Register on May 26, 2000.

The new regulatory regime for U.S. allies will focus on priority areas identified by industry: (1) the supply of satellite components, systems and associated technical data subject to the State Department's control, including for off-shore procurement; (2) technical information needed to respond to bids, to requests for quotations, plant visits, acceptance testing of equipment and the like; and (3) technical data for satellite insurance purposes, including for on-orbit anomalies.

The regime's main feature will be the ability to use high volume export licenses for components and technical data (known in the trade as "bulk" licenses), which will be valid for four years for multiple shipments to any of the NATO or major non-NATO allies. Another important feature is that it will not be necessary to provide in advance the details of purchase orders or contracts or re-transfer and end use certificates where they may be required.

While all of this documentation will continue to be mandatory, it will only be required to be furnished to the State Department within 15 days following shipment from the United States, at which time U.S. companies will report the appropriate shipping information and furnish electronic images of the required documentation.

In this regard, the Department decided to implement the satellite licensing regime for U.S. allies concurrently with another mandate provided by Congress in the same legislation: the requirement for reporting by the U.S. defense industry of all U.S. Munitions List exports from the United States within 15 days of shipment. State will also provide an electronic reporting procedure, including the necessary software at no charge, for this purpose.

Further, within the defined territory of the nineteen NATO member countries and the eight countries that have been designated by the President as major non-NATO allies of the United States (Australia, New Zealand, Japan, Republic of Korea, Israel, Egypt, Jordan, and Argentina), re-transfers of most U.S. origin components

and technical data licensed for export under this regime also would be permitted for an approved list of satellite programs involving U.S. allies and for use by an approved list of allied aerospace firms, all of which will be scrutinized within the USG before they are approved—without requiring written prior USG consent in individual cases since preapproval operates as an advance consent.

Both lists will be kept up to date and made publicly available by posting on the Website of the Office of Defense Trade Controls, and by other means.

For more sensitive components, such as those MTCR-controlled items subject to State's jurisdiction, the State Department's long standing controls, including non-transfer and end use certificates, parts control plans and the like, licenses will continue to be required. But, a means will be provided by which this documentation can be also furnished electronically, in most cases within 15 days of shipment, provided the transfers are limited to the approved projects and for use by approved firms. Restrictions may be imposed on the license in certain cases, in view of the specific items proposed for export and consistent with our missile technology control policies.

None of the special procedures will apply should the transaction at any stage involve an activity beyond the territories of U.S. allies, such as space launches from the People's Republic of China or Russia. In those cases, the State Department will continue to require case-by-case licensing and all of the rigors of existing law and regulation through individual licenses.

By the same measure, although not specifically provided for in the authorizing legislation, we will be prepared to include within this regime on a case by case basis certain aerospace companies located in additional member states of the European Space Agency and the European Union, as a number of these companies are closely involved in aerospace projects with our firms or those of our NATO allies.

The regulations will take effect on July 1. Between now and then we will be continuing to work with industry through our advisory committee and through a workshop, which the Society for International Affairs plans for June 28, in order to answer questions and discuss all of the details associated with electronic license submission, electronic reporting, and other guidelines that should be followed.

Mr. Chairman, thank you for the opportunity to provide the Department of State's views on satellite licensing and export controls. As you can see, we share your opinion of the importance of this matter for both our national security and our economic prosperity, and we are committing the necessary resources to carry out our responsibilities in the most efficient and effective manner possible.

Senator HAGEL. Mr. Holum, thank you.  
Secretary Reinsch.

**STATEMENT OF HON. WILLIAM A. REINSCH, UNDER SECRETARY OF COMMERCE FOR EXPORT ADMINISTRATION, DEPARTMENT OF COMMERCE, WASHINGTON, DC**

Mr. REINSCH. Thank you, Mr. Chairman. It is a pleasure to be back. Let me commend you and the committee for keeping track and keeping up to speed on a difficult issue. I think it is awfully tempting for Congress to make decisions and make changes and then never look at them again for a very long time, and I think it is commendable that you, in particular, and the committee have chosen to keep your eye on this because the consequences of what you have done are so significant. It is important that you continue to exercise close oversight. So, I am happy to be back and I was happy to be back 3 weeks ago as well.

Just speaking on behalf of the administration, let me say that we are always delighted when the Senate is voting on anything.

So, if you want to go back and vote some more this afternoon, that is fine with us too.

Since March 17, 1999, when the Congress transferred export license jurisdiction for commercial comsats back to the State Department, we have engaged in a large scale experiment in export control policy that has serious implications for future efforts to reform

or restructure our controls. I believe the outcome of that experiment has not been positive, and it is not one that I think the United States should repeat.

Since the transfer, which this administration opposed, as you know, satellite exports have declined 40 percent according to Census Bureau export statistics, and the satellite industry has told us that the U.S. share of the world market has dropped from 73 percent in 1998 to 62 percent in 1999 to 52 percent for the last three quarters. The changed controls on satellites bears some of the responsibility for this, and we can only conclude that a system that works well for arms exports is, even with the best intentions in the world, not appropriate for commercial exports. This is a fundamental point for export controls. Treating exports of commercial items like comsats as arms sales does more harm than good to our national security and to the high tech industries upon which our military and intelligence agencies depend.

Let me touch briefly on a number of factors which I hope you will consider as you contemplate this issue.

The first is that we are operating in an increasingly global economy where commercial cooperation between companies in different countries is the norm and where technology flows are shaped less by national borders than by the needs of the global market. No one nation can remain at the leading edge of technology unless it participates in this global market. This requires the ability to export.

Long-term changes in defense spending also shape the satellite export control issue. The civil use of space has exploded. Ten years ago, DOD and NASA accounted for more than half of aerospace sales. Today industry sources say that government purchases account for only 35 percent of sales while exports account for 40 percent. As the commercial telecommunications markets have exploded, companies have come to rely on commercial sales, including exports, for the bulk of their business. Globally there is overcapacity, and sales to DOD or the U.S. domestic market are not enough to maintain a strong and leading edge space industry that will stay at the cutting edge of technology.

It may seem contradictory to say that we do more to build our strength the more open we are as an economy. However, as the Defense Science Board Task Force on Globalization and Security recently reported, shutting U.S. companies out of markets that are served instead by foreign firms weakens U.S. commercial advanced technology sectors upon which U.S. economic security and military advantage depend. In the case of satellites, the same companies that manufacture the most sophisticated satellites are the leading commercial communications satellite makers as well.

The third factor is the difference between the two systems that we have under discussion, one for weapons, one for dual use. These differences are appropriate. We should treat the export of tanks, fighters, or submarines in a more deliberate and restrained manner. However, the arms export system can be needlessly damaging when applied to commercial items like communications satellites. Exports of major weapons systems have serious implications for our foreign policy and defense, and a process of lengthy deliberation and complex licensing requirements is appropriate. However, regulating commercial goods as if they were weapons harms our

technology lead and the industrial base that is the basis for our military strength.

Two procedural differences are most important. One is the scope of controls. Items on State's Munitions List require an individual license to any destination, whether that is India or the U.K. or whatever. In the case of satellites, many separate licenses can be required for a single sale. In some cases, one license is required for technical data, another to make a bid, a third to actually export hardware, and so on. This has proven to be particularly important in the satellite field, as one result of the transfer of jurisdiction was that U.S. companies now have to obtain licenses for routine exports related to satellite launches or manufacturing for Japan and the NATO countries that previously could move under license exception. The State Department, in cooperation with the Defense Department, has put into place a package of reforms to bring some flexibility to State's licensing process, which Mr. Holum has already described for you in some detail and which I suspect Mr. Bodner will address as well in his testimony.

The second crucial difference is the extraterritorial reach of the two systems. Once a munitions item has been exported, U.S. approval for any resale or re-export is required. Further, any foreign-made item which incorporates a U.S. munitions item, no matter how small, is considered to have become a U.S. munitions item and also requires a license for any resale or re-export. To use an actual example, if DaimlerChrysler Aerospace [DASA], uses a piece of plastic film which is on the U.S. Munitions List in a satellite it is building in Germany, that satellite becomes subject to U.S. controls and a license is required from the State Department for any sale. If, on the other hand, DASA buys the film from a British firm, the U.K. does not consider the film or the satellite a munition and no further license from Britain is required. This is a significant problem in cases like comsats, since our partners in the multilateral regimes consider communications satellites and the parts that go in them as dual use items, not munitions. Only the U.S. treats these sales as arms exports.

The obvious response of foreign manufacturers is to avoid using U.S. parts and components, and we have seen a trend to design out U.S. satellite components that poses grave risks to our industry. Several U.S. satellite component suppliers were notified by DASA that it has been directed to find European suppliers for parts. Other European and Japanese aerospace companies, Matra, for example, have made similar public statements.

Another factor is the fact that the commercial satellite market has tripled in size since 1992. Increasingly, these launches are for foreign satellite operators and international consortia. The pace of sales is also much faster. In 1992, it took 2 or 3 years to manufacture a satellite. Now it is down to 1 year in many cases. Today the most important criteria in the success of a commercial satellite business are reliability, scheduling, and cost in that order. While U.S. firms still enjoy a cost advantage, export restrictions can have a devastating effect on timeliness and on predictability. It is the uncertainty of the process, not just the time of the process, that is a critical element.

An illustration of the scope of this problem is that some financial analysts now predict that the jurisdiction change will affect the ability of U.S. satellite makers to tap capital markets. Other analysts believe that the main effect will be on companies' ability to obtain launch insurance, which is often critical to securing sales and financing. To have a strong space industry, we need our companies to be able to compete in the international market for communications satellites, and the companies that can best service the international market will dominate the space sectors. While the United States was, before the transfer of jurisdiction, the unquestioned leader, we have seen in the last year the early warning signs of a shift in market leadership. Our current export controls on satellites have had the unintended consequence of building stronger competitors overseas. Losing the lead in satellites to foreign producers is not a good outcome for our national security.

Obviously, any consideration of the jurisdictional issue must address the question of illicit technology transfers and the security of foreign launches of U.S. satellites. That is what the congressional inquiry was all about. This matter has been subject to extensive scrutiny and is routinely cited to justify the action that Congress took. The specific cases in question are under investigation, and it would not be appropriate to comment on them, but it is important to note that all of them, whether they were licensed by Commerce or State, occurred prior to the President's 1996 transfer of the remaining jurisdiction to Commerce, and we believe that as part of that decision in 1996 and subsequently we have put in place procedures sufficient to protect our security. In other words, we believe that we have already addressed the problem that Congress decided it wanted to fix, we believe incorrectly, in 1998.

To sum up, we find ourselves in the paradoxical situation where denial or delay of exports under the rubric of national security has in the end done more harm than good to our Nation's military and economic strength. Industry figures from the past 15 months suggest that the changed controls on satellite exports hurt the United States more than they hurt any intended target. While the Department of State has laudably taken action to alleviate problems, the fundamental issue remains that it is not practical or desirable to treat commercial exports as munitions transfers. The better solution is to recognize dual use items for what they are and control them through the Commerce procedures that are designed for that purpose. In fact, Congressmen Gejdenson and Goodlatte last month introduced bipartisan legislation in the House to do precisely that.

The position of this administration has been that the United States can achieve a net security gain if it properly exploits globalization and commercial trends. Our satellite export policy must reflect this, and I think the best way to ensure that is to begin the process of considering how best to transfer the control of satellite exports back to Commerce while ensuring U.S. Government oversight over sensitive exports.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Reinsch follows:]



## PREPARED STATEMENT OF HON. WILLIAM A. REINSCH

Thank you for this opportunity to appear before the Committee on an important and troubling issue.

Since March 17, 1999, when the Congress transferred export licensing jurisdiction for commercial communications satellites back to the Department of State, we have engaged in a large scale experiment in export control policy that has serious implications for future efforts to reform or restructure our controls. The outcome of this experiment, I would say, has not been positive and it is not one I think the U.S. should repeat. I applaud the Subcommittee for examining this problem.

The jurisdictional change affected our foreign relations, our national security and a broad range of U.S. industry, from small high tech firms to industrial giants, even for sales to allies. Since the transfer, which this Administration opposed, satellite exports have declined forty percent, from \$1.06 billion in 1998 to \$637 million in 1999 according to Census Bureau export statistics, and the satellite industry has told us that the U.S. share of the world market has dropped from 73% in 1998 to 62% in 1999 and to 52% for the last 3 quarters. The changed controls on satellites bear some of the responsibility for this, and we can only conclude that a system that works well for arms exports is, even with the best intentions in the world, not appropriate for commercial exports. This is a fundamental point for export controls—treating exports of commercial items, like communications satellites, as an arms sale does more harm than good to our national security and to the high tech industries upon which our military and intelligence agencies depend.

I would like to touch briefly on a number of factors which the Committee may wish to consider as it contemplates the satellite licensing issue. The first factor is that we are operating in an increasingly global economy where commercial cooperation between companies in different countries is the norm and where technology flows are shaped less by national borders than by the needs of the global market. Information, financing, research and development, and production are broadly diffused and can be quickly transferred to meet market needs. No one nation can remain at the leading edge of technology unless it participates in this global market. This requires the ability to export.

More efficient transportation and communication, the internationalization of capital flows and the growth of an information-based economy have transformed national industrial systems into components of this larger market. The ability of any one nation to prevent the technology transfers that accompany such flows is limited. The power of the global market is such that if one source chooses to deny an export, absent a broad consensus among our partners, some other supplier will meet the demand. To succeed in this market requires companies—and nations—to evolve and to adapt practices which emphasize speed and the transnational nature of business. Failure to adapt means economic decline.

Long-term changes in defense spending also shape the satellite export control issue. At the end of the previous administration, agencies with a role in space operations realized that DOD purchases would no longer be enough to support the robust satellite industry we need to meet our military and intelligence requirements. In contrast, the civil use of space has exploded. Ten years ago DOD and NASA accounted for more than half of aerospace sales. Today, industry sources say that government purchases account for only 35 percent of sales, while exports account for 40 percent. As the commercial telecommunications markets have exploded, companies have come to rely on commercial sales—including exports—for the bulk of their business. Globally there is overcapacity, and sales to DOD or the U.S. domestic market are not enough to maintain a strong and leading edge space industry and to stay at the cutting edge of technology.

It may seem contradictory to say that we do more to build our strength the more open we are as an economy; however, as the Defense Science Board Task Force on Globalization and Security recently reported, shutting U.S. companies out of markets that are served instead by foreign firms weakens U.S. commercial advanced technology sectors upon which U.S. economic security and military advantage depend. In the case of satellites, the same companies that manufacture the most sophisticated military satellites are the leading commercial communications satellite makers.

The third factor that bears on the satellite issue is the difference between our two principal export licensing systems—one for weapons and one for dual-use industrial products. These differences are appropriate; we should treat the export of tanks, fighters or submarines in a more deliberate and restrained manner. However, the arms export system can be needlessly damaging when applied to commercial items like communications satellites. Exports of major weapons systems have serious implications for our foreign policy and defense, and a process of lengthy deliberation

and complex licensing requirements is appropriate. However, regulating commercial goods as if they were weapons harms our technological lead and the industrial base that is the basis for our military strength and economic health.

There are many procedural differences between the systems which have contributed to the problems the satellite industry now faces, but two are most important. One is the scope of controls. Items on State's Munitions List require an individual license to any destination, whether that destination is India or the United Kingdom. In the case of satellites, many separate licenses can be required for a single sale. In some cases one license is required for technical data, another to make a bid, and a third to actually export hardware. If technology is transferred, another license is required. Some of these licenses may have to be notified to Congress. Commerce regulations allow safe transactions to go forward without delay. This has proven to be particularly important in the satellite field, as one result of the transfer of jurisdiction was that U.S. companies now have to obtain licenses for routine exports related to satellite launches or manufacturing for Japan and the NATO countries that previously could move under license exception. The Department of State, in cooperation with the Department of Defense, has put into place a package of reforms that bring some flexibility to State's licensing which my colleagues can describe in more detail.

The second crucial difference is the extraterritorial reach of the two systems. Once a munitions item has been exported, U.S. approval for any resale or reexport is required. Further, any foreign made item which incorporates a U.S. munitions item, no matter how small, is considered to have become a U.S. munitions item and also requires a license for any resale or reexport. To use an actual example, if DaimlerChrysler Aerospace (DASA) uses a piece of plastic film which is on the U.S. Munitions List in a satellite it is building in Germany, that satellite becomes subject to U.S. controls and a license is required from the State Department for any sale. If, on the other hand, DASA buys the film from a British firm, the U.K. does not consider the film or the satellite a munition, and no further license from Britain is required. This is a significant problem in cases like communications satellites, since our partners in the multilateral regimes consider communications satellites and the parts that go in them as dual use items, not as munitions. Among all the satellite producer nations in the world, only the U.S. treats these sales as arms exports.

The obvious response of foreign manufacturers is to avoid using U.S. parts and components, and we have seen a trend to "design out" U.S. satellite components that poses grave risks to our industry. Several U.S. satellite component suppliers were notified by DASA that it has been directed to find European suppliers for parts. Other European and Japanese aerospace companies, Matra for example, have made similar public statements. Commerce regulations, while they also apply to certain high-level re-exports, were modified in the Reagan Administration to avoid this broad extraterritorial reach. I expect the industry panel can provide you with additional examples of the damage caused by the transfer of jurisdiction.

Another factor is the fact that the commercial satellite market has tripled in size since 1992. Increasingly, these launches are for foreign satellite operators and international consortia. The pace of sales is also much faster. In 1992, it took 2 or 3 years to manufacture a satellite. Now, manufacturing time is down to one year in some cases, as satellite companies begin to produce "standard" models. Recent consolidation in Europe's commercial space industry, coupled with the history of cooperation on joint projects through the European Space Agency, have created a collaborative environment well suited to rapid manufacturing, and one of the main advantages that Europeans now have is being able to deliver spacecraft on a more timely basis. The ability to meet customer demands quickly is particularly important in light of the way that the satellite services industry is developing. Today, the most important criteria in the success of a commercial satellite business are reliability, scheduling and cost—in that order. While U.S. firms still enjoy a cost advantage, export restrictions can have a devastating effect on timeliness and predictability.

An illustration of the scope of this problem is that some financial analysts now predict that the jurisdiction change will affect the ability of U.S. satellite makers to tap capital markets. Other analysts believe that the main effect will be on companies' ability to obtain launch insurance, which is often critical to securing sales and financing. To have a strong space industry, we need our companies to be able to compete in the international market for communications satellites, and the companies that can best service the international market will dominate the space sector. While the U.S. was, before the transfer of jurisdiction, the unquestioned leader, we have seen in the last year the early warning signs of a shift in market leadership. Our current export controls on satellites have had the unintended consequence of building stronger competitors overseas. Losing the lead in satellites to foreign producers is not a good outcome for national security.

Obviously, any consideration of the jurisdictional issue must address the question of illicit technology transfer and the security of foreign launches of U.S. satellites. This matter has been subject to extensive scrutiny and is routinely cited to justify the transfer. The specific cases in question are under investigation, and it would not be appropriate to comment on them, but it is important to note that all of them—whether they were licensed by Commerce or State—occurred prior to the President's 1996 transfer of the remaining jurisdiction to Commerce, and we believe that as part of that decision and subsequently we have put in place procedures sufficient to protect our security. I would also point out that both the Defense and State Departments concurred in each of the satellite licenses that the Department of Commerce licensed, including all of the conditions of those licenses. Further, these agencies would review any licenses we receive in the future should jurisdiction be transferred back.

To sum up, we find ourselves in the paradoxical situation where denial or delay of exports under the rubric of national security has, in the end, done more harm than good to our nation's military and economic strength. Industry figures from the past 15 months suggests that the changed controls on satellite exports hurt the U.S. more than they hurt any intended target. While the Department of State has laudably taken action to alleviate problems, the fundamental issue remains that it is not practical or desirable to treat commercial export sales as munitions transfers. The better solution, in my view, is to recognize dual use items for what they are and control them through the Commerce procedures that are designed for that purpose. In fact, Congressmen Gejdenson and Goodlatte last month introduced legislation in the House to do precisely that.

Mr. Chairman, I applaud the steps State and Defense have taken to streamline the arms licensing process for our closest allies. The question for the Committee remains, however, whether it is appropriate to treat commercial communications satellites as weapons. One alternative is to return jurisdiction to Commerce in a way that strengthens our national security and reverses the damage done to our satellite industry. Part of any return should be a mandate for proper monitoring of satellite campaigns by both Defense monitors and Commerce enforcement agents knowledgeable in our regulations, and by better educational efforts with U.S. companies to reduce or eliminate the risk of technology transfer. A careful examination by experts from DOD, NASA and other agencies with satellite expertise to identify critical technologies which must be tightly protected is also necessary in this regard. The alternative, an export strategy dominated by risk-avoidance, may do more to damage our security than protect it. The position of this Administration has been that the U.S. can achieve a net security gain if it properly exploits globalization and commercialization trends. Our satellite export policy must reflect this, and I think the best way to ensure that is to begin the process of considering how best to transfer the control of satellite exports back to Commerce while ensuring U.S. Government oversight over sensitive exports.

Senator HAGEL. Secretary Reinsch, thank you.  
Secretary Bodner.

**STATEMENT OF HON. JAMES M. BODNER, PRINCIPAL DEPUTY  
UNDER SECRETARY OF DEFENSE FOR POLICY, DEPARTMENT OF DEFENSE, WASHINGTON, DC**

Mr. BODNER. Thank you, Mr. Chairman. I appreciate the chance to report today on the progress that DOD has been making in reforming the processes we use for reviewing satellite export licenses to improve national security, and to support legitimate satellite cooperation with friends and allies.

The policy that we pursue is one to restrict the transfer of technology to any foreign destination in two sensitive areas. The first is detailed design, development, and manufacturing technology for satellites, and the second is technology that would improve foreign launch vehicles. The focus of our policy is to ensure that U.S. technology is not transferred in a way that would improve ballistic or other missile capabilities where there are significant security risks, namely in China and in Russia, for example.

To implement this policy and the legislative mandates that we have been given, we have developed special export controls in cooperation with our colleagues at the State Department. These controls are embodied in a special section of the International Traffic in Arms Regulation [ITAR], which of course is the regulations that govern the transfer of arms.

At the same time, we recognize the desirability of continuing robust space cooperation with our close friends and allies. Therefore, while we reserve the right to apply these special export controls for national security or foreign policy reasons to transactions with allies and friends, we think that we ought to apply these controls only in selective and very narrow circumstances.

Since the last time DOD testified to this committee back in June 1999, we have been working very hard to implement the satellite export control provisions that were in the Defense Authorization Acts for fiscal years 1999 and 2000. As directed by those statutes, the satellite and launch monitoring mission is being performed in DOD by our Space Launch Monitoring Division of the Defense Threat Reduction Agency [DTRA]. Based on the estimate of what we thought would be the workload requirement for monitoring and licensing, we authorized a staff of 42 people for that organization. At the time of last year's hearing, we were just beginning to hire our first full-time new staff members. This has proven to be very difficult to do because we are facing the same shortage of skilled labor that the industry faces.

At this point we are close to 80 percent of our hiring goal, and we think that will be sufficient to meet this year's requirement.

We have also devoted significant time and energy over the last year to export control reform, as Mr. Holum referred to. Secretary Cohen has identified export control reform as a national security imperative for several reasons. First, we think it is essential in order to protect critical technology. Second, we think it is essential to promote allied interoperability, and third, export control reform is essential to preserve the health of our defense industrial base. The steps we have been taking have been focused on improving our processes so that we can perform high quality reviews of export license applications in a timely way to meet the needs of industry.

Looking beyond just the satellite arena, to all the export munitions licenses that we review, we have reduced the average review time over the last year from 45 days down to 17 days. Moreover, a year ago, we had a backlog of over 600 cases that were more than 60 days old. As of now, that has been eliminated, and we hope to maintain that. This has been accomplished primarily through changes in our processes and in our organization, not through the addition of staff. Now that we have reengineered our process and organization, we intend to continue to improve the quality and the speed of our reviews by adding 35 more licensing officers to DTRA's technology security staff, which is about a 50 percent increase in our licensing staff.

We are implementing these reforms with two primary objectives. The first is to strengthen the license review process in DOD by focusing greater attention on high risk export applications and by adding well-trained staff. Currently we have far too many low-risk applications that receive multiple layers of review, not just by

DTRA, but also by the military departments and other organizations in DOD. We think that we can handle those low-risk cases inside of DTRA, which will free up the highly specialized but very limited resources in the military departments. This will enable the military departments, with their equities and expertise, to focus on higher-risk license cases.

The second objective is that we want to make sure that DOD is not a roadblock to the appropriate export of U.S. defense goods and services abroad, especially to allies and friends. This is very important as we seek to improve interoperability and enhance coalition warfare capability, which the Kosovo experience showed we have not done enough on.

In addition to the improved export review procedures that we now have in place throughout the Department of Defense, we have also made significant strides with regard to satellite and space cooperation in particular. Within DTRA, the Space Launch Monitoring Division that conducts all of our monitoring efforts for space-related export reviews has moved forward and is consistent with the law, the Defense Authorization Acts of 1999 and 2000. We think that we have a synergy between the license and the post-license monitoring efforts that will improve consistency and also ensure streamlined review, to enhance both security and ensure that industry remains competitive. This is consistent with the view we bring to this, that industry and national security are best served by an approach in which we work closely with the U.S. exporter from the very earliest stages of contract and license development, all the way through the design, the manufacture, and the actual launch. Security and the industry both require a consistent approach throughout what amounts to a multi-year program life for every satellite launch campaign, and we think that having this dedicated team approach works best in ensuring security and in ensuring the needs of industry.

Presently there are about 100 satellite and launch vehicle programs that are subject to the more rigorous special export controls, which is to say those programs that require some form of DOD monitoring. Now, that monitoring might range at one end from a DOD presence in all technical meetings and at the launch site to the other end of the spectrum which would entail a DOD review of a company's internal control plan for authorized tech transfer. If you like, I can go into more detail about how our space launch monitoring system works.

Let me just emphasize again that the special export controls I have discussed we think should only be applied in very limited circumstances with a very limited focus when we are dealing with friends and allies. We think that the recently published changes in regulations that Secretary Holum referred to will, in fact, result in an expedited and more focused license process for NATO nations, as well as major non-NATO allies. So, we support that strongly.

I would like to reiterate that for DOD our central focus remains the task that has been given to us in the law. We are putting our principal efforts where we believe the principal risks to be, namely China and the former Soviet Union. We have designed our monitoring program against those risks and we think we have added a significant security element whose attention is focused on the pro-

gram and launch site physical security, which is where it should be focused.

DOD is focused on protecting what we should be and what the law requires and doing so in a way that ensures both technology security is protected, but also does not unnecessarily add bureaucracy or encumber industry. And we are confident that we can do better in the future. We have made enough progress in the last year to know how to improve. We are adding more people. We think we will get better in terms of process times, but also in terms of the quality of the reviews we provide.

With that, Mr. Chairman, I conclude my statement.

[The prepared statement of Mr. Bodner follows:]

PREPARED STATEMENT OF HON. JAMES M. BODNER

Mr. Chairman, I would like to thank you for the opportunity to report to you today on the significant progress DOD has made in reforming satellite export control processes to improve national security while supporting legitimate space cooperation with allies and friends. I would like to address our policies and then the procedures that we have in place to implement those policies.

It is our policy to restrict the transfer of technology to any foreign destination in two sensitive areas: (1) detailed design, development and manufacturing technology for satellites; and, (2) technology that would improve foreign launch vehicles. A major focus of our policy is to ensure that U.S. technology is not transferred that would improve ballistic and other missile capabilities in countries where there are significant security risks such as China and Russia.

To implement this policy and various legislative mandates, we have developed special export controls in cooperation with our colleagues at the Department of State. These controls are embodied in a special section of the International Traffic in Arms Regulations.

We also recognize the desirability of continuing robust space cooperation with our close allies and friends. Therefore, while we have reserved the right to apply these special export controls for national security or foreign policy reasons to transactions with those allies and friends, we have been and intend to continue to apply those controls in very selective and narrow circumstances.

Since DOD last testified before your committee in June 1999, we have been working hard to implement the satellite export control provisions mandated by the Fiscal Year 1999 Strom Thurmond National Defense Authorization Act. We have also been incorporating in those measures legislative direction contained in the FY 2000 National Defense Authorization Act.

As directed in those statutes, the satellite and launch monitoring mission is being performed by a dedicated and trained professional cadre in the Space Launch Monitoring Division, which is part of the Technology Security Directorate of the Defense Threat Reduction Agency. Based on our estimate of the monitoring and license workload the office would undertake, a 42-person staff was authorized with a mix of military and civilian personnel. At the time of last year's hearing, we were just beginning to hire our first new full-time staff members. This has proven to be an extraordinary challenge since we face the same skilled labor pool shortage encountered on a daily basis by the commercial space industry.

We are close to 80 percent of our hiring goal, which will meet our current projection of the number of monitoring days required to meet satellite launch program workload this fiscal year (about 2500 monitoring work days). When we and industry meet later this summer to discuss next year's monitoring requirements, we'll be prepared to move closer to our full strength, if the market and our security requirements warrant.

As the law requires, we have set exacting standards for both our engineering and security staffs—and we are very pleased with the results. While our physical and electronic security staff comes largely from the government sector, our engineering staff is a mix of highly skilled former industry engineers, civilian national security launch and satellite engineers, and very experienced former military engineers with commercial sector experience.

We have also devoted significant time and energy over the last year to export control reform, which Secretary Cohen has said is a national security imperative because it is essential to protecting critical technology, promoting allied interoperability, and preserving the health of our defense industrial base. The steps that we

have taken focus on improving our processes so that we are performing quality license reviews in a timely way.

So far, for all munitions licenses reviewed by DOD, we have reduced the average review time from 45 days a year ago to 18 days today. A year ago, we had a backlog of more than 600 cases more than 60 days old, which we have eliminated as of last month. This has been accomplished primarily through changes in DOD processes and organization for reviewing licenses, not the addition of new staff. Now that we have reengineered our process and organization, we intend to further improve the quality and speed of our reviews by adding 35 people to DTRA's technology security staff, increase of about 50 percent.

We are implementing these reforms with two primary objectives. First, we are seeking to strengthen DOD's export license review process by focusing greater attention on high risk exports and by adding dedicated staff that will be trained and experienced with export controls. Currently, there are many low-risk licenses that are reviewed by the Military Departments and other DOD entities. We hope to handle these cases in DTRA, which will free up the limited resources in the Military Departments to focus on those higher-risk license cases where they have military equities and critical expertise. Second, we want to ensure that DOD is not a roadblock to the appropriate export of U.S. defense goods and services abroad, especially to our valued allies and friends. This is very important as we seek to improve interoperability and coalition warfighting capabilities with our close allies and friends that we found lacking in our Kosovo experience.

In addition to the improved export review procedures now in place throughout the Department, we have also made significant strides in the satellite and space area. The DTRA Space Launch Monitoring Division that conducts our monitoring effort is now the principal reviewer of all space-related export licenses. This synergy between licensing and post-license monitoring provides consistency and streamlined review that enhances our security and ensures that our industry is competitive. This approach is fully consistent with our view that industry and national security are best served by an approach in which we work closely with the U.S. exporter from the early stages of contract and license development through design, manufacturing and launch. Our security and our industry requires a consistent approach throughout the multi-year life of satellite programs; and we believe that our dedicated team approach is focused and streamlined.

Presently, about 100 satellite and launch vehicle programs, involving 37 companies, are subject to the more rigorous "special export controls" identified in the International Traffic in Arms Regulations—controls that require some form of DOD monitoring throughout the export and launch process. This can range from a DOD presence at all technical meetings and at the launch site to simple DOD review of a company's internal control plan for authorized technology transfer.

Let me re-emphasize that special export controls should only be applied in very limited circumstances with a very limited focus when our allies and friends are involved. In this regard, we believe that the recently published change in regulations referred to by Mr. Holum will result in an expedited and more focused license process for NATO nations and major U.S. allies.

I want to reiterate that DOD's central focus remains the task given to us in the law. We are putting our principal efforts where we believe the risks of technology loss are greatest—China and the Former Soviet Union. We have designed our monitoring program against these risks, adding a significant security element whose attention is focused on program and launch site physical security.

We believe DOD is protecting what we should—and what the law requires—in a way that ensures U.S. technology security and does not unnecessarily encumber U.S. industry. We are confident that we can continue to do better as the process and regulation changes mature. The continuing interagency discussions on improved export controls will serve the American people well, simultaneously protecting both American national and economic security.

Thank you, Mr. Chairman. I look forward to any questions the committee may have.

Senator HAGEL. Secretary Bodner, thank you, and again, to each of you, we are grateful for your time.

As you know, behind you in the next panel will be an industry representative, and I suspect he will have questions about some of the points in your testimony as to how effective the new regulations have been in light of Secretary Reinsch's comments about market share losses. I suspect those are real numbers. And that

might be a good place to start. Mr. Holum, you know those numbers. You heard what Secretary Reinsch said. What is your explanation for those losses in market share for our satellite industry?

Mr. HOLUM. Let me preface by repeating what I said in my statement that we did not ask for this jurisdiction, but given it, we had to take into account the fact that Congress did not say you have jurisdiction over commercial satellites. It said commercial satellites are "munitions." And that means we are required to treat them as munitions. We are trying to make the best of a circumstance that Congress mandated that we did not ask for and that does have, by virtue of the character of our licensing process, definite disadvantages for a commercial product. It is not designed for commercial products, as Secretary Reinsch said.

It would also be entirely inefficient and duplicative for the State Department to parallel the Commerce Department process. If you are going to do something that would have agency voting and rigid timetables built into it, then you should not have it under a national security oriented munitions list. It should be in the Commerce Department.

That said, I think it is fair to say that we have made the very best of a situation that we did not request in trying to deal with these licenses in a timely way. You have heard my description in my statement about the average licensing times for commercial satellites. There are serious problems that I hope our reform, with respect to NATO and major non-NATO allies, is designed to address and will address and that is the fact that Commerce had decontrolled and had the license-free treatment for a number of parts, components and related technology that were also returned back to the State Department. We do not have in the State Department a CCL-99. We license everything that is in our jurisdiction. Everything requires a license. So that meant a number of things, parts and components, went from no license treatment to some license treatment, and no matter how fast it is, it is not going to be as fast as it was before because then the time was zero. So, I think that is the major focus of the problem.

We have not had a satellite manufacturer come to us and say they have lost a sale because of inability to obtain a license, other than cases where licenses have explicitly been turned down for security reasons related to countries other than NATO and non-NATO allies. So, I think the major focus, the major source of the problem which we are trying to resolve, is in the parts and components area.

Senator HAGEL. Staying on that subject and your comments, as well Secretary Bodner's comments about the new expedited licensing procedures—does that include complete satellites? Can you break that down for me? Are we talking about a complete satellite?

Mr. HOLUM. No, it does not include complete satellites, and there is a specific reason for that. One is that complete satellites, by virtue of the size of the contract, invariably are more than \$50 million, which means they require reporting to the Congress and Congress' acceptance of the notification. Complete satellites are also not suitable for bulk licensing because, by definition again, they are a single product exported in a point-to-point transaction, constructed wherever they are constructed, shipped to the point of



launch, and launched into space. So, it is not something that is suitable for multiple licenses. It is a single license case.

In addition, we feel that has been covered. In the initial regulations, a number of the controls that applied globally did not apply to NATO and non-NATO allies. And then as the record demonstrates, in terms of practice, we have been pumping these licenses out in a timely fashion. I gave you the list, and there is a longer list attached to my statement demonstrating how fast complete satellites have been licensed, and I think they have been moving expeditiously.

Senator HAGEL. Secretary Reinsch, would you care to comment on either of the two questions I posed to Mr. Holum?

Mr. REINSCH. Sure, Mr. Chairman. I guess I would say two things.

I think he struck the central point. They have been working very hard to tweak the system, but as Mr. Holum said, there is only so much you can tweak because there are some fundamental differences. To steal a phrase from John Hamre, who is not here to hit me over the head for stealing it, it is like putting lipstick on a dying pig. It makes it look better, but it does not solve the fundamental problem. The fundamental problem is satellites do not belong over there. We all know that, and there are limits as to what they can do.

I will leave to Mr. Mowry, who is better equipped than I am, to discuss the question of what the practical effect has been on the industry. I do have with me a three and a half page list of media reports about business lost by specific U.S. companies over the last 9 months that I would be pleased to submit to the committee. It details individual companies that have not been able to do business or have lost business or have not been offered to bid on contracts in many cases because of the licensing process.

Senator HAGEL. Thank you.

Mr. BODNER. Mr. Chairman, could I add a comment?

Senator HAGEL. Secretary Bodner, yes.

Mr. BODNER. To the first question you asked Mr. Holum, I hear black and white explanations as to why this shift in market share. On the one hand, I heard some say that it is solely due to export controls and the transfer that took place. On the other hand, I hear explanations that are totally unrelated to that. I think the situation is mixed.

In general—not in the satellite arena, but in general—we have an export control system which is sclerotic, which is very slow. It does not serve national security interests as well as it needs to, and national security interests in this arena are twofold. One, we need to open a gap with our adversaries by denying them things. We need to close the gap with our allies by facilitating their getting things, getting technology. Both of those are essential national security. The system we have tries to do that. It does not do it well enough on either objective.

We have worked tremendously hard at DOD, and the numbers I cited indicated some of the progress we made. But I know how hard it is to make that progress. It is not simply hiring people. That does not do the job. There are genuine process changes that are required. We have tried to do that. I think we now have an

interagency process trying to do that. Export controls have contributed to the problem I think that Mr. Reinsch described, but they are not solely at issue, and I think that we have now in place improvements that will help alleviate the degree to which it contributed to the problem.

I think there are other factors at work, as Mr. Holum suggested. One factor—I am not the expert in this—I believe is that out of the roughly two dozen contracts over the last year for geo-satellites, only a very small number of those were actually openly competed. Others were captured, in essence, within the European market because they were directed, if you will, by the contracting authorities. It is my understanding. I do not know the details in precise. Maybe Mr. Mowry can comment on that.

Senator HAGEL. Are you suggesting, Mr. Secretary, that the Congress should go back in and take a look at the national security implications of this with a little more intensity than we did before?

Mr. BODNER. For DOD, as Mr. Holum suggested, we did not seek, we did not welcome the change. We could work with the system as it was before and ensure that the national security was met. We can work with the current system and ensure that our aspect in this can be met. DOD can do its job in ensuring security. We can work either way with it.

I do think that the Congress needs to focus more broadly on export controls and how to make sure that export controls can do both functions: close the gap with our allies, open the gap with our adversaries. I do think that there is a misperception that the only function of export controls is the latter, opening the gap with adversaries by denying them things. We have to make sure our export control system facilitates cooperation between United States and allied industry and the transfer of technology to allies who have to fight with us side by side. Both of those are essential to the national security.

Senator HAGEL. Do you believe congressional action is needed to accomplish this in more defined ways than maybe we have been able to do in the last 2 years or is that a function of the three Departments who are working with this, primarily your Department?

Mr. BODNER. Well, again, Secretary Albright and Secretary Cohen just announced 2 weeks ago a series of initiatives to try to improve the export control process, and we think that they will simultaneously assist industry to collaborate with European partners and also Australian and Japanese partners and improve security at the same time. We specifically designed those 17 reforms so they would not require legislation because we were not sure we could get legislation. There are additional reforms beyond that that no doubt could be sought that would require legislation.

The first thing I would ask is first do no harm. If we could work with Congress to make sure we do not have legislation to prevent us from taking these 17 reforms, that would be very helpful because I do think there are some people considering legislation to block those 17 reforms.

Senator HAGEL. Are you familiar with Congressman Gejdenson's bill?

Mr. BODNER. Sir, I am not familiar with the details, no.

Senator HAGEL. Do you know generally what that bill is about?

Mr. BODNER. Is this to return jurisdiction?

Senator HAGEL. Yes.

Mr. BODNER. Again, I do not think that the administration sought the change in jurisdiction. DOD's view is we can live with the change. We can live with the current structure. We have worked with State to work out better procedures. DOD is not pursuing a change in jurisdiction. We can do our job, our role, satisfactorily under either arrangement.

Mr. REINSCH. If I can comment on that, Mr. Chairman.

Senator HAGEL. Yes.

Mr. REINSCH. The administration does not have a position on the bill. It was introduced only last month. It is H.R. 4417, I gather. It does have some unusual features that I think would probably give us some pause as we go through the details of it. But you have heard all three of us say that we did not seek and, in fact, opposed the initial transfer, and I think we welcome efforts to go back. Whether this particular approach is the right one is something we have not addressed yet.

Senator HAGEL. Mr. Holum, would you like to comment?

And I heard, by the way, very clearly your disclaimers here that you did not seek this responsibility.

Mr. HOLUM. No. We will do as Secretary Bodner said. We will deal with whatever Congress asks of us. My concern is that Congress be definitive and durable in its decision one way or the other. We have had some internal conversations about what would we do if jurisdiction were transferred back, and I think the consensus view is that we would have a party.

But we want clarity in what our mission is. We are doing the very best we can and I think we are doing a pretty good job of getting licenses dealt with, addressing specific problems, consulting closely with industry, trying to resolve concerns, but this is a system designed for weapons, for munitions. It is not a system designed for commercial products.

Senator HAGEL. And it appears—and I suspect again we will hear more directly from our industry representative—that commercial products are getting snagged in the underbrush of this noble, important effort. Generally would you agree with that statement or not?

Mr. HOLUM. Well, yes, and in particular, as it applies to—I think as a matter of objective reality that commercial satellites are not munitions—the satellite itself is a commercial product. There is a close relationship between the satellite and the launch vehicle which is a munition even if it is launching a satellite because there is no difference between a space launch vehicle and a missile that anybody can rely upon.

But the satellite and most of the related components in my view are commercial products objectively. Now, they have been defined as munitions for licensing purposes, and that is the complication here.

Now, within that framework, there are great many associated parts and components and technical data that, under the Commerce structure, required no license. They had gone through a Commerce determination that they were not sufficiently sensitive to be on a control list. So, they were, in essence, decontrolled except

for shipment to terrorist countries. Those items all require a license under the State system. I have no doubt that many of them are purely commercial products. So, they are folded up in this transfer of jurisdiction.

Senator HAGEL. Do either of you have a comment on that question?

Mr. BODNER. No.

Mr. REINSCH. No, I agree.

Senator HAGEL. Let me ask each of you this question. Realizing that we are early into this, less than a year and a half into it, and that we have burdened the State Department with some heavy responsibility, are we in fact any closer to accomplishing the objective that we set out with in this legislation? Is our national security in better shape today, more secure than it was 4 years ago, 3 years ago, and in fact is our commercial industry more productive? Are the opportunities less prohibitive? So, the obvious objective is protecting our national security without harming our industry. Are we accomplishing both with this legislation, or are there things that we need to come back and do? Mr. Secretary?

Mr. REINSCH. Well, my view frankly, which I am sure comes as no surprise, is that we are worse off for the action that Congress has taken. Our security is worse off because the industry is worse off. And as I tried to demonstrate in my testimony—and Mr. Bodner made exactly the same point—that in a world of globalization and in a world where communications technologies are integral to military strength and military capability, our ability to run faster than our adversaries is as important as our ability to hold our adversaries back. Export controls do the latter, but if we are strangling our own companies at the same time, we are hurting our security—it is very simple. They export. They make money. They plow their money back into R&D on next generation products.

If you go out and visit the Hughes High Bay, which is in southern California, where they actually make these things, you are walking along and you see various satellites underway, and then all of a sudden there is this area with all this dark plastic sheeting all over it. Well, what is it? It is a classified project. These are the same people that are doing military work. They are doing classified military work, and they are doing commercial satellite work at the same time. If we are going to hurt these companies, there is a spill-over effect that simply cannot be ignored that has a direct impact on our security.

I think we are not only worse off for the action that we have taken for that reason. I would contend that what Congress did was to step in and attempt to solve a problem which we had already solved and which we had already addressed. The situations that spun everybody up occurred in 1993, 1994 and 1995 and the first 2 months of 1996. The President did not take the action that Congress reversed until after those actions. He made the decision to transfer jurisdiction in March 1996, and the reg was not issued until October 1996.

In the process of issuing those regs, we have done a number of other things. We beefed up monitoring. We have regularized the process. We had all three agencies reviewing individual licenses. We felt that we had a tight process at that time. And I think it

is not insignificant that the Congress, despite the 320,000 pages of documents that we provided, and I assume comparable amounts that my colleagues provided in this period, never came up with any problems in 1997 or 1998 or the latter part of 1996. They came up with historical problems that all occurred before the transfer of jurisdiction.

Our view has consistently been that to the extent there was a problem, we fixed it, and now Congress has stepped in to fix it again, and by doing so has made everything worse.

Senator HAGEL. Well, that is rather clear.

Mr. REINSCH. I do not mince any words.

Senator HAGEL. Thank you.

Secretary Bodner.

Mr. BODNER. Thank you, Mr. Chairman. Let me make three points.

First, with regard to the monitoring that we do, from the earliest stages of design of the system all the way through launch, our system has gotten better. I do think the legislation has helped. The legislation provided for reimbursement, for example, of the cost associated with our monitoring program. Our monitoring program has gotten more disciplined. We got guidance in the legislation for precisely what we ought to be doing. And so, I do think congressional action has helped on that. I do think national security is being served better today than several years ago because our program has gotten better.

I would also note that we have greater transparency into the State Department run Munitions List process than we do sometimes into the dual use licensing process. In that regard, DOD feels more comfortable. We do not think anything is slipping through that we are unaware of on that front.

As I said before, my second point is the impediments inside the export control process undoubtedly have contributed to some of the market problems, but there are many other factors at play. I cited the captured market as part of the problem which might explain much of the decline in the number. I also think that the bottom has fallen out of the market. I pay attention to that more on the launch side than I do on the actual satellite side. The market is not what it was several years ago. Somehow that, I am sure, has contributed to the problems that Mr. Reinsch is identifying. I cannot tell you how much they have contributed but that is part of the picture as well.

Again, I would go back to in general, export controls—not on satellites, but in general—to the need for continued focus on reform. They have not been performing the job of protecting technology as well as they should. And that is something, because of the change in business practices, we need to continue to focus on. We have to stay ahead of the changes in business practice or our existing export control system will not keep pace, and we will no longer have the security we need. But export controls also need to continue to be reformed to ensure that people who we are going to fight side by side with are interoperable with us.

Senator HAGEL. I suspect the industry representative, Mr. Mowry, will cover some of the area and will be interested in your

analysis as to why the market has gone to hell. So, thank you for your thoughts.

Mr. BODNER. I acknowledge the limitations of my knowledge, sir, on that.

Senator HAGEL. Well, that is why we have Mr. Mowry here. He will help us with that, but thank you, Mr. Secretary.

Mr. Holum.

Mr. HOLUM. I would just reinforce maybe a couple of points. One is that there is no question about what exports of satellites and parts and components and technology are more tightly controlled now to China and Russia than they were in the past. The monitoring and the licensing requirements are also more tightly controlled every place else as part of the process. So, you have to make a judgment as to which goal is more important. We are, as I said at the beginning in my statement, scrutinizing these licenses very closely from a national security and foreign policy perspective. They are carefully reviewed, and I think there is more of that. We do not know in great detail, for example, what was decontrolled by Commerce. What we know is we got it all back and everything is now ours. So, it certainly is more tightly controlled.

But I also would reinforce the point that I think it is self-defeating to overestimate the effect of the licensing system on the market. It is a fact that military aerospace exports in 1999 grew to \$12.4 billion. Military aircraft sales grew to \$36 billion. Missile sector sales, again purely munitions, grew to \$8 billion. All of those are also licensed by the Office of Defense Trade Controls. Yet, the licensing did not prove to be an impediment.

Now, certainly the market is different, I grant you, for satellites than for munitions. But the munitions licensing process cannot be that big a clog. One of the things that Jim Bodner referred to I have also seen referred to, and that is the fact that a lot of these contracts are linked, are tied; they are not competitively bid. Of the ones that were awarded in 1999, only seven were in fact competitive. There has been shrinkage in the market due to excess transponder capacity in geosynchronous orbit. The lingering effects of the Asian financial crisis. You could point to a number of things.

I am only saying it is self-defeating to exaggerate this because it gives the competitors the opportunity to argue, well, that whole licensing mess in Washington means you better go with us when, in fact, we are getting licenses out pretty quickly. So, U.S. industry should not be handing its competitors a golden award here, a golden argument for going with other firms.

Mr. REINSCH. May I add something, Mr. Chairman?

Senator HAGEL. Yes.

Mr. REINSCH. I hesitate to do this, but I do have to take exception to a couple things my colleague said just to clarify the record from my point of view.

First of all, the Commerce Department does not remove things from the control list unilaterally. If we decided that a part or component did not need to be controlled, it was because the State Department and the Defense Department concurred in it and knew about it. It is not an action that we take by ourselves.

Second of all, I have always resisted the implication that the Commerce Department control system is somehow not as tight as

the State Department control system. I suppose one can argue that if you have to go through 24 hoops, it is tighter than having to go through 2 hoops. But I think that if you look at satellites in particular and go back to the history of this, of the three, I believe, cases that Congress identified as problematic, two of them were licensed by the State Department in 1994 and 1996, and one of them was licensed by the Commerce Department. We had our problems with this system, and I was quite clear in testimony before Congress at the time in explaining what our problems were.

But I do not think it would be correct to infer that the Commerce Department is the only agency which had those problems and that one system is in some sense tighter than the others. Both our testimonies spent considerable time talking about the differences between the systems and the difference in their focus, and I would prefer to leave it at that rather than getting into judgments about which one is tighter.

Senator HAGEL. Secretary Bodner, do you want to say anything about this issue?

Mr. BODNER. Just to clarify a point which has been relevant in the satellite arena in the past and the differences between the two systems. I think this is what Mr. Holum was referring to when he used the word "decontrol." He may not have meant decontrol in the sense of taking it off the commodity control list so much as in the process of determining whether something is subject to controls, Commerce and State operate slightly differently. We have good transparency into the State Department when they make such a determination, which is called a commodity jurisdiction determination. We do not always have such good transparency within the dual use system for a commodity classification. This is a subject that we have all testified to before. We think we should have better transparency. So, that is one benefit, a mix of many factors, one benefit of the switch over to State. We have confidence that when a determination is made as to whether something is subject to licensing, we know what is going on.

Senator HAGEL. Secretary Reinsch, you mentioned three specific cases: two licensed by the State Department, one by the Commerce Department. Are you talking about the Chinese cases?

Mr. REINSCH. Yes. There was the Hughes case, which was ours. There was the Loral case, which was State's, and the Lockheed Martin case which was also State's.

Senator HAGEL. The infamous cases that began this creative journey.

Mr. REINSCH. Hughes and Loral were the two big ones, yes. One of them was ours.

And I indicated quite clearly in testimony at the time that upon further review, we should have handled ours differently. We made a mistake and I have acknowledged that. But that was one of the cases.

Mr. HOLUM. It is important to keep in mind in that context that what allegedly happened—and these are still under investigation by the Justice Department, so we cannot go into much detail, but what is alleged to have happened is something required a license, and one was not secured. A launch failure investigation, which implied sharing of technical data relating to the space launch vehicle,

always required a license—did while it was under Commerce’s jurisdiction, and did while it was under State’s jurisdiction. You have to have a license to help anybody analyze why their rocket did not go up as estimated because that deals with something that is clearly a munition, was then, is now.

Senator HAGEL. Thank you.

Let me ask Secretary Bodner and Mr. Holum about a statement that Secretary Reinsch made in his testimony. He said: “Today the most important criteria in the success of a commercial satellite business are reliability, scheduling, and cost in that order.” Secretary Bodner, do you agree with that?

Mr. BODNER. I am not sure I am in a position to make a decision of which of those factors is most important for any given contract decision. I think they are all three important. Reliability has many factors to it. The speed of license review is one of the important factors associated with it, and that is why we are focused on making sure that we have a process which is a quality review but an expeditious review. They are all important. And we can do better. We are doing better today than a year ago, but I think we can do better still.

Senator HAGEL. So, you would not necessarily agree that reliability, I think emphatically pointed out by Secretary Reinsch, is the most important component in the success of our commercial satellite companies.

Mr. BODNER. I just do not think I am in a position to make that judgment.

Senator HAGEL. Thank you.

Mr. Holum.

Mr. HOLUM. It certainly sounds reasonable. From what I know anecdotally about the market, reliability is certainly a large factor, and there have been some failures that have caused competitive, as well as economic problems.

I also think that timeliness is becoming increasingly a concern because of the shrinkage between the time when contracts are awarded and satellites need to be launched. This used to be a longer-term, 2- or 3-year process. Now it is closer to a year, from what I understand, so that the entire process needs to be accelerated.

Mr. REINSCH. That is a very important point, Mr. Chairman. I mentioned it in my testimony, but I am glad Mr. Holum mentioned it.

When we were doing this, we had the luxury of taking a long time because it took a long time to build the thing, and then there was a launch window that was down the road. He is quite right. These things are being cranked out much more quickly now. The competitive environment has changed a lot. There is a lot more pressure on State to move quickly.

Senator HAGEL. A question I have for each of you—and we have touched on it, each of you in your own way in your testimony, and then during the give and take here—about illicit technology transfer and the security of foreign launches of U.S. satellites.

We all understand you can pass all the laws and all the regulations, have all the good intentions, but there are some out there



whose intentions and motivations are not as pure and noble as ours.

So, with the new law, as it is constructed and being implemented, are we any closer to getting at the core problem of tightening down the illicit transfer of technology than we were 3 years ago, 4 years ago when, as Mr. Reinsch points out, we had difficulties with the two cases that brought all this together? Is it any better? Is it too early to tell? Or is it about the same, or is it worse? Mr. Holum.

Mr. HOLUM. I was struck by something Bill Reinsch said about the fact that this problem was being fixed; it had been recognized. It seems to me that the ideal circumstance might have been that if Congress had had the full set of hearings that it had and then did not legislate because it certainly did contribute to raising the consciousness throughout the administration. The legislation did result in more routine defense monitoring of transactions, launches in sensitive locations.

I recall, in all of those hearings, there was a broader concern raised. There were some who argued if you help the Chinese improve their space launch capability simply by giving them the economic incentive for launches, just by providing launches, you help them, through the principle of practice makes perfect, improve their missiles. Now, for a variety of reasons I do not think that is an accurate conclusion. Their space launch vehicles are not likely to be what they end up using for missile programs.

But if that is what you believe, then our position does not help because we still believe that it is important to, and that we can safely, prevent the transfer of sensitive technology while licensing launches of U.S. commercial satellites on Chinese or Russian or other countries' launchers.

But more broadly, I think whether or not Congress had legislated, the issue would have been addressed and is being addressed in a much more rigorous way.

Senator HAGEL. Thank you.

Mr. REINSCH. I would second that, Mr. Chairman. I think it is better because of the hearings. I think it is not better because of the legislation.

We are not involved in the licensing process now, so I cannot comment on the merits of any decision that State has made in the intervening period because we do not see the applications anymore.

But I think, in general, the hearings that were held and work that we had underway prior to that time, as I said, has made the situation tighter now than otherwise.

It is uniquely a difficult area to maintain controls and to successfully monitor because all the incentives, if you will, are to have contact and to have exchanges of information. If you think about the vulnerable points in a whole launch program, the vulnerable points are, first, when the satellite arrives—take China—in China and they are bolting it onto the rocket. That is a point where there is potential technology transfer. If it is launched successfully, it is up there. You never see it again and there is not a lot of further technology transfer.

The other big vulnerable point comes in if the satellite blows up because then what happens is that the insurance companies come

in—and each side has an insurance company—and they have a great interest in making sure that it was somebody else's fault so the other company has to pay. At the same time, who is there but a bunch of engineers, and their job is not to make things blow up. Their job is to make things work. And so, everybody that is part of this equation is motivated to try to figure out what happened and how to fix it and to make sure it will not happen again. That is what they do. They are engineers, they are scientists, and they are insurance companies.

In that environment, it has proved very, very difficult to prevent technology transfer from occurring because that is what these people do. Frankly, I have some sympathy for an argument that Henry Sokolski, with whom I rarely agree on these issues, made at the time, which is that with respect to China, if you are concerned about this, you really need to make the decision up front as to whether you want to do business with them in satellites or not, because if you do business with them, there is going to be some leakage over time because of the nature of the transaction. And you either accept that and do your best to minimize it, or if you are troubled by it, you say no launches. In retrospect, I almost think that might have been a better way to go, to confront that issue head on and say, are we troubled by this, in which case let us get out of that business and go elsewhere, although that would have had a lot of implications.

We are doing this a lot better now than we used to, but I think there are still these vulnerabilities there. It is inevitable in the nature of the transaction.

Senator HAGEL. Secretary Bodner, I know you have a date at the White House and need to leave at 3:45.

Mr. BODNER. You know my schedule better than I do.

Senator HAGEL. Well, we are the all-knowing, omnipotent Senators. It is scary and frightening really how much we do not know and think we do.

You have got about 2 minutes before you have to leave. How is that? I am letting you off the hook a little bit here. So, if you could give me whatever you think is the appropriate answer in 2 minutes, you can escape. And I have one more question for your colleagues, but we will submit yours in writing. Thank you.

Mr. BODNER. Thank you, Mr. Chairman.

Let me add a layer of detail beyond what Mr. Reinsch said. I do not think it is the case that everyone involved is solely focused on making it work, whether it is a launch failure or not. We have monitors there. They are there to make sure that inappropriate tech transfers do not happen. And I do think that things have gotten significantly better. We have a much better monitoring system today than we did a couple of years ago, and that is partly due to the legislation.

I say the legislation that affected the monitoring, a distinct legislation provision from the one that transferred jurisdiction. We used to have temporary duty assignment of missile engineers go off and monitor meetings, launch sites, et cetera. We now have a dedicated team of people. I think we have 33 today. We will be up above 40 next year. That is all they do, and they monitor these things from cradle to grave. When it comes to China and Russia, they attend

every technical meeting where there might be transfer of tech data. That is certainly one of the most vulnerable points. It is not just at the launch site or in the case of a failure. It is in the design of the system in the first place because some of the most critical losses are the tech data that might be lost. So, we have definitely gotten better.

This improved monitoring system we have will be in place regardless of where the jurisdiction lies. So, if Congress were to change things, we would still have this improved system in place.

Again, we do not advocate changing the jurisdiction. Flux in the system can contribute to difficulty in maintaining controls here. We have already gone through tremendous flux shifting in one direction. If we shift back, we have to accept that there will be a period of time in which we are going to have a fluid situation where it is going to be hard to control again. But we will do what the Congress tells us to do and DOD can do its job either way.

Senator HAGEL. Secretary Bodner, thank you. Thank you for your service to the country as well. We are grateful.

If I might, gentlemen, I just have one general question. Picking up on your answers to my question on illicit transfer of technology and what the real world is about out there, connect that with what you have said in the last hour about the new competitiveness in this industry and the new products and the new players.

At some point I suspect we could ratchet sales down as tightly as we possibly can and go beyond where we are now, but it may not make all that big a difference because of the new competitive market and the other suppliers who are out there. How much is that a factor in your thoughts on this, coming from, Secretary Reinsch, your background in this and your past responsibilities moving forward, Mr. Holum, to your present responsibilities?

Mr. REINSCH. That is a really good question, Mr. Chairman, and it is one that requires a lot of thought. Let me say a couple things, but I would also like to reserve the opportunity to perhaps get back to you at greater length later after I have had a chance to ponder it.

I think you have touched on the problem that bothers us across the board in export controls now. In the 1950's and 1960's and into the 1970's, the United States was the world's leader in most everything that mattered from a military standpoint, and export controls was kind of an easy process because foreign availability was few and far between, and we had to make decisions about what we wanted the other guys to get, but we did not have to worry too much about what would happen if we said "no." We had to worry about leakage, somebody cheating, somebody filling out the form falsely. Every administration has had this problem—something that ends up in the wrong place.

But as the years go on, and particularly in the last decade, we have been really overwhelmed with the problem that you just described, which is that a lot of this technology is becoming ubiquitous in many respects, thanks in part to the Internet and more rapid means of communication. But if you want to look at the big picture, you should look more than anything else at the enormous numbers of foreign students that are being educated here and are getting their Ph.D.'s in various engineering sciences and then going

back to their own countries and doing good things. As a matter of national policy, we believe that is important because they take American ideas with them, and they take democracy with them, and they take freedom of the press with them. They take a lot of things with them. Oftentimes they do not go back. They stay here and they add to the great body of knowledge and skill that we have in this country that has made us what we are.

But some of them do go back, and the result is that in all the sectors we are talking about, we have got competitors. Talk to the phone companies. Talk to Motorola. Talk to the computer companies, as we are tomorrow. They are all in town. Talk to the software people that you may have met with over the last couple of days. There is this undercurrent sort of fear, if you will, that runs through a lot of what is going on now that they have got competitors that, 10 years ago, 15 years ago, they would not have had. That makes our job much more difficult because, first of all, it magnifies the economic consequences when we say no because there is somebody else out there ready to pick up the slack immediately, and it magnifies the security risk because those things can go from foreign sources and have the same consequences as if they came from the United States.

It is a fair question to ask in the case of the Chinese, how much difference did we really make? I think John's comment about practice makes perfect is well taken. That is an argument that is worth mentioning, but the Chinese have been launching missiles since the 1960's, and they did not do it in the 1960's and 1970's with any help from us. Those are capabilities that were there.

I think this is a situation that is only going to grow. I do not want to say get worse. It just poses a different set of challenges, and we are going to have to deal with them. Most people, both parties, bipartisan, have tended to say the way to deal with them is by trying to control fewer items better, focus in on the narrow range of stuff that really matters, keep up with technological change, and above all, do not do things that hold your own people back. Make sure that they can run faster.

The fact is, however, that getting agreement on any given action within that general set of principles is often difficult, and that is what we wrestled with between ourselves and the Congress and amongst the three of us on numerous occasions.

Senator HAGEL. Thank you.

Mr. Holum.

Mr. HOLUM. I think there are two distinct areas to focus on, and Under Secretary Reinsch has addressed very articulately the dual use realm.

Defense is a different item. This is not, as some argue, a cold war regime. This is actually a regime that goes back to the Neutrality Acts of the 1930's. It has always had a global focus. And we control many items in which there is enormous competition. Anything that is a munition down to an M-16 rifle, any commodity that is in a military inventory and has a military purpose and is on the Munitions List needs a license, low tech or high tech. We control for foreign availability purposes. Even if all the countries in the world are competing to send AK-47's into Sierra Leone, we do not think we should do that. So, it is a different kind of market.

At the high end, what I think we need most to do, picking up on what Secretary Bodner said earlier, is maintain our edge, our superior capability, and that means having a strong industrial base. Increasingly, it means having a strong multinational industrial base, including facilitating teaming arrangements, long duration licenses for major projects with our European allies and Japan and Australia. And that is what the new structure that Secretary Albright and Secretary Cohen announced in Florence a couple of weeks ago is designed to do. This is a very far-reaching set of new license capabilities that will facilitate precisely the kind of the relationships that we need to develop in order to build the best defense industrial base that we can in common with our allies, as well as in the United States.

A lot of focus in that discussion has been on the exemption idea of exempting preferred allies from ITAR's for the government and approved industries. That is important, and I think it can serve as an incentive for those countries to strengthen their munitions controls to parallel ours. In fact, that is a condition in order to grant the exemption.

But it has sort of taken attention away from the other 16 reforms that, if used fully, I think will answer a large number of the concerns including, incidentally, in the satellite industry because these project and product and global licenses will also work for satellites as well as other munitions. So, I think we are moving to reform the defense trade control realm in a pretty significant way that helps not only meet competition, but incorporate competition and build a stronger multinational base.

Senator HAGEL. Thank you. Gentlemen, you have been generous with your time. The committee is grateful. If we have additional questions from any of my colleagues, we will submit those for the record, but thank you and thanks for what you do for our country.

Mr. HOLUM. Thank you.

Mr. REINSCH. Thank you.

Senator HAGEL. Mr. Mowry, welcome. We appreciate your being here. You are all set up with water and you appear comfortable. You have your testimony. Please begin.

**STATEMENT OF CLAYTON MOWRY, EXECUTIVE DIRECTOR,  
SATELLITE INDUSTRY ASSOCIATION, ALEXANDRIA, VA**

Mr. MOWRY. Thank you, Mr. Chairman. I hope I can live up to the lofty expectations that my previous panel has put upon me. I will do my level best to answer your queries, and hopefully I will have all the answers.

I would like to thank you for the opportunity to testify here today on this important issue of satellite export controls. As executive director of the Satellite Industry Association [SIA], a private sector organization that represents U.S. companies in every aspect of the design, manufacture, launch, and in-orbit operation of telecommunications satellites, I am concerned about the issue of satellite export controls. American satellite companies have worked diligently over the past 40 years to establish and maintain their leadership position in this critical high technology industry. But hard-fought U.S. dominance in satellite manufacturing could quickly be lost to European and Asian enterprises that are striving to

win market share in this dynamic of the global telecommunications industry.

Mr. Chairman, let me begin by saying that the U.S. satellite industry holds concern for national security in the highest regard. Over the past 4 decades, American satellite manufacturers have worked to ensure that U.S. Armed Forces can maintain the high ground in outer space that translates to superiority on the battlefield. The same American manufacturers that supplied telecommunications satellites to the world have also designed and built our Nation's military communications, observations, and early warning satellites. As such, the economic health of the commercial satellite industry directly impacts our national security, and I think you heard that from all the speakers before.

While much of our industry's heritage can be attributed to the early defense and NASA space initiatives, commercial telecommunications satellite technology actually developed in parallel with government space programs. Commercial satellites have grown over the years from systems used largely to deliver basic long-distance telephone service and live international news or sports coverage to ones that are now providing services in competition with terrestrial telecommunications networks like cable television and fiber optic networks.

Today commercial satellites provide subscription television service to nearly 14 million American homes. That is about one in eight TV households here in the United States and nearly one in five homes in your home State of Nebraska, sir. By next year, you can expect to see satellite radio receivers in every new American automobile and the advent of two-way, high-speed Internet service via satellite to American homes. Congress has worked hard to enact legislation over the past several years to promote competition and diversity in telecommunications services and the satellite companies are now stepping up to that challenge.

Let me say that the commercial satellite industry today is a \$69 billion a year global industry and about a little less than half, about 45 percent, of that revenue is derived from satellite services, some of the products I mentioned before like direct-to-home television, video programming, and connecting Internet service providers around the world. Satellite manufacturing and ground equipment together account for \$32 billion in annual revenue and the commercial launch segment that has gotten a lot of attention recently makes up the remaining \$6 billion, roughly a smaller share of the overall marketplace. Nearly half of the revenues, about 45 percent, are earned by U.S. companies, and the U.S. satellite industry has consistently contributed to a positive balance of trade and employs over 100,000 highly skilled American technicians, engineers, and professionals.

That is not to say there is not competition in this business. There is. In fact, the list of foreign satellite manufacturers is long. There are major European industrial conglomerates involved in this business. Alcatel is one. Astrium is a new company that has formed from the merger of several other major European companies like DaimlerChrysler Aerospace, Aerospatiale Matra, and BAE. The Japanese have two companies that are formidable in Mitsubishi and NEC. And most recently we have seen the advent of Russian

joint ventures that use Western electronics on Russian-built satellite buses, and those companies, NPO PM and NPO Lavotchkin, are starting to compete in the marketplace.

Over the past 3 years, the global satellite industry has grown by nearly 50 percent. That growth has been driven by the explosion in multi-channel video programming and Internet services, and in many parts of the world, the only cost effective way to provide telecommunications services is via satellite. Indonesia is a case in point. Domestic and international satellite networks connect 216 million people scattered across 17,000 islands in that country. Satellites connect Internet service providers, link telephone companies, and bring TV news to homes throughout the island archipelago. Media accounts indicate that the most recent uprising in East Timor—the format for that—that was done over the Internet and a lot of that traffic was carried via satellite.

Yet, licensing for commercial satellite technology on the State Department's Munitions List nearly prevented companies from providing Y2K upgrades to satellite networks last year, as well as launching of a mobile satellite telephone service in Indonesia. The sanctions legislation that aimed at halting the sale of firearms and other weapons to the Indonesian military swept up telecommunications satellites and other products on the USML. Ultimately our industry persuaded Congress and the administration to carve out commercial satellites from those sanctions, allowing U.S. companies to continue the work on the software upgrades. But those types of sanctions will reoccur as long as satellites remain on the U.S. Munitions List.

As you know, the National Defense Authorization Act transferred jurisdiction for licensing of satellites and components and technical data to the State Department on March 15, 1999. Since that time, U.S. manufacturers of satellites and subsystems have encountered delays in receiving export licenses and approval for technical assistance agreements.

A typical telecommunications satellite will require multiple technical assistance agreements [TAA's] and export licenses from the State Department in order to be sold to an international customer. Once those licenses have been processed, the State Department must also notify Congress of the sale. This was mentioned before. They are products that tend to be about \$100 million at a pop and require congressional notification. And when you add that all together, the time it takes to license and notify a satellite system can begin to approach the time it takes to build a satellite. We have dramatically reduced our times from 2 to 3 years down to about a year. So, our market position now is at risk.

You heard the statistic that Secretary Reinsch mentioned, and I will say it again. In 1997, we had about 76 percent of the commercial marketplace for satellite orders, and when we looked at the date of the transfer, March 15, the last three quarters of 1999 and the first quarter of 2000, we had seen the market share erode to 52 percent.

Now, I am not claiming that this significant decrease is entirely or directly attributable to the shift in control. But one thing is clear: The perception is in international markets it is more difficult to buy a commercial satellite from a U.S. supplier than from a Eu-

ropean supplier. There were high profile stories in the Wall Street Journal, the Financial Times, and Newsweek that detailed lost contracts over the past 2 years, and they added to this perception. And the real life experience of U.S. companies that have spoken to me over the past 2 years have said it is more difficult to obtain TAA's and to hold basic marketing discussions with their customers, and that has been a major cause of concern.

Let me jump ahead a little bit here.

Fourteen months since the shift in licensing authority, the State Department has finally issued new regulations reforming its process for the bulk licensing of satellite parts and components to NATO and major non-NATO allies. We are grateful for the hard work that both the Office of Defense Trade Controls and Defense Threat Reduction Agency have put into crafting these new regulations. The satellite industry believes the new regulations are a positive step forward. We think they will help to improve the State Department licensing system and allow legitimate commercial sales of parts and components to occur in a timely fashion.

However, we are also concerned that the new regulations focus primarily on the export of parts. It is unclear from the Federal Register notice—and this is the one that was published on May 22, the interim final rule—how licenses for technical data for marketing bids, insurance, and on-orbit anomalies will be expedited. I look forward to the June 28 briefing that they talked about and hearing how these regulations are going to be implemented. It is unclear from a four-page notice exactly how this process is going to move forward. So, we are eager to see that.

Both the laws and new regulations are aimed at speeding trade between allied nations, and rightly so.

Let me jump ahead again.

But many of the countries whose satellite operators have purchased commercial telecommunications satellites from U.S. manufacturers over the last 10 years are not NATO or major non-NATO allies. These are friendly nations like Brazil, Malaysia, Mexico, Philippines, Taiwan, and the UAE. In addition, there are five other European nations that are active members of the European Space Agency. That is the EU's equivalent of NASA roughly. And they are not members of NATO and, therefore, are not subject to the expedited approval regulations. So, we are concerned there.

Let me also add that the change in our relationship with Canada has caused concern amongst a number of our companies, in particular one that had a major contract there. The Canadian Government's recent decision to purchase a satellite bus from a European company, after waiting 10 months for a U.S. license, was a clear signal that we have a problem here. Even more troubling are the recent press accounts indicating that commercial satellites may not be included in a list of products on the U.S. Munitions List that are under negotiation between the United States and Canada that will be eligible to receive the renewed exemption from State Department licensing. So that means Canadians may ultimately be allowed to buy military weapons from U.S. suppliers under the exemption but not commercial telecommunications satellites.

The commercial satellite industry should not be forced by Government policy into a similar position as our aerospace counter-



parts in the commercial aircraft and space launch industries. Lost market share is a difficult thing to regain, and the U.S. Government's decision to launch all satellites aboard NASA's space shuttle still reverberates amongst our domestic launch industry. Since the *Challenger* tragedy and President Reagan's decision to launch commercial satellites on board unmanned expendable rockets, Europe has dominated the commercial launch marketplace. In fact, over the past decade, more than 50 percent of all U.S. satellites have been flown by Arianespace, which is a European launch company.

At the time Congress debated shifting the export licensing back to the State Department, it was suggested that the move would ultimately help U.S. launch companies regain their lost market share. Now Members of Congress, including Representative Dave Weldon, who represents the district that includes Cape Canaveral and our launch facilities there, realize that just the opposite is true. Even a U.S.-built satellite launched on a U.S. rocket for a U.S. customer requires an export license from the State Department. Why is that? I have asked this question countless times and most people do not know the answer. The answer is that most of the insurance, 70 percent or better, comes from European suppliers, and so you have to get that license in order for that launch to take place.

Mr. Chairman, the rules governing the export licensing process for communications satellites will play a major role in determining whether our manufacturers can maintain the technological edge that serves our national security. Since the shift in licensing authority, we have worked diligently to improve the State Department licensing process so that it might work more efficiently.

Specifically, our industry has worked to help the State Department Office of Defense Trade Controls obtain resources to hire and train officers. We worked closely with authorizers, appropriators, and the administration to fix the problem. We think the efforts are beginning to pay off. We achieved a 50 percent increase in funding for ODTC in last year's appropriations bill. We secured bill language that will allow State to increase the GS levels for licensing officers to help attract and retain qualified individuals, and we backed legislation that will allow State to expedite licenses for NATO and major non-NATO allies. We continue to push for \$30 million in reprogrammed funds that will allow DOD to upgrade their computer networks and those of agencies that now must review nearly 2,000 additional satellite license applications per year.

This committee can and should make recommendations to implement several practices within the existing laws and regulations that will allow U.S. satellite manufacturers to effectively compete in the worldwide telecommunications market while ensuring that adequate safeguards are employed to protect our national security. As we at SIA see it, those recommendations could include some of the following items.

First, the State Department should move quickly to implement all sections of the laws passed by the Congress to create a speedy and transparent licensing process for commercial satellites and related equipment. This includes fully implementing the so-called Rohrabacher amendment language in the Foreign Relations Au-

thorization Act [FRAA] and resolving the outstanding issue of how to deal with space-qualified components.

Second, the Defense Department has already undertaken a comprehensive internal review of its practices for processing and scrutinizing export license applications with an aim toward dramatically reducing the time it takes to review licenses for commercial products such as satellites. We applaud their efforts and we encourage the State Department to mirror their processes and time lines to ensure that no one Federal agency becomes a bottleneck in this process.

Third, we encourage the administration to make the necessary funds available for the computer upgrades at the State Department, Defense Department, and within the intelligence community that will allow companies to file applications electronically and for Federal agencies to share these documents without having to print and transport reams of paper between offices throughout the greater Washington metropolitan area.

Fourth, commercial telecommunications satellites must be freed from the weapons-related sanctions imposed on countries where commercial telecommunications products can still be sold. It goes back to the Indonesian example I mentioned. U.S. satellite manufacturers must have a level playing field to compete with both foreign suppliers of satellites as well as makers of terrestrial telecommunications equipment, and both of those products are controlled as commercial items.

Finally, if promised improvements do not yield dramatically better results in the near future, Congress should consider passing bipartisan legislation that seeks to reclassify telecommunications satellites as commercial products for export control purposes. Such legislation would help ensure that commercial satellite exports are not put at a disadvantage vis-a-vis foreign satellite manufacturers and other products that are licensed as commercial items.

In closing, I would like to reiterate that the satellite industry is committed to ensuring that the Arms Export Control Act and its implementing regulations protect the national security of the United States. We believe that our national security is enhanced by having a healthy and robust satellite industry that can compete on an equal footing in the international marketplace.

Once again, I would like to thank you for the opportunity to testify and would be happy to answer any of your questions.

[The prepared statement of Mr. Mowry follows:]

PREPARED STATEMENT OF CLAYTON MOWRY

Mr. Chairman, Members of the Committee: Thank you for the opportunity to testify before you today regarding satellite export controls.

As Executive Director of the Satellite Industry Association, a private-sector organization representing U.S. companies involved in every aspect of the design, manufacture, launch, and in-orbit operation of telecommunications satellites, I am concerned about the impact of export controls on the commercial satellite industry. American satellite companies have worked diligently over the past 40 years to establish and maintain their leadership position in this critical high technology industry. But hard fought U.S. dominance in satellite manufacturing could be quickly lost to European and Asian enterprises that are striving to win market share in this dynamic sector of the global telecommunications business.

In order to address this issue today, I have organized my statement into four parts. First, I will provide an overview of the commercial satellite industry. Second, I will discuss how export controls can adversely impact our business. Third, I will

talk about what our association has been doing to improve the export licensing process. And fourth, I will finish my remarks by making recommendations regarding a course of action that Congress and the Administration should take to address this vexing issue.

Mr. Chairman, let me begin by saying that the U.S. satellite industry holds concern for national security in the highest regard. Over the past four decades, American satellite manufacturers have worked to ensure that U.S. Armed Forces can maintain the high ground in outer space that translates into technological superiority on the battlefield. The same American manufacturers that supply telecommunications satellites to the world have also designed and built our nation's military communications, observation, and early warning satellites. As such, the economic health of the commercial satellite industry directly impacts our national security.

While much of our industry's heritage can be attributed to the early Defense and NASA space initiatives, commercial telecommunications satellite technology actually developed in parallel with government space programs. Commercial satellites have grown over the years from systems used largely to deliver basic long-distance telephone service and live international news or sports television programming, to ones that are now providing services in competition with terrestrial telecommunications technologies such as cable television and fiber optic telephone networks.

Today, commercial satellites provide subscription television to nearly 14 million American homes—that's more than one in eight TV households across the country and nearly one in five homes in Senator Hagel's home state of Nebraska. By next year, you can expect to see satellite radio receivers in every new American automobile and the advent of two-way, high-speed Internet service via satellite to American homes and offices. Congress has worked hard to enact legislation over the past several years to promote competition and diversity in telecommunications services and satellite companies are now stepping up to the challenge.

The commercial satellite industry today is a \$69 billion-a-year global industry. Over \$31 billion—nearly 45 percent of the industry's revenue—is derived from satellite services such as direct-to-home television, video programming distribution, and connecting Internet Service Providers around the world. Satellite manufacturing and ground equipment together account for over \$32 billion in annual revenue with commercial launch services making up the remaining \$6 billion. Nearly half—over 45 percent—of those revenues are being earned by U.S. companies. The U.S. satellite industry has consistently contributed to a positive balance of trade and employs over 100,000 highly skilled American technicians, engineers and professionals.

Competition in the commercial satellite market is intense. The list of foreign satellite manufacturers is long. It includes several major European industrial and telecommunications conglomerates—Alcatel, Alenia Spazio, and Astrium (Aerospaziale Matra, DaimlerChrysler Aerospace and BAE Systems); the Japanese—Mitsubishi and NEC; as well as Russian joint ventures using western electronics and power systems aboard Russian-made satellite frames—NPO PM and NPO Lavotchkin.

Over the past three years the global satellite industry has grown by nearly 50 percent. That growth is being driven by the explosion in multi-channel video programming and Internet services. In many parts of the world, the only cost-effective way to provide telecommunications services is via satellite. Indonesia is a case in point. Domestic and international satellite networks connect 216 million people scattered across 17,000 islands in that country. Satellites connect Internet Service Providers, link local telephone networks, and bring TV news to homes throughout the island archipelago. Media accounts indicate that the recent uprising in East Timor was organized largely over the Internet—and that the data was carried over satellites.

Yet licensing commercial satellite technology on the State Department's U.S. Munitions List (USML) nearly prevented U.S. companies from providing Y2K upgrades to satellite earth stations and launching mobile satellite telephone services in Indonesia last year. Sanctions legislation aimed at halting the sale of firearms and other weapons to the Indonesian military swept up telecommunications satellites and other commercial products on the USML. Ultimately, our industry persuaded Congress and the Administration to carve out commercial satellites from those sanctions—allowing U.S. companies to continue their work on software upgrades to satellite earth stations in the country and permitting the launch of a new mobile telecommunications satellite that is now serving the south east Asian region. But these types of sanctions issues will reoccur as long as satellites reside on the USML.

Indonesia is but one example of how placing commercial telecommunications satellite technology on a list designed to control weapons has had unintended consequences. Let me take a moment to quickly outline our other problems.

As you know, the National Defense Authorization Act for Fiscal Year 1999 (NDAA) transferred jurisdiction for export licensing of all commercial satellites, components and technical data to the State Department on March 15, 1999. Since that time, U.S. manufacturers of satellites and subsystems have encountered delays in receiving export licenses and approvals for Technical Assistance Agreements (TAAs).

A typical telecommunications satellite will require multiple TAAs and export licenses from the State Department in order to be sold to an international customer. Once those licenses have been processed, the State Department must also notify the Congress of the sale, adding still more time for review. When you add it all together, the time it takes to license and notify the satellite can begin to approach the time it takes to build the satellite. The speed at which U.S. manufacturers can deliver a satellite has, heretofore, been a major competitive advantage for our companies. But our market position is now rapidly eroding.

Mr. Chairman, the United States' leading edge in the commercial satellite manufacturing business can be captured in a single statistic: Historically, U.S. manufacturers have built more than two-thirds of the world's telecommunications satellites. In fact, in 1997, U.S. companies won 76 percent of all announced contracts for internationally-competed telecommunications satellites. Similarly, in 1998, America racked up 73 percent market share. Yet in the past twelve months, U.S. companies' share of announced orders dropped to 52 percent.

We are not claiming that this significant decrease in market share is entirely or directly attributable to the shift in satellite export licensing from the Commerce Department to the State Department. But one thing is clear—the perception today in international markets is that it is more difficult to buy a commercial satellite from a U.S. supplier than from a European supplier.

High profile stories in the Wall Street Journal, Financial Times, and Newsweek that detailed lost U.S. satellite contracts over the past two years have added to this perception. And the real life experience of U.S. companies who are now required to obtain TAAs merely to hold basic marketing discussions with their customers has been a major cause of concern among foreign telecommunications companies accustomed to working closely with American suppliers.

Licensing delays have been particularly troubling for commercial satellite exports to countries that are members of the North Atlantic Treaty Organization (NATO) and other major non-NATO allies. Both the NDAA and last year's Foreign Relations Authorization Act for Fiscal Year 2000 (FRAA) included sections specifically seeking expedited approval of satellite export licenses for allied nations. Both pieces of legislation sought to shorten timelines and improve transparency in the processing of satellite export license applications at the State Department. The laws also specifically called for expedited approval of licenses dealing with launch insurance, on-orbit satellite failures, the return of defective parts, and responses to requests for proposals (RFPs) from customers in NATO and major non-NATO allied countries.

Now 14 months since the shift in licensing authority, the State Department has finally issued new regulations reforming its processes for the "bulk" licensing of satellite parts and components exported to NATO and major non-NATO allies. We are grateful for the hard work that both the Office of Defense Trade Controls (ODTC) and the Defense Threat Reduction Agency (DTRA) have put into crafting these new regulations. The satellite industry believes the new regulations are a positive step forward. We think they will help improve the State Department licensing system and allowing legitimate commercial sales of parts and components to occur in a timely fashion.

However, we are also concerned that the new regulations focus primarily on the export of parts. It is unclear from the Federal Register notice how licenses for technical data for marketing bids, insurance, and on-orbit anomalies will be expedited—as required by the NDAA and FRAA. These areas must also be dealt with and quickly.

Both the laws and the new regulations are aimed at speeding trade between allied nations, and rightly so. The majority of commercial trade in this sector is between countries that are either NATO allies or major non-NATO allies. These are nations that present no national security threat to the United States. Countries such as Luxembourg, Norway, Canada, The Netherlands, Argentina, Spain, Japan, and Australia have been longtime buyers of U.S. telecommunications satellites. And yet, we've made it increasingly difficult for U.S. companies to sell satellites to their legacy customers in those markets. The new State Department regulations are a positive step in the right direction, but they clearly don't solve all of our problems.

Many other countries whose satellite operators have purchased commercial telecommunications satellites from U.S. manufacturers over the last ten years that are not NATO or major non-NATO allies. These are friendly nations such as Brazil, Ma-

aysia, Mexico, Philippines, Taiwan, and the UAE. In addition, five other European nations that are active members of the European Space Agency (the EU's equivalent of NASA) are not members of NATO, and therefore are not covered under the NDAA and FRAA exemptions. The new regulations do not address commercial trade and cooperative programs between U.S. manufacturers and their customers in these important countries.

The change in our relationship with Canada has also caused concern for U.S. satellite suppliers. The Canadian Government's recent decision to purchase a satellite bus from a European satellite supplier after waiting ten months for a U.S. license is a clear signal that we have a continuing problem. Even more troubling are recent press accounts indicating that commercial satellites may not be included in the list of products on the USML under negotiation between the U.S. and Canada that will be eligible to receive the renewed "exemption" from State Department licensing. So Canadians may ultimately be allowed to buy military weapons from U.S. suppliers under this exemption, but not commercial telecommunications satellites.

The commercial satellite industry should not be forced by government policy into similar dire straits as our aerospace counterparts in the commercial aircraft and space launch industries. Lost market share is an extraordinarily difficult thing to regain. The U.S. Government's decision to launch all satellites aboard the NASA Space Shuttle still reverberates among our domestic commercial launch service providers. Since the Challenger tragedy and President Reagan's decision to launch commercial satellites aboard unmanned expendable rockets, Europe has dominated the commercial satellite launch market. In fact, over the past decade, more than 50 percent of all U.S.-made commercial geostationary satellites were launched from French Guiana, by Arianespace—the European launch company.

At the time Congress debated shifting satellite export licensing back to the State Department it was suggested that the move would ultimately help U.S. launch companies to regain their lost market share. Now Members of Congress including Rep. Dave Weldon, who represents the district that includes Cape Canaveral Air Station, realize that just the opposite is true. Even a U.S.-built satellite launched on a U.S. rocket for a U.S. customer requires an export license from the State Department. Why? Because over 70 percent of the insurance underwriting that make such launches possible comes from European companies.

Mr. Chairman, the rules governing the export licensing process for communications satellites will play a major role in determining whether U.S. satellite manufacturers can maintain the technological edge that serves our national security. Since the shift in licensing authority we have worked diligently to improve the State Department licensing process so that it might work more efficiently.

Specifically, the U.S. satellite industry has worked hard to help the State Department Office of Defense Trade Controls obtain the necessary resources to hire and train new licensing officers. We have worked closely with authorizers, appropriators, and the Administration to fix this problem. And our efforts paid off. We achieved a 50 percent increase in funding for the ODTC in last year's appropriations bill. We secured bill language that would allow State to increase the "GS" grade levels for licensing officers to help attract and retain qualified individuals. We backed legislation that would allow State to expedite licenses for NATO and major non-NATO allies. And we continue to push for nearly \$30 million in reprogrammed funds that would allow the Department of Defense to upgrade computer networks for all the agencies that must now review the nearly 2,000 additional satellite license applications each year.

The U.S. satellite industry agrees with the President and the Congress that the transfer in licensing authority to the State Department should have been accompanied by swift changes in the USML licensing process that would allow for timely licensing of satellite exports while ensuring our national security is not placed in jeopardy. Because the shift in authority was not accompanied by clear and measurable improvements in the timeliness and transparency of the USML licensing process, has had a profound impact on the U.S. satellite industry's ability to compete in the global telecommunications marketplace of the 21st century.

This Committee can and should make recommendations to implement several practices, within the existing laws and regulations, that would allow U.S. satellite manufacturers to effectively compete in the worldwide telecommunications market while ensuring that adequate safeguards are employed to protect our national security. As we at SIA see it, those recommendations could include the following:

First, the State Department should move quickly to implement all sections of the laws passed by the Congress to create a speedy and transparent licensing process for commercial satellites and related equipment. This includes fully implementing the so-called "Rohrabacher amendment" language in the FRAA and resolving the outstanding issue of how to deal with space-qualified components.

Second, the Defense Department has already undertaken a comprehensive internal review of its practices for processing and scrutinizing export license applications with an aim toward dramatically reducing the time it takes to review licenses for commercial products such as satellites. We applaud their efforts and encourage the State Department to mirror their processes and timelines to ensure that no one Federal agency becomes the bottleneck in this process.

Third, we encourage the Administration to make the necessary funds available for computer upgrades at the State Department, Defense Department, and in the Intelligence community that would allow companies to file applications electronically and for Federal agencies to share these documents without having to print and transport reams of paper between offices throughout the greater Washington metropolitan area.

Fourth, commercial telecommunications satellites must be freed from weapons-related sanctions imposed on countries where commercial telecommunications products can still be sold. U.S. satellite manufacturers must have a level playing field to compete with foreign suppliers and makers of terrestrial telecommunications equipment.

Finally, if promised improvements don't yield dramatically better results in the near future, the Congress should consider passing bi-partisan legislation that seeks to reclassify telecommunications satellites as commercial products for export control purposes. Such legislation would help ensure that commercial satellite exports are not put at a disadvantage vis-a-vis foreign satellite manufacturers and other domestic suppliers of terrestrial telecommunications equipment—whose products are licensed as commercial products.

In closing, I'd like to reiterate that the satellite industry is committed to ensuring that the Arms Export Control Act and its implementing regulations protect the national security of the United States. We believe that our national security is enhanced by having a healthy and robust commercial satellite industry that can compete on an equal footing in the international marketplace.

Once again, I thank you for the opportunity to testify today and to take part in the policy discussion concerning such issues of vital importance. I would be happy to answer any questions that the Committee might have.

Senator HAGEL. Mr. Mowry, thank you.

I would like to pick up with some of your testimony as it relates to the previous witnesses' concerning market share. You covered some of it, especially on page 3 of your testimony. But you say—and I quote from your testimony—"Over the past 3 years, the global satellite industry has grown by nearly 50 percent." The global market is increasing, but it appears our share is decreasing. You heard Secretary Bodner's and others' explanation for that. Is their explanation on target?

Mr. MOWRY. I would say that a number of things they said are quite true. There is some cyclicity in the business. There was a slowdown in the Asian market. That had an impact really a couple years later because it does take a year or two from the order date to the delivery date of the satellites. And there were clearly some other larger issues of satellites being pulled off the pad because they had some technical difficulties and they had to be redone and some launch vehicle failures that also limited the overall number of launches that took place and the satellites that were delivered to pads and launched into orbit.

That said, it is difficult to look at the cyclicity that is somewhat inherent in the business from a year-to-year basis and the upward line that is taking place—we are looking at an overall growth in the industry over time—and to say that what has been happening on our satellite manufacturing side has not been affected in some way by the shift in export licensing. It is difficult to draw a line and say this license was lost and this means  $x$  number of dollars outside of the licenses that were either denied by the State Department or took a long time, and therefore, in the Canadian example,

for instance, where the Canadian Government, just after 10 months, threw up their hands and said we are going to buy from Europe. You can quantify those dollar to dollar, and you can draw the direct line to the State Department process. But outside of that, it is difficult to do.

So, we put the market share statistics out there basically to talk really about the perception in the marketplace, and I think the perception is it is harder to buy a satellite from a U.S. company. And that is a problem for our companies. Secretary Holum mentioned that maybe we do not want to say that because it does provide our foreign competitors with a good example, and if the perception is a reality in this marketplace, that means our companies are not going to maybe win all the contracts that they could. But we have to talk about the problems that face our industry and we have to talk about the regulatory issues that we are encountering. I do not think you would hear the industry yelling as loudly as it has been if there were not real problems here.

Senator HAGEL. I assume if over the last 3 years the global satellite industry has grown by nearly 50 percent, as you state, it is a result of a considerable increase in demand. Is that right?

Mr. MOWRY. That is absolutely true, and it is driven by the demand for telecommunications services. As we all know, the Internet is growing rapidly. We have got a multi-channel television universe now that is 200, 300, 400 channels and is growing more rapidly. And all that needs to be carried, particularly internationally—not only here in the U.S., but internationally—via satellite. So, we tend to be a smaller part of the global telecommunications business, about 5 percent of all the traffic out there. But that traffic, particularly on the data side and the Internet world, is increasing quite rapidly, and so we are seeing quite a bit of growth in the services end of the business.

Senator HAGEL. And you are saying that the new growth, as you laid out directly and clearly in your testimony, is being inhibited by these new regulations and the new legislation that now is being implemented as law. Is that correct?

Mr. MOWRY. That is correct. As I say, it is difficult to quantify specifically the impact on some of the contracts. We can say overall that it has had a chilling effect on the industry. It has certainly slowed down the delivery of a lot of these products, and it is taking longer.

A lot of these companies, as I mentioned before, particularly the parts suppliers, are not used to dealing in the environment where they had to go get multiple licenses from the State Department. They were smaller companies. They did not have staffs of three or four or five people here in Washington just to baby sit a license through the process. So, we had some very small companies calling me from Buffalo, New York and Kansas and other places where you do not expect to have big aerospace companies. These were small companies. They were saying, how do we deal with this? How do we go about getting a license through this process? How do we go about competing against a French company or a German company that can respond to an RFP within 30 days or 60 days when it takes us 60 days just to get the license from the State Depart-

ment to be able to respond to that request? So, that is the type of examples that we have been seeing.

Senator HAGEL. So, those most vulnerable are the little guys.

Mr. MOWRY. Absolutely. I think, by and large, we have not had Hughes come to me and say, we lost the sale because of the State Department licensing process. It just has not happened. There have been instances—and there still are satellites out today—that they have not reached a decision on, and so I do not know if those are counted in the averages that the Secretary mentioned or not. I am not quite clear as to what is all being involved in those 50-day and 70-day averages that he mentioned.

I would like to add, though, that those are working days and not actual days and there is somewhat of a difference there. You get a 60-day RFP, it is not a 60-working day RFP, it is a 60-day RFP. Clearly the companies are struggling to get the license quickly enough to reply to those requests and submit bids.

Senator HAGEL. So, you would take some issue with Mr. Holum's analysis of how quickly these licenses are being pumped out. He was quite specific about the effectiveness of the State Department's ability to get those licenses out in a rather timely way, implying that he did not necessarily believe that there was anybody being hurt or losing business.

Mr. MOWRY. As I say, I do not think the major companies involved here have lost specific contracts outside of those where the licenses were denied. But I do not know that I would say that the process is working so well that there are no problems out there. There continue to be some problems. They have dramatically improved the process. We are hearing fewer complaints from industry. In fact, a number of the folks in industry are saying they are really working hard at this. The folks that are involved at the State Department are really doing their jobs quite well.

We are not out here to beat up on State or anybody else. We think they were really underfunded and under-resourced when this transfer took place, and that is why we fought very hard to get them the funding that they needed. But we still think there is room for improvement in that process and that they continue to reduce those times and get closer to what would be a commercially acceptable timeframe for processing those applications.

Senator HAGEL. And you do not believe generally it is quite there yet.

Mr. MOWRY. No. Overall it is getting there. We think it is getting close, but from time to time, we still hear of difficulties and there are some last-minute fire drills that still do take place. But by and large, we are getting our licenses and we are still able to do business.

Senator HAGEL. Mr. Reinsch mentioned that he had, I think, three pages of companies—I believe he said this or implied this—that had lost contracts or lost business as a result of the time problems and the lag and the complications of the licensing process. Are you familiar with the list that he is talking about? He has entered it or will enter it for the record.

Mr. MOWRY. I have not seen the specific list. I know there have been a number of press reports out there. I mention a couple in my testimony as well from Financial Times and Space News and the



trade publications, as well as national publications. Newsweek had a story that outlined several of the problems like Radarsat was one that I mentioned with Canada. So, there have been a lot of instances, and they have been well publicized where U.S. companies have lost business.

Senator HAGEL. Your organization does not keep an inventory or a list of those companies who have had problems?

Mr. MOWRY. We have a press file of all those clippings and all those accounts, but the companies do not always share every lost sale with me for competitive reasons. We are a trade association and we do not try to get into their individual contracts and where they may or may not have won a bid or been able to reply to a request on an individual license.

Senator HAGEL. Mr. Holum mentioned that the expedited procedures for NATO and our other allies, or some of our allies—and he listed them in his testimony, and you are familiar with all of them—is going to vastly improve the situation. I asked him a question, and he talked about parts of satellites. And I asked the question about complete satellites, and you heard his answer. Do you agree with what he said as to why complete satellites are not listed?

Mr. MOWRY. I agree partially with what he said. I think they are trying to reform the larger process for completed satellites, and they are trying to expedite particularly the congressional notification provisions that take place. By and large, they are working to speed that up. But also I think on the completed satellite side we could see some faster processing. There are clearly some ways to improve that process I think.

Whatever is done on the completed satellite side, we would like to see it done in a way that ensures that all the launch companies are treated in the same way, that it does not benefit one supplier over another in terms of delivery of a satellite for a launch because that could impact the launch marketplace. But we think there are some things that could be done to help process completed satellites.

Senator HAGEL. Well, it seems to me—and I am quickly out of my depth here—that if competition is developing as rapidly as it is within this expanded market with this kind of demand, then complete satellite sales are a very big part of this and are a critical dynamic in dealing with the competitiveness part of this. I am a little surprised that we are not focusing more on the complete satellite issue. Am I overstating it?

Mr. MOWRY. It is clearly important. When you come down to it, you have a \$100 million piece of equipment that might be sitting on the ground completed ready to go to launch and you are waiting on a notification or you are waiting on a license. Every month that that spacecraft is not in orbit the company could be losing upwards of \$10 million from transponder related revenue. They have got to go out to the capital markets, raise the money. Time is money, and clearly getting those licenses in a timely fashion is important to the companies, particularly to the prime contractors, as well as their customers. These are companies like NBC and CNN and they are waiting for that bird to get up.

Senator HAGEL. And they need a complete satellite.

Mr. MOWRY. They need a complete satellite. Absolutely, and that is important to our industry. There is no doubt.

Senator HAGEL. And so the market drives this like anything.

Mr. MOWRY. Absolutely.

Senator HAGEL. You mention in your testimony here—you said rather plainly—“but our market position is now rapidly eroding.” I assume everything you said points to your comment here. That is a tough statement. But yet, I do not get a sense of urgency from you that these licenses are all that big a problem yet. They are working them through, I think you said. If your market is eroding as deliberately as you have stated here, what are you doing to deal with that? And I suspect there is always going to be, as you live in this real world, some kind of regulation, some kind of government entity that is going to deal with these kind of things. So, if your market is eroding, what are you doing about it?

Mr. MOWRY. Well, the companies are trying vigorously to compete. As I said, there is rapid consolidation in Europe. They are getting better. Their companies are pulling together to try to compete against our contractors. Our companies are trying to reduce the cycle times, improve the lifetime of the satellite, how many transponders, its power, its capabilities. Obviously, they have devoted considerable staff and resources to export licensing now. They have got a lot of people that baby sit these things all the way through. They pay for all the monitoring that is done by DTRA and DOD, so they put a lot of resources into those efforts. And they are trying to make sure that the process that we live with today—and this is our reality. We know we are at the State Department, that we are going to try to make that be the best process that we can have and that we can do our business.

It has been a difficult 2 years for the satellite industry. I think overall, if you talk to the companies, they will tell you that the market has not been quite as robust as they would like to see. We have had, as I said, some issues with satellite failures. But we think the market is going to come back. I think overall the market for these types of high speed data satellites that connect Internet service are going to be important.

And our companies are going to have to get better and continue to work to compete against consolidating European companies that are going to be formidable suppliers of these satellites. If you look at other industry examples like Airbus and like Ariane where the Europeans stepped up and they made a major concerted effort to compete against the United States in these critical parts of the aerospace industry, they captured considerable market share. We obviously would like to see our market position within the satellite—

Senator HAGEL. Well, is that due to the over-restrictive regulatory process that we have?

Mr. MOWRY. I would say partially. Clearly the Europeans license their satellites as dual use commercial products, and we license ours as weapons. And that is a fundamental difference. They do not have the same types of restrictions in terms of the types of technical data transfer that we have, particularly with customers that are within the European Union, which represent quite a few of our

satellite buyers. So, we have got that to deal with and we are going to try to deal with it the best we can.

Senator HAGEL. Do you believe what happened in March of last year was a mistake?

Mr. MOWRY. I would have to say yes. We have always said that commercial communications satellites should be treated as commercial products and not as weapons. The problem was satellite launches in China and the failure investigations. The answer was dealing with all telecommunications satellite exports to the entire world. It was a very blunt instrument to try to fix what seemed to be a specific problem. So, we support the goal of trying to license satellites ultimately as commercial products, and we think that is the way we are going to be able to compete both against foreign suppliers and terrestrial providers of telecommunications equipment.

Senator HAGEL. You spent some time in your testimony talking about Canada. Again, quoting from your testimony, "So, Canadians may ultimately be allowed to buy military weapons from U.S. suppliers under this exemption," the previous exemption that we referred to and laid out, "but not commercial telecommunications satellites." Explain a little bit more about that and what your industry is doing about this problem.

Mr. MOWRY. I think this issue—and I am not the expert in the Canadian exemption, but for a very long time, Canada was exempted from a lot of the licensing requirements for all kinds of products that were on the Munitions List, commercial satellites and military products as well. That exemption was withdrawn by the administration. I think it was about a year and a half ago, and now they are in negotiations to try to restore that exemption. There were a few announcements earlier in the spring about work and negotiations between the administration and the Canadian Government to restore that exemption. But there have been some press articles, most recently in Space News and Defense News, that have said that administration officials may not be considering including satellites as part of that exemption. So, if the exemption is restored, it would allow sales of military products that are on the Munitions List to basically be free and clear of a lot of the licensing requirements, but satellites would still be burdened with a number of the licensing requirements that come with being on the Munitions List.

And it is a stark example because of the Radarsat contract that was lost and the 10-month delay that it took in trying to get that contract through. It was a contract for the satellite bus and not for the electronics and components inside the satellite. So, it was one where I think the U.S. company that was involved in it was quite troubled in losing the contract to a European company when it felt like it was not something that should have been controlled. It is Canada, and they think that we should be able to do business there.

Senator HAGEL. If we would rearrange the deck chairs again and move it all back to Commerce and go back to where we were, does that help, hurt, or make any difference? I suspect we all accept that we are going to continue to have an agency—certainly DOD will always be a piece of this—to regulate, oversee, and process sales of this kind of technology.

How do you do it better, realizing that any time there is a shift there is going to be a period of working through the glitches, as the State Department is doing? How do you make it better? Does it make any difference whether we go back, change it, or let this settle in at the State Department, let them get proficient, let them hire up, and hopefully get to a point where they know what they are doing with it? I do not mean that in a derogatory way. Any agency with this kind of burden put on them all of a sudden is going to take time to get to where they need to be. I think we all accept that. So, what do you think?

Mr. MOWRY. To answer the first part of your question, it would help if we were licensed as commercial products because clearly we would not run into the weapons related sanctions issue that I mentioned. Clearly there would be countries that we are trying to sell to that are not NATO or major non-NATO allies, which we would like to have an expedited process for. So, in those two specific instances, it would be better to be licensed as a commercial product than as a weapons item.

That said, obviously the State Department is working very hard to improve their process and we are going to try to work under that framework until the time that Congress decides that it is time to treat us as commercial products again. Until that time, we are going to do our level best to improve the State process, help them get the resources they need to do their job, and the companies are going to continue to work with the State Department folks to make sure that we can get these things through and be able to compete. We are hopeful. This is a good sign. It took them 14 months to get the regulations out, but we are hoping that once they get the thing in practice, that it is going to work better. According to the people I have talked to in the business, this should clear the decks of something like 70 percent of the problems that they see out there, these bulk licenses.

Senator HAGEL. Your people think that?

Mr. MOWRY. Yes, our people, our companies. The licensing officers that work for a number of our major contractors have told me that roughly 70 percent of the application problems that they have deal specifically with these bulk licensing type of issues where you have to keep going back time after time to get licenses for a specific part or item. That obviously protracts the entire process of licensing the commercial satellite itself. The idea is, as State gets better at dealing with those bulk licenses, they can focus on the completed satellites and that those will be able to move through even faster. That is our hope.

Senator HAGEL. What do you think of the Gejdenson bill?

Mr. MOWRY. We support the goals of the Gejdenson bill. As I said before, I think we would like to be treated as a commercial telecommunications product and not as a weapon. There are specifics of that legislation that we are still looking at, and I even heard today from a couple of folks I talked to here that there may be some specific issues in the way the bill is written that we may want to look at. But overall, we support the goals of that legislation.

Senator HAGEL. Is there anything else you want to add?

Mr. MOWRY. I would just say that our industry—I cannot underline this point enough—is trying to compete in a global telecommunications marketplace, and that is a marketplace that moves very rapidly. In fact, you are seeing technology and the speed of technology change very quickly, much like in the computer industry, not quite the application of Moore's law, but we are seeing cycle times reduced. We are seeing a very competitive market from our European suppliers and from our Asian markets that are suppliers. We want to make sure that the satellite industry can compete both against the terrestrial guys, the fiber guys, the cable guys, the wireless guys. Those are our competitors. We see it in spectrum areas. We see it in licensing areas as well against our foreign satellite manufacturers. So, we are just asking for a level playing field really with those types of entities. We are treated differently, and as such, it makes it more difficult for satellite companies to really have commercial products that serve a retail consumer marketplace in the world.

Senator HAGEL. Mr. Mowry, thank you. I am grateful that you would take time to come before this committee. Your testimony and questions and answers have been important.

Mr. MOWRY. Thank you, Mr. Chairman.

Senator HAGEL. You helped us. We may keep the record open for a couple of days in case my colleagues wish to ask questions. But thank you.

[Whereupon, at 4:33 p.m., the subcommittee was adjourned.]

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#### ADDITIONAL STATEMENT SUBMITTED FOR THE RECORD

##### PREPARED STATEMENT OF ASSOCIATION OF AMERICAN UNIVERSITIES, THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, AND THE COUNCIL ON GOVERNMENTAL RELATIONS

Thank you for the opportunity to submit testimony to the Senate Foreign Relations Committee. This testimony is submitted on behalf of the Association of American Universities (AAU), the National Association of State Universities and Land-Grant Colleges (NASULGC), and the Council on Governmental Relations (COGR). These three associations represent most of the major research universities affected by the International Traffic in Arms Regulation (ITAR).

As you know, Public Law 105-261 transferred responsibility for export licensing of all space satellite technology from the Department of Commerce to the Department of State. Neither department requested this transfer nor wanted it. As a result of the transfer, virtually all information related to scientific satellites, including all related components, software, parts, and materials, are designated significant military equipment (SME) and are thus covered by the tightly-controlled Munitions List, regardless of whether the underlying hardware is actually SME. Consequently, a non-citizen's participation in research and development of a scientific apparatus that involves or relates to a satellite (such as a gravity measurement device to be placed in earth orbit) may be, under ITAR, a "deemed export" requiring an export license from the Department of State before the data may be shared with a foreign collaborator or fellow researcher. This is so even when the technology and data utilized are already in the public domain, as is the case with most university-based research.

Both the ITAR and the Department of Commerce's Export Administration Regulation (EAR) have existed for a number of years and serve a valid national purpose. The Department of Commerce, through the EAR, has devoted significant coverage to fundamental research. The freedom to communicate research techniques and results within the academic community is essential to the synergy and vitality of the research enterprise. Together with competition and peer review, this broad and open communication constitutes a fundamental element of the research enterprise and the development of intellectual capital. Ultimately, this intellectual capital feeds in-

dustry and leads to further innovation. Restriction of scientific communication is costly and can inhibit continued advancement.

Over the last twenty years, open academic research has come to be recognized as “fundamental research” not subject to export controls or to special restrictions in federal contracts. Former president Ronald Reagan, in National Security Decision Directive (NSDD) 189, stated, “It is the policy of this Administration that, to the maximum extent possible, the products of fundamental research remain unrestricted.” Similarly, the statement that accompanied NSDD 189 stated, “Our goal is to maintain the free and open exchange of unclassified research so necessary to a free society and an expanding economy.” The policy, still in effect, was expressly intended to forestall the imposition of special controls on fundamental research, particularly that conducted in universities.

The definition of “fundamental research” is critical given this position. NSDD 189, which established the term as a policy concept, defined it as “basic and applied research in science and engineering, the results of which are published and shared broadly within the scientific community as distinguished from proprietary research from industrial development, design, production, and product utilization, the results of which are ordinarily restricted for proprietary or national security reasons.” Moreover, the definition of technical data does not include information concerning general scientific, mathematical or engineering principles commonly taught in schools, colleges and universities or information in the public domain. But for this exclusion, universities would need an export license for each foreign student matriculated, each foreign researcher invited, and each collaboration with a foreign institution.

The success of university research in general and of collaborative research programs in particular owes much to unfettered participation by persons of all nationalities. In addition to considerable expertise, they often bring state-of-the-art technology and research funds. Of course, a legitimate need to protect national security also exists, but as NSDD 189 suggests, classification—rather than export controls—is the appropriate vehicle for controlling federally funded research if national security is an issue. The adverse impact universities are feeling here is generally in the realm of unclassified, non-weapons-related research that is pulled into ITAR only because it is space-based or relates to space technology.

ITAR’s impact on university research has been substantial. The following are examples of the difficulties universities have encountered over the last year and a half.

- *Government projects hampered when university researchers are afraid to travel overseas to assist collaborating institutions:* A major NASA-funded, international space exploration project included the participation of a foreign university, funded by the foreign government, to fabricate a piece of instrumentation that would be shipped to the U.S. and integrated into the scientific payload. The European partner was falling behind schedule, which would cost NASA \$1 million per month for each month of delay. However, the NASA project officer hesitated to authorize the U.S. scientist to go overseas and get the collaborator back on track, and the university was unable to assure the researcher that, under the newly-applicable ITAR, such travel and discussions did not require an export license. Given the jail terms and fines leveled against researchers personally even for inadvertent violations of ITAR, university researchers are understandably unwilling to take chances.

- *Government Requests for Proposals (RFPs) suggest that an ITAR license may be required before discussing a proposed project with foreign collaborators:* While it is clear that international funding and contribution to space missions is necessary, the NASA SMEX Mission of Opportunity Q&A for Proposals that require such foreign support then advises that the university may need a license prior to even discussing the project with the intended collaborators.

- *Inventions developed by foreign students cannot be developed or marketed:* A Turkish national graduate student developed a new hybrid rocket fuel that the university is in the process of patenting. A commercial sponsor wanted to fund further testing of the fuel, but insisted that information that they relate to the student would need an ITAR license. It would be unrealistic to expect further work on the invention be limited to U.S. citizens, or to seek ITAR licenses for such university work.

- *Commercial defense contractor to issue Stop Work Order because a key person was a Canadian citizen:* The university contract contained no restrictions on publication or foreign nationals; the project was to test devices to grow cells in space designed for the International Space Station. Upon learning that one of the key personnel (for whom prior approval was required to replace) was not a citizen, the defense contractor informed the university that the person must stop work. The de-

fense contractor has subsequently suggested that a Technology Transfer Control Plan can be developed to authorize the person to work; however, this is not acceptable to the university because it is impossible to anticipate what foreign nationals may participate, in a funded or unfunded capacity, in the future.

- *Expert project personnel precluded from further contribution:* A Chinese national post-doc wrote software for the NASA funded Gravity Probe-B project, which was sent to NASA for their review. NASA stamped the report and software “ITAR-controlled” and insisted that the individual who wrote it now needed an ITAR license to read their comments on the work.

In such a restrictive environment the message being sent throughout the global science community is to avoid involvement of U.S. industry in foreign scientific collaboration on space missions. This unwelcome message has the effect of restricting the involvement of the United States in foreign and joint science projects. As a global technology leader, the U.S. cannot afford the negative consequences on industry or on the advancement of the science.

The changes announced on May 26 by the Department of State are certainly welcome, but are unlikely to have much impact on universities. The regulations are specifically designed to improve U.S. cooperation with allies and are geared more toward easing industry’s problems than addressing the academic community’s concerns.

For example, the *Streamlined Licensing for COMSAT Components/Technical Data* provision (proposal 14) applies only where all parties involved are NATO countries. Many of universities collaborate closely with the European Space Agency (ESA). In working with ESA, two problems emerge. First, universities are not conducting “sales” of items. Second, of the fourteen members of the ESA, five are not members of NATO. These include Austria, Finland, Ireland, Sweden, and Switzerland. Therefore, under the new regime, universities will still be regulated by ITAR and required to obtain export licenses.

At best, the *Major Program License* (proposal 1) under which a university might become a subcontractor, would require a continued scrutiny of the research being done to maintain it within the initially approved license parameters, which is not compatible with the open inquiry of fundamental research. Such required monitoring would likely have a chilling effect on the research performed. In addition, collaborators on a fundamental research project are often not all known and identifiable at the beginning of the project; they may be determined only as the direction and/or needs of the research project evolve, or they may change as researchers move from one institution to another.

The Administration is to be commended for trying to address industry’s problems, but additional consideration should be given to universities’ needs as well. The following options may be of use in trying to resolve this situation:

- Clarify that the fundamental research exemption in the ITAR is the same as under the Export regulations.

- The fundamental research exemption in ITAR should operate in the same manner as it does in the EAR and should exclude from ITAR export controls U.S. university-based research, scientific and experimental satellites and related technical data.

- Universities need not register or secure export licenses when the activity qualifies under the ITAR public domain and fundamental research exemption.

- Universities may rely upon the Q&A section of the EAR, at 15 CFR Part 734, as similarly applicable to ITAR.

- Make explicit that prime contractors who accept controls on access by foreign nationals and EAR or ITAR licensing requirements should not flow down such requirements to university and laboratory subcontractors when the subcontract activity qualifies as fundamental research.

- Urge that a system be created wherein Major Program Licensees are not limited to subcontractors and collaborators identified at the beginning of a project, but will also have the flexibility to include additional subcontractors as needed, in keeping with the current practices of fundamental research.

- Recognize that universities cannot operate like defense contractors; support the open, fundamental research environment, and limit the use of closed meetings, non-disclosure agreements, and other security controls when involving University-based researchers in federally supported projects.

- Clarify that “Defense Services” and “Defense Articles” are distinct from the education and fundamental research activities conducted by universities and that universities need not secure State approval for Technical Assistance Agreements when the activity qualifies as public domain under ITAR.

- The best result would be to return jurisdiction for university aeronautical and space-based fundamental research programs and their related satellite to the Department of Commerce, provided that the satellite or related item is intended for basic or applied research in science and engineering and that the resulting information is published and shared broadly within the scientific community.

