

Space Issues: (Law, Policy, Finance, Management, Ethics...)

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# Proposed Changes to US "Deemed Export" Law Threaten International Collaboration - Part I

By Rachel Yates

Much has been written about the restrictive nature of the United States' export control regime, particularly the International Traffic in Arms Regulations (ITAR) under the jurisdiction of the United States Department of State (DoS) [see Editorial, *ISR* August 2005]. Less attention has been paid to the similar regulatory scheme administered by the United States Department of Commerce (DoC). Recently, those regulations have been brought into sharper focus, as universities, industry, and governmental agencies all decried changes being proposed by DoC. If adopted, these regulatory changes would require such entities to limit the exclusion from export control for "fundamental research," making it more difficult for foreign scholars, researchers, and visitors to participate in post-graduate programs or to conduct research in the United States.

In the US, the National Science Foundation reports that for fall 2002, nearly one-third of the 450,000 graduate students enrolled in science and engineering fields were temporary visa holders. Data from 2004 identified over 200,000 foreign students in the engineering and sciences fields. At the doctorate level, the percentage of foreign-born researchers rises to 38%. Within those groups, 57% of all international students at American universities are from Asia, primarily India, China, South Korea, Japan, and Russia. Given the significant number of sensitive technologies in the aerospace field and the proposed regulatory threat to the fundamental research exclusion on which aerospace laboratories and researchers have historically relied, the aerospace community is predicted to be hard hit.

The proposed regulations affect not only students, but also aerospace faculty. Among foreign engineering faculty in the US, 36% are foreign-born. Indeed, at one large American university, 50% of the engineering faculty (including its dean) are foreign-born.

In the space community, fundamental science and engineering research is best accomplished in an open, collaborative environment, with constant evolution and reconfiguration of equipment, research team members, and ideas. *The proposed regulatory changes threaten to stifle innovation and should be rejected.*

## The Genesis for Proposed Regulatory Changes

Within the DoC, the Bureau of Industry and Security (BIS) administers the Export Administration Regulations (EAR). By law, the Inspector General of the DoC must annually conduct an assessment of the adequacy of current export controls and counterintelligence measures. Its Final Inspection Report (March 2004) identified several areas in which the DoC export controls were found to be insufficiently protective of sensitive technologies. The Inspector General recommended several changes within the DoC generally and within particular agencies, such as the National Oceanic and Atmospheric Administration (NOAA).

In response, the BIS issued an Advanced Notice of Public Rulemaking (ANPR), a precursor to regulatory changes. In the ANPR, the BIS requested public comment on several areas raised by the Inspector General. It specifically requested data on the impact of the proposal, such as the number of foreign nationals in the US who would face licensing requirements and the impact of compliance with the new licensing requirements. The BIS received an unprecedented number of submissions, almost all of which urged the DoC to reject the recommendations of the Final Report.

The proposed changes address the licensing requirements for "deemed exports." According to the EAR, any release of controlled technology or software to a foreign national in the US is deemed to be an export to the home country of the foreign national. The term "technology" is broadly defined in the EAR to include instruction, skills training, working knowledge, consulting services, engineering designs and specifications, manuals, and other media containing instructions. Deemed exports may involve the transfer of sensitive technology to foreign visitors or workers at US universities, research laboratories, and private companies. For example, if a graduate student from the United Kingdom is taught by her instructor how to use controlled technologies in a research project at an American university, an export to the UK is deemed to have occurred. This is true even if the student does not physically take the technologies back to the UK, nor apply the "use instruction" in any project involving the UK. The DoC requires a deemed export license for the transfer of this use technology, submitted and approved in advance.

Certain transfers, however, are currently excluded from regulation. Publicly available technology and software are not EAR-controlled if they:

**Table 1: Deemed Export License Applications. FY 2003**

Category	Description of Category	Number of Applications*
0	Nuclear Materials, Facilities, and Equipment	0
1	Materials, Chemicals, "Microorganisms," and Toxins	79
2	Materials Processing	34
3	Electronics	338
4	Computers	661
5	Telecommunications and Information Security	357
6	Lasers and Sensors	3
7	Navigation and Avionics	10
8	Marine	0
9	Propulsion Systems, Space Vehicles, and Related Equipment	80
EAR99	Classification used for items subject to the Export Administration Regulations that are not on the Commerce Control List	3

\*Note: Because applications may contain a request to export more than one technology, the number of applications in this column does not equal the total number of deemed export applications BIS received during FY 2003.

Source: Export Administration, Bureau of Industry and Security, as reprinted in the Bureau of Industry and Security Final Inspection Report, No. IPE-16176 - March, 2004

- are already published or will be published;
- arise during or result from fundamental research;
- are educational; or
- are included in certain patent applications.

These exclusions are at risk under the proposed regulatory changes.

**Aerospace Industry & Academia Response**

The ANPR drew sharp criticism from a range of aerospace organizations, including EADS North America, Boeing, NASA, the Aerospace Industries Association of Canada, University Corporation for Atmospheric Research, the Associated Universities, Inc. (which operates the National Radio Astronomy Observatory), and federally-supported research laboratories such as the University of Colorado's Laboratory for Atmospheric & Space Physics (LASP), its Co-operative Institute for Research in Environmental Sciences (CIRES) and NOAA's Geophysical Fluid Dynamics Lab. Individual American universities and collaborative academic groups likewise submitted comments, almost uniformly urging the BIS to reject the proposed recommendations.

BIS's processing of deemed export control licenses demonstrates how vulnerable the international space industry and

academia are to the proposed changes. In 2003, the BIS received 846 applications for deemed export licenses. By relevant category, most applications involved computer technologies, with telecommunications, electronics, and propulsion systems/space vehicles falling thereafter in rank (see Table 1).

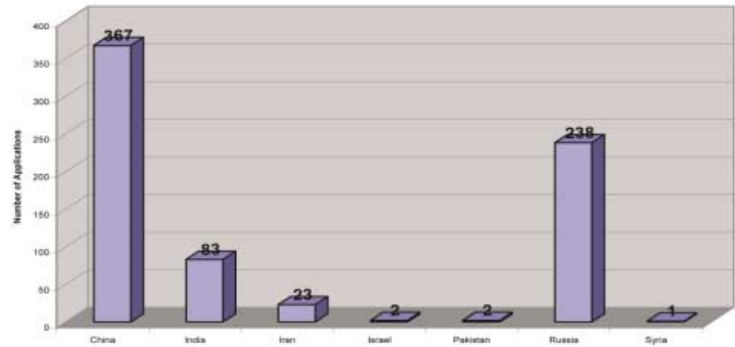
Approximately 85% of the export license applications involved foreign nationals from locations considered to be "countries of concern" for the US. Notably, the top three countries are major contributors in the

space industry (see Table 2).

Given the broad reach of the proposed regulatory framework, the space community passionately criticized two aspects of the proposal for their chilling effect on science and engineering research: limiting access to use technologies and determining access based on country of birth. The ramifications of these two aspects will be discussed in part II of this article.

Part II will appear in the next issue of *ISR*.

**Table 2: Deemed Export Applications Received for Foreign Nationals from Countries of Concern. FY 2003**



Source: Export Administration, Bureau of Industry and Security, as reprinted in the Bureau of Industry and Security Final Inspection Report, No. IPE-16176 – March, 2004

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