Good afternoon, Congressman Sherman, Congressman Manzullo, and Lieutenant Governor Dubie. My name is David Logsdon, and I am the Executive Director of the U.S. Chamber of Commerce Space Enterprise Council. The Space Enterprise Council represents all aspects of the aerospace industry and is comprised of thirty companies. The U.S. Chamber of Commerce is the world's largest business federation, representing more than three million businesses and organizations of every size, sector, and region.

Introduction

As you may know, the U.S. Chamber of Commerce is a founding member of the Coalition for Security and Competitiveness and the Space Enterprise Council is a member of this important group. The Coalition is committed to advancing a modernized export control system that is efficient, predictable and timely and supports U.S. competitiveness and national security. However, I'm here today to discuss the impact of the current export policy regime on the space industrial base, specifically to small businesses (Tier Two and Tier Three companies) and entrepreneurial companies. As national and economic security have become increasingly intertwined, the economic impact on small business and entrepreneurial companies has national security ramifications. On behalf of the Chamber and its Space Enterprise Council, I would like to thank the Aerospace States Association for holding this hearing and focusing attention on this very important issue.

As I begin my testimony, I would like to make four basic points:

Cost of Compliance and Financial Health

According to the Air Force Research Lab/Department of Commerce "Defense Industrial Base Assessment- U.S. Space Industry" August 2007 report, export control compliance costs averaged $49million per year industry-wide. Compliance costs grew 37% during the 2003-2006 period with the burden of compliance significantly higher for companies in the lower tiers.

Unintended Consequences

Foreign competitors leveraged their countries' more relaxed regulatory climate in marketing their products as "International Traffic in Arms Regulation (ITAR)-free"directly affecting U.S. companies' ability to compete, especially the lower tier suppliers. In effect, our companies are even losing opportunities with our allies who have sought to avoid cumbersome U.S. controls.

Competitiveness on the Foreign Market

According to the AFRL/DOC report, Tier Two companies feel that ITAR restrictions and limits are a major impediment to be able to respond to proposal requests and subsequently sell products in foreign markets. Tier three companies are starting to leave the space industry due to a sustained absence of profitability and a refusal of some foreign customers to procure equipment that requires U.S. ITAR licensing.

Export Controls and the Aerospace Workforce

Though foreign nationals are composing a growing portion of the engineering talent pool, because of the stringent export policy, several companies are starting to phase out the hiring of foreign nationals. This is particularly relevant because there is such a dearth of qualified domestic personnel. Hiring a foreign national requires: an export license, a technology control plan, special training in export control compliance, facility modifications, computer network architecture modifications, and escorting and monitoring the employee.

Background

The space industrial base is now operating in a global economy. In order to meet the needs of the warfighter, the Department of Defense (DOD) acquires goods and services from an industrial base that includes foreign suppliers. Further, the DOD has an interest in seeing that U.S. allies have access to weapons and equipment that will allow them to fight effectively and efficiently with U.S. forces. On the other hand, the U.S. has an enduring interest in seeing that advanced defense technologies do not fall into the wrong hands and thereby become a threat to both the U.S. and its allies. At the core of the effort to prevent the improper diversion of defense technologies is the arms export control policy of the U.S.

For many years, U.S. arms export control policy was based on preservation of national security and the need for allies to keep weapons technology out of the hands of Eastern Bloc countries. With the end of the Cold War, arms export control has become more complicated and difficult. The post-Cold War global arms market is extremely competitive; defense firms compete for an ever-greater share of a smaller pie. Partly in response to this competition, the defense industry has put tremendous pressure on the U.S. government to modernize and speed up the arms export licensing process, which industry claims is too slow and inefficient and therefore threatens its market share.

At the same time, the need for rigorous export controls has never been greater. Arms traffickers have been trying to secure weapons and defense technologies that they can sell, at a huge profit, to rogue states, terrorists and other dangerous individuals and groups. Preventing these individuals and countries from acquiring U.S. defense technology is the primary objective of the licensing process that industry seeks to streamline. Thus, government agencies responsible for controlling arms exports are confronted with the unenviable task of balancing industry's demands for a system that supports U.S. competitiveness with the need to keep dangerous technologies out of the hands of unauthorized end-users.

To export or reexport satellites and most satellite components to a foreign country, or to launch a satellite on a foreign launch vehicle, one must first attain proper authorization from the U.S. Government. Under the ITAR, the Department of State (DOS) is the licensing authority for most commercial communications satellite exports and reexports, although recent interagency reviews

of the U.S. Munitions List (USML) have resulted in the transfer of several categories of space-qualified components to the DOC's Commerce Control List (CCL).

The policy surrounding the export of commercial satellites (primarily communications satellites, or comsats) has revolved around giving jurisdiction to export between the DOC and the DOS. Under the DOC, comsats fell under the dual-use controls, while under the DOS they were on the munitions list.

Unhappy with this outcome, DOC appealed to the National Security Council and President Clinton. In March 1996, after many interagency meetings, President Clinton ordered that comsats be transferred to DOC. To accommodate DOS's concerns, he issued an executive order in December 1995 that required DOC to refer all export licenses to the DOS, DOD, Energy, and the Arms Control and Disarmament Agency. A majority vote of these five agencies would decide licensing conditions. By October 1996, all jurisdiction over comsats was transferred to Commerce.

1996–1999

Two launch failures of the China's Long March rocket would once again bring change to U.S. export policy: the January 1995 failed launch of the Long March 2E rocket carrying Hughes-built Apstar 2 spacecraft and the February 1996 failed launch of the Long March 3B rocket carrying Space Systems/Loral-built Intelsat 708 spacecraft. The satellite manufacturers and China worked together to create an analysis of the failure of both these launches. This analysis was required to fulfill insurance requirements and was reviewed by the DOC. DOC determined that the export of the analysis to the insurers and China fell under the license DOC issued in February of 1994 and allowed its transfer to China.

This analysis created a major controversy, as it was unclear whether DOC had the authority to approve such an export. A congressional review determined that these launch failure reviews were conducted without required Department of State export licenses, and communicated technical information to the People's Republic of China in violation of ITAR. This investigation led to the inclusion of a provision in the Strom Thurmond National Defense Authorization Act in 1998 that returned control of all satellites and related technologies to the DOS. This was accomplished by the removal of said items from the DOC list of dual-use items in the Export Administration Regulations and placing them on the DOS's USML, controlled under section 38 of the Arms Export Control Act. In addition, a provision was added that the President must certify to Congress 15 days in advance that any transfer of satellite technology to China would not harm U.S. launch companies and/or help Chinese missile technology.

The events leading up to the convening of the Cox Committee by the Congress in 1998, and those following the declassification of its report in 1999, have had a significant worldwide impact on the U.S. export licensing process. U.S. laws that were once business-friendly have become more stringent to accommodate national security concerns, but with no differentiation

between potential adversaries and allies. Whether the change will actually be able to achieve the intended national security goals is uncertain, especially since many of the new measures taken differ from the actual recommendations of the Cox report. In the meantime, international aerospace commerce has become encumbered by rules at best ambiguous, at worst counterproductive.

In January of 2002, Space Systems/Loral agreed to pay the U.S. government $20 million to settle the charges of the illegal technology transfer and in March of 2003, Boeing agreed to pay $32 million for the role of Hughes (which Boeing had acquired in 2000) in the export violation. In addition to that, the company has had the export of its satellite, Chinasat-8, blocked for launch in China from 1998 to the present day.

Cost of Compliance and Financial Health

As stated earlier, according to the AFRL/DOC "Defense Industrial Base Assessment- U.S. Space Industry" August 2007 report, export control compliance costs averaged $49m/year industry-wide. Compliance costs grew 37% during the 2003-2006 period with the burden of compliance significantly higher for companies in the lower tiers. As a percent of foreign sales, the cost burden on Tier Three companies is nearly eight times that of Tier One firms. These compliance costs include insurance costs, consulting services, compliance training costs, and Defense Technology Security Administration monitoring costs. For companies that are operating on tight budgets, these accumulating costs can be devastating to a company's bottom line.

According to the AFRL/DOC report, margins are thin and below average for the Tier Two and Tier Three suppliers. The average net margins for the Tier Two and Three suppliers are around 5%, compared to 9% in the high technology manufacturing sectors in the general economy. There is a direct correlation between export policy, the cost of compliance, and the finance health of the Tier Two and Tier Three suppliers.

For entrepreneurial companies, because of the cost of compliance, the net margins (if they exist) are even lower. Entrepreneurial companies have had to restrict discussions with several foreign investors because they could not perform due diligence and this has impacted investment capital.

Unintended Consequences

Our stringent export policy has, in essence, allowed our global competitors to catch up in the global aerospace marketplace. As our global competitors have narrowed the gap, they have started to develop capabilities that, in many instances, are very similar to ours. In Europe, U.S. components and technology are slowly but surely being designed out. There are six primary examples that clearly show a definite " ITAR-free" trend :

- Creation of a ITAR-free European apogee motor;
- ITAR-free European thruster control valves;

- ITAR-free European star tracker;
- Microwave components from the Astrium Megha-Tropiques mission instruments;
- Alcatel satellite bus; and
- GRACE mission where U.S. systems integrator was replaced by a foreign contractor.

Several other countries have stated that they won't buy from the U.S. due to export controls. This, in turn, has led to issues about our competitiveness on the foreign marketplace.

Competitiveness on the Foreign Marketplace

Because of our current export policy regime, U.S. companies are finding it increasingly difficult to compete on the foreign marketplace. In a recent study, more than half of all U.S. companies polled stated that they didn't think that they could be competitive on the global marketplace. According to the AFRL/DOC study, Tier Two companies feel that ITAR restrictions and limits are a major impediment to be able to respond to proposal requests and subsequently sell products in foreign markets. Tier three companies are starting to leave the space industry due to a sustained absence of profitability and a refusal of some foreign customers to procure equipment that requires U.S. ITAR licensing.

The Space Enterprise Council represents all the manufacturers of remote sensing satellites (most of which are Tier Two companies) in the industry and their prospective is quite telling. According to the Council's remote sensing companies, over $1 billion has been allocated to foreign competitors by their respective governments in order to compete internationally. In turn, the opportunities lost to foreign vendors due to U.S. regulatory restraints include:

- Spain's abandonment of ISHTAR to participate in the French HELIOS system;
- Taiwan's ROCSAT-2 program also built by a French concern;
- South Korea's latest KOMPSAT program built by an Israeli company;
- Thailand's remote sensing satellite system built by the French;
- Turkey's current procurement- where not a single US company bid; and
- Singapore's multi-satellite constellation cooperation with Israel.

The Council also represents many of the subcomponent manufacturers. According to recent Aerospace Corporation analysis, the following are areas of concern in the space supplier base (where there is only one domestic supplier left or the supplier is financially weak):

- Solar Cells

- Lithium-Ion Batteries
- Travelling Wave Tubes
- Visual Imagers
- Optical Coatings
- Read-out Integrated Circuits
- Infrared Focal Plane Arrays
- Solar Cell Substrates

Export Controls and the Aerospace Workforce

According to the National Academy of Sciences (NAS) report, "Rising Above the Gathering Storm," the United States has a few issues that need to be reformed in terms of international students and scholars. NAS recommends:

- That there be a less complex visa processing and extensions process;
- New PhDs in S&E: 1-year automatic extension and automatic work permit and expedited residency status;
- Skills-based, preferential immigration points system to prioritize U.S. citizenship; and
- Reformation of the "deemed exports" policy
    - Allow access to information and research equipment except those under national security regulations

The Chamber's Space Enterprise Council backs these recommendations.

For small and entrepreneurial companies, the current export restrictions have severally impacted a company's ability to hire employees with specialized technical expertise.

These reforms are needed because the domestic talent pool has shrunk dramatically. Consider the following facts:

- In South Korea, 38% of all undergraduates receive their degrees in natural science or engineering. In France, the figure is 47%, in China, 50%, and in Singapore 67%. In the United States, the corresponding figure is 15%.
- Some 34% percent of doctoral degrees in natural sciences and 56% of engineering PhDs in the United States are awarded to foreign-born students.

- In the U.S. science and technology workforce in 2000, 38% of PhDs were foreign-born
- About one-third of U.S. 4th graders and one-fifth of U.S. 8th graders lacked the competence to perform even basic mathematical computations.
- U.S. 15 year olds ranked 24th out of 40 countries that participated in a 2003 administration of the Program for International Student Assessment (PISA) examination, which assessed students' ability to apply mathematical concepts to real world problems.

Finally, the reforms are needed because of the "graying" of the aerospace workforce. The 2002 Presidential Commission on the Health of the Aerospace Industry" stated that 27% of the aerospace workforce could retire by 2008. Fresh blood is needed, especially for those folks in the 30-40 year old range. These folks will make up the next set of aerospace program managers.

Conclusion

Congressman Sherman, Congressman Manzullo, and Lieutenant Governor Dubie, thank you for the opportunity to discuss this serious issue. The Chamber and its Space Enterprise Council stand ready to work with Congress to ensure that we have an export policy regime that balances both national security interests and economic security competitiveness. We congratulate you for taking this important step by holding today's hearing.

In summary, we believe that the recent directives from the White House is a step in the right direction; however, we believe that we need a fundamental change to the export policy regime to ensure both our national and economic security. Small business is the bedrock of the American economy and the small businesses in the aerospace community continue to be adversely affected by our export control policy.

The Chamber and its Space Enterprise Council stand ready to take action on behalf of the business community to provide viable solutions that benefit business, workers, and our national and economic security.