

Record Testimony

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Working Group on the Health of the U.S. Space Industrial Base  
and the Impact of Export Controls

Chairman Gordon and Mr. Hall,

It is a privilege to appear before this distinguished committee to present the findings and recommendations of an independent Working Group from the Center on Strategic and International Studies (CSIS) on the Health of the U.S. Space Industrial Base and the Impact of Export Controls.

It was my honor to co-chair this expert study group with Dr. William Ballhaus , The Aerospace Corporation, and Mr. Pierre Chao, Senior Associate, CSIS. The other distinguished members of our Working Group were:

Richard Albrecht, Moog  
Jeffrey Bialos, Johns Hopkins  
Lincoln Bloomfield Jr., Palmer Coates  
David Danzillio, Emcore Photovoltaics  
John Douglas, Aerospace Industries Association  
Paul Kaminski, Technovation  
John Klineberg, Consultant  
Lon Levin, SkySeven Ventures  
Tom Marsh, Lockheed Martin, retired  
Tom Moorman, Booz, Allen Hamilton  
J.R. Thompson, Orbital Sciences  
John Tilelli, Cypress International  
Robert Walker, Wexler & Walker Public Policy Associates

Our task was as follows:

- 1) Review previous and ongoing studies on export-controls and the U.S. space-industrial base and 2) assess the health of the U.S. space-industrial base and determine if there is any adverse impact from export controls, particularly on the lower-tier contractors.
- Review the results of the economic survey of the U.S. space industrial base conducted by the Department of Commerce and analyzed by the Air Force Research Laboratory ( AFRL ).
- Integrate the findings of the study group with the result of the AFRL/Department of Commerce survey to determine overall conclusions and recommendations regarding the impact of export controls on the U.S. space-industrial base.

The methodology we used to meet this task was:

- Leverage a broad set of interviews and data from:
  - the U.S. Government
    - Department of State, Department of Defense ( OSD/Policy, OSD/AT&L, DTSA, STRATCOM, General Council{??} ), NRO, Department of Commerce, NASA, FAA, and GAO

- The U.S. Congress
  - Foreign Governments and agencies ( Asia and Europe )
  - U.S. industry
    - Boeing, Lockheed Martin, Northrop Grumman, ATK, Moog, Swales, GeoEye and SES Americom
  - Other experts
    - IDA, Aerospace Corporation, Booz Allen Hamilton, Satellite Industry Association, Space Foundation, US Chamber of Commerce, CSIS, and Aviation Week
- Leverage the comprehensive survey of space-industrial base undertaken by AFRL/Department of Commerce

In doing this study, we were guided by the following set of principles:

- Space is critically important to U.S. national security
- Global leadership in space is a national imperative
- Similarly, sustaining technological superiority in space is a U.S. national interest
- Given the interdependence between the defense, intelligence, civil and commercial sectors of space, U.S. leadership in all four is important
- A strong space-industrial base is important
- A prudent export control policy is necessary to control sensitive technologies, and
- The U.S. must have unimpeded access to the technologies ( global and domestic ) needed for national space systems

Mr. Chairman and distinguished members of the committee, the Working Group recognizes that the United States must have export controls that protect technologies critical to our national security and maximize the opportunity to maintain our leadership in critical areas. However, it was the overarching conclusion of our study that our current export controls have had an adverse impact on our national security, a negative impact on our industrial base, most particularly at the second and third tiers of the industry, and has complicated the relationships necessary for mutually-beneficial, international cooperative endeavors.

It is our view though that all of the deficiencies in our export control processes can be corrected without an adverse impact on our national security. It is also our view that correcting these deficiencies will have a positive impact on our national security.

We found not only that the intent of current export controls was not being realized, but it was also having an adverse impact on the health of the space-industrial base. Specifically, we are controlling technologies that are not critical to our national security and are readily available in the global marketplace. Most obvious are commercial communications satellite systems that are a widely available commodity today. There are clearly others, such as some aspects of weather satellites. The result of this over-control is that our space industry loses international sales; other countries conclude it is more

advantageous to develop indigenous capabilities rather than be subject to our export control requirements; and countries that throughout the space age have been our partners in space exploration no longer consider the U.S. the partner of choice.

Instead of maintaining our leadership, this over-control has been a catalyst for other nations to develop their own capabilities. An example is India. Clearly, U.S. export controls have been a motivation for their current most impressive development of a comprehensive national space program. In the last decade, the space community has grown from a very exclusive Club X into a very broad array of countries with substantial space capabilities. As an example, a dozen nations are able to launch their own satellites, and 38 countries have operational control over their own communications satellites. Although this expansion of space capabilities would have eventually occurred, U.S. export controls have caused it to accelerate to the degree that today, the U.S. does not control its proliferation, and U.S. preeminence in space is under challenge in many areas. Other unintended consequences of our over-control are that we have become insular, meaning we are not a full player in international space, and consequently we have somewhat diminished our access to foreign innovation and human capital.

Our report presents 13 findings and nine recommendations, which are summarized below.

**Finding 1:** Overall financial health of the top-tier manufacturers in the space industrial base is “good,” but there are areas of concern within the broader health of the industry.

**Finding 2:** As earlier studies have documented, the ability of the government and industry to meet program-execution commitments remains inadequate.

**Finding 3:** The U.S. space-industrial base is largely dependent on the U.S. defense/national security budget.

**Finding 4:** There are rapidly emerging foreign space capabilities, and the U.S. does not control their proliferation.

**Finding 5:** U.S. preeminence in space is under challenge in many areas.

**Finding 6:** The current export-control policy has not prevented the rise of foreign space capabilities and in some cases has encouraged it (International Traffic in Arms Regulations (ITAR)-free space products).

**Finding 7:** U.S. leadership in space benefits significantly from access to foreign innovation and human capital. That access is becoming increasingly difficult.

**Finding 8:** The current export control policy is constricting U.S. engagement and partnership with the rest of the global space community and is feeding a

growing separation between the U.S. space community and an emerging, non-U.S. space community.

**Finding 9:** Some elements of the export-control laws are in conflict with the U.S. National Space Policy, which has as one of its goals to “encourage international cooperation with foreign nations on space activities that are of mutual benefit” and states that “space-related exports that are currently available or are planned to be available in the global marketplace shall be considered favorably.”

**Finding 10:** The U.S. share of the global space markets is steadily declining, and U.S. companies are finding it increasingly difficult to participate in foreign space markets.

**Finding 11:** Export controls are adversely affecting U.S. companies’ ability to compete for foreign space business, particularly the second and third tiers. And it is the second and third tiers of industry that is the source of much innovation, and is normally the most engaged in the global marketplace in the aerospace/defense sector.

**Finding 12:** A U.S. export-control policy that protects sensitive security space capabilities is important.

**Finding 13:** There is unanimous agreement that the export-control process can be improved without adversely affecting national security.

### **Working Group Recommendations**

1. The Administration and Congress should review and reconcile the strategic intent of space export controls.
2. Critical space technologies should be identified and should remain on the Munitions List and under the State Department ITAR process.
3. Remove from the Munitions List commercial communications satellite systems, dedicated subsystems, and components specifically designed for commercial use; provide safeguards by having the Department of Defense identify critical space components and technologies that should always require licensing and referral. Have the appropriate Executive branch departments conduct a study to see if other space technologies should be removed from the Munitions List (e.g., weather satellites).
4. Annually review the appropriateness of designating specific satellite and other space systems, components, and capabilities as Munitions

List items based on criticality of items and on their availability outside the U.S.

5. Additionally, Congress could amend the legislation related to satellite export licensing and adopt some of the best practices being used in other processes – set timelines, technology thresholds, *de minimus* rules, and special licensing vehicles.
6. The Secretary of Defense and NASA Administrator, in addition to the Secretary of State, should have the authority to grant real-time, case-by-case, specific time period exemptions for anomaly resolutions deemed to be in the national interest based on criteria from the National Space Policy.
7. Create a special program authority to permit timely engagement of U.S. participants in multinational space projects.
8. Increase the dollar threshold for satellite exports, increase Congressional notification and establish a mechanism to enable the threshold to adjust with inflation.
9. Relevant space-related government agencies should collaboratively undertake an annual assessment of their industrial base.

Mr. Chairman, I have attached a copy of the Working Group's full report and I look forward to your questions.