

Interview With Robert Anstead

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Assignment 3, Paper 4

### **Introduction**

Robert Anstead agreed to discuss his work for the Institute for Defense Analyses (IDA) with me for the purpose of this paper. I found his work especially relevant to our class because of his role as a consultant to the Department of Defense, Department of State, and Department of Commerce on export controls of critical technologies to countries of concern and how this helps shape American policies. In this paper I will give a brief background of export controls and Mr. Anstead's qualifications, then cover our discussions on current issues and future concerns.

### **Background**

Mr. Anstead's area of expertise is assisting and advising the United States government on sensitive, dual-use technologies to help shape policy on export controls to potential countries of concern (countries that could have an adversarial relationship with the United States and our export control-regime partners).

The purpose of these export controls is to find realistic ways of keeping countries of concern two generations behind the export control-regime partners. The goals of these controls are intended to be realistic and pragmatic; there are realistic considerations with these controls. First, with enough money, research, and effort, controlled technology and machinery can be developed or smuggled into countries of concern, but with controls in place, the cost will be prohibitive, making widespread use of this technology difficult. Next, the technology has to be controllable. If a particular item or machinery is deemed uncontrollable (i.e., the technology is widely available throughout the world), export controls are either deleted or not attempted.

Mr. Anstead earned his BS and MS in Physics, augmented with courses in Metallurgy, Semiconductor Theory and Manufacture, and Microprobe Analyses. His professional background includes twenty years at Goddard Space Flight Center, followed by eight years with the Department of

Commerce. Since 1995 he has worked as a consultant for the Institute for Defense Analyses (IDA).

His area of responsibilities at IDA is advising the DoD, DoS, and DoC in regard to Materials Processing, Electronics, Sensors, and Avionics. In this capacity he consults on the Militarily Critical Technologies List, is Co-Chairman of the Electronics Technical Working Group, the Manufacturing and Processing Technical Working Group and the Nanotechnologies Technical Working Group. He also represents and advises the various departments at the Wassenaar Arrangement.<sup>1</sup> In the area of policy, he assists in developing US policy relating to the export of critical and dual-use materials and technology, prepares working papers on formulating changes in the export control policies of the U.S. and its export control-regime partners, and participates in DoC Technical Advisory Committees to help formulate US export control policies.<sup>2</sup>

### **Current Issues**

In this section, I use Mr. Anstead 's own words from our email exchanges; my words are in italics.

*What technology and policy issues do you see as most significant now?*

Present technical/policy issue: All Participating States in the control regimes are free to handle transfers of items and technology at national discretion; i.e., although there is agreement on what items and technology should be controlled, each country is free to approve transfers of any controlled commodities to any country they wish (with the exception of UN embargoed countries). This causes not only commercial disparities and friction between member countries, but also concerns over what technologies may be transferred to countries of possible concern.

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<sup>1</sup> The Wassenaar Arrangement has been established in order to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilising accumulations. Participating States will seek, through their national policies, to ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine these goals, and are not diverted to support such capabilities.

*The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies*, <http://www.wassenaar.org/docs/talkpts.html>.

<sup>2</sup> Parts of this paragraph were taken verbatim from email exchanges with Mr. Anstead.

*My focus is for this class is ICT (Information & Communication Technologies) and related issues. Do you deal with ICT issues?*  
Not directly

*If so, what are the major issues?*  
I think that the major issues are as follows:  
Limiting the availability of fiber optic networks in [countries of concern].  
Limiting the proliferation of telecommunications systems with advanced cryptographic capabilities.

*What are the implications for countries that do not export?*  
Only restrictions on what they can re-export (i.e., if they import a controlled item from another country, what are their limits on re-exporting to a country of concern?

*What are the implications for countries that do not receive exports?*  
None that I can think of.

*What are the most successful aspects of export controls?*  
The four major export control regimes are the Wassenaar Arrangement, the Nuclear Suppliers Group, the Missile Technology Control Regime and the Australia Group. With a few exceptions, the countries that belong to one regime belong to the others. In other words, approximately 33 - 40 countries have agreed on what should be controlled.

Only the Wassenaar Arrangement controls information technology items (telecommunications and cryptographic equipment).

*What are the greatest weaknesses of export controls?*  
Except for UN embargoed countries, members of the export control regime determine which countries they consider to be of concern (i.e., the regimes cannot target specific countries).

Countries are free to decide at national discretion what exports they will approve. In other words, if one member country believes there should be limited exports of high tech items to country X, other countries may have an opposite view and export freely to that country.

## **Future Concerns**

I asked Mr. Anstead what he saw as possible consequences of the export-control treaties on the United States and our export control-regime partners. While he did not present these as “consequences,” he recommended I watch for two trends.

First is the decline of foreign graduate students in areas of technology and science at American universities. The possible reason for this trend is that other countries have developed advanced universities and research institutes of their own and are increasingly able to teach within their borders. As countries develop their own technology and manufacturing base, export controls will become less effective in controlling proliferation of sensitive technologies.

The other issue is the economic impact of differing philosophies on how export controls are enacted. The countries with stricter standards lose business to countries with lax standards. This discrepancy has the potential to keep particular industries from competing on the global market; thus leaving them devastated. While there are no solid figures on how serious the impact is, this issue should be monitored; there is some belief that this has negatively affected the U.S. machine tool industry.

I also asked him what he thought was the next technology issue on the horizon. His answer was jamming technology. I commented that cell phone jamming has been in the news and this technology could be disruptive if used against cellular infrastructure. While he agreed with this, he explained the real danger is the ability to jam GPS. The implications are frightening. Terrorists could use this technology to disrupt commercial airline traffic. Although commercial airlines have other guidance systems (e.g., inertial navigation systems), the loss of GPS could lead to accidents. The loss of GPS could also cripple military forces on the battlefield, where GPS is used for navigation and location. This technology is also used for the deployment of smart munitions.

We finished up with his thoughts on the outstanding policy issue of the future. He stated, “Future technical/policy issues would include the necessity of reaching a common understanding both of what items should be

controlled and which countries should be considered a possible destabilizing risk.”

### **Conclusion**

I found my discussions with Mr. Anstead fascinating and enlightening. When I asked if the export controls and treaties could really be effective, he told me a story that illustrates the best success of these policies.

During the Cold War, Mr. Anstead participated in the inspection of microprocessor manufacturing plant in the Deutsche Demokratische Republik (East Germany). Their engineers had successfully reverse-engineered the Intel 80286 microprocessor and had it in production, using almost exclusively their own technology, machinery, and equipment. With a huge investment of manpower, they produced a microprocessor comparable to what had been available in the West. Although they were successful, at this same time a consumer in the United States could purchase a personal computer with the 80486 microprocessor off a store shelf.

The Deutsche Demokratische Republik (DDR) had the main responsibility of supplying integrated circuits for the Warsaw Pact Countries, and even their best efforts were two generations behind the West. This is an example of the policies that kept the East Bloc from being competitive in the world market, and eventually led to its downfall.

The intent by member nations of the various export control regimes is that continued export controls will help countries of concern join the world community.