

**ESTABLISHING AN EFFECTIVE, MODERN  
FRAMEWORK FOR EXPORT CONTROLS**

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**HEARINGS**  
BEFORE THE  
**COMMITTEE ON**  
**BANKING, HOUSING, AND URBAN AFFAIRS**  
**UNITED STATES SENATE**  
**ONE HUNDRED SEVENTH CONGRESS**

FIRST SESSION

ON

ESTABLISHING AN EFFECTIVE, MODERN FRAMEWORK FOR EXPORT  
CONTROLS BY MEANS OF THE EXPORT ADMINISTRATION ACT OF 2001  
(S. 149)

—————  
FEBRUARY 7 AND 14, 2001  
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Printed for the use of the Committee on Banking, Housing, and Urban Affairs



U.S. GOVERNMENT PRINTING OFFICE

77-577 PDF

WASHINGTON : 2002

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## **ESTABLISHING AN EFFECTIVE, MODERN FRAMEWORK FOR EXPORT CONTROLS**

**WEDNESDAY, FEBRUARY 7, 2001**

U.S. SENATE,  
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,  
*Washington, DC.*

The Committee met at 10:30 a.m., in room SD-538 of the Dirksen Senate Office Building, Senator Phil Gramm (Chairman of the Committee) presiding.

### **OPENING STATEMENT OF CHAIRMAN PHIL GRAMM**

Chairman GRAMM. Let me call the Committee to order and thank our witnesses today.

We are here today to talk about the Export Administration Act. As all our colleagues know, and most people in the audience know, the Export Administration Act is a very important piece of legislation because it is our attempt as a Nation to deal with conflicting goals. On the one hand, we want to dominate the production of high-tech items in the world. We want to produce more and better items. We want to be at the cutting edge of the world's commercial market.

And at the same time, as the preeminent defender of freedom and right in the world, we want, to the degree to which we can at prices we are willing to afford to pay, to prevent would-be adversaries and hostile forces from gaining access to technology that could endanger our interest, our freedom, or our lives.

We have put together on this Committee, on a bipartisan basis, what I believe to be an excellent bill.

I want to congratulate Senators Enzi, Sarbanes, and Johnson for their leadership. I believe we have a bill that will come close to getting a unanimous vote in Committee, I am hopeful that it will be supported by the Administration and become the law of the land.

The basic premise of the bill is that if something is mass-marketed—if you can buy it in the marketplace of the world—while it may have defense uses, there is no way to prevent a would-be abuser of that technology from gaining access to it.

Our bill is based on the premise that we need to build a higher wall around a smaller number of items, and we need to have stiff penalties for people who, on a knowing and willful basis, violate the law. We have established a system which I believe meets both our security and commercial concerns.

We establish a mechanism whereby we can look into the future and judge the flow of technology and the timing so that if we are about to have a change in the MTOPS capacity of computers—the

ability of computers to do theoretical calculations per second—if we know that that is going to rise in 6 months on a broad basis, rather than waiting for it to rise and then requiring American producers to apply for a license, we can, on a prospective basis, change the standard and allow American producers to be the leaders in the market rather than having to delay action with an application.

I am very proud of this bill. We are eager to move forward with it. And we are holding our first hearing today with those who represent the commercial interests of America, that have a vital stake, as well as an academic who has specialized in this area.

So, with that, let me stop and recognize my colleagues. And let me begin with Senator Sarbanes.

#### **STATEMENT OF SENATOR PAUL S. SARBANES**

Senator SARBANES. Thank you very much, Mr. Chairman.

I am pleased to join you in welcoming our panel of distinguished witnesses this morning.

The subject of today's hearing, S. 149, the Export Administration Act of 2001, was introduced a couple of weeks ago by Senators Enzi, Johnson, Gramm and myself. It is very similar to legislation which was introduced in the last Congress and reported out of this Committee on a 20 to nothing vote.

I believe this legislation is a carefully balanced effort to provide the President authority to control exports for reasons of national security and foreign policy, while also responding to the need of U.S. exporters to compete in the global marketplace.

We have two objectives, worthy objectives, that we have to achieve here and we have to reconcile them because, to some extent, they come into conflict with one another, and it is very important to balance them in a careful way.

I think I ought to underscore that extensive consultation took place in the development of this legislation, when we brought it before the last Congress, consultation with the then-Administration, the Commerce Department, the Defense Department, the intelligence agencies, the National Security Council, and extensive consultation with representatives of different industry groups and outside national security experts. So the legislation represents a process that has been gone through very carefully.

We of course now are undertaking to repeat I guess part of that process, although I do not think it is necessary to go through it as comprehensively as it was done only very recently. And obviously, we expect to work closely with the new Administration.

I want to commend Senator Enzi, who was the Chairman of the International Trade and Finance Subcommittee in the last Congress, who, I gather, is going to move on to other pastures in this Congress. And Senator Johnson, who was the Ranking Member of that Subcommittee, and who is also moving on to other pastures in terms of ranking. But I think they are both going to get this thing done before that happens. And also, Senator Gramm.

We were able, all of us, to work I think in a very positive and constructive way. And the respective staffs, which always, of course, are an essential part of any such effort to develop a bipartisan consensus.

Let me in closing just note that the EAA has not been reauthorized since 1990, more than 10 years ago, except for temporary extensions, in 1993, 1994, and again last year.

At the end of the last Congress, we passed a temporary extension until August 20 of this year. Prior to this recent temporary extension, the authority of the President to impose export controls has been exercised pursuant to the International Economic Emergency Powers Act (IEEPA).

In my view, Congress should put in place a permanent statutory framework for the application of export controls. They should not be imposed in effect on a permanent basis pursuant to emergency economic authority of the President, which is what we have been doing now for most of the decade.

In fact, one of our witnesses, in his testimony this morning, points out that it is difficult for the United States to encourage other countries to put in place a statutory framework for the exercise of export controls when we have such difficulty doing it ourselves.

I look forward to the testimony of our witnesses and I look forward to working closely with the Chairman and with Senators Enzi and Johnson and other Members of the Committee as we try to move ahead on this important legislation.

I think it is an obvious candidate, it seems to me, for fairly early action in this Congress, and I hope—although I appreciate that a new Administration has just come into place, so they may be sorting out their positions—although I do believe that the President endorsed this legislation, or certainly endorsed this concept, in the course of his campaign last fall.

Mr. Chairman, I look forward to working with you on this and I hope we can carry it through to completion in the near future. Chairman GRAMM. Thank you, Senator Sarbanes.

Senator Enzi.

#### **STATEMENT OF SENATOR MICHAEL B. ENZI**

Senator ENZI. Thank you, Mr. Chairman.

I appreciate your bringing this up so promptly this session, and I appreciate the effort that you have put into the bill.

I learned a tremendous amount working with you on it last year. I know that you had some of the same disappointment to put that much effort into a bill and then not have it finished. And you are not used to that.

[Laughter.]

So I appreciate your elevating it to the Full Committee.

Chairman GRAMM. I do not want to get used to it, either.

[Laughter.]

Senator ENZI. Elevating it to the Full Committee so that we can put that kind of emphasis on it this year.

This is a day of mixed emotions. I am so pleased that we are working this bill again, but I am disappointed that we are working this bill again.

It makes it kind of like old home week. The people that are here watching today have been here numerous times before and are very well versed in all that we are doing. And of course, our witnesses today, we have heard from before.

They have even been involved in other efforts that are related to EAA in the meantime and have made some great contributions there. So we definitely have some experts working on it. And we appreciate Mr. Hoydysh and Mr. Freedenberg and Mr. Christensen and Mr. Cupitt being willing to do this again.

Thank you for your efforts on that.

I have to mention Senators Sarbanes and Johnson and the way that they went about working on crafting this bill as we went through the unique process last time of taking an issue that had failed 12 times previously—in fact, had not even gotten out of Committee before that—and putting together a bill that would get out of Committee 20 to nothing. We are talking about bipartisan efforts this time. That is an example of a bipartisan effort last time.

Senator Johnson has been an integral part of that process. He and I have appeared at numerous places selling this bill after we had gone through the process of finding out how it all worked so that we could craft a bill. I mentioned that today is kind of a day of mixed emotions.

One of the reasons for that is that Paul Nash, who works for Senator Johnson, and has put just an incredible amount of effort into both working on the bill and working to get it passed, is going to be taking another job. We are going to lose his expertise, even though—what are we infiltrating?

No.

[Laughter.]

Even though we will be finding out about some other areas of private work. And I congratulate you on your new job and want to mention how sad we will be not to have your efforts here working on our side of the issue.

Chairman GRAMM. Senator Johnson.

#### COMMENTS OF SENATOR TIM JOHNSON

Senator JOHNSON. Thank you, Mr. Chairman.

I have just a brief remark that I want to make. One is to welcome, of course, the members of the distinguished panel, and I appreciate Chairman Gramm bringing this group together.

I want to thank Chairman Gramm, Senators Sarbanes and Enzi for their leadership on our issue, on this issue, as we work to now build on last year's EAA efforts. As was noted, last year was a very closely consultative effort. It resulted in a bipartisan 20 to zero vote out of this Committee. We ran out of time at that point.

I am pleased that Senator Enzi has acknowledged the contribution of Paul Nash on my staff, and the extraordinary work that he put into this legislation. We are going to miss Paul.

But I also want to acknowledge that while a lot of people played an active role in bringing this EAA legislation to the point where we are today, Senator Enzi exhibited a persistence that is seldom seen, I think, around here on an issue such as this one. I think his effort, perhaps more than any other, is the reason why we have reached this point.

S. 149 largely does what we were doing last year. It has been pointed out that we have gone since 1990 now without reauthorization. We have been relying on emergency authority. And as Senator

Sarbanes observed, that is not only bad policy, it is bad precedent for our efforts to work with our allies around the world.

It also leaves open some serious legal issues on which I think we tempt fate, as long as we fail to come up with a permanent statutory framework for these trade issues.

The principles at stake here are fairly simple. It is to reduce or eliminate control where there really is no serious security implication, and to tighten the control where in fact that control is needed, utilizing mass market standards as a benchmark for what in fact can and should be controlled and what simply cannot be controlled. Again, I extend my appreciation to Senator Enzi for his leadership and to Senator Gramm for making this a high priority item for this Committee.

And as we embark on the 107th Congress, I am hopeful as well that we can move this fairly quickly through Committee and onto the floor, giving the Administration, obviously, a fair opportunity to examine the details.

But I hope that we can keep this on a reasonably fast track.

Mr. Chairman, thank you for your leadership here.

Chairman GRAMM. Well, thank you, Senator Johnson. Thank you for your good work.

Does anybody else want to make a statement?

Senator Stabenow.

#### **STATEMENT OF SENATOR DEBBIE STABENOW**

Senator STABENOW. Thank you, Mr. Chairman.

If I might, as a cosponsor of the legislation and someone who is supportive of the efforts from the House side last year, I did want to make a comment, if I might, about the hard work and the effort and the leadership that has gone on in this Committee. And I want to congratulate everyone for being involved in this.

This is truly a bipartisan legislative effort to streamline the current export review process and will allow most technology products to be sold overseas with very limited obstruction from the U.S. Government, which of course means more exports and more jobs for workers in the high-tech industry.

I did want to just take a moment, if I might, to plug my State of Michigan because, while we are known for automobiles and very proud of that, we also, just outside of Detroit and metro Detroit, have what is now being known as Automation Alley. This is an area that includes a cluster of 1,800 smaller companies that are producing advanced technology products for export all over the globe. This group of companies is prospering so much, that they are now competing with the well-known Silicon Valley and Route 128 outside of Boston and other areas.

And so, I want to make my colleagues aware that Automation Alley is thriving in Michigan and will definitely benefit from this legislation. I am very pleased to be a cosponsor, Mr. Chairman, and look forward to swift passage.

Thank you.

Chairman GRAMM. Thank you very much. Anyone else care to make a statement?

Well, let me then call on our witnesses.

Our first witness will be Dan Hoydysh, with Unisys, who is representing the Computer Coalition For Responsible Exports. Our witnesses will be Paul Freedenberg, who is representing the Association For Manufacturing Technology; Larry Christensen from Vastera, representing AeA, which was formerly known as the American Electronics Association; And finally, Mr. Richard Cupitt, who is associate director for the Center for International Trade and Securities at the University of Georgia.

Well, let me ask each of you, if you can, to try to stay within 5 minutes. But if you need to say something more, I am not going to object if you run over a little bit.

Mr. Hoydysh, why don't we start with you, and then we will just go down the table.

**STATEMENT OF DAN HOYDYSH, COCHAIR  
COMPUTER COALITION FOR RESPONSIBLE EXPORTS**

Mr. HOYDYSH. Thank you, Mr. Chairman.

I appreciate the opportunity to present the views of the CCRE on an issue that is of critical importance to the national security of the United States and to the technological preeminence of the U.S. computer industry.

I will briefly summarize my testimony and ask that a complete copy of my testimony be submitted for the record.

Chairman GRAMM. It will. Everybody's full testimony will be printed in the record as if given.

Mr. HOYDYSH. I almost hate to admit it, but I have been laboring in the export control vineyard for almost 20 years, first, as part of the Reagan Administration's effort to make export controls an effective weapon against the Soviet Union. And for the past 3 years, as part of the CCRE, to create an effective export control system for the emerging network world. Therefore, I fully appreciate the leadership this Committee has taken to craft a bill that appropriately addresses the complex technological, economic and security issues that we are facing at the beginning of the 21st century.

The CCRE applauds the Committee's efforts. We believe this bill creates, with some exceptions that I will note shortly, the framework for establishing an export control system that will protect our security without compromising our prosperity or technological preeminence. The key to creating an effective export control system is contained in Section 202. This section is designed to give the President the authority and flexibility to update controls in response to rapidly changing technology and market conditions.

Flexibility to address rapidly changing circumstances is critical to maintaining an effective system. Unfortunately, the flexibility contained in Section 202 cannot be applied to computers because the National Defense Authorization Act of 1998 imposed a rigid requirement that control decisions must be based on MTOPS.

MTOPS is a metric that was developed almost 10 years ago to measure computer performance. It is now generally agreed upon by industry, the Department of Defense, and the GAO that MTOPS is an outdated metric that has lost its effectiveness as a control measure. Yet, the NDAA continues to mandate that the President use this obsolete metric when making control decisions.

Therefore, the CCRE believes that a necessary step to creating an effective export control regime is to repeal the MTOPS-related provisions of the NDAA. Please note—repeal of the MTOPS provisions does not equate to decontrolling computers. It would only permit the President to develop a control regime that is not rigidly bound to MTOPS, if he so chooses. Only when the President is freed from the MTOPS straightjacket will the new Administration be able to craft an export control regime that is appropriate for the post-Cold War network world.

Section 202 can be further improved by explicitly recognizing that controllability is one of the risk factors that should be considered by the President when determining which items to keep on the control list. The CCRE believes that attempting to control uncontrollable items is not only ineffective, but also counterproductive. It is ineffective because it simply will not work. It is counterproductive because it diverts industry and government resources from policing truly sensitive items. And it creates the illusion of safety without providing any real security.

The CCRE believes that if the Committee takes into consideration the improvements suggested in my testimony, S. 149 can serve as the basis for an effective export control regime. We look forward to working with the Committee on this important issue. I will be happy to answer any questions.

Chairman GRAMM. Thank you.

Mr. Freedenberg.

**STATEMENT OF PAUL FREEDENBERG, PHD  
GOVERNMENT RELATIONS DIRECTOR  
ASSOCIATION FOR MANUFACTURING TECHNOLOGY**

Mr. FREEDENBERG. Thank you, Mr. Chairman.

I appreciate the opportunity to testify today. I would only note, I first got involved in this in 1979, as a member of the minority staff of this Committee and then worked on revisions of the Act from 1979 to 1985. The last time this Act was comprehensively updated and amended was 1988, which is before the fall of the Berlin Wall or the dissolution of the Soviet Union. It is obvious, given the premises of the Act, that it is badly in need of revision.

I will be testifying on behalf of AMT—the Association for Manufacturing Technology, where I am director of government relations. We represent 370 member companies with annual sales ranging from less than \$2 million to several hundred million, many of whom, by the way, are in Automation Alley, mentioned earlier.

The major point I make in my testimony, in terms of background, is that the problem we have is that the current multilateral export control regime is aimed at keeping dangerous technology out of the hands of the pariahs, out of the states like Iran, Iraq, Libya, North Korea. But the problem beyond that is that we have yet to decide, either within our own country or, more importantly, with our allies, what to do about China.

Our allies do not view China in the same manner that we view China. Certainly, the more conservative Members of every Administration that I have worked with, who are generally found in the Defense Department, view China as a potential technology transfer

threat and are very conservative about approving licenses, particularly for machine tools.

The record which I lay out in my testimony is that, on average, the record has been that about 50 percent of the licenses for machine tools have been approved over the decade of the 1990's. And the time that it takes to approve those licenses is several months to as long as a year.

During that period of time for approval, it is quite possible for the customer, or the potential customer, to get tired of waiting and go on to buy a machine of one of the competitor companies. And I also point out that in the area that DoD is most concerned about—five-axis machine tools—there are 718 models worldwide and about 580 are made outside the United States. That means that there are plenty of competitors waiting in the wings with export licenses if the U.S. company is unable to either get approval or get approval in a reasonable length of time.

That is a major problem. Your legislation deals with this issue. It sets time limits. I think it improves a number of things. I will just note what it improves. We can get into the discussion in the questions and answers. There is a very important improvement in that what I have just been talking about—the foreign availability issue—is improved significantly, because your legislation recognizes that foreign availability can come from our trade partners, as well as from outside the export control regime.

And in fact, the problems we have are not caused by countries who we do not have good relations with. The problems we have, the licenses that are lost in China, particularly, are lost to the Germans, the Swiss, the French, or the British. They are not lost to Taiwan or to Afghanistan, who are outside Wassenaar. They are lost to our close trading relationships.

We feel that it is very important that you have the foreign availability provision that you have in the bill. We are also very happy with the mandate to the Administration to tighten up the multilateral regime. Currently, the regime is almost worse than having no regime at all because it is based on national discretion. A national discretion regime is not really a cooperative regime. It is a regime that essentially allows each country to make its own decision. We do not even share information.

If we want to know if the Germans have shipped a particular machine tool, we do not have the right under the current regime—Wassenaar—to ask them for that information. And we do not have a no-undercut rule, which is a promise by our allies not to ship to an end-user that we have denied a license to. They have to tell us about it, but they do not have to tell us within 60 days. That is not a very effective discipline on them.

Finally, since I see the time is up, I would say that we do have a problem with one part of the act, which is 502(b)(3). We think it would cause problems for exactly what we have been talking about. It reverses the Executive Order that I talk about in my testimony. It reverses the Executive Order of 1995, which allowed all agencies to review all export licenses, in return for which they had to stay within very tight time limits and, more importantly, get the approval of a policy level official in order to escalate a disagreement through the system.

This 502(b)(3), the way I read it, calls for consensus among all the licensing officials or all the officials at the first level of interaction. That in itself would create further delays. The exact delays I document in my testimony. I would be happy to work with the Committee on drafting in that area. But I think that that is the one major flaw and the one reversal.

And as I say, our problem is with denials, obviously. But it is also with delay. And delay is the enemy of U.S. exporters. I think we have to work to get a process that cuts down on that delay.

I will be happy to answer questions.

Chairman GRAMM. Thank you.

Mr. Christensen.

Senator JOHNSON. Mr. Chairman, may I intervene just a second?

I failed to acknowledge earlier as we were beginning the hearing that Mr. Christensen is a former classmate of mine at the University of South Dakota, who has gone on to a distinguished career. It is good to see Mr. Christensen here today representing the American Electronics Association. But I also want to acknowledge for your benefit, Mr. Chairman, that I believe it is South Dakota two, Texas A&M one at this particular hearing.

[Laughter.]

Thank you.

Chairman GRAMM. It is always dangerous to identify former classmates. They remind people what a poor student you were.

[Laughter.]

Mr. Christensen.

**STATEMENT OF LARRY E. CHRISTENSEN  
VICE PRESIDENT  
INTERNATIONAL TRADE CONTENT VASTERA, INC.  
TESTIFYING ON BEHALF OF THE AEA**

Mr. CHRISTENSEN. Well, thank you for the opportunity to discuss hopefully legislation today. Mr. Chairman, and Members of the Committee, I am here representing AeA, the largest high-tech trade association. I am a Vice President of Vastera, where we are engaged in compliance. We manage global trade for over 200 firms with software, consulting, and management services, and we represent two distinguished firms I will talk about just briefly, and that is Dell of Texas and Gateway of South Dakota. And that is about as bipartisan as I can get.

We are in the trenches every day. I have spent 11 years with the Bureau of Export Administration, where I was charged with managing the rewrite of these rules and interpreting them. I am a professor at Georgetown, where I teach export controls, and in the private sector and in government I have spent 22 years in export controls.

The AeA overall has to tell you that the Committee and the leadership of the Committee has to be congratulated for the work it did last year. We are supportive of your efforts to renew the EAA. And I have to tell you that I am personally gratified, having spent 22 years laboring in these vineyards, that your staff and the Members have exhibited a level of expertise that I think is important to regain this Committee's rightful position on these topics. Of all the

wonderful things you have gained, I think achieving that level of expertise and commitment again is the most important.

We all know that there are problems caused by government in not renewing an EAA and its disciplines and authorities. There are also problems from industry. I am going to touch on just a few of those from the perspective of AeA.

The high-tech industry is concerned, first of all, that under the current regulatory schemes, there is too much restriction on intra-company transfers, especially of technology and software. To be a market leader in the world, you have to be in the market and you have to be in many areas of the world. And too many U.S. companies, we believe, are heavily restricted by the current licensing system, especially in their inability to freely use all their nationals in the United States, foreign nations in the United States, and around the world.

We believe it is useful to permit, in other words, greater leeway in intra-company transfers.

Second, the language in the statute at 201(c) regarding end-use and end-user controls—we realize it is late in the game. We realize that the Committee wants to move very quickly and there are good reasons to do so. We would ask, however, that you consider the language of 201(c), and the possibility of a low-value exemption. Working with companies every day and seeing these values drive enormous costs, even for \$100 or \$200 or \$2,000 exports. You can see the difficulty that industry faces. So we would propose perhaps a \$10,000 ceiling on these high burdens with the ability of the Secretary to identify those very few low-cost items that are out there that may need this kind of rigid, strict end-use control.

When I testified 2 years ago before Senator Enzi, I mentioned to the Committee that these controls applied to basketballs and refrigerators. And at the noncontrolled low end, in fact, they do. And I think that we should all look for some means to reduce some of those burdens.

On the penalty section, the AeA would like to see a little modification, especially of the civil penalties, to move closer to the customs service strategy, where the level of penalties are tiered based on negligence, gross negligence or fraud. Of course, the bill does that in the criminal area. But the civil area, we would find that helpful as well.

We support, Mr. Chairman, your notion that foreign availability should leave the discretion of the President to look a bit forward. We think that is very important to an efficient administration of the system, and I think no President has abused that authority and that that discretion should be left with the President.

One last point about the Office of Technology Evaluation. AeA, and I certainly think that this is a very important idea, the contribution we would like to make is this. The statute or the legislative history should make very clear that something is necessary for those folks to do their job, their job of examining mass-market treatment and, above all, the effectiveness of other regimes in other countries. And that is training. They need to know the facts. They need to get out from behind their desks, visit with companies, have exchanges with high-tech companies and so on. Believe it or not,

one of the hardest things to do in implementing these programs and these standards is to get the facts.

And so, that is our last recommendation regarding the OTE.

Thank you very much.

Chairman GRAMM. Mr. Cupitt.

**STATEMENT OF RICHARD T. CUPITT, PHD  
ASSOCIATE DIRECTOR  
CENTER FOR INTERNATIONAL TRADE AND SECURITY  
THE UNIVERSITY OF GEORGIA**

Mr. CUPITT. Thank you, Mr. Chairman.

I would like to also extend my thanks to the Committee for its hard work and persistence in this issue area because I think developing a new EAA is incredibly important. I think, in fact, the failure to revamp the EAA over the last decade has had some really troubling consequences. The United States, by default, is ceding leadership on this issue to the European Union. The multilateral arrangements are in a period of stagnation because we have had difficulty providing leadership.

Also, the double standard of urging others to have a strong permanent legal framework for their export control systems when we consistently have problems creating one for ourselves exacerbates what is really a substantial amount of distrust about U.S. motives and behaviors.

So the work of the Committee has been excellent and I really appreciate all that has been done. Let me say that these represent my personal views, not those of the Center For International Trade and Security, the University of Georgia, nor the Center for Strategic and International Studies, where I am a visiting scholar.

I think many aspects of S. 149 will help alleviate a lot of the problems. I would like to focus quickly on three areas where there may be some—I know the Committee wants to move quickly, but maybe some additions or some things that you might think about in negotiations as this moves onto the floor. First is how to create a stronger government-industry partnership. For an effective export control system, you have to have one in which industry wants to abide by this policy, wants to exercise its duties and obligations to the United States, wants to fulfill this mission that is set out in the EAA.

Our center recently did a survey of compliance activities of about 120 U.S. exporters. One of the things that we found was that there is considerable variation in the range of compliance activities. I think the bill, as written, addresses some of these issues. One element in Section 601, talking about more outreach, is particularly important.

I think supporting outreach activities here and abroad is really a crucial element for the success of the EAA because one of the things that we noticed, anyway, was that companies typically say most violations are related to a lack of knowledge and a lack of understanding of the rules. And so, I think that the outreach effort is really crucial.

The second part of that, of building this partnership, would be to share more information with companies about threat assessments. In Section 202, I note that there is a suggestion that we

need to do some more threat assessments on all of the items. It might be helpful even to talk about a rolling threat assessment, to keep doing that over time. But providing companies some information about these threat assessments is crucial to having, let's say, the compliance officers make the argument to their company CEO's and their stockholders that this is an important thing for us to do. This is why we need to pay attention to this.

The third thing is if there is a way to consider building more incentives into the system that would help companies on a voluntary basis adopt strong internal compliance programs, or export management systems, and I suggest several in my written testimony.

Let me move to another area where I have a fair amount of experience, and that is assessing national export control systems mentioned in Section 203. Personally, I have probably done more national export control assessments than anybody else over many years now. That means I know that making policy is like making sausage in a lot of countries. You do not want to really see it happen in some cases. But one of the other things I have learned is that it is not cheap to do these assessments. To do them comprehensively and to create reliable and accurate information is really difficult. I am concerned that if there are not adequate resources dedicated to this task in the Department of Commerce and the Office of Technology Evaluation, and not enough help from the State Department and Defense Department and other agencies, that this may create a bottleneck in terms of the time required to assess and put countries on country tiers.

I see my time is up and so, let me just say that I would be happy to answer any questions and work with the staff on these and other issues.

Thank you very much.

Chairman GRAMM. Well, let me begin by thanking our panelists for excellent and very helpful testimony. Let me make it clear that, while you might argue that it is late in the process, we have a bill. The bill passed the Committee last year unanimously.

We want to write the best bill we can write. So if you have any suggestions, it is not too late to change the bill. We have simply gone out and tried to put together the best ideas we could find. If we find better ideas, we will change the bill. I want to urge our panelists, and anybody who is in the audience and anybody else who is interested in this area, that any suggestions you have as to changes that should be made, we would like to see them.

Let me just ask a couple of generic questions, and let me just ask each panelist to respond to them. First of all, it is my thesis, given that the Berlin Wall has been torn down, given that we have liberated Eastern Europe and destroyed the Soviet Union, that, clearly, there is a need to change the basic focus of our export administration system. Does everybody agree with that?

Mr. HOYDYSH. Yes.

Mr. CUPITT. Yes.

Mr. CHRISTENSEN. Yes.

Mr. FREEDENBERG. Yes, Senator.

Chairman GRAMM. It is also my thesis that even when Ivan was at the gate, we were trying to control too many things and not putting enough focus on controlling the things that really mattered.

Does everybody agree with that?

Mr. FREEDENBERG. I would add one thing. During that period, I think we alienated our European allies. And that is one of the reasons they do not want to cooperate with us now, because we were so tight in our controls.

Chairman GRAMM. Mr. Hoydysh.

Mr. HOYDYSH. I have a different spin on it, a different perspective. I agree that we ended up by controlling too much. But I think that the basic difference between Soviet-era controls and the controls that we have now is that we really were in the business of trying to destroy the Soviet Union. We were in the business of breaking down their economy and their industrial base, not just preventing high-tech military equipment from going to the Soviet Union. We are not in that business now, with the exception of some of the rogue States like Iraq and North Korea.

We are not in the business of destroying the economy of India or the economy of China. In fact, it is in our interest to build those economies up.

That is where the major shift in emphasis is between the 1950's, 1960's, 1970's, even 1980's style export controls and what we have to be looking at into the future.

Chairman GRAMM. Let me ask one more generic question. It is my sense that what is unique in America's national security is our ability to dominate the flow of new and productive ideas as they relate to technology, not our ability to protect old ideas that either we or anybody else has developed. That in the end, you cannot protect technology. You can delay it. But in the end, productive ideas ultimately get employed everywhere.

Does everybody agree with that thesis?

Mr. HOYDYSH. I agree. And to amplify that, I think that who succeeds in the 21st century will not be who can regulate the best or who can restrict technology the best, but who can integrate and use it most efficiently and faster than anyone else. And that is basically what we need to focus on. We need to focus on running faster than everyone else and not trying to tie the opponent's shoelaces as much as we have in the past.

Chairman GRAMM. Well, it seems to me that is critical in terms of export controls because, ultimately, the thing we do not want to do is cede our leadership in new technology by trying to limit export of items that ultimately will be exported by somebody. And that brings me to my last question as I am running out of time.

Mr. Freedenberg, you mentioned that you talked about 50 percent of the machine tool applications have been rejected.

Mr. FREEDENBERG. Right.

Chairman GRAMM. During that period, to the best of your knowledge, has a would-be purchaser ever had difficulty buying the item from some other country?

Mr. FREEDENBERG. No. And that is the problem we have and that is what I pointed out, particularly with regard to China. We simply do not have consensus with our allies about what to control and what not to control. We have a list, but the list—we rigidly enforce the list and our allies do not.

Chairman GRAMM. In all the years that you have been looking at this—well, at least during the period that you were talking

about—where half of our applications have been denied, machine tool manufacturers in the United States have lost sales that have gone to Switzerland or Germany or some other place. But in the end, the target has ended up getting the machine tools.

Mr. FREEDENBERG. Precisely. And that is why I started with the old system. In the old system, we had a veto. Easy. We just said no. We angered our allies quite a bit. There were multimillion, and sometimes billion dollar projects we vetoed.

We cannot do that any more. And as a result—and our allies see it not as—with regard to China, I believe, not as a national security type negotiation, but more as kind of a trade negotiation. They do not see a threat, so they are not interested in the same kinds of arguments that we had before; nor can we, with great clarity, bring intelligence that shows a particular factory as a threat because Chinese factories sometimes are integrated. They might have one end of the factory has got some military or does some subcontracting for military, while most of the factory is building something for Boeing, for example.

Chairman GRAMM. Well, I certainly believe that this bill is important in giving us the sort of standing we need to get multilateral efforts back into place, which is one of the reasons I want to do it.

I am going to call on our Members going back and forth by the order that they came this morning.

And the next person on the list that is here is Senator Miller.

#### COMMENTS OF SENATOR ZELL MILLER

Senator MILLER. Let me ask this question of Mr. Cupitt.

You recommend creating incentives, for the industry to adopt better compliance practices, more along the line of best-practices. Do you think a more developed export control compliance program would be a better standard than best practices?

Do you see what I mean?

Mr. CUPITT. That is why I want to just talk about it being voluntary, Senator. I think one of the concerns is that best practices for one company may not be the best practices for another kind of company that is structured differently and operates differently and in a different—it may be machine tools versus aerospace and there may be some different ways that you would want to approach the marketplace.

Senator MILLER. Let me interrupt you. You have just completed a survey of U.S. exports.

Mr. CUPITT. Right.

Senator MILLER. Do you think that U.S. exporters could even agree on a set of best practices?

Mr. CUPITT. I think that that probably will be difficult, actually, because I point to, let's say, some companies that have business models based more on distribution centers, where they just produce a product, send it overseas to a distribution center, and then it goes out somewhere, versus the companies that may have different distribution models of getting their product to the customer.

I think in some of the discussions we had with industry, that has been expressed, some concern that they would be forced to do some things that would, in essence, bankrupt the company because they

would have to change their business model. But I still think that trying to build some incentives for good compliance programs, ones that are adapted to individual circumstances, but still strong compliance programs, could be created.

And I think that there are several things that you might do. One is improve licensing or make it easier for companies that have good compliance programs—let's say one here in the United States and one in England—to trade with one another. I think you might talk about sharing more information on end users. That is a particular problem that some companies do not discover an end-user problem until they get a denial, or they are pretty far in the licensing process. I think those kinds of incentives might be built-in, but I am pretty flexible on this. I just think that that is an area to focus on, is how to improve that partnership.

Senator MILLER. Thank you. I do not have any other questions.

Chairman GRAMM. Thank you, Senator Miller.

Senator Enzi.

Senator ENZI. Thank you, Mr. Chairman. And again, I want to thank everybody for their testimony, particularly the full testimony that will be a part of the record. In looking through that, there are several common threads that you have done a good job of making a part of the message, both last year and this year. And those will be an important consideration for us to make.

One of the problems that we have on the bill, of course, is timing. If we get this bill debated early, we have a better chance of getting a completed bill. It also operates a little differently than some of the other bills that come through Congress in that, while the Banking Committee has jurisdiction, there are some other Committees that feel very jurisdictional. So we have been running everything through four other Committees as well, trying to avoid additional hearings in those Committees, which is traditional—I mean, it is not traditional for the Senate to farm this stuff out for multiple hearings by other Committees. And we intend to maintain that.

As a result, some of the things that need to be debated will probably be debated more on the floor than they are in Committee.

The Committee's expeditious review of this and getting it to the floor will be more beneficial to a final bill, I think, than if we keep vetting it out to all of the other jurisdictions. And in light of the common thread that there is among the testimony, I will just direct questions to one person for the answer and we will take into consideration all of them. For Mr. Hoydysh, President Clinton raised the threshold on the MTOPS level for computers to 85,000. Could you give us an explanation of how this increase balances our economic and national security interests, and of course the emphasis that you made on that if it is the wrong measurement, perhaps what the right measurement would be?

Mr. HOYDYSH. Yes, thank you, Senator. There is a certain class of computers that fits under this MTOPS metric. Generally, they are computers that are in the 32 processor category that are used in ordinary commercial applications. For example, here's a press release about an insurance company using an ES 7000 UNISYS 32 processor computer for its billing purposes, Another press release describes a bank using it for e-brokerage purposes; a health service

provider using it for billing, and also, a school system using it for administrative processes.

So the systems that are represented by the new levels are large servers, but they are still sold in relatively high-volume. And they are items that represent a good return on investment for the companies selling them.

At the low end of the computer spectrum where sales are in the millions, for example PC's, the profit margins are relatively small. In big systems, the profit margin is higher. So it is much more profitable for companies to be able to sell these types of systems.

The new MTOPS level allows us to sell large servers that are used for benign commercial purposes and for commercial purposes that are now just beginning to take off. All of these e-business, e-commerce type of applications require these large systems which are primarily designed for transaction processing. They can handle thousands of inquiries in any given second, as opposed to computers that do one task at a time.

This last MTOPS increase permits us to sell exactly this kind of e-commerce system, which is essential for the development of the networked world and for the global economy.

Senator ENZI. Mr. Freedenberg, you concentrated a little bit more on the dual-use technologies and had some valuable information about how long it takes to get approval in some of the competing countries to us.

Are there some ways to maintain that inter-agency dispute resolution provision contained in the bill while preserving some timeliness in the decision making?

Mr. FREEDENBERG. Time limits are the most important thing. But the problem is there are ways to stop the clock and there is no way to legislate against that, such as asking for more information or there are delays having to do with intelligence or requests for more intelligence. It is very hard to legislate the time limit.

I think what you want to do in your final bill is create a structure that is conducive to rapid movement toward a final decision. If there is a policy dispute, it should be handled by the policy level people. But if it is just a dispute about facts, I do not think—I think those sorts of things ought to be resolved quickly and it is just an up-or-down kind of vote.

It does not happen with machine tools. And we have had very bad experiences with it.

Senator ENZI. Thank you. My time is expired.

Chairman GRAMM. Senator Corzine.

#### **COMMENTS OF SENATOR JON S. CORZINE**

Senator CORZINE. Mr. Chairman, I am in catch-up mode here, so I will pass at this time. Thank you.

Chairman GRAMM. All right.

Senator Reed.

#### **COMMENTS OF SENATOR JACK REED**

Senator REED. Thank you, Mr. Chairman. And thank you, gentlemen, for your testimony.

I first want to commend the Chairman and particularly Senators Enzi and Johnson for all the hard work they have put in this legis-

lation, bringing it to this point. Let me just ask a few questions, if I may.

Mr. Hoydysh, you suggested the elimination of MTOPS as a benchmark to give the President more flexibility. What other types of benchmarks would you suggest the President employ in making these judgments about export controls?

Mr. HOYDYSH. We do not have a specific benchmark that we are proposing.

What we are suggesting is that the MTOPS benchmark has now been generally recognized as being ineffective and obsolete. And although the MTOPS metric is obsolete, it is still a requirement in the NDAA that whatever the President does has to be based on MTOPS. We are suggesting that the MTOPS be removed from the legislation, not from the regulatory structure which now uses MTOPS. We are suggesting that the Administration work with the industry to look at what type of metric or whether any type of metric is appropriate.

Although there may be other ways of controlling computers, we basically believe that it is virtually impossible in this networked world to actually control raw computing power because you can cluster lower-end systems to obtain higher performance.

But what we object to primarily is having the President in this MTOPS straightjacket where we cannot make any progress. Even if someone were to come up with a new architecture, a new metric, a new something, it cannot be used because we have to rely on MTOPS. So all we are suggesting is get it out of legislation and let the President do what is necessary to get a system that works in this new environment.

Senator REED. Let me infer from your response that there are some guidelines basically that the industry would at least be able to discuss and advise upon. The alternative is not standard. You are not suggesting that. You are suggesting that we get away from this one and move to something else. I am just trying to find out what the something else is.

Mr. HOYDYSH. We are suggesting that maybe a standard based on performance is not necessarily the correct way to go. Even if you remove MTOPS from the control regime, you still have a very extensive and restrictive end-user regime. We cannot sell to end-users that are identified by the government as being off limits, or if we have knowledge that the end-user is involved in developing weapons of mass destruction.

Even if you eliminate MTOPS entirely, you have not eliminated the export control system. We are prepared to discuss other technological ways of trying to get a handle on this, or looking at improving the end-user based system to make sure that these systems do not end up in the wrong hands.

And I would like to emphasize—we are not talking about removing controls on any of the rogue states like Iraq, Iran, North Korea, Libya. We are content to allow these controls to continue to stay in affect. We are talking about the rest of the world and whether performance-based controls make any sense since they can be circumvented so easily.

Senator REED. Mr. Freedenberg, the answer sort of dovetails on the question I have for you. You seem to suggest the world is divided into three parts, the rogue states, China, and everybody else.

Mr. FREEDENBERG. Yes, I would say so.

Senator REED. And how does this legislation roughly match up, given those three different challenges—the rogue states, China and the rest of the world?

Mr. FREEDENBERG. I think it helps. It has good provisions dealing with terrorism, antiterrorism, and with proliferation. And it helps with the world outside China. I do not know that it clarifies or, well, even I do not know that it clarifies China. But that problem, as I say in my testimony, is a debate within the U.S. Government. Unless we resolve it and decide what we want to do about China, how can legislation?

You cannot legislate that to a conclusion. It has to do with threat assessments. It has to do with all types of issues. That is why export controls are so difficult to administer, because it is where policy meets technology and it is a very difficult decision to make.

Senator REED. I guess I can infer also that if we come to some consensus, we would have a better chance of talking to our allies and our other technological countries in terms of a common—

Mr. FREEDENBERG. I think so, and I think having that would enhance our security, which is the most important thing. I mean, if we do have correct assessments of some of these places, they shouldn't be getting the technology they are getting. If we do not, then we should try to resolve that internally, what the facts are.

Senator REED. Thank you. Just one quick question and I think both Mr. Cupitt and Mr. Christensen touched upon it. That is the education of industry as far as these controls. I wonder, from your research, Mr. Cupitt, have you seen a difference between the small business and major business in terms of their ability to operate? And should we focus efforts through the SBA or some other organization to reach out to small business?

Mr. CUPITT. Generally speaking, that is not just in the United States, but that is a difficulty many governments face, is how to deal with small and medium-sized businesses. Some are quite experienced. But typically, an internal compliance program may cost in the neighborhood of \$400,000 or \$500,000 a year. And that is just way too much for some smaller companies. So that is a difficult issue for most companies to grapple with. And I think increased outreach is one of the main ways that you try to do that along with developing a good infrastructure with freight-forwarders and others who might be handling the exporting activities of some of the smaller businesses.

But it is a problem, and not just for the United States, Japan has a big problem with it. They know they have a problem with it. The Chinese are beginning to realize that they are going to have a big problem with that.

So I think that is a major issue, but outreach can really help.

Senator REED. Thank you very much. Thank you, Mr. Chairman.

Chairman GRAMM. Thank you.

Senator Ensign.

**COMMENTS OF SENATOR JOHN ENSIGN**

Senator ENSIGN. Thank you, Mr. Chairman.

Obviously, for those of us new on the Committee, this is a very difficult issue and I am sure it is actually a difficult issue for those who have been on the Committee. And for those of you in industry and academia, because of the problems that have been pointed out today dealing, as fast as technology is changing today and trying to decide whether or not, first of all, whether you can ever control the advancement of that technology, that some of these people that we don't want to get that technology, whether they can get it from other places.

It also seems to me that we have to be careful what we put in legislation versus regulatory controls because regulatory controls obviously can be changed much more quickly. Whereas, we see with legislation, it can be a very timely process. And as fast as technology is changing, it seems to me that if we do not have the mechanisms in place to be able to change some of the standards that the White House is dealing with some of these other countries, that they seem to need that flexibility to be able to change. Otherwise, this legislation could be mostly obsolete within just a couple of years if those kinds of things are not built in. I do not know if any of you want to comment on that. But just in the brief part that I have been reading about this legislation, it seems to me that that is a major challenge of this legislation.

Mr. HOYDYSH. I would like to comment, Senator. Again, as I said in my testimony, we think the bill does create a system that gives the Executive Branch, the President, the necessary authority to do what is appropriate, with the exception of the computer field where MTOPS is embedded in cement. This is a metric that is already 10 years old and that lost its currency maybe 3 or 4 years ago.

Failure to address this MTOPS issue now could result in MTOPS being in legislation for the next 5 years. This is akin to fighting the next war with the tactics used in the Korean War.

You cannot put the President in that kind of situation where you deny the flexibility to fix the system. Again, this legislation simply creates a process to get to a desired result. It does not decontrol anything. The President will still have all the authority necessary to consult with everyone to do the right thing. But the Administration must be given the authority to do this.

Otherwise, you end up with absurd results.

Mr. FREEDENBERG. If I could comment.

We did not as an association propose any changes in technology limits. We did not try to legislate or propose any legislation on that. And the suggestions we had had to do with process.

I think the most important thing to moving toward a conclusion is get the process to work. And the complaints that people have had is that the process does not always work. That plus improvements in the companies internal control systems.

You would come up with a really good bill and one that would leave sufficient flexibility to the Administration to adapt new technologies. I do not think you want to put anything, technological limits, at all in this legislation.

Mr. CHRISTENSEN. Senator, I would add a point about process and oversight that we have not talked about that I think is critical

to the operation of the system. And that is active, well-funded support from the intelligence community.

One of the fundamental differences between the Cold War era that Dan Hoydysh talked about and the current day is in the Cold War, if something went to the Soviet Union, we assumed it would get in the wrong hands. It was a simple system. You just denied everything you could and as Paul Freedenberg said, you used your black ball veto at COCOM.

We do not live in that world any more. Rather, both in license review and end-use license requirements, in countries with which we actively trade—India, China, Pakistan—companies are put to the burden of knowing what the end-use is or they are put to the burden of getting their license or not getting their license depending on what the intelligence community tells the review authorities about an individual they might seek to hire or a customer they might seek to serve.

Recently, I was very disturbed that the intelligence community for a 3- or 4-week period just cut off its recommendations on deemed export cases. It said they could not add value. When you are in the government and you have to make these decisions, you cannot pull facts out of the air. And the intelligence community usually has to be the best source of information. It does not mean they know everything in the world. But I do think as you go forward and have oversight of the system, you need to always keep in mind the important role of the intelligence community.

Chairman GRAMM. Thank you. Well, let me make it clear that we do not write MTOPS into this bill. The fact that they are now written into law is a testament to what happens when you do not have a permanent legal structure. In the defense authorization bill last year, someone thought that we could constrain gravity and repeal the laws of physics by having action by the legislative branch. As a result, we have written technology into law without informing technology and the innovation process.

But in any case, that is something we intend to fix.

Let me announce that—I think we have already announced it. But we are going to have a hearing on Friday. I am very sorry. I know a lot of our colleagues will not be here. But we are looking toward the rewriting of the Defense Production Act, which is probably the most powerful and all-encompassing law ever adopted by the American Congress.

It virtually gives the President in the name of national security police powers, the power to take property, to set prices, to mandate allocation. It is a law that was used by Richard Nixon to impose wage and price controls. It was the law used by President Clinton to mandate that natural gas producers and suppliers sell natural gas in California without the ability to negotiate price, without any guarantee they will ever be paid. And that order was extended for 2 weeks by the Bush Administration.

So next Friday, we are going to take a very small look at the use of the Defense Production Act in California. Clearly, it is my intention this year to have us rewrite the Defense Production Act, and again, rewrite it in recognition that in 1951, when we passed the Defense Production Act, we were at war in Korea. Ivan was at the gate. Our national survival was threatened. We were willing to

give the President these extraordinary powers. It would be my intention to take a long, hard look at the Defense Production Act in the context of the world that we live in today.

I just thought the recent use of the Defense Production Act was too good an opportunity to miss. Given that I think the order expires Tuesday, is it?—today. Today—it would be a good idea to go ahead and hold a hearing while this is fresh on everybody's mind.

So I want to thank everybody for coming. Let me say that we are eager to move ahead with this bill. It is not too late to have an input. We would appreciate any support from people and letting other Members of the Senate know that this is an important issue, and barring the fact that any of my other colleagues want to say anything—Senator Enzi?

Senator ENZI. I just wanted to make a quick comment, that I do have some other questions for the panel and there are some other people out there that I see. So my staff and I will be talking to you to get some answers so that we can better incorporate what you have said into what we will do.

Thank you.

The CHAIRMAN. Again, let me thank you all for coming.

The Committee stands adjourned.

[Whereupon, at 11:45 a.m., the hearing was adjourned.]

[Prepared statements, response to written questions, supplied for the record follow:]

**PREPARED STATEMENT OF SENATOR PHIL GRAMM**

Senator Phil Gramm, Chairman of the Committee on Banking, Housing and Urban Affairs, made the following statement today at a Full Committee hearing on S. 149, the Export Administration Act of 2001. The bill, introduced January 23, would provide the legal framework for the executive branch to implement export controls on nonmilitary items for both national security and foreign policy reasons.

We are here today to talk about the Export Administration Act. As our colleagues know, the Export Administration Act is a very important piece of legislation because it is our attempt as a Nation to deal with apparently conflicting goals.

On one hand, we have a goal to dominate the production of high-tech items in the world. We want to produce new and better items. We want to be at the cutting edge of the world's commercial markets and, at the same time, as the preeminent defender of freedom and right in the world, we want, to the degree we can and at prices we are willing to pay, to prevent adversaries and would-be hostile forces from getting access to technology that could endanger our interests, our freedom and our lives. We have put together on this Committee on a bipartisan basis an excellent bill. I want to congratulate Senators Enzi, Sarbanes, and Johnson for their hard work on this bill. I believe we have a bill that will come close to getting a unanimous vote in committee, and I am confident that it will be supported by the Administration and will become the law of the land.

The basic premise of the bill is if something is mass marketed or if you can buy it in the marketplace of the world, while it may have defense uses, there is no way you can prevent a would-be user of that technology from having access to it. Our bill is based on the premise that we need to build a higher wall around a smaller number of items and that we need to have stiff penalties for people who, on a knowing and willful basis, violate the law. We have established a system in our bill that I believe meets both our security and commercial concerns.

We establish a mechanism whereby we look to the future to judge the flow of technology and the timing so, for example, if we are about to have a change in the capacity of computers—such as the ability of widely marketed computers to do theoretical calculations per second—rather than waiting for it to rise, requiring American producers to apply for a license that will be approved, we can on a prospective basis change the standard and allow American producers to be leaders in the market. That is clearly better than having to fool around with an application process for a technology that is already widely available.

I am very proud of this bill. We are eager to move forward with it. We are holding our first hearing today with people who represent the commercial interests of America, which have a vital stake in this legislation, as well as an academic who specializes in this area. We want to write the best bill that we can write. If anyone has any suggestions, we want to hear them. We have simply tried to put together the best ideas we could find. If we find better ideas, we will change the bill.

It is my thesis that, given that the Berlin Wall has been torn down, given that we have liberated Eastern Europe and destroyed the Soviet Union, clearly there is a need to change the basic focus of our export administration system. It is also my thesis that even when Ivan was at the gate, we were trying to control too many things and not putting enough focus on controlling the things that really mattered.

I believe that the ultimate source of America's national security is our ability to dominate the flow of new and productive ideas as they relate to technology, not our ability to protect old ideas that we or anybody else has developed. In the end, you cannot protect technology. You can delay it, but in the end, productive ideas get employed everywhere.

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**PREPARED STATEMENT OF SENATOR MICHAEL B. ENZI**

Thank you, Chairman Gramm for holding this hearing on S. 149, the Export Administration Act of 2001. I extend my appreciation to the other cosponsors of this important legislation, Senators Sarbanes, Johnson, Hagel, Roberts and Stabenow. I thank each of them for their help in drafting and supporting this bipartisan bill.

I also welcome back Mr. Freedenberg, Mr. Hoydysh, Mr. Christensen and Mr. Cupitt to the Committee. Thank you for continuing a constructive dialogue on the issues surrounding the reauthorization of the EAA. I look forward to hearing your views today and working with you as this bill moves through the legislative process.

The goal of the EAA of 2001 is to eliminate unnecessary trade barriers, while focusing controls on the items most sensitive to our national security. It establishes a modernized framework to recognize the rapid pace of technological innovation and the realities of globalization, and puts higher fences and more enforcement priority

around the most sensitive items and destinations. At the same time it takes into account the realities of today's global economy, incorporating the concept that some items are very difficult to control. The bill recognizes that items available from foreign sources or available in mass-market quantities cannot be effectively controlled.

S. 149 builds upon last year's EAA reform bill by making several improvements. We have studied the issue for several years now, with this being the Banking Committee's eighth hearing since 1999.

It is essential that the EAA be reauthorized and reformed this year as the EAA expires on August 20. There have been long lapses in the EAA as a result of repeated failures to update and reauthorize this important Act in the past decade. As a result, our export control laws have been inadequately governed by either the EAA of 1979, or more often than not, by emergency Presidential authority under the International Emergency Economic Powers Act (IEEPA). This situation has effectively allowed the Administration, instead of Congress, to set the export control policies of the United States. The bill introduced today would place our export control system on firm statutory ground.

Another important, but often overlooked reason for the reauthorization of the EAA is that it would enhance our efforts to convince other countries to implement more effective export controls, particularly in the multilateral export control regime context. The June 1999 joint Offices of Inspectors General report to the Senate Committee on Governmental Affairs pointed out:

The United States encourages other countries, such as those in Eastern Europe and Southeast Asia, to implement export controls, it must set the example by sending a clear, unambiguous message that it is committed to export controls. It has been 10 years since the expiration of the Export Administration Act, in our opinion, this could send the wrong signal to these countries as well as our allies that the United States is not truly committed to export controls.

We currently have a one-year extension of the outdated statute governing export controls. The failure, however, to update the antiquated 1979 Act compromises our position of world leadership in stemming technologies related to the transfer of weapons of mass destruction. Once again, a strong endorsement for quickly updating and reenacting an export administration bill.

In September 1999, the Senate Banking Committee unanimously approved a Committee Print, S. 1712, to the Senate. I expect S. 149 will also have strong bipartisan support from the Committee as we modify and move forward with this legislation. I look forward to working with my colleagues and other interested parties to reauthorize the EAA during the coming months. S. 149 is necessary to advance both our national security and trade objectives. Thank you, Mr. Chairman.

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#### **PREPARED STATEMENT OF SENATOR JIM BUNNING**

Mr. Chairman, I would like to voice my strong support for S. 149, the Export Administration Act.

We tried to pass an Export Administration Act last year. We passed it unanimously out of this Committee. But we were unable to bring it to a vote on the Senate floor. It is my hope we can pass this bill rapidly, and get it to the President's desk. I support this Export Administration Act bill because it has real teeth.

We will be able to restrict companies from selling technologies that may harm our national security. We will finally be able to levy real penalties against those companies who would undermine our security to make a profit.

We also will allow the agencies in charge of our export controls to concentrate on those items that will hurt our national security if passed along to other nations. They will not be forced to try and stop products that rogue nations can buy at radio shack. Our export controls badly need to be updated. This bill will protect our security and bring our export control laws into the 21st century.

I would like to commend Senators Enzi, and Johnson, Chairman Gramm and Senator Sarbanes for their hard work on this issue.

If it was easy to reauthorize the Export Administration Act, it would have been done long ago. Or it would have been done last year. Now we have a good bill that I believe all of my colleagues should support.

I hope that we will continue to work with our colleagues from the armed services, foreign relations, governmental affairs and intelligence committees. Hopefully we can overcome the pitfalls that prevented this bill from becoming law last year. And I hope at the end of the day we can have a bill that everyone can support. I urge my colleagues to support the Export Administration Act.

Thank you Mr. Chairman.

**PREPARED STATEMENT OF DAN HOYDYSH**

COCHAIR OF THE COMPUTER COALITION FOR RESPONSIBLE EXPORTS

FEBRUARY 7, 2001

Mr. Chairman, Members of the Committee: Good morning. My name is Dan Hoydysh. I am Director of Trade, Public Policy & Government Affairs at the Unisys Corporation. I also have the privilege of serving as CoChair of the Computer Coalition for Responsible Exports (CCRE) and am testifying today on CCRE's behalf (a curriculum vitae is attached). I want to thank you for providing me and the CCRE with the opportunity to share our views on U.S. computer export controls.

**Overview of Testimony**

In our testimony today, we want to raise several key points concerning S. 149, the Export Administration Act of 2001, focusing on what we consider to be the heart of the bill—Section 202—which empowers the President, Secretary of Commerce, and Secretary of Defense to review and update the National Security Control List to decide whether or how an item can be effectively controlled. CCRE wishes to emphasize that: (1) the benefits of Section 202 will not extend to our industry unless the computer control requirements in the National Defense Authorization Act (NDAA) are repealed; and (2) Section 202 can be strengthened by (a) requiring the Secretary of Commerce to review the National Security Control List on a continuing basis, and (b) clarifying that a relevant Risk Assessment Factor is whether the capability or performance provided by an item can be effectively controlled.

**The Computer Coalition for Responsible Exports (CCRE)**

CCRE is an alliance of American computer companies and allied associations established to inform policymakers and the public about the nature of the computer industry—its products, market trends, and technological advances.

CCRE members include Apple Computer, Inc., Compaq Computer Corporation, Dell Computer Corporation, Hewlett-Packard Company, IBM Corporation, Intel Corporation, NCR Corporation, SGI, Sun Microsystems, Inc., Unisys Corporation, the American Electronics Association (AeA), the Computer and Communications Industry Association (CCIA), the Computer Systems Policy Project (CSPP), the Electronic Industries Alliance (EIA), the Information Technology Industry Council (ITI), and the Semiconductor Industry Association (SIA).

CCRE is committed to promoting and protecting U.S. national security interests, and seeks to work in close partnership with the Congress and the Executive Branch to ensure that America's economic, national security, and foreign policy goals are realized. CCRE also believes that a strong, internationally competitive computer industry is critical to ensuring that U.S. national and economic security objectives are achieved and that U.S. economic and technological leadership is maintained.

The U.S. computer industry has a history of cooperation with the U.S. government on security-related high technology issues. They take their responsibilities in the area seriously. CCRE members believe that U.S. national security is tied to U.S. technological leadership. U.S. computer companies also devote hundreds of employees and millions of dollars annually to complying with export control regulations. It is not our role, to define U.S. national security needs—that is for the Congress and the Executive Branch. Rather, we do and will continue to provide the Congress and Executive Branch with information concerning the rapidly changing technology and international market conditions that we believe they will need to take into consideration in shaping up-to-date and effective U.S. export control policies.

**Introduction**

CCRE would like to begin our remarks today by thanking this Committee for its leadership in pushing forward with its agenda for meaningful export control reform. It has been a long road, and we appreciate the Committee's legislative efforts in recent years, including its efforts in connection with S. 1712, the Export Administration Act of 1999. Like S. 1712, the bill now before this Committee—S. 149, the Export Administration Act of 2001—reflects several positive elements for reform.

At the heart of S. 149 is Section 202, which we believe is the key to implementing effective national security controls. Section 202 empowers the President, Secretary of Commerce, and Secretary of Defense to review the National Security Control List and determine whether an item can and should be controlled. The decision of whether or how to control an item is the most fundamental, threshold step in export control administration. In making this risk assessment, the President needs to consider not only U.S. national security goals, but rapidly changing developments in

technology and international market conditions. For precisely this reason, Section 202 is designed to provide the President with the authority and flexibility needed to implement up-to-date and effective export control measures.

### **The Need to Repeal NDAA Computer Control Requirements**

Notwithstanding the promise of Section 202, its application to computers is seriously undermined by another statute, the National Defense Authorization Act (NDAA), which imposes mandatory, rigid controls on high performance computer (HPC) exports. As a general rule, it is a bad idea to legislate static technological standards to address dynamic technological challenges. The NDAA violates this principle by requiring the President to use the MTOPS (millions of theoretical operations per second) metric to measure computer performance and set export control thresholds based on Country Tiers. Although the Department of Defense and the General Accounting Office now consider the NDAA approach to be “ineffective,” the NDAA severely limits the authority of the President to determine both *what* computers should be controlled and *how* they may be controlled. CCRE believes that the flexibility contemplated in Section 202 will be essentially nullified in relation to computers unless S. 149 also repeals the NDAA computer provisions. Put another way, if the NDAA computer provisions are not repealed, the computer industry would be the only industry that is essentially read out of Section 202.

We wish to emphasize that a decision to repeal the NDAA’s computer provisions will *not* alter the way in which computer exports are currently controlled under the Export Administration Regulations (EAR). If the NDAA computer provisions are repealed, the current MTOPS-based regime will continue to remain in place and controlled computers will remain on the National Security Control List. What would change, however, is that the President, Secretary of Commerce, and Secretary of Defense would be empowered to reassess the effectiveness of these controls in the future pursuant to the Section 202 framework.

The need for Presidential flexibility in administering computer export controls is especially clear in light of recent reports by the Department of Defense (DoD), General Accounting Office (GAO), and Defense Science Board (DSB), all of which conclude that the rigid MTOPS-based approach required by the NDAA is obsolete and fails to advance U.S. national security. A recent DoD report concludes, for example, that “MTOPS has lost its effectiveness as a control measure . . . due to rapid technology advances.” On this point, DoD has emphasized that:

Controls that are ineffective due to market and technology realities do not benefit national security. In fact, they can harm national security by giving a false sense of protection; by diverting people and other finite export control resources from areas in which they can be effective; and by unnecessarily impeding the U.S. computer industry’s ability to compete in global markets.

The GAO’s report to the Senate Armed Services Committee similarly concludes that the MTOPS standard is “outdated and invalid” and that “[t]he current export control system for high performance computers, which focuses on controlling individual machines, is *ineffective* because it cannot prevent countries of concern from linking or clustering many lower performance uncontrolled computers to collectively perform at higher levels than current export controls allow.” Finally, the Defense Science Board echoes this same analysis, warning that “[c]linging to a failing policy of export controls has undesirable consequences beyond self-delusion.”

In essence, U.S. defense and security experts now agree that the NDAA’s MTOPS regime is outmoded and needs to be dismantled. The recommendations of the DoD, GAO, and DSB highlight the President’s need for administrative authority to design and implement the most appropriate types of controls to advance U.S. national security for all dual-use items, including computer systems. CCRE believes that this can only be accomplished if the NDAA computer provisions are repealed.

### **Strengthening Section 202**

Section 202 can also be strengthened in two important ways. First, Section 202 can be more effective if it requires the Secretary of Commerce to *continuously* review the coverage of the National Security Control List to ensure that its controls are frequently updated to account for rapidly changing technological and market realities. On this point, we note that while Section 211(a) requires the Secretary to review on a “continuing basis” the foreign availability and mass market status of items subject to a license, Section 202 requires only that the Secretary conduct a “periodic review” of the National Security Control List. This distinction is sharp—“periodic” review is generally less frequent than “continuous” review—and the heart of an effective control system should be an updated determination of whether an item should be controlled in the first place. For this reason, Section 202 can be more

effective if it requires the Secretary to conduct continuous rather than periodic review of the National Security Control List.

Finally, CCRE believes that the Risk Assessment Factors identified in Section 202(b) would benefit from greater elaboration. Section 202(b)(2)(C) states that among the risk factors that the Secretary shall consider are “[t]he effectiveness of controlling the item for national security purposes of the United States, taking into account mass-market status, foreign availability, and other relevant factors.” While the catch-all “other relevant factors” is conspicuously broad, we believe that this provision should prominently list an additional factor central to the concept of controllability—whether the capability or performance provided by the item can be effectively restricted.

The plain language of the bill wisely recognizes that the foreign availability or mass market status of an item is not the only consideration relevant to an item’s controllability. Consider, for example, that while various U.S. computer systems have not yet attained mass market status, the equivalent computing power can be easily achieved by “clustering” several widely available, low-level systems. In this regard, the Department of Defense, General Accounting Office, and Defense Science Board agree that while the most advanced stand-alone high performance computers may be controllable, high performance *computing* is not. For precisely this reason, CCRE believes that explicit among Section 202(b)’s Risk Assessment Factors should be the consideration of whether the capability or performance provided by the item can be effectively controlled.

#### **Conclusion**

In summation, CCRE believes that with S. 149, the Committee is moving forward in the right direction. In particular, we believe that the review mechanism provided in Section 202 has great potential to provide meaningful export control reform. Unfortunately, however, the promise of Section 202 will not be delivered to the computer industry unless the NDAA computer provisions are repealed. If the NDAA computer provisions are not repealed, the President will remain confined within the MTOPS straitjacket and will lack the administrative authority necessary to implement the most appropriate types of national security controls for computers. Section 202 can also be strengthened by requiring the Secretary of Commerce to review the National Security Control List on a continuing basis, and by clarifying that a relevant Risk Assessment Factor is whether the capability or performance provided by an item can be effectively controlled.

CCRE remains committed to working with the Congress and the Executive Branch in helping to formulate solutions that effectively advance U.S. economic and national security interests. We thank the Committee for its attention to these important issues.

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### **PREPARED STATEMENT OF PAUL FREEDENBERG, PHD**

GOVERNMENT RELATIONS DIRECTOR

AMT—THE ASSOCIATION FOR MANUFACTURING TECHNOLOGY

FEBRUARY 7, 2001

Mr. Chairman, Members of the Subcommittee, I appreciate the opportunity to testify before you today on S. 149, which would reauthorize the Export Administration Act (“EAA”). As a former Assistant Secretary for Trade Administration and Under Secretary for Export Administration in the Administration of President Ronald Reagan, and as a former Staff Director of the Banking Subcommittee with export control oversight responsibility, I believe that I can offer some perspective and some background on this issue. Thirteen years ago, I testified in front of this Committee on behalf of the Reagan Administration, during the hearings that led up to passage of the Omnibus Trade Act of 1988, the last time that the Congress passed comprehensive legislation to reauthorize the Export Administration Act. From the time that I left office in 1989 until the fall of 1998, I was an international trade consultant, specializing in technology transfer issues; so in addition to my administrative experience, I believe that I can also bring the perspective of someone whose clients have been regulated by export control policy to my discussion of the issue.

Today, I will be speaking on behalf of AMT—The Association for Manufacturing Technology, where I am the Director of Government Relations. AMT represents 370 member companies, with annual sales ranging from less than \$2 million to several hundred million, who make machine tools, manufacturing software, and measurement devices. Industry sales total nearly \$7 billion, and exports account for more

than one-third of those sales. In your invitation you asked that I address the specifics of S. 149, which is similar to S. 1712, the EAA bill that the Senate failed to act upon during the 106th Congress. I will focus my testimony on that bill and how I believe that it will affect the United States business community, in general, and the U.S. machine tool industry, in particular.

By way of introduction, however, and to put my comments into perspective, I would also like to discuss the multilateral export control regime and how that regime has affected U.S. policy, particularly in China. The most important point to be understood with regard to United States export control policy is that while it is ostensibly aimed at keeping dangerous technology out of the hands of the so-called pariahs, or rogue states, the really important issues revolve around the question of what to do about China. Unfortunately, the China issue is being addressed unilaterally by our Government, because there is absolutely no consensus within the Western alliance about how to treat technology transfer to China.

The end of the Cold War led to the end of CoCom—the international coordinating committee that regulated technology transfer since 1949. When CoCom officially went out of business on March 31, 1994, our leverage for limiting technology transfer to China on a multilateral basis disappeared as well. CoCom was created in the same year as NATO, and it stood with NATO as one of the preeminent tools of the containment strategy that guided our policy for more than 40 years. The guiding premise was that the West could not match the Soviet Union and its allies man for man, tank for tank, or even missile for missile. Moreover, if the West maintained tight multilateral controls over the transfer of technology to the East, we could use our superior technology as a force multiplier that would tip the scales to our benefit. The Soviets and their allies could produce great numbers of weapons and keep large numbers of men under arms, but our technological superiority would more than compensate for that numbers deficiency. One example of the validity of this assumption was demonstrated in the 83 to 1 victory of U.S.-built F-15's and F-16's over Soviet-built MIG 21's and MIG 23's over Lebanon's Bekkha Valley in 1982. While pilot skill played an important role in that victory, technology was the critical factor.

The successor regime to CoCom, which is named the Wassenaar Arrangement, after the Dutch city in which it was formed, came into existence in 1996. Unfortunately, Wassenaar has none of the elaborate rules or discipline that characterized CoCom. Most importantly, the U.S. Government no longer has a veto over the goods and technologies exported to the target countries of Wassenaar. The current multilateral export control regime is based on what is known as “national discretion.” Each Wassenaar member makes its own judgments about what it will and will not license for export and, as a matter of fact, whether to require an individual validated license (“IVL”) at all. Other multilateral export control regimes, whose focus is nonproliferation (such as the Nuclear Suppliers Group, the Missile Technology Control Regime, and the Australia Group), do obligate signatories to require an IVL for the export of proscribed items to nonmembers, but Wassenaar does not.

China is not identified as a target of Wassenaar. In fact, during the negotiations which led up to the formation of Wassenaar, the U.S. representatives explicitly assured other potential members that Wassenaar was created to keep dangerous weapons and technologies out of the hands of the so-called rogue and pariah states: Iran, Iraq, Libya, and North Korea. China was never mentioned as a target of Wassenaar.

This brings me to an important point about the lack of both national and international consensus regarding China. Judging from official statements over the past decade, it is unclear what U.S. technology transfer policy toward China is. China is obviously seen as a major trading partner, and great effort is put forth to ensure that U.S. companies obtain a major share of the China market, which is predicted to be the largest in the world in most capital goods categories over the next decade. Clearly, however, China is also viewed by U.S. licensing authorities as a potential technology transfer risk. This is reflected in the fact that the U.S. Government is far more rigorous (and more time-consuming) than any other industrialized state in reviewing and disapproving licenses for exports to China.

There is a myth that has grown in the popular media that U.S. technology transfer policy toward China is lax. This myth is fed by disgruntled Defense Department employees who are against improved trade relations with China in high technology manufactured goods. The facts, particularly with regard to machine tools, indicate quite the opposite. Nothing could be further from the truth than the assertion that the U.S. Government is soft in its review of exports to China. The U.S. Government has consistently been by far the most rigorous with regard to reviewing license applications for exports to China. Other countries within the Wassenaar Arrangement simply do *not* share our assessment of the risk factors involved in technology transfer to China and have generally maintained a far less stringent licensing policy. In-

deed, one could say, without any equivocation, that our European allies maintain what could only be described as a favorable export licensing policy toward China. This can be illustrated by the following data.

Based on evidence gathered informally at Wassenaar meetings by the AMT technical advisor to the U.S. delegation, the following machine tool license processing times could be expected if an export license for the shipment of products or technology destined for China were to be applied for in major industrialized countries:

*United States*—Several months—up to a year—is the norm for difficult cases.

*Germany*—The longest it could possibly take is 30 days, although many take less time for processing. For a while there was a 24-hour turn-around promised by the licensing office, because the big companies tended to camp out in the office and monopolize this service, the licensing agency has discontinued it. Nonetheless, it is only in cases of prelicense check that it takes as long as 30 days.

*Italy*—They expected 30-day turn-around, with extraordinary cases involving prelicense checks to take as long as 60 days.

*Japan*—For their part, the Japanese said that the norm was 2 to 3 weeks, with up to a month in the cases where there was some sort of prelicense check.

*Switzerland*—The Swiss said 2 days was the norm, with the possibility that a license could take as long as 7 to 10 days to process if it were difficult.

Subsequent reports by commercial and economic officers posted at embassies in those countries have confirmed these informal license processing time estimates. When these comparative timeframes were raised with U.S. Government officials, the response that AMT received from them was that the various agencies involved almost always processed licenses within the 30-day time limit that the statute prescribes. But this time estimate fails to take into account times when the clock is stopped in order to obtain more information from the exporter, which is a quite frequent occurrence. And, even more significantly, the 30 days does not include the time that it takes to complete the Government's end-user check, which is almost always a very time consuming activity. U.S. companies are judged by their customers not merely by the time that any particular agency of the U.S. Government completes its license processing but rather by the *total* elapsed time that it takes for delivery from the moment that the order is placed. Any legislative provisions aimed at improvements in the licensing process must include improvements in the total licensing time, not just the time that licensing officials actually have physical possession of the license.

As I have argued, the total elapsed time that it takes to process a license is only part of the problem. Official licensing statistics demonstrate that the U.S. Government is far more likely to disapprove machine tool licenses for China than any of our European competitors. (This is true in many other sectors such as scientific instruments, semiconductor-manufacturing equipment as well; but I will concentrate on machine tool exports, where I have the most complete data.) While a mere handful of U.S. machine tool licenses have been approved during the period from 1994 to 1999 (a total of 25 licenses, or five licenses per year), trade statistics indicate that our European allies have shipped a huge volume of far more sophisticated machine tools to Chinese end-users.

China is the largest overseas market (in dollars) for U.S. machine tools, and it has the potential to grow significantly from its current total of machine tool imports from all sources of \$2 billion. However, unlike other East Asian markets where U.S. market share has been substantial, U.S. machine tool sales represent a relatively small percentage of the Chinese market.

For example, South Korea is at a similar point in its economic plan as China. Both South Korea and China are developing their auto industries, high-volume consumer durables, small and medium combustion engines, and second-tier aerospace industries. Both China and South Korea have indigenous machine tool industries, but the development of their respective metalworking industries requires imported machine tools.

There is a major difference, however, in the way U.S. export control policy views the two countries. Korea is an ally of the United States and U.S. export control policy reflects that. By contrast, the U.S. Government's implementation of the Wassenaar export control list toward China is highly restrictive. One result is that in 1998, the last year in which we have complete data, China imported only 9.9 percent of its machine tools from the United States. By contrast, Korea, which is not subject to restrictive U.S. export controls, imported 22.3 percent of its machine tools from U.S. providers. If one attributes the difference in import totals to the difference in U.S. export control policy toward the two countries, it can be argued that the cost

to U.S. machine tool builders of the restrictive export control policy is approximately a quarter of a billion dollars per year in lost export sales to China.

A major reason for this differential is that Western European countries are exporting to China modern machine tools that would be unlikely to be licensed by the U.S. Government. As evidence of this, the average unit prices of European machine tools in categories likely to be subject to controls are up to 250 percent higher than the average unit prices for machine tools in the same categories exported from the United States to China. In 1996, while the average unit price of machine tools sold to China by U.S. manufacturers was \$155,000; the average unit price of those sold by Italy was \$208,000; by Switzerland \$348,000; and by Germany \$407,000. Average unit prices are a key indicator of the sophistication, accuracy, and productivity enhancement of machine tools. Those factors are accounted for by higher precision, five-axis (and above) machine tools that perform more productively and thereby command a higher price. But it is precisely those characteristics that cause a machine tool to be listed on the Wassenaar list of presumably restricted technologies. If this is true, the statistics indicate that Europeans are shipping to China machines that, had they been produced in the United States, would be very rigorously reviewed by the U.S. Government, with a low probability of their being granted an export license.

The U.S. Government's rigorously enforced limits on machine tools significantly disadvantage U.S. machine tool builders in the global marketplace, since China has proved able to buy from a variety of foreign makers. The most rigorously controlled machine tools are those that possess five axes. A recent survey by AMT indicated that there are 718 different models of five-axis machine tools manufactured around the world, with 584 different models made outside the United States in countries such as Japan, Germany, France, Italy, Sweden, Spain, and Taiwan. There are even six models manufactured in China (as the Chinese themselves displayed at the Beijing Machine Tool Show in 1999).

One U.S. company reported, based on its agents' personal observations, that between 1993 and 1996, 15 large, five-axis machine tools were purchased by Chinese aerospace end users. All 15 were made by Western European manufacturers. In addition, Shenyang Aircraft purchased 12 five-axis machine tools *in 1 year alone*. These machine tools came from Italian, German, and French factories and not a single one from American machine tool producers.

Chinese importers often wish to buy several machines at one time to upgrade a factory or to complete or augment a production line. The inability of U.S. manufacturers to guarantee delivery of a particular machine tool requiring a license has an amplified effect on sales of machines that do not require a license. For example, Germany's market share of machine tools imported by China is more than double the U.S. market share. The trade figures indicate that by freely selling the same sophisticated machine tools to the Chinese which would be most likely unavailable from U.S. manufacturers, German and other European providers are also garnering sales in the noncontrolled machine tool categories as well, further disadvantaging U.S. manufacturers. This is made even more frustrating to U.S. machine tool builders and their workers by the fact that many of the commercial aircraft factories in China contain joint ventures and coproduction arrangements with American airframe and aircraft engine companies. In other words, despite the fact that these Chinese factories are supervised, or monitored, by American executives (or at least have a strong American presence to assure the production of quality components), U.S. Government export control policy creates a situation in which machine tools in those factories are almost certain to be supplied by *European* machine tool builders. How does that assure our national security?

As I have noted, while machine tool license applications to China are likely to be approved in a matter of days, or weeks, by our European allies, U.S. applications languish for months, or longer. Executives of U.S. machine tool companies have told me that they have decided to forego business in China if it involves an export license application. That is how discouraged they have become by the current licensing process. For their part, as recently as last month the Chinese told U.S. companies that, in the future, they will not even ask them to bid for business, since the Chinese experience with the U.S. licensing process has been so negative and so time-consuming. For those U.S. companies who are still asked to bid, the Chinese have begun to demand a guarantee from those manufacturers that they will be able to obtain an export license from the U.S. Government for the product in question, with a penalty built into the contract if that guarantee is not met. Obviously, this is a further deterrent to doing business in China. It is expensive enough to bid on business in China, without having to undertake the added risk of a monetary penalty for failure to obtain an export license on a timely basis.

A very recent example will illustrate many of the problems inherent in attempts by U.S. companies to obtain an export license for machine tool sales to China. Last year, an AMT member asked for my assistance in obtaining final approval for an export license that had been already been pending for many months. The Chinese, who were making purchases for an aircraft engine plant, informed the AMT member company that they were at the end of their patience in waiting for U.S. export license approval. This particular company had been delaying the Chinese buyer repeatedly, while it attempted to obtain an individual validated license for two five-axis machine tools. After waiting many months the Chinese cancelled one of the two machines on order, but gave the company one last chance to obtain the export license from U.S. authorities for the remaining machine. The company was particularly eager to gain approval for this license, because its owners believed that there would be follow-up orders for as many as a dozen additional machines if they could prove that they could obtain a license for this one. The U.S. Government was aware that a Swiss company had offered to fill the order for these machine tools, and, in contrast to the American company, the Swiss made it clear to the Chinese that there would be no security conditions, or compulsory visitations by the Swiss company if they were given the business by the Chinese.

In order to create an incentive to approve the license, the AMT member company offered to provide special software that would limit the use of the machine tool to only a small group of activities approved by the U.S. Government and to provide regular visitations to ensure that the machine tool would only be used for the jobs described in the license. While all this was being negotiated, the State Department declined to demarche the Swiss Government to warn them of the U.S. Government's concerns with the sales of machine tools to the Chinese plant. Negotiations between the AMT member and the Defense Department dragged for another 2½ months, with none of the AMT member's security or post-shipment visitation proposals deemed adequate by DoD. Finally, just as the license, which had by then been pending for 6 months, was about to be escalated to the Cabinet level for resolution, the Chinese buyer informed the AMT member company that they had lost patience with U.S. licensing process and cancelled the order. As it turned out, the Chinese plant manager had decided instead to go with the Swiss machine tool alternative, which required no post-shipment conditions and which had already obtained a license from its government months earlier. Reportedly, when informed of the Chinese cancellation and the need to return the license without action, the comment of the Defense representative inter-agency review panel (known as the Operating Committee) was that he was happy because DoD had achieved its objective; no U.S. machine tool would be going to that Chinese factory.

Of course, the U.S. machine tool would have gone to that factory under strict conditions with numerous follow-up visits to ensure that it was being used for the purposes stated in the license, while there will be no guarantee that Western authorities will be able to check on the projects on which the Swiss machine tools will be used. Nonetheless, DoD was apparently happy, having accomplished its objective of blocking the U.S. sale, and, I presume that the State Department was happy as well, since it did not have to offend any of our friends or allies by taking a strong position or asking uncomfortable questions of them. The only ones who are unhappy are the owners of the U.S.-based machine tool company, who may very well move production offshore to avoid a repeat of this unpleasant and unproductive process; and, of course, the employees who may lose their jobs are not very happy either.

I would ask the Committee to consider what this case illustrates about the national security benefits of our current export control policy, other than the fact that such a policy is likely to maintain machine tool employment in Switzerland. It certainly did not have any appreciable effect on Chinese ability to obtain machine tools for whatever aerospace projects they deem appropriate.

This inability to sell into the market while foreign machine tools are freely exported to China is particularly burdensome for the U.S. machine tool industry, because recent market projections have indicated that China will represent the largest and fastest growing market for commercial jet aircraft in the first 2 decades of the 21st Century. As recently as 1995 China represented less than 2 percent of Boeing sales, today China represents more than 9 percent, Boeing estimates that China will be the largest market outside the United States over the next 20 years. Within the next 6 years, China could account for nearly 25 percent of Boeing's total business.

In 1992, 90 percent of Boeing's aircraft components were built in the United States. Today, more than half the components are imported. China's exports to the United States of civilian aerospace components have grown 63 percent in the past 5 years. Moreover, Boeing's acquisition of McDonnell Douglas has given them an operation in which half of the MD-90 (and its successor, the 717) built each year are wholly constructed in China. Given the tremendous market power that China will

possess, it is certain that the Chinese Government will demand and receive what are known as “offset” contracts to build ever greater shares of Boeing’s aircraft in their own aircraft factories on their own machine tools. If the trend I have described continues, and licensing policy does not change, U.S. machine tool builders are highly likely to be displaced and replaced by their foreign competitors who will be able to take advantage of a far more lenient export licensing policy to make the sales to stock the new production lines that the Chinese will demand.

Machine tool licenses to China are but one example of a larger problem—the lack of international consensus about how to regulate technology transfer to China. Whatever technology transfer concerns the U.S. Government may have about China are not reflected in the largest and most active multilateral export control regimes to which we belong. The absence of a China reference in Wassenaar means that there are no internationally agreed upon rules or standards that the U.S. Government can cite to induce our allies to follow our lead with regard to China technology transfer policy.

Indeed, our former adversary Russia is a charter member of the Wassenaar Arrangement, and China would see any United States Government attempt to make them a target of this export control regime as a hostile act. In fact, discussions were held in 1998, with the goal of making China a Wassenaar member. I note all of this in order to provide some perspective regarding the degree to which the U.S. Government lacks leverage in denying technology to China. The U.S. Government may decide not to sell machine tools, or satellites, or scientific instruments, or semiconductor manufacturing equipment to China, but that does not obligate the Japanese, the Germans, or the French to follow our lead.

That is a fundamental problem with the current export regime. Not only does it indicate a lack of discipline regarding a country with which the U.S. Government has indicated technology transfer concerns; it also puts U.S. companies on an uneven playing field with regard to sales to what is likely to be the fastest growing and largest market for capital goods over the coming decade. Repeatedly over the past few years, whether it is in the category of machine tools or scientific instruments, the U.S. Government has taken a negative approach to technology transfer to China while our allies have not. The result has been that the Chinese are denied nothing in terms of high technology, but U.S. firms have lost out in a crucial market. This serves neither our commercial nor our strategic interests.

### Recommendations

The Committee is well aware of the fact that the authority of the Export Administration Act will lapse on August 19, 2001. As you also know, in the 1990’s, both the first Bush Administration and the Clinton Administration extended that authority under the pretense of an emergency that did not exist by virtue of invoking the International Emergency Economic Powers Act (“IEEPA”). The EAA, which was extended repeatedly under the authority of IEEPA, was last amended in a significant way while I was serving the Reagan Administration as Under Secretary for Export Administration, in 1988, a year before the fall of the Berlin Wall and 3 years before the collapse of the Soviet Union. These facts would seem to be reason enough to justify the passage of a new, revised EAA to guide export controls in the 21st Century. That is why, with the proper changes, AMT sees great value in S. 149. A comprehensive rewrite of the Act is long overdue. I will now comment on what I see to be the most valuable and important elements of S. 149. I will also point out a serious defect. As I see it, one of the most beneficial provisions of S. 149 is that it has a very strong provision defining “foreign availability” in terms of the reality in which U.S. companies compete today. Current law defines “foreign availability” as any item that can be supplied from *outside* the multilateral export control system in sufficient quantity and comparable quality so as to make the existing export controls on any particular item ineffective in achieving the objective of the controls. S. 149 seeks to adapt that element of current law to the era in which we live today, which is an age of weak to nonexistent multilateral controls and a multilateral system with rules of the game that allow any member country to decide whether to license a product on the basis of “national discretion.” Importantly, the bill acknowledges that “foreign availability” can exist *within* a multilateral control system, not just outside that system.

The key provision in S. 149 is found in Section 211(d)(1), which states: “The Secretary shall determine that an item has foreign availability status under this subtitle, if the item (or a substantially identical or directly competitive item) (A) is available to controlled countries from sources outside the United States, *including countries that participate with the United States in multilateral export controls* [emphasis added]; . . .”

I would consider the inclusion of such language in any EAA reauthorization reported by this Committee to be of critical importance to the creation of a fair and equitable "foreign availability" definition, one that reflects the new reality in which U.S. companies find themselves. Any new EAA should not be allowed to perpetuate the fiction that the current multilateral export control system functions effectively to deny technology to targets of that regime, particularly China, which I have argued has, at best, an ambiguous status in relation to the Wassenaar Arrangement's list of restricted technologies. Not to give U.S. companies the right to petition for relief from a system which allows trade competitors to use the multilateral system to garner new business by taking advantage of lax, or nonexistent, national export control systems, would be to perpetuate an anachronism in the law, one which would be grounded in an era that no longer exists.

That is a very positive provision in your bill. In addition, I feel that the mandate to the Administration, contained in Section 601, to strengthen the existing multilateral export control regimes and to annually report to Congress on progress in that endeavor potentially has great value. But this is such a critical area that I would suggest that you strengthen the mandate substantially and create some sort of an oversight mechanism to provide pressure on the Administration to vigorously pursue the multilateral goals established in the section.

As I have argued, Wassenaar provides weak guidance and almost no discipline upon its members. In some ways, it is worse than having no multilateral regime at all, because it gives the appearance of restricting technology transfer, while leaving all the key judgments up to its constituent members. To get an idea of how weak an export control regime it really is, one only has to ask what useful information the U.S. Government can obtain about the technology transfer decisions of other regime members. Under the rules of the Wassenaar Arrangement, the U.S. Government is not entitled to information about the licensing decisions of any other regime member unless that member is licensing an export to an end-user to which the U.S. Government has previously denied a license. And then, the Government in question is only obligated to inform the U.S. Government within 60 days of the decision to license, most likely after the technology or product in question has already been shipped. Such an obligation on Wassenaar members can hardly be called discipline.

I agree with the goals created in Section 601, that revisions of the Wassenaar Arrangement charter ought to include far better regime member discipline, including improved rules for information exchange. One idea that Section 601 proposes that would be particularly valuable would be to institute the "no undercut" rule within Wassenaar. The "no undercut" rule obligates all members of the regime to deny a license to any end-user who has been denied a license by any other member of the regime. The adoption of that rule alone would ensure that U.S. companies, such as those I have described in the machine tool industry, are not alone in denying their products to end-users in China when their licenses are denied by the U.S. Government. This amounts to unilateral export controls, and it is particularly frustrating, because the current Wassenaar Arrangement export control regime allows the Chinese to simply turn to another Wassenaar member in order to obtain the very same product, frequently with no delay or conditions. In the process, the Chinese are denied nothing, while the U.S. companies develop a reputation as unreliable suppliers.

I have noted what I see to be among the most positive aspects of S. 149, but there is one provision where I see a great potential for mischief. That is Section 502(b)(3). I believe that it would be a mistake to reverse the inter-agency decisionmaking structure created by the Executive Order of 1995. Until issuance of the 1995 Executive Order, referral of most licenses was at the discretion of the Secretary of Commerce. The Executive Order authorized all relevant agencies to review any export license submitted to Commerce. But, in return for this comprehensive review authority and also to facilitate the movement of the licensing process along toward the final decision, reviewing agencies would have to complete their review within rigorous time limits, and importantly, any dissenting agency's representative to the first level of inter-agency dispute resolution (the Operating Committee) would have to convince his or her policy-level supervisor to formally challenge a decision, rather than the licensing officer having the authority to veto and escalate on his or her own authority. It is important to understand that the inter-agency process created by the 1995 Executive Order allows any dissent by representatives of the Defense, State, or Energy Departments to be escalated all the way up to the President if the policy level of the dissenting agency concerned is dissatisfied with the results of its appeal.

I am convinced that reconfiguring this system into one that requires consensus at all decisionmaking levels, as is prescribed in Section 502(b)(3), would have the result of introducing a low-level veto back into license processing. Any one individual licensing official, in any agency, could then delay a license for a considerable

amount of time, with little or no justification. This, almost certainly, would lead to vastly greater numbers of license denials and, without doubt, much greater delays and lost sales in the cases of those licenses that do ultimately receive approval. Remember, as I recounted in the case study cited earlier in my testimony, the elapsed time that a license takes before it receives approval is the enemy of U.S. exporters almost as much as license denials. The machine tool industry has already seen a significant number of cases where the customer simply got tired of waiting for a license to be issued by the U.S. Government and turned to the foreign competitor, who invariably was waiting in the wings armed with a validated export license for the same product containing authorization to ship approved by his home government. I am afraid that Section 502(b)(3), as it is currently drafted, would reverse what little progress there has been in a system that is already too complex and too slow to enable the machine tool industry, among others, to compete effectively in China with our foreign counterparts. I would urge the Committee to reconsider this provision.

We need more than just a "feel good" China policy, or a "feel good" renewal of the EAA. We need to ask if it is possible to convince our allies to share our strategic vision of China (assuming that we ourselves have concluded what that vision is). At the current time, we do not have a multilateral technology transfer organizational structure that is conducive to entering into a debate about China—let alone one that would be able to enforce standards and rules about technology transfer if such a consensus were to be reached. Without such a multilateral technology transfer structure and without a clearer idea of what U.S. technology transfer policy toward China ought to be, it will be difficult to draft an EAA that is an effective guide to policy. I hope that these comments will be helpful to your consideration of S. 149, which reauthorizes the Export Administration Act and brings it up to date. I would be happy to answer any questions that the Committee might have.

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**PREPARED STATEMENT OF LARRY E. CHRISTENSEN**

VICE PRESIDENT

INTERNATIONAL TRADE CONTENT VASTERA, INC., ON BEHALF OF AEA

FEBRUARY 7, 2001

Good morning Mr. Chairman and Members of the Committee, thank you for the opportunity to discuss the legislation known as the Export Administration Act of 2001 (S. 149) that was introduced on January 23, 2001. My name is Larry Christensen, I am Vice President of International Trade Content for Vastera. I am here today on behalf of AeA (formerly the American Electronics Association), a 3,700-member company organization, and the largest U.S. high-tech trade association representing the U.S. electronics, software and information technology industries. I have a brief oral statement describing my company and background, and AeA's comments on S. 149. I ask that my written statement be made part of the record.

My company, Vastera, manages global trade for our clients through software, consulting, and managed services. We provide our software and services to over 200 blue chip clients, and we are on the front lines of international trade every day. I am also an adjunct professor at Georgetown University Law Center and coteach export controls and trade sanctions. Earlier I served the Commerce Department for 11 years where I directed the first complete rewrite of the Export Administration Regulation. In the private sector and in government, I have done export control work for 22 years.

Overall, AeA supports the creation of a new Export Administration Act, as it would provide a certain and stable legal framework for the executive branch to implement export controls. As recent events have shown, absence of an EAA can bring new challenges to the U.S. exporting community. In 1990, the EAA of 1979 expired and the International Emergency Economic Powers Act (IEEPA) was put in place to fill the void. Never intended to be a replacement for the EAA, IEEPA's authority was recently challenged in the U.S. District Court, M.D. Florida, Tampa Division, in the case of the Times Publishing Company, and Media General Operations, Inc., d/b/a The Tampa Tribune versus the U.S. Department of Commerce. If the U.S. Government had not successfully appealed the original decision, it would have had two potentially catastrophic impacts: (1) it would have undermined the current U.S. export control regime; and (2) it would have enabled competitors, especially foreign ones, to obtain highly confidential marketing and pricing information of U.S. high technology companies.

As a result of this case, last October Congress reinstated through August 20, 2001 the expired EAA of 1979. AeA is very appreciative of the initiative taken by the Senate Banking Committee on this issue. However, I believe that this is a short-term fix to a long-term problem. After August 20, 2001, the disciplines of the EAA will no longer be available unless the statute is renewed.

Industry and government both have strong interests in making the export control system as effective as possible. AeA's member companies support effective national security and nonproliferation export controls. The challenge for government is to avoid ineffective controls that not only do not advance important interests of the United States, but also might result in lost jobs and lost export opportunities. Exporting is good for the United States. It drives the growth in our economy, provides well-paid jobs for our people, provides an industrial base necessary for our military, and generates the revenues for the research and development necessary to move to the next generation of products.

In regard to S. 149, the essentials of the dual-use structure carry over from the approach of the 1979 EAA as amended, which were developed at the height of the Cold War. AeA member companies now find themselves in a much different environment; the Cold War and the peer-to-peer technological competition between the United States and its major potential adversary of that period are a thing of the past. Administrative approaches developed in the Cold War environment are no longer effective and, in fact, can be seriously harmful to truly globalized U.S. companies. In response to this new environment, AeA has recommendations that would enhance the bill and minimize some of the harmful by-products of the current control regime. Our recommendations are focused on two key areas:

- (1) the controls on transfer of technology and software within U.S. enterprises; and,
- (2) the open-ended nature of EPCI catch-all controls on decontrolled and uncontrollable products, particularly in light of the order of magnitude increases in civil penalties found in S. 149.

#### **Section 2(10)**

AeA recommends including language in Section 2(10), definition of an export, specifying that an export for the purposes of the Act does not include transfers of data, technology or source code within a company.

U.S. companies must operate in a competitive global environment. Integration of worldwide facilities and efficient use of resources within U.S. companies are critical to the maintenance of leadership within high-technology industries and the economic and employment benefits that leadership provides. These activities are seriously impeded by restrictions that apply to non-U.S. employees in the United States and abroad. Inclusion of the recommended AeA language would build on stringent company controls on proprietary data and be a step forward in minimizing this impediment. The United States can maintain and enhance its national security interest by controlling the transfer at the critical stage abroad, rather than inhibit the sharing of knowledge at a U.S. enterprise.

#### **End-Use and End-User Controls (Section 201(c))**

End-use and end-user controls in Section 201(c) should be enhanced with language that would mandate the exclusion of certain items from control that fall below reasonable *low value* standards, thereby eliminating proforma Enhanced Proliferation Control Initiative (EPCI) controls from marginal and uncontrollable transactions. Such language would provide a concrete benchmark for the "material contribution" standard already specified in the catch-all proliferation controls in this section.

This language would provide that no controls on end-use or end-user could be imposed on exports or reexports if, for example, the item would qualify for export or reexport to the country of destination under "No License Required," notwithstanding controls on end-use or end-user, and the value of the export is less than \$10,000.

This exemption from end-use/end-user controls would not apply if the Secretary of Commerce determined that any item specifically identified and published in the *Federal Register*, if released from control by this provision, would pose a serious risk to the national security. It also would not apply to any export controlled under statutory authority other than the EAA.

This provision could eliminate EPCI end-use/end-user screening from tens of thousands of *low value* export transactions involving decontrolled products, eliminating the need for extensive screening for decontrolled products. In addition, it would create reasonable boundaries for potential imposition of massive civil penalties for *low value* administrative errors of no national security significance. An "escape clause"

would be available to specifically list items that are so sensitive that a low value shipment criteria would pose serious security risks.

**Penalties (Section 603)**

In regard to penalties contained in Section 603, AeA asks that the Committee seriously consider development of a tiered system similar to that used by the U.S. Customs Service. Customs' system ranks offenses as *negligence*, *gross negligence*, and *fraud*, with a corresponding tiered schedule of penalties.

The potential for imposition of civil penalties for *low value* administrative errors, particularly under EPCI controls, is extremely great, and is exacerbated by the order of magnitude increase in civil penalties included in the draft legislation. Under these conditions, boundaries must be established to protect exporters from arbitrary enforcement involving *low value* administrative errors in an extremely complex regulatory environment. In the absence of such limits, many exporters, particularly small businesses, may forgo the export market.

**Country Tiers (Section 203)**

AeA members believe the five-tier system laid out in Section 203 is counterproductive and should be eliminated. A country-tier approach limits the flexible and effective management of controls by imposing artificial groupings and constraints based on country criteria alone. Moreover, the five-tier system articulated in the draft would not lend simplicity to the system, but would complicate it further. Finally, the tier classifications have been proven to acquire a life of their own, becoming "signals" of potential policy shifts rather than being modes of control as originally intended, thus tying the hands of any Administration wishing to change them.

**Foreign Availability and Mass Market (Section 211)**

Incorporate into Section 211 language that is forward looking. For instance, Section 211(d)(1)(A) currently reads "is available . . .". AeA recommends that it read "is or will be available".

Export control legislation needs to encompass language that takes into account present realities as well as future developments. This is particularly important to the high-tech sector where technology is constantly advancing and new products are regularly entering the marketplace. The requirements for determining foreign availability and mass market status currently established in S. 149 are restrictive. If the Act does not provide for the Administration to anticipate probable competitive developments that undermine the effectiveness of controls, U.S. exporters will first have to lose a market and demonstrate that it is lost before relief can be granted. However, once a market is lost, it is often lost forever and the damage to the U.S. industrial base cannot be undone.

**Office of Technology Evaluation at the Department of Commerce (Section 214)**

Establish criteria such as annual training and internship programs that ensure that the staff of this office is up-to-date in its technical knowledge and information.

The Office of Technology Evaluation will have important responsibilities including, but not limited to, foreign availability and mass market assessments, evaluation of global technological developments, and the monitoring and evaluation of multilateral export control regimes. It is therefore important that the staff's knowledge is current with the present day export environment and technologies. Deficiencies in this area will directly impact the exporting community.

**National Defense Authorization Act (NDAA)**

Repeal the provisions of the NDAA relating to high performance computers (Subtitle B of the NDAA). These provisions no longer reflect the realities of the marketplace and have become a serious obstacle to U.S. interests. The "MTOP's" restriction on computers which requires the President to control computers based on their performance levels, no longer make sense under current technological trends, much less for future circumstances. The exponential growth of computing power and the availability of clustering and other technological developments have made this metric-based approach obsolete. While the metric fails to serve national security interests, it imposes a serious burden on U.S. economic interests and the Administration, diverting resources to constant adjustment of the MTOP's thresholds to reflect the latest technological trends.

In summary, AeA feels a new EAA is important. However, the legislation must be reflective of today's and future realities, while not undermining national security and foreign policy objectives. Again, I thank you Mr. Chairman and Committee Members for this opportunity, I am happy to answer any questions you may have.

**PREPARED STATEMENT OF RICHARD T. CUPITT, PHD**

ASSOCIATE DIRECTOR

CENTER FOR INTERNATIONAL TRADE AND SECURITY, UNIVERSITY OF GEORGIA

FEBRUARY 7, 2001

**Introduction**

Mr. Chairman: Thank you for the invitation to address the Committee on Banking, Housing, and Urban Affairs regarding legislative efforts to craft the Export Administration Act (EAA) of 2001. I direct the Washington, DC office of the Center for International Trade and Security of the University of Georgia (CITS/UGA), a nonpartisan institution that specializes in research, teaching, and service related to United States and international export control issues. Among other things, CITS/UGA is the only institution that makes periodic comparable and comprehensive assessments of national export control systems, having done assessments on more than two dozen countries since 1996.<sup>1</sup> This year, I am also a Visiting Scholar at the Center for Strategic and International Studies (CSIS), where I assist the staff in their work on export controls. Please note that these remarks represent my personal views and not necessarily those of either CITS/UGA or CSIS.

Let me preface my remarks by noting some assumptions behind my views:

- Proliferation of nuclear, chemical, biological, and other weapons of mass destruction (WMD), coupled with the proliferation of their means of delivery, poses the greatest threat to U.S. national security today and for the immediate future;
- Export controls provide a relatively low-cost (but not no-cost) approach to delaying the diffusion of critical proliferation-related technologies or increasing the costs of obtaining WMD; and
- National and multilateral export control systems always need improvement as long as determined proliferators seek WMD systems;

Developing a prudent export control system always demands a delicate and coherent balance of military, economic, and other interests that constitute U.S. national security policy. As the Members of this Committee know, the many conflicts among the competing stakeholders has foiled a decade's worth of efforts to produce a new EAA.

**The Consequences of Failure**

Without the direction a legislative mandate confers, the United States has not sent clear messages regarding export controls to friends and foes alike. This has several immediate and long-term consequences. For example:

- The United States, almost by default, is ceding leadership on export controls to the European Union (EU). On list enumeration, on countries of concern, on controls on intangible technology and deemed exports, and perhaps on catchall controls, EU standards are becoming the global norm. The attractions of joining or working with the EU, where export controls have become mandatory for prospective members (an *acquis communautaire*), helps explain why many countries adopt EU-like export controls. Nonetheless, why the EU and the United States have not reached common ground on many export control practices stems in part from a lack of consensus on U.S. policy.
- The four major supplier arrangements (for example, the Australia Group, the Missile Technology Control Regime, the Nuclear Suppliers Group, and the Wassenaar Arrangement) have made few improvements in the last 5 years, despite general agreement that the infrastructure for multilateral coordination remains appallingly weak. This is not limited to the lack of headway, which is likely to persist, regarding stronger "no undercut" procedures in the Wassenaar Arrangement or to the lack of agreement on how to treat China. Many foreign officials criticize the arrangements for, among other things, a failure to share information on national policies, poor exchange of intelligence on end-users of concern within and between arrangements, and inadequate threat assessments for controlled items. Given that entities trying to acquire WMD always try to exploit weaknesses in the multilateral system, this means that the multilateral system has not merely stagnated but it has become weaker over the last 5 years.
- U.S. officials constantly find themselves in the hypocritical position of telling foreign officials and industry representatives that their governments need strong legal frameworks for export controls. This undermines trust and creates practical difficulties. Discussions with U.S. officials about encryption export controls, for ex-

<sup>1</sup>Most of these assessments are available on the CITS/UGA website, [www.uga.edu/cits](http://www.uga.edu/cits).

ample, prompted the People's Republic of China (PRC) to introduce very stringent controls in late 1999. By that time, however, the United States had reversed course on such controls. Although the overwhelmingly negative response from Japanese, United States, and European companies induced Beijing to adopt a more liberal interpretation of State Council Decree 273, confusion over the status of Chinese controls on encryption items still reigns.

Without developing a solid consensus on how the United States should approach export controls, it will be ever harder to create coherent ideas and incentives that will allow the United States to reassert its leadership effectively. My primary recommendation to the Committee, therefore, is to keep at this until Congress enacts a prudent, even if not perfect, EAA in this session.

#### **Developing a New Industry-Government Partnership on Export Controls**

Building a new consensus must overcome the substantial distrust and lack of understanding that exists between industry and the government. In a recent survey of 120 companies conducted by CITS/UGA, the compliance activities of U.S. exporters varies considerably, with scores ranging from 54–94 on a 50–100 scale (producing an overall average of 76). While many U.S. exporters have well-developed export control compliance programs, it appears that others do far less than “best practices.” Creating incentives for industry to adopt—voluntarily and appropriate to the company—better compliance practices would foster more effective export controls and demonstrate why government should place more trust in those companies that do follow “best practices.” Internationally, many Japanese and some European companies already have sophisticated internal compliance programs, so this is not a matter of placing U.S. companies at a competitive disadvantage. Indeed, better compliance practices may make companies more profitable by improving their logistical systems. Calling for improved compliance practices would also mean that the United States would not ask more of Russian and Chinese companies than we do our own as we do now in some instances.

Partnership, however, implies mutual responsibilities. In return for tighter industry compliance practices, the U.S. Government might, for example, permit more special licensing processes for dual-use transactions between companies that meet some standard of compliance. These incentives might parallel those outlined in the Defense Trade Security Initiative.

In addition, the United States Government could share information on end-users of concern in a timely fashion to more people. Under current practices, if the end-user is not on the Entity List, the Denied Parties List or something similar, an exporter often only finds out about an end-user problem through a license denial or similar notification. Other exporters, however, will not get this information until they too attempt to acquire a license. Worse, companies ill-informed about the ramifications of the Enhanced Proliferation Control Initiative (ECPI) may proceed with a transaction believing that no license is required. Current rules also appear to direct immoderate government enforcement resources toward addressing minor (and often self-reported) violations. While a good compliance program already serves as a mitigating factor in enforcement decisions, limited enforcement resources puts a premium on directing those resources to where they will improve effectiveness. A new legislative consensus behind U.S. export controls should generate a new strategy to direct enforcement resources toward the objectives of a revamped EAA.

Most important, Section 202 includes language to require new threat assessments associated with each item on the National Security Control List. Sharing persuasive threat assessments with industry, especially with our allies is a critical step in reforming U.S. export controls to meet the challenges and opportunities of the twenty-first century. A large number of foreign officials or representatives from industry do not appear to understand the specific security threats related to individual controlled items. A solid threat assessment makes for a more compelling argument for compliance than vague references to national security. In addition, a rolling review of the threat associated with each controlled item would help keep the United States and multilateral control lists from becoming glaringly obsolete.

#### **Assessing National Export Control Systems and Multilateral Export Controls**

One of the more interesting elements of S. 149 comes with the creation of the Office of Technology Evaluation. The Office will undertake a considerable number of crucial actions, particularly identifying and monitoring foreign availability, mass-market evaluations, and assessments of various national export control systems. Although all three-activities are important, let me focus on the evaluation of foreign export control systems (see Sections 203.C.3–7). Assessing foreign systems plays an important role in determining into which tier a country falls (Section 203), evalu-

ating the multilateral arrangements (Section 601), and identifying if violations of national laws adopted by other countries are violated (Section 604).

Somewhat surprisingly, few comparative assessments of national export control systems exist. Along with the more comprehensive comparisons made by CITS/UGA, Saferworld (UK), the Stockholm International Peace Research Institute (SIPRI), Vastera, Ltd., and the EU have produced some studies in recent years that compare several aspects of national export control systems. One conclusion stands out—*countries have not harmonized their export control systems very closely*, even among those countries with a history of coordinating their systems through the EU or the now defunct Coordinating Committee (COCOM). The differences identified in the lengthy negotiations with Australia and Great Britain, for example, over the Defense Trade Security Initiative are illustrative of how little harmonization exists. Taken together, the lack of assessments and the absence of harmonization indicate that serious evaluations of national export control systems and the four multilateral arrangements will require significant amounts of original data collection.

To give you an idea of the scope of the problem, let me draw on my own experience. Over the past 5 years, I have conducted or supervised assessments of the export control systems of the PRC, Hong Kong, India, Japan, South Korea, Taiwan, and the United States, as well as contributed to similar studies of Argentina, Cuba, the Czech Republic, Israel, all the republics of the former Soviet Union, and the United Kingdom. Retrieving *accurate, comprehensive, and reliable* information for these assessments requires a well-designed research protocol and considerable work in-country, which is not inexpensive. Using our protocol, for example, it typically takes one investigator about 4 months to conduct an initial assessment (although follow-up monitoring involves a smaller investment of resources).

Given the number of countries involved, especially classifying their systems across categories of controlled items, the Office of Technology Evaluation will need to apply considerable resources to this task. In other words, the assessments could become a bottleneck for creating and adjusting the country tiers, evaluating harmonization for the multilateral arrangements, and other legislative requirements if they receive insufficient support from Commerce and inadequate assistance from Defense, Energy, and State.

### **Conclusion**

I would like to thank the Members and staff of the Committee for their efforts in drafting a new EAA. I will be happy to pass additional comments on specific sections of the legislation on to the staff. Given the history of this legislation, several of the proposed sections will bring out significant opposition, so I think it is worth keeping several points in mind in steering the bill through the legislative waters:

- The export control systems of other countries are not harmonized with that of the United States and the infrastructure to coordinate this divergent systems is very weak. Compromises that assume otherwise will only succeed by serendipity.
- Focus on incentives (and disincentives) that will make the relationship between government and industry more of a duet than a duel.

Most important, the United States needs a legislative framework that will serve its interests in the post-Cold War world. Without developing a solid consensus on where U.S. export controls should take the country, the United States will cede its leadership role by default. Thank you again for the opportunity to speak before the Committee.

**RESPONSE TO WRITTEN QUESTIONS OF SENATOR ENZI FROM  
PAUL FREEDENBERG**

**Q.1.** In your testimony you noted that many export control decision conflicts were those for exports going to the People's Republic of China. Are there instances where U.S. export control policy toward certain machine tool exports to countries other than China has been problematic?

**A.1.** The vast majority of the problems that machine tool companies have had with the licensing process have been with regard to licenses for products destined for China. However, problems have arisen with regard to other destinations as well. I will cite three recent examples. The first case had to do with a machine tool being sold to the largest aerospace producer in Spain. The end-user was fine with regard to its ability to prove that it would need and initially only use the machine for a large European space consortium project. But apparently some in the U.S. Government did not like the fact that this company had done legitimate business in the past with Libya, and these Government officials wanted to punish the Spanish company for its past behavior. Unfortunately, in a world in which there are multiple suppliers for the very same machine being sold to Spain, the only ones that they would have punished would have been the American workers who would have lost their jobs without the Spanish business. After some delay, the license was approved, but that did not serve to enhance the U.S. company's reputation in Spain.

Second, there was a significant delay recently on a license for a machine tool to a new end-user in Brazil. Embrier, the largest Brazilian aircraft manufacturer, decided to subcontract to Brazilian job shops, much as U.S. aerospace companies frequently do when work becomes too heavy. The new Brazilian end-user was unknown to DoD, and significant delay ensued, as DoD debated with other export control agencies whether the new company could be trusted. It was pointed out that Brazil had entirely given up its missile program, and it was unlikely the machine could be transshipped out of the country. The U.S. supplier became very nervous, because, once again, the reliability of that company as a source of future machine tools was called into question. The license was eventually approved, but not without significant delay and some damage to the U.S. machine tool company's reputation.

Finally, I am also aware of significant delay in a machine tool sale to Taiwan. Obviously, Taiwan is an ally, but that does not mean that delays cannot occur when the Foreign Commercial Service individual assigned to this task has too much on his plate to find the time to go out to distant locations to check out the *bone fides* of specific end-users. Before the check was completed, the customer became impatient and threatened to give its business to the European competitor of the U.S. supplier. But the end-user check was carried out just in time to save the order. In all three of these cases, the delay inherent in the U.S. licensing system came close to costing members of my association business and might very well have damaged their reputations irreparably with these particular customers. As I stated in my testimony, time is the enemy of U.S. companies competing for business in foreign markets. Obviously,

the system is still in need of improvement, and hopefully your bill will eliminate needless delays.

**Q.2.** I am aware that companies often complain that it can take months to obtain a commodity jurisdiction determination as to whether their product is subject to a license under the Department of Commerce's Export Administration Regulations or the Department of State's International Traffic in Arms Regulations. This delay can often be very costly in terms of lost export opportunities—especially for smaller companies or start ups. Are you aware of any examples that are particularly troubling to you?

**A.2.** Mr. Chairman, I am pleased to address one of the most vexing problems facing American industry as they confront the export control regulatory scheme—the problem of getting a prompt response to requests for “commodity jurisdiction determinations.” As you know, exporters are frequently confronted with the question of whether a product is subject to the Export Administration Regulations administered by the Department of Commerce or the International Traffic in Arms Regulations, administered by the Department of State.

Often a product, particularly a new product, does not readily fall into one category or another and the exporter is left with a dilemma. He may guess which regulation governs his product, but if he guesses wrong he could face very serious consequences. Alternatively, he may take advantage of the provisions in the regulations to seek a commodity jurisdiction determination—usually referred to as a “CJ”. The problem is that it often takes months to get an answer, and that delay can be debilitating, particularly for a start up company. In a highly competitive world, that delay can spell the difference between success and failure.

Let me cite a specific example. Jaycor Tactical Systems, Inc., a start up company in San Diego principally owned by Jaycor, Inc., (an established company) has developed a range of nonlethal technologies that are of great interest to law enforcement and military agencies around the Nation and overseas. Essentially, JTS's PepperBall™ product uses a commercially available paintball-type of compressed air launcher to fire projectiles containing Oleoresin Capsicum (OC) powder, which has been used for decades by law enforcement and the military in aerosol pepper sprays. The product, which has only recently been introduced to the market, is attracting much interest among U.S. law enforcement agencies because of its great effectiveness. It is accurate and very effective at a range of 0 to 50 feet, the range most useful to police. As a credible alternative to a firearm, it has, over the past year, been used in several hundred instances to successfully quell violent suspects without resorting to lethal force.

Obviously, the company would like to market this product overseas. In April of last year, they began discussing with the Departments of Commerce, State, and Defense where their product would be classified. After receiving conflicting informal advice, they submitted a formal CJ request in June of 2000. Despite repeated calls to the government they have not yet received an answer. In fact, I understand most recently they learned that one department had misplaced some of the paperwork, resulting in even further delay.

The consequence of this delay, and delays suffered by countless other companies, is that U.S. exports are lost, U.S. jobs are placed in jeopardy, and foreign competition can gain the upper hand. In the case of JTS, Mr. Chairman, you can also imagine the utility that its nonlethal technology could be to Israeli security forces as they deal with Palestinian anger on the streets. Had JTS been able to export their PepperBall™ technology to Israel it is possible that many lives could have been saved.

The problem faced by JTS is faced daily by hundreds of companies. I do not know how many CJ requests are currently pending, but I urge the Committee to look into the unconscionable delay in responding to CJ requests. If the Administration won't speed up this process, then Congress should act to force the process, perhaps by enacting a mandatory time—say 60 days after a CJ request is filed—after which, if no answer is received, an exporter is free to export the product under the less restrictive regulation.



## **ESTABLISHING AN EFFECTIVE, MODERN FRAMEWORK FOR EXPORT CONTROLS**

WEDNESDAY, FEBRUARY 14, 2001

U.S. SENATE,  
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,  
*Washington, DC.*

The Committee met at 9:30 a.m., in room SD-538 of the Dirksen Senate Office Building, Senator Phil Gramm (Chairman of the Committee) presiding.

### **OPENING STATEMENT OF CHAIRMAN PHIL GRAMM**

Chairman GRAMM. Let me call the Committee hearing to order.

I want to thank our witnesses today. We have two people today who have rendered great service to this country and who are probably the two leading experts on the issue before us—export administration—in the country.

John Hamre—many of us know him from the old days as the senior staffer on the Armed Services Committee—is now President and Chief Executive Officer of the Center for Strategic and International Studies. He is a former Deputy Secretary of Defense. And he is, in fact, now in the process of conducting a study on this very subject.

Our second witness is Mr. Donald A. Hicks, who is Chairman of Hicks & Associates. He is former Under Secretary of Defense for Research and Engineering, and he is Chairman of the Defense Science Board Task Force on Globalization and Security. So, in terms of hearing from knowledgeable people about export administration, there are hardly two people in America that we could have chosen who could give us as educated testimony. Let me just say, having spoken on this subject many times, there is an inherent conflict in the goals that America has.

We want to dominate the world in high technology, to do the research, to provide cutting-edge products on the world market, and to dominate the world market with those products. At the same time, we are the principal guard at the gate in terms of the security of the world. We are the protector of freedom on the planet.

And so, we have concerns about powerful technology getting into the wrong hands. And to be honest with ourselves, we have to say that there is, at least at the margin, a conflict in these two goals.

The bill we have put together over several years of effort, with input not only from Members of this Committee, but from many witnesses and many Members of other Committees, is an effort to deal with this conflict. It is really based on a few simple principles.

Number one, if something is mass-marketed, it may be very powerful. It may be that you would wish that the number of theoretical calculations per second that a computer will make will not grow as fast, that the machines would not proliferate because they have military usage and potential.

But the reality is the number of MTOPS is doubling every 6 months and no law we could pass could stop that from happening.

So, the first thing we try to do in our bill is to say, those things that are mass-marketed, that are sold on the world market, while they may have defense implications, there is nothing we can do about them. And so, they ought to be decontrolled.

Second, we ought to build a higher fence around the things that we can control, have an effective process of analysis of what those things are, strengthen the individual departments in terms of the potential for objecting on national security grounds, have very stiff penalties for those who knowingly and willingly violate the law.

Finally, a change we have made in the bill which I think is justified—and in fact, the President already has the power to do under the Constitution—despite a process that we have set out for systematic evaluation, at the end of the process, if the President of the United States decides that he wants to control an export for national security reasons, he has the right to do that.

That right cannot be delegated to anybody else. It has to be made on an individual item basis. And therefore, the President has to be answerable for it. But he has that power.

That is a summary of our bill. I am very happy that our witnesses are here. I want to give my colleagues an opportunity to make an opening comment.

I would say, in recognizing Senator Enzi, that I have been in the Senate now for 16 years, I have never seen anyone become as personally involved in an issue. I have never seen a Senator who has attended meetings of agencies to try to figure out how they work. I have never seen anybody with that hands-on approach. And I want to say that I am a great admirer of that approach.

This is Senator Enzi's bill, and I intend to be there, this year, when the President signs this bill into law, standing right next to Senator Enzi. And I intend to see him handed the first pen.

I intend to get my pen after he gets the first one.

Senator Enzi.

#### **STATEMENT OF SENATOR MICHAEL B. ENZI**

Senator ENZI. Thank you, Mr. Chairman. Thank you for the kind words and thank you for holding this second hearing on S. 149, the Export Administration Act.

It is a delightful day. Today, Mr. Hamre is back. Mr. Hamre took me through that educational process from the Department of Defense standpoint and spent a lot of hours educating me and then spent a lot of hours working with Bill Reinsch, who is the Under Secretary of Commerce who was involved in the export administration, working laboriously, extreme detail, to try and resolve how we meet this balance between national security and having an effective export trade. And the willingness to work and to dedicate the hours is very much appreciated. He came up with some very creative methods by which we can reach those goals.

It is good to have you back again to hear some additional comments on this. As one of the most knowledgeable people on EAA, I appreciate your doing that.

I also want to commend Mr. Hicks for the tremendous amount of work that he put into the 1999 Defense Science Board Task Force on Globalization and Security—one of those small titles that we have around here. And of course, globalization has become a dirty word to some people in society. But as the 1999 Defense Science Board report points out, globalization is not an option. It is a fact. Its cause is derived from various factors, but the result is the same.

Dual-use technologies are fully globalized and therefore, are very difficult to effectively control. The solution that we point to in the bill is to control those items that are controllable and not available in foreign or mass markets.

We build higher walls around those things that we can control and are able to focus the attention of the people that do the enforcement on less things to a great extent, which should provide for more security for this country.

So, I look forward to hearing the views of the distinguished witnesses and moving this to a mark-up, hopefully later this month.

Thank you.

Chairman GRAMM. Thank you. Let me say for our new Members, I am very grateful that you came. This is a subject that the public does not understand. And the reason they do not have to understand it is we have men like the two witnesses before us who do understand it and who, in Democrat and Republican Administrations, have been good stewards of our interest.

But it means a lot to me that you came, and I want to thank you.

Senator Miller, did you have a statement you wanted to make?

#### **COMMENTS OF SENATOR ZELL MILLER**

Senator MILLER. No, I do not have a statement. I am looking forward to the testimony.

Thank you.

Chairman GRAMM. Thank you.

Senator Allard.

#### **STATEMENT OF SENATOR WAYNE ALLARD**

Senator ALLARD. Mr. Chairman, I just have a brief statement I would like to make. First, I would like to commend you, Mr. Chairman, for holding this meeting. You have clearly demonstrated that the issue of export control is a top priority and I appreciate your dedication. I would like to commend my colleague Senator Enzi, for his very hard work on this issue.

I would just comment that in the last session, I had a lot of sympathy for the amount of work that he was putting in, and I know he experienced a lot of frustration with this issue. And as Chairman of the International Trade and Science Subcommittee during the 106th Congress, Senator Enzi laid the groundwork for our consideration of this matter.

The Export Administration Act is an important tool for protecting national security and implementing foreign policy. We have already gone too many years without a clear, balanced, long-term

export controls policy in place and I appreciate the opportunity to address this lapse. Our world has seen many changes in recent years. Economies are now global and technology progresses at an incredibly rapid pace.

International trade has also become increasingly important. The challenge has been to find a way to compete in the global market, while simultaneously protecting our national security and our national interests.

As a Member of the Armed Services and Banking Committee and a former Member of the Intelligence Committee, I have had the opportunity to examine both sides of this issue. One point that has come up in all of my committees is how critical export controls are in controlling the proliferation of technology to our adversaries.

Although national security certainly must play a primary role, it is also appropriate that we consider the business side of the equation. There are legitimate dual or commercial use items and I believe that it is possible to find ways to address legitimate national security concerns without placing unnecessary restrictions on American business.

I look forward to hearing the witnesses' comments on this point and I look forward to their testimony.

Chairman GRAMM. Thank you, Senator Allard.

Senator Corzine.

#### **COMMENTS OF SENATOR JON S. CORZINE**

Senator CORZINE. Yes. Thank you, Mr. Chairman.

I look forward to listening and learning here. I commend Senator Enzi and all those that worked on this most complicated subject. Chairman GRAMM. Senator Stabenow.

#### **COMMENTS OF SENATOR DEBBIE STABENOW**

Senator STABENOW. Thank you, Mr. Chairman.

I would also just welcome our guests. As you know, I am a co-sponsor of the legislation and think it is critical that we modernize our export control policy, and I am looking forward to your testimony today.

Chairman GRAMM. Thank you. Let me suggest that all three of you—why don't we leave a seat for Senator Sarbanes and why don't you all move up here.

Mr. Hamre why don't you start.

#### **STATEMENT OF JOHN J. HAMRE, PHD PRESIDENT AND CHIEF EXECUTIVE OFFICER CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES**

Mr. HAMRE. Senator Gramm and distinguished Members, thank you for the opportunity to come back. I spent 17 years of my life working for the Congress and it is a great joy to have a chance to come back up here.

When we think of the Nation, you think of the President. When you think of the words, we, the people, you think of the Congress.

I think that is one of these issues that can only be settled in a place like the U.S. Congress. This is an area where, as you said, Senator, conflicting interests have to be reconciled. We have important goals that are all important and we have to strike a balance

among those goals. And that is what this institution was created 212 years ago to do—to strike a balance where we need to reconcile competing goals and interests for the country.

I really do thank you for taking the time to do this. I personally don't think there is a more important issue right now facing the country where national security and economic well-being come together than this.

Your leadership is, I think, absolutely crucial, and I thank you all for it.

First, let me say, as you have all said, we need export controls for our national security. We have to have some form of export controls. The types of controls that are in place today do not work, and I think they fail badly on several counts. We need to think about national security with a capital S and a small s, and small s security is watching every license to make sure that it does not get out to the bad guys. But there is a capital S security, which is the vitality of our economy, our ability to work with allies, to strengthen allied relationships that when we have to go to war, we can fight together, for example, so our radios work together.

There is that capital letter S, security, that is being lost now by a preoccupation with a small s, security, which is just trying to follow a lot of rules and procedures that I personally do not think are now buying us much security.

We need a new framework, which is what you have really asked for in this hearing and in this legislation, a new framework for export controls that fits today's environment and provides real security in today's world.

I would like to briefly give highlights of my written testimony. You have worked through the details of this bill. I would like to discuss the large principles, if I may.

First, any export control framework has to address two basic things.

Number one is the export control system cannot fight the business practices of the day. It has to figure out how to work with the business practices of the day.

Back 50 years ago, when the export control systems were being put in place, most of the manufacturing process was parochial and local. Manufacturing took place around a geographical location. The engineers had to be close to the production facilities. It was easy to put an export control system in place that was around licenses, controlling things leaving a plant.

Well, today, you now have companies that are setting up their design teams around the globe so that one part of the design team hands it off to the other as the sun moves, so that they never stop working on the project.

Well, we now have just-in-time international business practices. We also have to find export controls that work for today's business practices, not those that just are nostalgic and worked in the past.

Our problem is that when the world started to get more complicated with export controls, we did not step back and design a new framework for them. Instead we made the system more complicated. We have made the system more complicated and more failure-prone, and we now have a system for which people know they are going to be making mistakes. Making innocent mistakes,

in this environment, creates big political casualties because it is so easy to mischaracterize what a company did—in honesty, not trying to break the law, but it is not hard to break the law when you get down to today's complex export control system.

We have to design a system that, first of all, comprehends today's business practices and design a control system around today, not around the past and not try to force people into the past. The second thing we need to do is only try to control exports where there is an international consensus that it is a problem. The world does not think exporting 5-ton trucks is a big national security problem. And yet, we are still trying to control the export of 5-ton trucks.

We do agree that we ought to try to control the export of nuclear-related technology. We always should. We do not want the bad guys to get more nukes.

We should be designing export controls around things for which there is a genuine consensus that this is a national security threat of significance, and we have the support of allies trying to work it. Our allies do agree with us on an issue like nuclear technology and they work with us on trying to limit exports of nuclear technology.

They do not agree with us on things like computers and they are trying to beat our pants off.

By simply holding back our companies in an international competition environment, we are only denying our companies access to markets. This is not going to solve a national security problem. So we have to accommodate these two things.

We have to design a system that fits the business practices of the day. And we have to focus our constraints on things where there is an international consensus, that this really does matter for national security.

I think the key for your framework has to rest on three partnerships. We need to design a partnership between the government and the private sector.

Right now, we have maybe 30,000 employees working for industry that are preparing licenses to try to get them past a couple hundred inspectors in Washington. It is adversarial. It is confrontational. We need to turn that around so that those 30,000 licensed individuals and companies are the first line of defense for the country. They are not trying to beat their government.

That means we have to change the way we think about talking to them.

I personally think we should shift our focus so that we are licensing a company to export by certifying the internal controls of their export control process, rather than making them submit individual licenses, license by license by license for each sale.

Today if you want to sell a pump here, here, here, here. Every one of those requires an individual license.

Instead, what we ought to do is work with the companies and say, if you design the adequate internal controls, I am going to trust you. I am going to make you the first line of defense.

I am going to hold you accountable, but I am going to make you the first line of defense for the country rather than have 300 poor inspectors here in Washington looking through mountains of paper trying to sort it out themselves. So the first thing we have to do is to create a partnership with industry.

The second thing we need to do is to create genuine partnerships with other governments.

This is more in the area of the military exports, less on the dual-use items. You license an F-15 and then you license the missiles that go on it, the software that goes in the computer, the support equipment that goes with it, the publication manuals. All of these are separate licenses. And many times, it is to our best allies.

I had the ambassador from the Netherlands who came to me when I was the deputy secretary, while we were fighting in Kosovo. His pilots were fighting side-by-side with our pilots. And he said, can you help me get a license through the system because I need to buy more missiles so that my pilots can fly with your pilots. That is pretty embarrassing. Our best allies. We had already provided them with these weapons, but they had to come back and get another license for a new set of missiles. This is very counter-productive.

We need to be working with these alliance relationships and build on those relationships.

They are willing to be our partners. And we need to establish a new partnership relationship with those allies, and then start lowering the barriers between our companies between these two countries, or three countries, or whatever are these relationships.

The third partnership we need is to be working better inside the government agency to agency.

You know what Washington is like. It is all tug-o-war. Everybody is pulling against each other. And it should be more like competitive rowing, where we are all sitting in the same direction pulling on the oars together. But that is not how it works.

How it works in this town is we are all fighting each other. And we need to find ways to get the agencies to see that it is in their collective interest—They need to help each other get the collective problem done.

That is not the culture that exists right now. They need to be sharing information.

There is no automated way to share information across the government when it comes to licenses. We should be demanding that.

Why do we make the private sector come around and touch bases, the kind of a stations-of-the-cross approach to try to get your licenses approved by going around to every agency that has a stake in the process?

It ought to be far more customer-friendly and user-friendly, and it would be good for the government if we did that as well. I think you should be insisting on that. You should be insisting that your government does a better job of working internally. I know that is a big feature of your bill. And again, those are details that have to be worked out in partnership with the new Administration.

I think the new administration is very interested and committed to making it work and they want to be your partner on it because I have had conversations with them.

Please do not let up on this. There is no more important agenda, I think, for the Senate than this agenda. This is the time we have to change. If we do not change, I fear we are going to lose that capital S security. We are going to fall further behind. Our companies are going to take work offshore. We are going to lose

technology from America and we are going to lose working relationships with allies.

That is not going to be good for our security over a period of time. That has to be a big feature of your thinking as you are moving this legislation.

Thank you for being the sponsors and the proponents of this bill, and I would be delighted to help in any way as you work it through the system.

Chairman GRAMM. Thank you.

Don.

**STATEMENT OF DONALD A. HICKS, PHD  
CHAIRMAN, HICKS & ASSOCIATES**

Mr. HICKS. Senator Gramm and Members of the Committee, I am pleased to be here. Thank you for inviting me.

There has been a lot of effort in this area, among others, by the Defense Science Board.

We had some extremely fine people from a lot of different backgrounds that worked on the report. If you look at the report, you will see their names.

I should also add that we touched on many things besides the issue of export control—which is certainly important—regarding U.S. Security.

I have a verbal remarks paper here that would take 15 minutes, which I defer to save time.

Chairman GRAMM. We will print them in the record.

Mr. HICKS. Actually, my written statement will take care of that, also.

In looking at export controls and trying to see what was wrong, many of the things have been discussed by John Hamre. It is really a big problem.

Having read over your papers before I came back here, Mr. Chairman, I am impressed that so many of those problems are being resolved by your bill.

I commend Senator Enzi and anyone else involved in the bill because I think it contains many items that will help the situation a great deal.

My approach in discussing this with you is not just to talk about export control, but to talk about the implications to defense. I could be talking to the Armed Services Committee, but, still, I think that this is important for you to recognize these issues as you proceed with your bill.

These unnecessary trade barriers, as John says, are really restrictive. They do not help us. They hurt us. We have to recognize what globalization means in the first place. Globalization is a fact—it is not going to change. You have to set your policy recognizing that it is real.

We know that we do not control the flow of monies. We do not control the flow of people in many cases, and we find that cultures are changing as a result.

All that is happening and has happened before. However, in the last 10 years, it has been remarkable because of the information technology advance. Things have progressed so rapidly in the area of communication that information is spread everywhere.

Having said that, my feeling was, well, what does it do to hurt the DoD or help the DoD? And actually, both occur.

And here, I think something that John said is terribly important and we stress this very strongly in the report—do not try to control things that are uncontrollable. Control things you can control that are important. And, by the way, we used an example of that in our security section.

You have been reading about there is 800,000 or some number of people who have clearances at the secret level who have not been checked in 5 years, and so on. An enormous number of people, a ridiculous number of people, because the number of things that really should be controlled is far less than that.

And yet, if we look at the history of having lost important data, we find that they were lost by people who had the highest clearances. There is a whole list in our report, the names of individuals who are traitors, giving crucial data either to our enemy or so-called friends, who had top clearances. They had access to the gold nuggets of our defense situation.

So what happened?

Well, what happened was we had this enormous number of defense investigators looking for breaches in security and not focusing on the important items. If you have a job, for example, that is really critical and knowledge that is really critical, you have given up certain privacy rights, by definition, in my mind.

We should not have concentrations on security across a broad range of things that nobody cares about. And that is where the Export Control Act comes in because we are trying to control unimportant things that just cause problems, not solutions.

Our allies then either buy from someone else or build them themselves to prevent our interference in their foreign policy.

That presents economic problems to our industry. It takes business away from companies that are struggling to maintain themselves. And it does not make a lot of sense for our overall security.

The other thing that is important to recognize is that things have drastically changed in preventing countries in accessing defense systems.

What has happened now is that there is so much information out, that individual countries can produce a system that I call “good-enough.” It is not what we do. It is not as good as what we do. But it is sufficient to be a very serious security problem to us. A good example of that, of course, is the North Korean missile.

You can say, well, here is a little backward country, cannot even feed its people. And yet, they are able to produce a missile. It is not anything like ours. I am sure the accuracy is lousy and so on.

It does not matter—it could do a lot of damage.

It is also important to note that our use of high technological capabilities as evident in the Gulf War has impacted other countries’ thinking. They begin to say, hey, look, we cannot beat the United States that way. Let’s beat them some other way. They come up with asymmetric solutions to the problem. One of the important asymmetric solutions which we tend not to want to face is the problem of getting our people there, the issue of transporting people there.

It took us months to get the necessary people into the Gulf area in order to commence the Gulf War. Our potential enemies know that. They are not stupid, that if we did not have airfields, if we did not have ports, we would have big problems in producing the necessary military strength—that Secretary Rumsfeld is now trying to see what the real requirements are for our military—and by the way, that ties into the foreign policy of what should we really be doing overseas?

Our people are so stretched now, the ordinary grunt, as I call him. They are always being sent some place. And so, the question is, what is our foreign policy in terms of intervention?

And having said that, what does that do to our military requirement? And what if we do lose ports and airfields in some places? What do we do about it?

Well, it turns out that the legacy systems do not help us much. And so, it is important, I think, that we continue to view these things and think about them and recognize that if we impose export controls that are harsh and ineffective, all they do is hurt us. They do not hurt the enemy at all. You will see in our DSB report, that we stress capabilities, not technologies.

The fact is that technologies are widespread.

I can go back to the B-2 bomber, of course, which is my favorite subject because I think it is so important.

We had all types of things going on that thing that were technologies. Stealth is not a single technology—it is many technologies. And yet, if you looked at the situation around the world—let's take, for example, one of the things we did in the B-2 that was unique was to recognize that Maxwell's equations and hydrodynamic equations were compatible. You could design a vehicle we never had designed before.

That led to the capable and stealthy B-2 bomber.

The Russians had better people than we did in terms of mathematical capability. But what they did not have was the money to put into the systems, the engineers, the architects, the individuals who could do it, the factories to build it, on and on and on. So, that is what we want to protect. We want to protect that capability.

We have to face the fact that we are losing technologies broadly. It is something we cannot control.

If you look at a graduate student in our prestigious universities today, 40 percent of the time, he is a foreign student. Where do you think he is taking that information? Some of them stay, if they are lucky. But a lot of it goes back to their own countries. Technology is widespread and there is nothing much that we can do to prevent that. There is another fact that I believe is very important. While, it really is not this Committee's worry, since you all are good Senators, you should think about it.

When I was Under Secretary of Defense for Research and Engineering we had about—in 1985 dollars—\$90 billion for production systems.

Today, even though it has been increased this year, it is about \$60 billion dollars. So the production budget is probably half of what it was when I was Under Secretary of Defense for Research and Engineering and was controlling acquisition.

Around 3 percent of those production dollars are spent by companies on their Creative Independent Research & Development.

That is where a lot of the really creative defense systems are created. That is where a lot of our sensors are developed. That is where a lot of our communications systems are developed.

So, we have less money for new creative defense systems. Additionally, because we are buying legacy systems in general, not the systems I think that will come out of Rumsfeld's study, people in industry have to put their R&D money where the production money will be spent, not on new creative systems but on legacy systems.

It is offset—I agree—by the incredible expansion of the commercial area in R&D, which is available to everybody.

So going back to what you said earlier, Senator Gramm, we have to put high barriers on important things, and I call those capabilities, not technologies, and recognize that a lot of the technologies we just cannot control.

And so we must spend our time and effort and money trying to control things we can control.

Thank you.

Chairman GRAMM. Thank you. I just want to ask a couple of questions.

First of all, I am constantly reminded in this job, as I am sure each of you have in your careers, that Jefferson was right when he said good men—a person now would say good people—with the same facts are often prone to disagree. And that is exactly what has happened on this subject.

I find myself in disagreement with a handful of people who are very concerned about national security.

It is kind of a paradox because, John, as you will remember when I came to the Armed Services Committee, my dad was a career soldier, a sergeant in the Army for 28 years, 7 months, and 27 days. I believe in national defense. I am proud that I wrote the 1981 budget in the House that helped provide the funds that ultimately tore down the Berlin Wall and won the Cold War, along with a lot of other things that happened. I am from a part of the country that lost a war. This is something that I have a deep feeling for.

But I guess as I look at the world that exists today, there may have been a time in American history, clearly was in the 1960's and 1970's, when much of our new technology was coming out of defense labs. These were literally our secrets.

Invariably, they leaked into the private sector. They had to go into the industrial military complex or they were not any good to us. But they gradually leaked into the private sector and then gradually leaked out to the world.

And so, you were fighting a losing game in preventing them from ultimately getting out, but there was a great advantage to slowing the process down.

As I look at the world, the Soviet Union is gone. Most of our new technology is now coming from the private sector, interestingly enough, similar to what the world was like in World War I. We were there trying to adapt private technology to defense uses.

I have concluded that the principal source of our security is to maintain our leadership in generating technology, that, ultimately, our security is to be sure that we are the engine which is driving technology because, A, we will always have it first and, B, we will always understand it better. When I am looking at our national security concerns, there is a very real trade-off between guaranteeing that we are always this engine and protecting the secrets we have. And I guess when forced to err here, I come down on the side of immediately cutting loose things that we cannot really control.

If I can buy something at Radio Shack, even though it will run a missile defense system in some region in China, the Chinese Embassy knows where the Radio Shack is. And I assume they go there just as I do.

But in any case, I would like to just ask each of you to tell me what you would say to people who are concerned about national security and about the approach we are taking, and who believe that there is a peril to America in taking the approach we are taking.

Mr. HAMRE. Let me give an example because I find theoretical discussions hard to understand.

I will give a real example that I personally feel very strongly about. For 25 years, we have been limiting the ability of commercial satellite manufacturers to sell commercial products. And the reason is that we have been terrified that bad guys are going to be able to buy reconnaissance-quality photos that could come back and cause a military problem for us. I worry about that.

The fact is, though, that other people around the world are now building satellites of that quality.

Our approach in export controls and government licensing has been, well, we are not going to let an American company have a license to sell commercial imagery until they can prove that a foreigner can do it better.

I cannot imagine that that is going to be in our best security interest over time, that we in essence have created a protected market for foreigners to produce a product that is better than what we are letting our own companies produce that is going to create a security dilemma.

Frankly, if we are going to have a future time when we are in conflict, and I want to ask a company to turn off its satellite for a couple of days, I would rather have the area code be out in Silicon Valley rather than in the Loire Valley. I think that is the reality of it. You want your companies to dominate. This is this partnership that I think we have to talk about. It is a bigger, broader definition of security.

Trying to block the loss of technology simply creates an incentive for others outside of American interests to create it.

Instead, we ought to be doing this in partnership with our companies and how we contribute to their commercial success. It is not an easier world, but it is one that is inevitable and we have to figure out how to deal with it. That is a real-world example we need to wrestle with in this country.

Mr. HICKS. I agree. I think that—let me go back to the issue of capabilities.

The thing I worry about in our country is that we are not focusing and producing what I think are the crucial weapons systems.

It is a priority issue. I have arguments on both sides.

But I believe that we have not taken advantage of the military technical revolution as we should. We are not building enough smart weapons. We are running out of smart weapons. John knows how that works.

People are so interested in platforms and so on, that they forget what the thing is really supposed to do. My issue of security is based on the fact that we have unique capabilities.

Now, we are going to continue to have that because we are a rich country. We have great manufacturing capabilities.

Let me give an example.

When the B-2 bomber was being designed, we carried an aluminum wing for a long period of time. The reason we did that, we were not sure that Boeing could actually build that composite wing. When they did finally work that out, which is a very tough technical problem, engineering problem, no new technologies, just plain good engineering, we saved around 8,000 or 9,000 pounds on the weight of the bomber. Very important in terms of its overall performance.

That, by the way, fed into the 777 and the capability that Boeing had. So, we have in this country enormous strengths in terms of architectural engineering, good teams, manufacturing capabilities, enormous infrastructure, that other countries just cannot match.

They can in fact take commercial technologies and do what I call good enough, which we have to worry about. You take care of good-enough things by trying to have something better that counters it. But if we spend all of our time worrying about losing technologies and do as I said earlier, lose our ability to spend more money because we need to on very creative defense capabilities, we are going to lose. We can still take advantage of all the commercial stuff.

One of the things that we talked about in our report was what is an important thing to protect?

I noticed in your bill, without reading it in detail, but you discussed having some kind of a group that looked at that.

We actually spent a fair amount of time on our report talking about that situation, properly computerized, properly feeding in from the agencies and so on.

Well, a lot of this stuff is out-in-the-open literature. We can find out, in a very classified way, what we have that nobody else has. I think that is an important issue. It is one of the things that covers what you are worried about. Do we let something go that we should not let go?

And my view is, yes, we have to be careful there. But in general, we cannot control so much of this stuff. But we can control what we are doing with our enormous capability as a country to build things and build the right things.

My concern is that if the budget is down by 50 percent, we can say, well, the Cold War is over. Let me tell you—in some ways, the world to me is more dangerous now than it was then. It is less definable. I think we are not looking at the right thing. So I again say that I think that Secretary Rumsfeld, and I have no detailed information on this at all, is doing the right thing to try to relook at what the real worries are for defense. That has an impact, then, on the issues of what we have to control with our exports.

Chairman GRAMM. Let me say that we do have a forward-looking science board in this bill, and if we know that the number of MTOPS is going to double in the next 6 months—if that is even a relevant factor now in terms of export control—then instead of waiting for that to happen and then allow companies to apply for waivers, we could go ahead and change the standards.

Or in your example, if we know that there are about to be competitors who can do satellite imaging, we go ahead and allow our people to do it first.

Let me just conclude, Mr. Hicks, by asking you a couple of questions. In looking at your defense science board task force, you have the Who's Who of experts in this area on it—Bill Snyder, Ash Carter, others—and you reached some conclusions. I would like to read three of them and then ask you, were these unanimous or were there solid majorities, or was there split opinion.

Conclusion: An overly cautious approach to dealing with globalization will result in a net erosion of U.S. military dominance.

Mr. HICKS. I think there was no lack of concurrence in that statement.

Chairman GRAMM. So that was unanimous?

Conclusion: It is utterly futile for the United States to attempt to unilaterally control technologies and goods that are available on the world market.

Mr. HICKS. Also totally agreed.

Chairman GRAMM. Conclusion: The United States must put up much higher walls around a much smaller group of capabilities and technologies.

Mr. HICKS. Exactly, and that is what you said in your opening statement. Absolute agreement.

Chairman GRAMM. Well, it seems to me, that your report, in essence, in many ways calls for exactly what we have tried to do.

And let me say to both of you—and to anyone who is here that is more knowledgeable about this than we are—that while we have put together a bill, it is not the final word. We tried to put together the best bill we could, and we met extensively with those who were opposed to it. In fact, I spent over 40 hours talking to individual Senators who were opposed.

It was at that point I decided that I have invested enough in this—I want it to happen.

But in any case, if one has a better idea, do not get the idea that we have closed the book on this bill. If you have a better idea, we will throw out ours and take yours.

I hope that both of you, and anyone else who has a suggestion about something that is not in here but should be, or something that is in here that shouldn't be, or how something could be done better, let us know.

We do not have any great pride of authorship in the sense that if somebody has a better idea, we will take it. We want to write a good bill.

Senator Sarbanes, you were not here when we did opening statements. So let me call on you next, and then I will go to questioning.

**COMMENTS OF SENATOR PAUL S. SARBANES**

Senator SARBANES. Well, I will just pass.

Chairman GRAMM. All right.

Senator Enzi.

Senator ENZI. Thank you, Mr. Chairman.

I want to thank the two people who testified. I took extensive notes. I will borrow a lot of what you said for use in the floor debate later.

I may be jumping a step there, I am anticipating that we will have the floor debate and a final vote on this and get this problem that has existed since 1994 taken care of. Because of having worked on this before and having looked through the 12 previous failures, I do want to raise the issue that even though we use some examples that deal with munitions and with satellites, this bill deals with dual-use items. Items that are primarily for civilian uses, but may have some military applications as well. We tried to limit the bill to those applications, even though some of these munitions and satellite examples give an excellent example of what the problems are and why they need to be solved and how they can be solved.

But I get a little nervous in light of the times that this has had difficulty without mentioning that. Again, I commend the witnesses for some outstanding quotes, both in the testimony that they presented to us and in what you said verbally here.

You have taken an issue that has great potential to create glazing the eyes over, and putting it in real terms so that people will stay interested in this extremely vital issue.

Mr. Hamre, at CSIS, you are currently undergoing several studies that deal with both dual-use and military export controls. In light of the additional time and tremendous focus that you put into this, do you think that the recommendations that these studies are doing are consistent with the principles that are in S. 149, which is, namely, of course, focusing controls on what can be effectively controlled?

Mr. HAMRE. Sir, I do. I think that the spirit is certainly the same. There are going to be some differences in engineering details as you implement a system that will work, and that is frankly the hard part. That has to be something that you do directly with the Administration.

The real problem when we did not get anything done in the last several years is that you did not trust the Administration and you did not feel that they were honest with you. There was not a fabric of trust that was there around which to build the next step forward. I think that is possible now.

So sit down with them early to work out some of the details.

If I could say a couple of things.

One, please design in your system a way for people to get some transparency about what is going on.

The hardest, thing that I sensed with industry is that there is no way for them to figure out what the government is really thinking at any point in time. They have to go around and hire consultants and try to figure out what the government is thinking—We ought to tell you what is going on.

The government should say, I have a problem and here's why I have a problem. There is no good way to get that right now. There is no good way for the government—the government is not forced to tell them in explicit reasoning, why is this a national security risk I am worried about, so that you can talk about that. I think that that would be an important thing, some transparency.

The second thing—and I think this is a hard issue. But you have to design the system in a way so that the bureaucrats, and I do not mean that in a negative sense because they have to carry out the laws that you pass and that we try to enforce.

You want them to be dutiful executors of the law. But you do not want them to make policy at their own level. That is your job. That is my job—not mine any more. But when I was in government, I did not want a GS-12 deciding new policy on whether we would control three micron microprocessor chips, for example.

That was my job and I ought to be held accountable for it, either making the right decision or the wrong decision. But right now, we have a system where the bureaucrats, and I do not mean that in a negative sense, but the bureaucrats are interpolating policy based on precedent and making that the direction for the government, rather than forcing senior management—me, you—to determine what is in our national interest?

We must design a system that makes sure that the bureaucracy carries through policies that exist today, but it does not create new policy under the rubric of just simply expanding existing precedents. I think that is a very hard engineering detail. It is going to be the hardest part as you engineer your bill.

But I know that that is the center of your focus and I commend you for it, sir.

Senator ENZI. Thank you. That fits well with your comment about the 30,000 people preparing the information for the 200 people that are trying to keep them from being able to do this, as opposed to putting them on the same team and having everybody work together.

In the February 13 edition of the *USA Today*, there was an article about high-tech companies expanding their companies overseas amidst the U.S. slowdown. Many of the high-tech companies are going to China, according to the article. It is another example of the globalization of business and technology. And for both of you, how do these developments change the dynamics of export controls and increase the importance of strengthening the multilateral export control regimes?

Mr. HICKS. Well, I view this as, again, a situation that is uncontrollable. The fact of the matter is that it is an economic situation that you have to live with and find ways around.

One of the things that I tried to find ways to say to this Committee was that what you are doing is part of a much bigger fabric. And that fabric in our mind was to maintain military dominance for the United States to protect our country. And when you have a system like that and you have to look at all the interplays and everything else, it is not an easy job. It is not a job for this particular bill as compared to other bills. It is sort of our Administration, our Congress, our Senate, all have to think about this in a broad sense.

In my mind, the way your bill has come out, and I have not read it in detail, but I certainly have gone through the comments that were made that I got from the press, it sounds like it is doing exactly what we felt was necessary to try to get it in step with that overall issue of globalization is real. Don't try to pretend it is not because there is nothing you can do about it. It is going to happen without you. Understanding that, try to find out how to live with it and, in fact, increase our military capability as a result of this.

Now one of the things I will say is that on this group of science advisors you have—I have forgotten how it was worded—there are lots of things that are still classified that we know about. So there is a need, I think, for the Defense Department to have another group that gets information from all the various intelligence agencies, from the State Department overseas and so on, that keeps track of these things so that we do know when there is something that is not obvious to people, that we do not want to have that released, for whatever reason, we make sure it is not released.

But I believe those are going to be few and far between. And that is why this issue which we have in our report and which Senator Gramm talked about initially, is having high barriers around important things, instead of having rather lousy security—look, most of the stuff that goes to the export control places now, about 98 or 99 percent of it are approved eventually.

Mr. HAMRE. Yes, 99.4 percent.

Mr. HICKS. It takes forever to get it through.

It is not a question that we are protecting anything. It is that we are screwing up in what we look at. So I can say, well, maybe we did catch 1 percent. Well, if people are thinking right, that would never have been an issue in the first place.

We would have known very early and could have said very early, don't bother. That is not going to be allowed.

Senator ENZI. I think the Office of Technology Evaluation that we have in the bill does provide for the things that you mentioned. And I appreciate that.

Mr. HICKS. Well, I think it does, it is an unclassified issue. I think it is important. I would not take it out. It is just that I think that the Defense Department has got to have a different—and we talked about it in our report, where we have a group where we use computers, frankly, and we stress that because it makes it easy to filter through, and get all the inputs that we have to have, some of them are top secret, whatever, that will help us in that situation.

Senator ENZI. If the Committee would indulge me—

Mr. HAMRE. If I can just give you a concrete example.

Senator ENZI. Yes.

Mr. HAMRE. I spent 2 years when I was the deputy secretary fighting the software industry on the encryption issue. I was convinced that these guys were going to sell our security down the river and we needed to protect ourselves and I fought them.

I knew how to come up here and testify and say intimidating things that would scare you so that you would not go with them.

We are all good at that. That is Washington now. We all know how to put testimony out in front that makes it awkward for you to vote. And this town has become muscle-bound in a lot of ways.

But then I had a dark night of the soul where I realized, we are probably not going to be safer as a country if all the encryption software is written overseas.

It is a lot better if we know what our companies are doing and that they are talking to us and they give us a running start on how to stay up with it. And so we said, we are going to change our approach here. We are going to think about this as a partnership.

Yes, it is a little risky. I would love to be able to say it is just not going to happen, or say, we are going to enter into a partnership and I am going to tell you exactly what I need and I am not going to try to get in your way. But you are going to tell me what you are doing so I know how to stay in advance of it.

I think that is working, and I think that is that core partnership that we need to create with our industries. Our industries are not disloyal. But they are going to be driven by a market force. And if we block them here—I know companies that are relocating overseas to avoid our export controls.

Senator BENNETT. We tried to tell you that at the time.

Mr. HAMRE. Sir, I wasn't as smart as you were. So I apologize. [Laughter.]

I hate it when you point that out.

Senator SARBANES [presiding]. I think we had better go to Senator Corzine at this point.

John.

Senator CORZINE. Thank you. I just have a brief question.

I come from an industry where, after-the-fact analysis and self-regulation are a fundamental part of the control structure. Is that built into this bill in a way that you all are satisfied that there is some transparency to what has happened, so that when we look at whether we breached those high walls, that there is enough information to decide whether that has occurred?

Mr. HAMRE. Sir, first of all, I will give you a response, a more thoughtful response. I will look through it more carefully to try to answer your question.

I do want to say that I think that the basic framework, the answer is yes, you are not trying to control things where you cannot create an audit trail. You cannot create an audit trail if you can buy a microprocessor through the mail. You can order it through the Internet and buy it through the mail and have it sent to a post office. You cannot set up an export control system around that.

And you are not trying to. And I think that that is a premise that says, you are not trying to control things for which you cannot design a good audit system or an audit control system.

Are there concerns that people have that the bill has adequate tracking where you want to track?

Let me study that, and I will get back to you, sir, if I could.

Mr. HICKS. As I said earlier, I think it is important that we have a group of very competent people from the intelligence agency and so on, that continually looks at what is available outside, where things are, try to decide what would be not right to release.

Let me give you the software issue. We spend a lot of time on software. I think there has been more committees on software than there are software.

But, you know, so much of our software is written in India or some other place. And it gives you the opportunity to put in trap doors that allow people to get into your system any time you want. One of the recommendations we had was that those systems that are very important to us, we do not use commercial software. We develop our own software. Clearly, you would not want a flight control system software to have a trap door that somebody could get into that says, shut down the engines, when you are in the middle of combat. So there are risks inherent in globalization you have to think about.

Let's say, we had a virus yesterday that shut down companies. E-mail stopped for 12 hours, for example, in some companies because the only way they can prevent it is to stop it. So we have lots of vulnerabilities that are generated by globalization. And we are trying to struggle, I think, with ways to solve that problem.

It is not an easy problem.

Mr. HAMRE. Senator, if I might just say, I think your question is crucial because if you are going to enter into a partnership with business, and they are going to be the first line of defense for export controls, they need to know you are going to audit them.

They need to know there is going to be an audit trail that you can follow up on and if they have not done it, you are going to clobber them. That is just the guts of it, and is the reason why the new systems used for auditing financial records for corporations work. So that is the model.

But that means the government needs to change its focus. No longer just try to approve every little license as it comes through the door, but set up a process where you come in and you certify a system the company uses and then you periodically check to see if they do it.

I think it is a crucial question that you have raised.

Senator SARBANES. Senator Bennett.

Senator BENNETT. Thank you, Mr. Chairman.

Mr. Hamre, you made a comment saying we need to trust the Administration, and that maybe we had not in the past. And with the new Administration, we could.

I want the record to be crystal clear that we always trusted you. [Laughter.]

Mr. HAMRE. Thank you, sir.

Senator BENNETT. You were one of the fellows that we could always go to, or I could always go to, get a straight answer without equivocation, and we are grateful to you for your service, sir.

Mr. HAMRE. Thank you. Thank you, sir.

Senator BENNETT. We are glad to have you where you are now.

I sit in the Senate seat that was occupied by Reed Smoot, the author of the Smoot-Halley tariff.

Paul Johnson says in his book, the Smoot-Halley tariff did not cause the Great Depression. It simply exported it to the rest of the world.

[Laughter.]

I think we should have learned by that—and by the way, Senator Smoot was an exemplary Senator in most other ways.

He just was wrong on the issue of protectionism and the 1930's version of globalization. And he thought that the U.S. market

would be big enough for U.S. products and U.S. companies so that they could survive selling only to the U.S. market and put barriers that would prevent anybody else from coming here and, consequently, other people going.

Where I am going with this if I hear what you are saying, is, in today's market, if we prevent U.S. companies from exporting this technology elsewhere, we are guaranteeing that they are in a tiny market where they ultimately cannot survive because you cannot survive with a product that sells only in the U.S. market in today's world.

You have to be able to spread your overhead costs and your research costs among sales worldwide, or those costs are going to kill you. And ultimately, all this technology will be in foreign hands simply because, through a protectionist attitude. And this is not driven by economic protectionism. It is driven by security protectionism. But the impact on the economy is exactly the same.

Am I right in assuming that we could destroy American companies by shutting them off from markets elsewhere and create the circumstance that you described where we have to go to the Loire Valley rather than the Silicon Valley?

Mr. HAMRE. Yes, sir. And undermine alliance relationships. I mean, if you do not let your allies team up with your company so that they can jointly develop things, they are going to go off and do their own thing and we are going to have inter-operability problems that are going to just block our ability to fight together.

Mr. HICKS. I agree. I do not think I need to comment.

Senator BENNETT. Okay. Well, I have nothing further then, if you agree.

[Laughter.]

I will quit while I am ahead. Thank you.

[Laughter.]

Senator SARBANES. Senator Stabenow.

Senator STABENOW. Thank you, Mr. Chairman.

First of all, thank you again for your public service and your comments today. I share the concern that in the global economy that we have today, we have to look at the realities of what we can control and not control and focusing on national security while focusing also on the ability for our companies to compete and be successful in a world economy.

It has been a difficult balance to bring that together to end up with this legislation.

I think the bottom line for our colleagues and for the public is the question of national security, and if you believe that will be enhanced or diminished by this bill. I would appreciate both of you commenting for the record on that.

Mr. HAMRE. I personally believe that a bill to reform our export controls is essential for our national security in the future because I think what we are doing now is undercutting the long-term viability of our strategy, our strategy to work with allies, our strategy to be competitive internationally, to have a dynamic economy. And I think export controls, as they currently exist, are now undercutting that. I think there needs to be a new system. I think your bill gets us to the new system.

Let me say, I think there are a few cases even where it is hard to control, we still want to try. Nuclear technology, I want to try to control that at almost any cost. Precursor chemicals that go into chemical weapons, biological sequencing devices, things like this, I would like to try to control that.

But we are spending the bulk of our time and our money controlling things that do not matter. Five-ton trucks, and equipment like that. We are wasting resources that do not really provide national security and really become a serious impediment to cooperation and we are diverting them away from the things where we do need to spend money for national security, through export controls.

Your bill is essential, and I think it is a step in the right direction. I leave it to you working with the Administration to work out the fine details. It has to be that way. You have to trust them. They have to know what you want. And rather than have an outsider and a has-been like me tell you what it ought to be, work with them to get the final fine-tuning.

But absolutely, you have to get this bill moving for the good of the national security.

Mr. HICKS. For the record, I agree with John. I would like to add something to that. In the past, I recall restrictive export control issues has not allowed us to take advantage of the globalization in a positive way.

There are a lot of things outside, and I think John has talked about some of them—the cooperation we can make with allies, the benefits we can get from allies—that bills in the past have very often made them unlikely to want to do it.

People who would say, look, I am not going to buy this from you because I cannot include it in my system, and all of a sudden, I have to get permission to sell it. And that may take forever.

My view is that a bill like this is crucial, not only because it opens up the issues for business, but it allows us from the standpoint of defense to have a better utilization of the globalization issues. But, we are not the only smart people in the world. I would like to think we were, but we are not. We do have the tremendous economy and the ability to build things. We should really take advantage of what we can do well.

I am afraid that what has happened to the defense budget is we are losing that. I am not saying it is gone. But if you look at what has happened to our defense industry as a whole, it is a changed world from what it was 15 years ago when I was Under Secretary.

And not for the better, I think.

Senator STABENOW. Thank you.

Senator SARBANES. Well, gentlemen, I am very pleased to welcome you here.

Both of you have made really very distinguished contributions to our national defense. You had careers in the public service which I think command the respect of us all. You are intimately familiar with the challenges of implementing our export control system on dual-use technologies, those that can have both commercial and military applications.

And of course, as you well know, it is a very difficult balance to strike between the national security interests and our trade interests in terms of encouraging exports.

Mr. Hamre, I want to thank you for the role you played as Deputy Secretary of Defense in helping to shape the legislation.

I think Senator Enzi would agree with me that it was an important contribution, and the work of the Defense Science Board Task Force, Mr. Hicks, in which you have been so intimately involved.

I have just a couple of observations.

First, I cannot allow this to pass. This is an aside issue.

Mr. Hicks, you said that the world is more dangerous now than it was then, referring back to the Cold War period. People say that all the time and I have decided that I just want to raise a kind of caution light or a red light to that comment.

I do not think that the world now is a nondangerous place. There are lots of dangers out there. But I do not accept the proposition that it is more dangerous now than it was then when we were in the midst of the Cold War.

I just want to make that comment, for whatever it is worth. Now here's my concern as I listen to you this morning. Some of your statements and positions overreach this bill. They in a sense go beyond this bill. I am concerned about that because there has been great difficulty in getting this bill as far as we have gotten it and we were not able to get it through.

It is not as though we were able to move it through and we are just coming back to do a technical exercise here. We still have the problem of confronting others who think that the bill, even as it is written, goes too far.

And of course, some of what you have said this morning would go further. It is actually not in the bill. And I want to try to be clear about that because we do not want to add some extra weight to this bill as we try to move it through.

Now much of what you have pointed to, the bill I think takes care of and I think it does address a lot, this transparency issue.

It also addresses getting a decision for the private sector in a reasonable period of time, which I think is a very important issue. And of course, Senators Enzi and Johnson worked so hard on this in the last Congress and I think did a really very first-rate job of sort of crafting this.

Let me just put this to you, although, Mr. Hamre, you seem to move off of this position in a response to Senator Stabenow, and I was encouraged by that.

Earlier, you were saying that the United States should I think try to control things only when there is an international consensus with our allies that these things should be controlled. That is a pretty common-sense observation because if they won't control it and they can do it, then they can just circumvent us. But a total adherence to this proposition would mean that the lowest common denominator could well end up setting the standard.

So, you really have the question, how do we provide the leadership to try to get to a higher standard? We have had instances in which we have undertaken to do that. In the end, the others came around. Not many examples, but there are examples of that.

And of course, you said to Senator Stabenow, as I understand you, that there are certain areas, certain technologies, I guess that you would not be willing to transfer in certain categories, even if others had at least some aspects of that technology.

Presumably, they want the American technology. So there is a certain bonus that goes with it. This bill does not preclude the United States taking that position, that leadership position, or making some judgment that there are certain countries that we do not want to trade with in any event, for a whole host of reasons unrelated to the spread of this technology.

I wonder if you would just address that.

Mr. HAMRE. Sir, yes, thank you.

First of all, let me say, I agree with you that what we ought to do is first lead with a policy initiative to try to create an international consensus that things should be controlled. I think we did that when it came to nuclear material. We did that when it came to chemical-biological materials. We did that on missile technology.

And our problems tended to be places like China or North Korea, that did not observe those conventions and we were trying to get them to observe those conventions.

We were still holding our companies to them, though, because we felt that that was important.

I think that is the inherent tension of using national security and export controls to try to accomplish those goals.

I do not think that we ought to just unilaterally as a country say, well, we do not like country X and therefore, we are going to try to deny them something, and the rest of the world does not agree with the policy goal until we build a consensus for that.

All we are really doing there I think is hurting American companies. We may still choose to do that and that is ultimately what you are going to decide. That is what Members of Congress do.

Senator SARBANES. Iraq, for example.

Mr. HAMRE. I think that is a very good instance. We had a lot of people with Iraq who just do not believe any longer that the sanctions should be in place.

We do. And this is going to be a tension. We are going to have to figure out how—we either have to recreate an international consensus around Iraq or find another solution. But right now, we have great tension. And that has to be resolved. That is one of the real challenges for the new Administration.

I think we have a left-over of the 1990's where we really tried to create foreign policy through export controls that only got unilaterally imposed on American companies. And indirectly, we tried to impose them on others.

And frankly, that is now a great sense of frustration and tension inside the community. You hear that all the time.

And I think it has to start with what you said. You have to build the consensus for the foreign policy objective first. I absolutely agree with that.

I do think that what we have tended to let the kind of bureaucratic momentum carry us along and pretend that there is a consensus around stuff that really does not matter. And it is like the 5-ton trucks and all the little stuff that, frankly, is not important, but it just gets caught in the inertia of regulatory processes.

Senator SARBANES. I am trying to focus on the important stuff.

Mr. HAMRE. Yes, sir.

Senator SARBANES. Can you think of a country that has taken a lead on export controls beyond or ahead of the United States?

Or has it been our role, so to speak, to inevitably be the leader, the one who's trying to put together these regimes on the movement of this technology?

Mr. HAMRE. Well, sir, I think we have been a leader, but I think we have had good partners. I think when you get to, for example, nuclear technology, Japan has been very cooperative and very much leading in trying to be an agent for that in Asia. You will find that the United Kingdom was very strong. France and Germany are very strong on precursor chemicals.

So where there is an agreement, these are dangerous, terrible things. We ought to do what we can and use this as an additional tool to control. I think you see that there is cooperation. That ought to be the centerpiece for designing a system. Your lowest common denominator approach, unfortunately, is the norm in the Wassenaar process. That was what we were fighting all the time on encryption, is that people were going to a lower common denominator time after time. Then we had to just say, we have to design a new system, a very different approach to make it work for that.

Senator SARBANES. Mr. Hicks.

Mr. HICKS. I would make two comments. One is, I think one of the reasons that we have been the leader in the past is because we had the stuff. We had the lead in most of the technologies and certainly the capabilities which, I do not know if you were here when I was talking about this. I think it is important we focus on capabilities more than technologies because that is where the real rubber hits the road.

As far as whether this is a more dangerous world, let me give you some feelings about that.

That is in the eyes of the beholder, I am sure. And my beholding is that we have had nuclear capabilities, the deterrence from a nuclear standpoint, which, in my mind, may have put us on the edge of the problems, but it kept peace from that standpoint for a long time for a major war.

We still got ourselves racked up in a Korea or a Vietnam. But certainly from the standpoint of the Soviet Union and China and so on, the Soviet Union has been the only real threat, our nuclear capability, which I think we have to maintain, was crucial.

Now why I think it is a more dangerous world now is that we see a lot of capabilities coming out in other countries that we are not friendly with that can prevent us from doing some of the things I think we want to do nationally, internationally, worldwide, in our own interest.

Part of that problem in my mind is that we have been able to rely upon nuclear deterrence. And in those cases, what do you do if you have a small country that you know you have to take care of, that you would like to be able to suppress?

Do you want to nuke them? I do not think so. That is a terrible problem for a president to have to handle.

What we have not done is to take our conventional capabilities and put them to a position where they are equivalent to what we had in what I call a real deterrent.

A conventional deterrent says that you have to be able to do major damage to an infrastructure of a country without nuclear weapons. And by the way, when you do that with what we have

available to us, which is smart weapons and so on, you do this with a minimum of casualties.

Why I say it is more dangerous is because we do not have the deterrent we had in those times that I think we must have now.

And I believe our approach to legacy systems will not lead us there. And that is why I hope that the studies that Mr. Rumsfeld is pushing will lead to a proper approach to that issue.

Senator SARBANES. Well, the only place I differ with you is using the word more. I think it is a dangerous world.

There is a movie around town now, "13 Days." You would be hard put to see that movie and not figure that was a pretty dangerous world back then, and continued on of course for a period of time. And may come back again. I hope now.

Well, my time is up. I do want to thank you for your testimony. If you have the opportunity, if you can work through the bill and give us some specific suggestions, with an appreciation of the tasks that exist here in terms of trying to move this legislation through.

You come with one point of view, but there is another point of view out there that we have to deal with, and it stymied us in the last Congress. Hopefully, it won't do so again in this Congress.

I think that the work that Senators Enzi and Johnson did was really an excellent piece of legislative craftsmanship and that is the bill that we have now put in and we are going to try to move it through.

Chairman GRAMM. Thank you, Senator Sarbanes.

I know, Mr. Hamre, we promised you that you could get to an 11 a.m. call.

I would say that I agree with Senator Sarbanes. I think we do live in a dangerous world and I think we have many problems. I think there are great uncertainties in this new world.

But I do not think anybody can logically conclude that the world is more dangerous today than it was in 1980. I think the world is a much safer world today than it was in 1980, and I think as a result, we have the ability to do a lot of things now we could not do then, and we want to have more ability, which is what all this is about.

Thank you both very much. We stand adjourned.

[Whereupon, at 10:55 a.m., the hearing was adjourned.]

[Prepared statements, supplied for the record follow:]

**PREPARED STATEMENT OF JOHN J. HAMRE, PHD**

PRESIDENT AND CHIEF EXECUTIVE OFFICER  
 CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

FEBRUARY 14, 2001

Mr. Chairman, Members of the Committee, thank you for inviting me to testify this morning before this distinguished group. Let me commend you at the outset for holding this series of hearings, and for your willingness to tackle this critical issue. While many of our days are filled with small and sometimes trivial activities, this is momentous legislation. This is precisely what the U.S. Congress is supposed to do—weigh the pressing matters of our day, assess the positive and negative implications of current policy and design a new approach for the future. Only the U.S. Congress can handle such large and important issues facing the country, and I congratulate you for your leadership.

**Summary**

Let me state the essence of my testimony in summary form at the outset. America needs effective export controls to protect its national security. Our current system of export controls fails that test—fails badly. It provides inadequate security where it is most needed, and it imposes counterproductive procedures that I believe are now causing security problems. America's security rests not just with blocking the export of important technology to potentially dangerous adversaries. It ultimately is grounded in a dynamic and innovative economy, a creative society and an inventive and industrious citizenry. Our times are characterized by international economic and scientific activity and collaboration. Government activities that block these natural and developing patterns of science and commerce will ultimately imperil our security. We should have such impediments only where they contribute to genuine and immediate security threats. Hence, it is the task of this Committee to develop a new framework for export controls that protects America from the loss of critical technology, but promotes the economic vitality and growth of our economy.

**America Needs Effective Export Controls**

Mr. Chairman, at the dawn of the Cold War when it was apparent we faced a large, ominous and growing threat, America crafted a long-term national strategy. We could not and chose not to match the military might of our opponent tank for tank, soldier for soldier. Instead, we sought to match the quantitative might of the Warsaw Pact with the qualitative superiority of American armaments. Export controls played a critical role in our strategy. We needed to insure that our side in the global struggle had superior technology for the vitality of our economy and the sophistication of our forces. We invested in high technology and we sought to block its loss to our opponents through a multilateral system of export controls.

While it was arguably an inefficient strategy, it worked. We never fully blocked the loss of technology to our opponents, but we slowed its loss to stay ahead in the long-term race. Two dimensions to the policy were critical—a steady investment in new technology and a systematic method for monitoring its export to limit its transmission to our opponents.

During the last 20 years, export controls were expanded to include a number of so-called “rogue” nations that sought to develop and field dangerous new weapons of mass destruction. Joining with other countries, the United States established a multilateral framework to block the proliferation of technology and equipment that would facilitate the construction of dangerous arsenals in these nations. While this too has not prevented proliferation, it has, I believe, slowed down the dispersal of dangerous technology to irresponsible nations. That remains a security concern to this day.

**Export Controls Become More Complex and Pervasive**

During the 1980's and the 1990's, export controls became a major new dimension for America's foreign and security policy. The growing complexity of products and commodities required ever more elaborate rules and regulations. The collapse of the Warsaw Pact and the rise of rogue nations greatly expanded the use of export controls as a major element of foreign and security policy. And frankly, it often became easy to legislate restrictions on trade as a means to express our policy concerns and frustrations.

**Export Controls Have Now Become a Security Problem**

Three factors have combined, however, to make export controls a serious problem, and increasingly a counterproductive solution to national security.

First, the nature of industry and business has changed dramatically over the past 20 years. Twenty years back, most advanced equipment was manufactured in geographic proximity. Design engineers had to be relatively close to the production facilities, at least in the initial phases of production, in order to work out problems that developed during production. Today, modern design tools permit design teams to be located around the world and never near the production location or locations. Our export control system was designed at a time when design and manufacturing was local. Today the design and manufacturing process is international.

Second, we are living in a time of business partnering in complex enterprises. We see the rise of international alliances, designed either to reduce the risk associated with the development of new products or to insure easier access to global markets. These international partnerships are good for American business in that they utilize the comparative advantage of others where it exists and help to insure market access for American products. Yet export controls are now undermining such partnerships for American firms because companies in other countries cannot count on and plan with confidence that licenses will be approved on a timely basis.

Third, where the United States had an overwhelming technology advantage 20 and 30 years ago, we now find comparable capabilities around the world. Increasingly American goods are competitive, but not necessarily superior to foreign-produced goods. Blocking American exports does not necessarily prevent other countries from gaining access to high technology.

The export control system has tried to stay current with these growing complexities by developing ever more elaborate and complex regulations. This has occurred at the same time that the American public has demanded streamlined processes and more efficient government. As such, too much of our export control resources are devoted to licensing relatively benign transactions, diverting resources away from far more important and dangerous transactions. In demanding to put a stamp on every export transaction, then ultimately approving 99.4 percent of the requests, we are not really protecting our security. In fact, we are diverting resources from protecting the most important technology and products.

More important, these factors in combination have undermined desirable collaboration between American companies and companies located in allied countries. I believe we should be trying to encourage greater collaboration with allies in order to further knit together our economies and our interests. Instead, our export control procedures are driving a wedge between the United States and our friends and allies. Our export controls also increasingly shelter a market for our commercial competitors to exploit. Indeed, I believe for some important sectors, the satellite industry being a good example of this, we are effectively creating incentives for foreign companies to develop their own technology solutions and avoid collaboration with the United States.

#### **A New Framework for Export Controls**

Mr. Chairman, as I said at the outset, I strongly believe that America needs effective export controls for our national security. But we need export controls that meet two important tests. First, export controls must recognize and complement modern business practices. Because high-technology business today is international, we need export control procedures that recognize transnational business models.

Second, effective international export controls require a consensus on the threat we face together. We have an international consensus in important areas. Internationally we maintain controls over nuclear-related technology. Frankly, these controls are so important that they should be strengthened. There are effective multilateral controls on the export of precursor products for chemical weapons. There is a consensus on export controls on missile-related technology. Effective export controls must begin first with a shared consensus on threats. Too often the United States has attempted unilaterally to impose its policy concerns on the rest of the world through unilateral export controls. History shows that this is largely ineffective and counterproductive. America fails to prevent our would-be opponents from acquiring the technology and we block American companies from the business.

You have been working on a new approach to the Export Administration Act for some time. I realize it is a complex process to balance the competing perspectives of all affected parties and to strike a balance. I suspect that no one will completely agree with your approach. That is to be expected, and that is precisely what the constitutional framers anticipated when they created the United States Congress which is uniquely suited to hearing and balancing the conflicting perspectives of all affected parties.

Therefore, I do not think it is helpful for me to give you a precise formula. Instead, let me outline the broad features of a new framework that I think are needed to meet the challenges outlined above. This framework would, in large measure,

work for both military items on the so-called “munitions list” and dual use items regulated by the State Department.

### Three Partnerships

I believe an effective new framework for export controls must be grounded on three partnerships—a partnership between the U.S. Government and its business community, partnerships between the U.S. Government and the governments of allies and friends, and third, a partnership inside the Federal Government between national security, intelligence, commerce and law enforcement departments. Let me briefly outline each of these three partnerships.

The first critical partnership is between the government and industry. The current system is adversarial. Tens of thousands of export officers in companies are preparing forms to try to get licenses past a few hundred government reviewers. The first goal of a new system should be to convert those thousands of company export administration employees into extended enforcers of a system.

I believe the best way to accomplish this is to convert from a transaction-based licensing system to a process-based licensing approach. In essence, rather than require companies to submit licenses for each individual sale, instead the government should license the export control procedures of a company. If a company had acceptable internal controls in place, it would be free to export controlled commodities without individual licenses. The government would shift its focus to monitoring and approving internal control procedures and spot-checking the functioning of those internal controls. Under this approach, the thousands of export administration employees in private companies become the extended security element for our export control system.

At the same time we need to fundamentally reassess what it is we are trying to control. By far the bulk of things we try to control do not represent critical threats to the United States if they fall into the hands of opponents. These things should come off the control lists now. We need a more objective and explicit process for determining what needs to be controlled. Government should provide an explicit explanation of why a technology should be controlled, from whom and for how long. I also believe we need a dynamic assessment process for determining risk. When I was in the government we attempted to establish such a process for computer products, looking ahead to insure that we did not block computers that effectively became commodities in the marketplace.

Third, the export controls need to be designed so that senior officials bear the obligation and the responsibility for deciding the policy. When I was the Deputy Secretary of Defense, I found often that policy decisions were being made on a defacto basis by lower-level government officials who in good faith were trying to extend their understanding of previous policy on new products and services. Yet I felt that was my job. I felt I had the responsibility for deciding new policy directions, yet too often I did not even know a license was pending or rejected until some extraordinary appeal action was mounted by a company or a concern. We need a more explicit process where new developments that require new policy determinations are made by senior officials, not by lower-level employees, extending through inertia the policies of the past.

The second partnership is between governments. As business becomes transnational in scope, the regulatory framework needs to similarly become transnational. If we want to encourage American partnering with trusted friends and allies in order to foster closer collaboration for national security reasons, we must extend closer working collaboration government-to-government. At present the picture is mixed. I find very good collaboration among customs agencies, for example, when they collectively try to stop the flow of precursor chemicals. There is far less collaboration, however, where there is no shared policy consensus on the underlying risk we face and the goals of export controls.

The Defense Department has pioneered a framework for government-to-government partnerships for arms exports through the so-called “Declaration of Principles” between the U.S. Department of Defense and the U.K. Ministry of Defense. Following these principles, the governments of the United States and the United Kingdom will police a shared industrial base perimeter, permitting relatively unregulated transactions in munitions between these two countries. This is modeled after the U.S.-Canadian export control exemption that has been in place for 25 years. This approach to defense industrial partnering should be extended to other countries, but only where the partner country commits to serious and extensive collaboration with the United States. This does not solve all military export control problems, but it will go a long way toward facilitating more efficient operations.

Let me say at this point that the absence of such an agreement between the United States and another country does not preclude collaboration between compa-

nies in these respective countries. But it does mean that transactions between the United States and nondeclaration of principle countries would require ongoing licensing for arms exports. We also need to be careful that the bureaucrats do not make requirements for reaching such an agreement so convoluted that there is no prospect for moving forward. This framework should promote defense cooperation, not block it.

The third partnership is inside the U.S. Federal Government between the agencies of government. Currently the interagency process is more turf-prone than consensus prone. It is inevitable that we will have conflict among agencies. That is to be expected and indeed can be healthy. But the turf wars too often block the flow of information and impose added burdens on American companies. We should work to a common government-wide integrated database for licenses. The government also needs to develop more effective ways for integrating other data bases so that questionable transactions can be identified by cross-correlating information that is already being collected by the government for other purposes.

We can adopt much of this approach to the dual use exports that would be regulated by an Export Administration Act. We need to build the partnership between government and industry, by focusing on a company's processes and procedures rather than on licensing each transaction. We need to remove commercially available items off the control lists, and we need to make senior officials bear responsibility for decisions. Improving partnership among the many export control agencies is also essential.

However, this needs to be done in the context of an international climate where, for dual-use items not controlled for reasons of nonproliferation, there is little agreement on prospective threats and little prospect for consensus. These controls fall under the mandate of the Wassenaar Arrangement. Its lists are too long and its aims too outmoded to contribute effectively to international security. I applaud the Committee for its work in this bill to modernize our national export controls and I hope the new Administration will seek to do the same with a multinational controls in the Wassenaar Arrangement.

### **Conclusion**

Mr. Chairman, I know that the Committee has worked long and very hard on its legislation to amend the Export Administration Act. This is very important work and I commend the committee for it. Only the U.S. Congress is capable of this reform. It is critical and you must be successful. The long-term security of this country rests in your hands.

Thank you for the opportunity to testify before you today. I would be pleased to answer any questions that you might have.

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**PREPARED STATEMENT OF DONALD A. HICKS, PHD**  
CHAIRMAN, HICKS & ASSOCIATES  
REPRESENTING THE DEFENSE SCIENCE BOARD TASK FORCE ON  
GLOBALIZATION AND SECURITY

FEBRUARY 14, 2001

Mr. Chairman and Members of the Committee: I am pleased to be here today. I will not provide an assessment of the draft Export Administration Act of 2001 that is under consideration by this Committee. I will, however, speak about the realities of globalization and their implications for national security and, more specifically, for export controls as a function of national security.

My remarks will be based primarily on the deliberations and findings of a Defense Science Board Task Force on Globalization and Security that I chaired, and which completed its work in December 1999; I have provided each Member of this Committee a copy of the Task Force's final report. The Task Force was chartered by the Under Secretary of Defense for Acquisition and Technology to: (1) examine the impact of globalization on DoD, and (2) advise the Department on innovative policies, procedures and/or technologies that may allow DoD to maximize the benefits of trends associated with globalization while concurrently mitigating any associated risk. Not long into deliberations, the Task Force refined its overarching objective into advising the Department of Defense on how to enhance U.S. military dominance in the face of globalization. This course change stemmed from members' strong belief that the United States can achieve a net military capability gain over its potential competitors if it vigorously exploits the globalization trends. Conversely, members believe as strongly that an overly cautious approach to dealing

with globalization will result in a net erosion of U.S. military dominance, due primarily to relative or asymmetrical capability gains made by potential adversaries who are, in fact, seizing the opportunity to exploit the global availability of militarily useful technology, products and services.

### **What Is Globalization and How Is It Affecting DoD?**

Before discussing the Task Force's key findings and recommendations, it is important to establish a working definition of the now-ubiquitous term "globalization"—which means different things to different people—and to offer the Task Force's broad sense of globalization's impact on DoD. From the Task Force's perspective, globalization—defined as the integration of the political, economic and cultural activities of geographically and/or nationally separated peoples—it is not new, but rather is a continuously evolving process. What is new is the dramatic acceleration of global integration and the resulting political, economic, and technological change the world has seen over the last decade. Goods and services, materials, capital, technology (know-how and equipment), information, customs, people, and energy all flow across national borders, not always freely but most often successfully. Most important, the phenomenon of accelerated global integration is largely irresistible. *Thus, globalization is not a policy option, but a fact to which policymakers must adapt.*

Globalization has accelerated as a result of many positive factors, the most notable of which include the collapse of communism and the end of the Cold War; the spread of capitalism and free trade; more rapid and global capital flows and more liberal financial markets; the liberalization of communications; international academic and scientific collaboration; and more rapid and efficient forms of transportation. At the core of accelerated global integration—indeed, its principal cause *and* consequence—is the information revolution. Driven by quantum leaps in telecommunications and computing efficiency and effectiveness, the information revolution is knocking down barriers of physical distance, blurring national boundaries and creating cross-border communities of all types.

Globalization affects DoD in two distinct, if overlapping, ways:

First, globalization is altering fundamentally the composition of DoD's supporting industrial base. DoD once depended upon, and could afford to sustain, a dedicated domestic industrial base for the development, production and provision of its equipment and services. Today, the "U.S. defense industrial base" no longer exists in its Cold War form. Instead, DoD now is supported by a broader, less defense-intensive industrial base that is becoming increasingly international in character. This transformation is due largely to the confluence of three factors: (1) deep cuts in U.S. defense investment in the Cold War's wake (procurement and R&D are down 70 percent and 25 percent in real terms, respectively, since the late-1980's), (2) an explosion in commercial sector high-tech R&D investment and technological advancement, and (3) a shift in procurement emphasis from weapons and platforms, *per se*, to the sophisticated information technologies so amplifying their capabilities.

Indeed, yesterday's U.S. defense industry is, with few exceptions, reconstituting itself into a global, more commercially-oriented industry. The traditional core of the U.S. defense industrial sector—those firms still focusing nearly exclusively on the defense market—comprises firms that will focus increasingly on the integration of commercially developed advanced technology to produce military capabilities. That which remains of this sector:

- has undergone an intense period of consolidation;
- has already begun—although mainly in the lower industrial tiers—the process of integration across national borders, via mergers, acquisitions, joint ventures and strategic partnerships with European counterparts, who are themselves in a period of rationalization and consolidation; and
- is now supplied to a significant degree by the commercial sector and is increasingly dependent on commercial business and defense product exports for growth and good health.

It is now the commercial sector, which pays scant attention to national boundaries, which is driving the development of much of the advanced technology integrated into modern information-intensive military systems. This is especially true of the software and consumer microelectronics sectors. The National Science Foundation reports that over 80 percent of high-technology exports (some of them dual-use) originate from outside the United States. Moreover, high-technology commercial exports dwarf arms exports in magnitude. Accordingly, future U.S. military-technological advantage will derive less from advanced component and subsystem technology developed by the U.S. defense sector than from the military functionality generated by superior, though not necessarily U.S.-based, defense sector systems integration skills.

Second, and perhaps most significantly, globalization is reshaping the military-technological environment in which DoD must compete. During most of the Cold War, the United States enjoyed a near-monopoly on the development of and access to advanced military technology, and could, to a large degree, deny other nations access to such technology in order to maintain a wide military capability gap between itself and its potential adversaries. No longer. It is now likely that a majority of militarily useful technology will eventually be available commercially and/or outside the United States as a result of many factors, all of which are direct manifestations of the globalization phenomena. The United States remains the world's premier military technology integrator and developer of military systems; this is not likely to change. Over time, all states—not just the U.S. and its allies—will share access to the majority of the technology underpinning the modern military.

In developing its findings and recommendations, the Task Force focused its energies on four specific areas: maintaining U.S. military dominance amidst global technological leveling; globalization of the U.S. defense industry; DoD acquisition of commercial technology, products and services; and personnel security. All four areas are important; however, I will concentrate the remainder of my remarks on the first one, as I believe it has the most direct relevance to the work of this committee.

### **Maintaining U.S. Military Dominance Amidst Global Technological Leveling**

#### *Findings*

From a strategic standpoint, globalization's most significant manifestation is the leveling effect it is having on the military-technological environment in which DoD must compete. Access to commercial technology is virtually universal, and its exploitation for both civil and military ends is largely unconstrained. Many of the most important enabling technologies for information-intensive U.S. concepts of warfare (that is, access to space, surveillance, sensors and signal processing, high fidelity simulation, and telecommunications) are equally available to the United States, our friends and allies, and potential U.S. adversaries. In other words, much of the technology the United States is most anticipating leveraging to maintain military dominance—information-related technology developed largely in the commercial sector—is that which DoD is *least* capable of denying its potential competitors. The so-called "Revolution in Military Affairs" is, at least from a technology availability standpoint, a truly global affair.

Compounding this narrowing of the U.S. technological advantage are continuing declines in DoD research, development, test and evaluation (RDT&E) and defense industry internal or independent research and development (IR&D) investment. In addition, government and private defense R&D investments are skewed toward near-term priorities (that is, upgrades to fielded systems and the development of legacy system replacements) and away from fundamentally new capabilities.

Traditionally, defense industry IR&D has funded the development of many of the United States' most advanced military technologies and innovative integrated defense systems. Stealth technology is but one example. Industry has historically put about 3 percent of the DoD procurement budget back into IR&D. However, with a 70 percent decline in procurement budgets in the past decade, contractors not only have less to spend on IR&D, they appear to be using many of these funds to secure increasingly scarce line-item business and/or maintain profit levels. The result is severely depressed U.S. military-technological innovation when the premium on innovation has never been higher, and a defense industry devoted primarily to the development of what the military says it wants—legacy system replacements—and not necessarily what it needs to meet emerging strategic challenges. Accordingly, this trend must be reversed if the United States is going to maintain the capability gap between it and its potential adversaries.

### **Strategic Implications of Global Technological Leveling**

As the technological playing field levels, the United States' potential competitors will be able to modernize their forces and augment their overall capability relative to ours at a much faster rate than was previously possible. One reason is that they will be able to take multiple, concurrent paths to military modernization.

A common path will be through an increasingly permissive and technologically advanced global conventional arms market. The arms market has undergone a striking transformation in the last 5 or so years, the root cause of which is the contraction in worldwide defense spending that has increased significantly the pressure on firms to export—and on governments to encourage them to do so. When combined with increasing level of crossborder collaboration, the black and gray market availability of most types of defense products, and the pressure on already export-minded firms to offer their most sophisticated equipment, these trends will progressively

erode the effectiveness of conventional arms and defense technology export controls worldwide. With a few exceptions, advanced conventional weapons will be available to anyone who can afford them.

Beyond the global arms market, the general diffusion of technological know-how and commercial availability of so-called “strategic” or “enabling” dual-use technologies (that is, advanced machine tools, high-performance computing, manufacturing of biotechnology products) will likely yield rapid advances in competitor industrial infrastructure development and, in turn, indigenous weapons production capability. Moreover, the commercial sector will offer an increasingly wide array of both advanced components and subsystems (particularly software and microelectronics) to aid indigenous defense system production and system upgrades, and of full-up systems (particularly information and communications related) offering direct capability enhancement.

Moreover, owing to the ready availability of many key military capabilities, states will be able to *time* their investments in order to peak militarily when their forecasted opponent is least suited to engage them. This may present a particularly vexing challenge to the United States, which, by virtue of its commitment to maintaining a large general-purpose force structure, must spread its investment resources much more broadly. Because DoD does not have the resources to modernize all force elements concurrently, it must alternate modernization efforts *between* major force elements, frequently at decade-long (or longer) intervals, making it all but impossible for DoD to maintain state of the art forces across the board. Often, the stated DoD or Service rationale for investing in a particular force element is rooted not in a strategic imperative, but rather in the fact that it is the said force element’s “turn” to be recapitalized. This limits DoD’s investment agility, and thus its ability to react swiftly to unanticipated strategic military-technical developments. Also limiting DoD in this regard are the lingering cultural and, to a lesser extent, regulatory constraints on tapping the commercial sector—by which potential U.S. competitors may not be similarly shackled. Consequently, and particularly as militaries become more reliant on commercial products and services, adversaries over which the United States is otherwise dominant can be expected to achieve superior capabilities in narrow—yet potentially critical—areas.

Furthermore, with virtually the full range of military technologies and capabilities available, competitors will also be able to tailor more effectively their investments to their particular geo-strategic circumstances to achieve scenario-specific advantages over potential foes. As previous DSB studies have pointed out, those states preparing for potential conflict with the United States will seek to capitalize on the great distances U.S. forces must travel to engage them, and U.S. forces’ near-absolute reliance on unimpeded access to and use of ports, airfields, bases, and littoral waters in the theater of conflict.

To exploit these vulnerabilities, potential competitors are not trying to match DoD ship-for-ship, tank-for-tank, or fighter-for-fighter. Rather, they are investing asymmetrically, channeling their more limited resources into now widely available (and increasingly affordable) capabilities, conventional and unconventional, that could allow them to deny U.S. forces both rapid access to their region and/or and sanctuary once in-theater. These include conventional antinaval forces (that is, ultra-quiet diesel submarines, advanced antiship cruise missiles and sophisticated sea mines); theater-range ballistic and land-attack cruise missiles (with the latter expected to be available in the thousands, and, increasingly, with low-observable characteristics); and nuclear, chemical and biological weapons.

In addition, future U.S. competitors will leverage the commercial space sector to achieve so-called “step function” gains in antiaccess capability. Capabilities such as space-based communications, surveillance, navigation services and equipment will become increasingly available through a variety of multinational consortia. Such unobstructed access to space for C3ISR support will allow even the most resource-constrained adversaries to monitor the location of, target and precisely attack U.S. forces in the field, at theater bases, ports and airfields, and moving through critical naval checkpoints. Viewed in this manner, technological leveling—globalization’s most strategically unsettling manifestation from a U.S. perspective—is clearly the engine of the emerging “antiaccess” threat.

Consequently, there is growing—if uncelebrated—risk inherent in U.S. power projection and force modernization strategy. Strategic risk is defined here as a discernible decrease in U.S. forces’ capability to protect vital U.S. interests relative to adversaries’ capability to threaten them: a potentially serious erosion of military dominance. At the root of the problem are the inherent limitations—namely, sluggish deployment times and heavy dependence on theater access—of the legacy, primarily short-range general-purpose force elements to which the vast majority of the Services’ modernization funding is currently, dedicated and the correspondingly in-

adequate investment planned in long-range force projection capabilities (that is, long-range stealthy bombers, standoff missiles, and long-range reconnaissance/surveillance). Viewed in this light, the continued budgetary, strategic and force structuring primacy of legacy systems in DoD budgets has a clear and high opportunity cost: the investment agility necessary to transform U.S. strategy and forces to meet the emerging strategic challenges posed by global military-technological leveling.

#### **Export Controls: An Imperfect Panacea**

One might, at first glance, reason that the United States could mitigate the undesirable effects of global military-technological leveling by unilaterally tightening restrictions on dual-use and defense technology exports, and by coordinating with its allies enhanced multilateral restrictions dual-use and conventional military technology exports. This approach worked reasonably well during the Cold War, that is, through the Coordinating Committee on Export Controls (CoCom). However, unilateral and multilateral controls today are no longer a significant factor affecting potential adversaries' access to highly sophisticated dual-use technology and they have been only marginally more successful in the conventional weapons arena.

CoCom's success, for example, derived from its members facing a common threat—the Warsaw Pact and, to a lesser extent, China—and sharing a common objective: retarding Warsaw Pact and Chinese technological advancement. CoCom also benefited from the disproportionate leverage the United States, its leading advocate, held over the other members as the guarantor of Western security. The Cold War's end undermined this cooperative impetus, and the United States can no longer count on its allies, its closest competitors in the high-tech sector, to follow America's lead. The lukewarm success of CoCom's successor, the Wassenaar Arrangement, is a testament to the declining utility of multilateral technology controls in the post-Cold War era. It also points to the utter futility of the United States attempting to control unilaterally technologies, products and services that even its closest allies are releasing onto the world market.

Wassenaar's lack of strong central authority and its dearth of explicit target countries is a reflection of the times—the absence of a single large threat and lack of agreement over the nature and seriousness of the smaller threats. This inherent weakness has complicated its development and made it more difficult to achieve consensus among the expanded (from CoCom) membership on which states to which they should control exports. With the exception of a few unanimously targeted pariah states (namely, Iraq, Libya, Iran and North Korea), for which it has been a reasonably effective control mechanism, Wassenaar is proving, in the words of one observer, little more than a “paper tiger.”

China is perhaps the best and certainly the timeliest example of the difficulty of coordinating multilateral technology controls in the new environment. Under CoCom, the West had a well-coordinated position on dual-use trade with China. In the wake of CoCom's dissolution, a chasm has developed between the United States and many of its Western allies, who no longer view China as a threat and have relaxed or lifted dual-use export restrictions to China accordingly. This, in turn, has rendered many U.S. controls on exports to China essentially unilateral, thus neutralizing their utility as constraints on Chinese acquisition of dual-use technology.

Also limiting the utility of dual-use export controls is the ubiquity of critical technologies and the ease of their transfer. Consider the case of high-performance computing. Microprocessors, which are the essential ingredient for high-performance computers (HPC's), have long been a commodity product widely available on the world market from a vast range of sources. Personal computers are similarly difficult to control. Each year, United States and foreign companies manufacture millions of PC's and sell them the world over, often via mail order and the Internet. The technology to “cluster” these computers (for example, link them together to multiply their computing power) is also available online. Through clustering, it is possible to create computer systems ranging in computing power from 4,000–100,000 MTOPS (millions of theoretical operations per second)—equivalent to the supercomputers currently under strict export controls. In other words, while the most advanced United States stand-alone high-performance computers may be controllable, high-performance *computing* is not.

High-performance computers are a good example of limited controllability, but the same is true for other sectors where the state-of-the-art is advancing rapidly, such as telecommunications, and controlled software. It is somewhat easier for the United States to control the transfer of large capital items, mainly because the customer base is smaller and the products cannot be easily and inexpensively cloned and/or scaled-up in capability (that is, as PC's are clustered into HPC-level systems). However, as is the case with HPC's, this does not mean the technology will not be available outside the United States. In some of these sectors, such as machine tool and

semiconductor manufacturing equipment, the United States has a minority global market share and the technology is widely available abroad. In others (that is, satellites) the United States currently has a strong global position but is under growing pressure from formidable competitors.

Some argue that the obstacles to effective multilateral controls suggest that the United States should become even more restrictive unilaterally. In some cases, this may be necessary, but doing so broadly in the face of globalization is likely, in the end, to do the United States more harm than good. DoD is relying increasingly on the U.S. commercial advanced technology sector to push the technological envelope and enable the Department to “run faster” than its competitors. DoD is not a large enough customer, however, to keep the U.S. high-tech sector vibrant. Exports are now the key to growth and good health. In the computer and communications satellite industries, for example, between 50 percent and 60 percent of all revenues come from foreign sales. Any significant restriction on exports would likely slow corporate growth and limit the extent to which profits can be put back into research and development on next-generation technology. This is particularly true for internal or independent R&D (IR&D) designed to address particular DoD concerns, which, because it is less likely to yield products with near-term commercial demand, would likely receive even lower priority during any IR&D decline. If U.S. high-tech exports are restricted in any significant manner, it could well have a stifling effect on the U.S. military’s rate of technological advancement.

If the United States responds to what some parochially and inaccurately view as a preventable hemorrhaging of U.S. advanced technology (vs. the irresistible leveling of the global technological playing field) by unilaterally tightening controls on high-tech exports to states such as China, new competitors in Taiwan, Korea, Japan, and Europe can be expected to move quickly to fill the market void. The U.S. lead in most dual-use sectors is based not on the United States being the sole possessor of the technology, but rather on the comparatively high quality of U.S. products and the efficiency with which they are produced (which enables competitive pricing). Shutting U.S. industry out of major markets such as China will necessarily create viable competition where little currently exists. As has been demonstrated in other sectors, the increased competition will not be limited to the Chinese market. New competitors will use their market share in China and all its benefits (that is, accelerated IR&D funding) as a springboard to challenge U.S. dominance elsewhere. In other words, if the United States were to unilaterally tighten dual-use controls to China, the loser is not likely to be the Chinese. Rather, the losers will be U.S. industry, whose technological and market leadership will face new challenges, and DoD, whose access to the world’s most advanced technologies will be at the very least complicated, and perhaps compromised, by virtue of their being developed and produced by non-U.S. firms.

Furthermore, because the dual-use sector is fully globalized, export control tightening meant to deny single states such as China access to certain technology can do unintended damage to vitally important U.S. business relationships elsewhere. Congress’ 1999 decision to return commercial communications satellites to the State Department’s U.S. Munitions List from the Commerce Department’s dual-use list—and the U.S. Government’s interpretation of Congress’ direction—may already be having such an effect. Consider the case of Europe. The United States and European space sectors are deeply interconnected. In the wake of the controversy leading up to the decision to move satellites back to State—intended by Congress as a means of tightening controls over satellite exports to China—the U.S. Government has become much stricter in its interpretation of the ITAR, which govern the export of items on the munitions list. This is particularly true of the DoD and its interpretation of ITAR Part 124.15(a), which states specifically that: “The export of any satellite or related item . . . or any defense service controlled by this subchapter associated with the launch in, or by nationals of, a country that is not a member of the North Atlantic Treaty Organization or a major non-NATO ally of the United States always requires special export controls, in addition to other export controls required by this subchapter . . .” DoD has insisted on applying these “special export controls” on our NATO and major non-NATO allies (as is allowed for under Part 124.15(c)); it is this approach that may be proving the most damaging.

Most European satellites—and most European military systems, for that matter—contain U.S. components that are also subject to the stricter controls. The U.S. Government’s stricter interpretation of the ITAR may also be having a negative ripple effect on the behavior of the U.S. space industry, which has, in turn, ratcheted up its own security procedures. According to some in Europe, this is making it increasingly difficult to do business with the U.S. space industry. Said one European space industry official in a recent media report: “To have a simple telephone conversation with a U.S. customer or supplier, I have to inform him of my wishes 30 days in

advance, then fax him an outline of what I want to talk about. The fax gets passed on for clearance by the U.S. State Department: What is the purpose here—national security or protectionism?” The long-term effects could be damaging. European defense/aerospace firms, which currently depend on U.S. companies to assure their supply chain, will logically look elsewhere for suppliers if the cost of doing business with the United States remains unacceptably high.

A tightening of dual-use controls could also spawn—or hasten—the development of indigenous R&D and production capabilities where they might not otherwise flourish. For example, China has the capacity to produce high-performance computers indigenously. While China cannot currently compete with U.S. companies on the global market, they can produce machines with performance sufficient to provide many of the military capabilities they seek, though perhaps at greater time, effort and cost than would be the case with the highest performance computers. Denying countries such as China U.S. products could very well encourage their own development and production.

Finally, increased technology protection amidst global technological leveling could well limit the special influence the United States might otherwise accrue as a global provider and supporter of military equipment and services. This includes intimate knowledge of, and access to, military systems that only the supplier would have, and that could prove militarily instrumental in crisis and conflict and is particularly true regarding communications and information systems.

The strategic significance of the ongoing leveling of the global military-technological playing field cannot be overstated. It presents a direct challenge to *the* fundamental assumption underlying the modern concept of U.S. global military leadership: that the United States enjoys disproportionately greater access to advanced technology than its potential adversaries. This assumption also underpins the increasingly strained logic holding that technology controls are the *sine qua non* of U.S. military dominance.

Such a parochial assumption is simply not consistent with the emerging reality of all nations’ militaries sharing essentially the same global commercial-defense industrial base. The resulting erosion of long-standing technical and economic barriers to acquiring advanced militarily-useful technology will increasingly negate enduring U.S. advantages in technology development, namely, superior infrastructure, education and resources. By virtue of its *comparatively* large defense R&D investment—past and present—the United States will likely maintain over the long-term a developmental advantage over its competitors in a limited number of cutting-edge, defense-specific technologies; directed-energy weaponry is one example. However, such niche technological advantages will not sustain a meaningful, long-term military capability gap between the United States and its potential adversaries.

Rather, with the whole world working from essentially the same military-technological “cookbook,” the United States will need to rely on its unique strengths as a “chef,” that is, as the world’s most innovative integrator of militarily useful—though not always U.S.-developed—technology. The United States will need to redouble its efforts at out-innovating, out-integrating and out-investing its competitors. This involves exploiting our currently superior systems integration skills, training, leadership, education and overall economic/industrial wherewithal to translate globally available technology into dominant military capability. To remain dominant, DoD will need to not only “run faster,” but also to “pick alternate routes”—that is, respond asymmetrically to its competitors’ asymmetrical strategies by intelligently altering its own warfighting strategy and investment plans. Indeed, sustaining military dominance in the face of technological leveling will ultimately come down to the age-old questions of how—and with what—DoD chooses to fight.

### Key Recommendations

(1) *The Department needs a new approach to maintaining military dominance.* Globalization is irresistibly eroding the military advantage the United States has long sought to derive through technology controls. Accordingly, the more the United States depends on technology controls for maintaining the capability gap between its military forces and those of its competitors, the greater the likelihood that gap will narrow. To hedge against this risk, DoD’s strategy for achieving and maintaining military dominance must be based on the recognition that technology controls ultimately fail to deny U.S. competitors access to militarily useful technology.

DoD must shift its overall approach to military dominance from “protecting” militarily-relevant technologies—the building blocks of military capability—to “preserving” in the face of globalization those military capabilities essential to meeting national military objectives. Protection would play a role in an overall strategy for preserving essential capabilities, but its primacy would be supplanted by three other strategy elements: direct capability enhancement, institutionalized vulner-

ability analysis and assessment, and risk mitigation efforts designed to ensure system integrity.

To shift its approach from *technology protection* to *essential capability preservation*, the Task Force recommended that DoD: (1) establish a permanent process for determining a continuously-evolving “short list” of essential military capabilities, and (2) develop strategies for preserving each essential capability. Both the list of essential military capabilities and the strategies for their preservation are needed to inform the development of: U.S. warfighting strategy and the forces to underpin that strategy (by identifying how and with what the United States will need to fight to remain dominant), DoD positions on technology and personnel security (by helping to identify those capabilities and/or constituent technologies which DoD should attempt to protect and how vigorously they should be protected); and DoD acquisition risk mitigation measures (by identifying those systems that should be the focus of intense efforts to ensure system integrity).

(2) *DoD needs to change substantially its approach to technology security.* The Task Force did not challenge the propriety of the Department of State’s statutory obligation to evaluate proposed defense technology transfers against U.S. foreign policy objectives. That said, the leveling of the global military-technological playing field necessitates a substantial shift in *DoD’s* approach to technology security, the principal objective of which is to help maintain the U.S. military-technical advantage. DoD should attempt to protect for the purposes of maintaining military advantage only those capabilities and technologies of which the United States is the sole possessor and whose protection is deemed necessary to preserve an essential military capability. Protection of capabilities and technologies readily available on the world market is, at best, unhelpful to the maintenance of military dominance and, at worst, counterproductive (that is, by undermining the industry upon which U.S. military-technological supremacy depends). Where there is foreign availability of technologies, a decision to transfer need only be made on foreign policy grounds by the Department of State. If foreign availability has been established, DoD should not review export license applications. This change will allow the DoD licensing review to concentrate on cases where the availability of technology is exclusive to the United States.

Moreover, military capability is created when widely available and/or defense-unique technologies are *integrated* into a defense system. Accordingly, DoD should give highest priority in its technology security efforts to technology integration capabilities and the resulting military capabilities themselves, and accordingly lower priority to the individual technologies of which they are comprised. For those items and/or information that DoD can and should protect, DoD security measures need improvement. The means for such an improvement might come from a redistribution of the current level of security resources/effort, whereby DoD relaxes security in less important areas and tightens up in those most critical. In short, DoD must put up higher walls around a much smaller group of capabilities and technologies.

(3) *DoD should take the lead in establishing and maintaining a real-time, inter-agency database of globally available, militarily relevant technologies and capabilities.* Such a database, which would facilitate rapid and authoritative determination of the foreign availability of a particular technology or military capability, would serve two principal functions. First, it would allow those involved in the export licensing and arms transfer decisionmaking process to determine what is available abroad and, thus, no longer U.S.-controllable. Second, it would enhance U.S. access to the global technological marketplace by illuminating potential foreign sources and/or collaborators.