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HAS THE RUSSIAN SPACE LAUNCH QUOTA ACHIEVED ITS PURPOSE?

HEARING

BEFORE THE

INTERNATIONAL SECURITY, PROLIFERATION, AND FEDERAL SERVICES SUBCOMMITTEE

OF THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

JULY 21, 1999

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WEDNESDAY, JULY 21, 1999

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
SUBCOMMITTEE ON INTERNATIONAL SECURITY,
PROLIFERATION, AND FEDERAL SERVICES,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2 p.m. in room 342, Senate Dirksen Building, Hon. Thad Cochran, Chairman of the Subcommittee, presiding.

Present: Senators Cochran, Akaka, and Cleland.

OPENING STATEMENT OF SENATOR COCHRAN

Senator COCHRAN. The Subcommittee will please come to order.

Today our Subcommittee on International Security, Proliferation, and Federal Services convenes a hearing to review and assess the effect on weapons proliferation of the 1993 Space Launch Quota Agreement between the United States and Russia. Specifically, we hope to be able to answer the question: Has the Russian space launch quota achieved its purpose?

This Subcommittee has spent considerable time in the last 2½ years examining the serious problem of weapons of mass destruction and ballistic missile proliferation. Along with others, we have advocated a comprehensive approach, from diplomacy to improved export controls to ballistic missile defense, to protect our country from the effects of weapons proliferation. The threat posed by this proliferation is accurately described by Executive Order 12938, which declares the proliferation of weapons of mass destruction and their means of delivery to be an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States.

In Senate testimony this year, Director of Central Intelligence George Tenet underscored the seriousness of this threat, particularly as it relates to the continuing commerce between Russia and Iran, stating: "Politically, Russia is increasingly unpredictable, and the worsening economic situation affects all aspects of the Russian scene. As the desperate search for revenue streams is exacerbating a number of serious problems, it has magnified the proliferation threat across the board as growing financial pressures raise incentives to transfer sensitive technologies, especially to Iran."

Thus, our government must insist that the Russian Government exert its full authority to halt missile and missile technology trans-

fers from Russia to Iran and others. Our government must also take those steps necessary to persuade the Russian Government to act quickly and effectively on this problem. This does not mean, though, that any action by our government is appropriate just because it is done in the name of stopping the flow of Russian technology to Iran. Our government should recognize and avoid taking actions that not only do little to stem Russian proliferation, but put the national security of the United States, and its allies, at greater risk.

Our witnesses today, we hope, will help us sort through these issues surrounding our country's commercial satellite launch policy with Russia. Will Trafton, president of Lockheed Martin International Launch Services, will be our first witness. Mr. Trafton will be followed by a panel including Catherine Novelli, Assistant U.S. Trade Representative for Europe and the Mediterranean; Walt Slocombe, Under Secretary of Defense for Policy; and John Holum, State Department Senior Advisor for Arms Control and International Security.

We first welcome Will Trafton, president of International Launch Services, as our first witness. We have a copy of your prepared statement, which we appreciate, and we will have it printed in the record in full. We encourage you to make any summary comments or remarks that you think would be helpful to the Subcommittee.

Welcome, and you may proceed.

STATEMENT OF WILBUR C. TRAFTON,[1] PRESIDENT, LOCKHEED MARTIN INTERNATIONAL LAUNCH SERVICES

Mr. TRAFTON. Thank you, Mr. Chairman. I really appreciate the opportunity to testify before you today on the use of a quota-based trade agreement as an instrument of commercial space launch trade policy between the United States and Russia.

Let me begin by expressing our deep appreciation for your leadership, Mr. Chairman, and support in addressing this important issue, culminating today with this hearing. The progress we have made thus far is due in no small measure to your efforts to advance U.S. policy objectives for cooperative threat reduction and economic competitiveness.

In my remarks, I would like to talk about International Launch Services (ILS) and, in particular, the arm of ILS, the Lockheed-Khrunichev-Energia International (LKEI) joint venture, that supplies commercial Proton launches to international satellite operators and service providers. I will also tell you what I believe will happen to LKEI if it continues to be restricted by quota-based trade agreements or held hostage to proliferation concerns. I will also address the potential adverse impact on another very important U.S.-Russian joint venture that will co-produce in the United States the world's best rocket engine—the Russian RD–180. Last, I would like to offer our recommendations for addressing these issues.

International Launch Services was established in 1995, upon the merger of Lockheed and Martin Marietta companies, to market Atlas and Proton commercial launch services in the world wide sat-

[1] The prepared statement of Mr. Trafton appears in the Appendix on page 33.

ellite telecommunications marketplace. Lockheed and Martin Marietta, prior to the merger, were each individually competing in the commercial launch service market with their Proton and Atlas launch vehicles respectively. Lockheed entered the launch market in 1993 with the establishment of Lockheed-Khrunichev-Energia International, the joint venture to exclusively market the Russian Proton launch vehicle. Similarly, Martin Marietta had entered the commercial launch market with the purchase of the General Dynamics Space Systems Division and establishment of its Commercial Launch Services subsidiary (now LMCLS, Lockheed Martin Commercial Launch Services) which marketed the Atlas launch vehicle. Both LKEI and LMCLS are within the ILS structure, and serve as the contracting entities for executing Proton and Atlas launch service contracts.

ILS, headquartered in San Diego, California, is a commercial company, servicing a broad range of both domestic and global satellite operators and manufacturers, as well as the U.S. Government. Today, ILS has a backlog of $3.5 billion representing launch contracts for 23 Atlas vehicles and 19 Proton vehicles.

Mr. Chairman, the success of the LKEI joint venture has generated important benefits for U.S. national security and commercial space competitiveness. But the quota on Proton launches jeopardizes continued growth of this venture, indeed, its viability in the commercial launch market.

Mr. Chairman, as you know, President Clinton recently approved an increase in the quota from 16 launches to 20. This is a good first step towards the elimination of the quota. It demonstrates to us that the administration recognizes the importance of this venture, and that its near-term viability is dependent on the continued availability of Proton launch services.

While this action is commendable, the quota should be lifted entirely. This small increase may assist in meeting near-term business objectives, but there will continue to be uncertainty as to the long-term viability of this joint venture as long as a quota exists. Therefore, it will be necessary to increase the number of allowed launches again before the expiration of the Launch Trade Agreement at the end of 2000.

The trade criteria stipulated in the Launch Trade Agreement have been met. Khrunichev and Energia have not only complied with pricing regulations, but also have implemented stringent internal export control safeguards and are not engaged in proliferation.

U.S. leadership in the international launch market is essential to economic growth in the 21st Century. If LKEI is unable to provide a guarantee to customers of the availability of launch services, the United States stands to lose to foreign competitors the industry's market share we worked so hard to gain over the past 13 years.

The Lockheed-Khrunichev-Energia joint venture continues to be the most successful U.S.-Russian commercial endeavor, promoting economic stability within Russia by providing hard currency to the Russian economy. Furthermore, it is U.S. policy to engage in activities with Russia's aerospace industry that will meet cooperative threat reduction objectives by providing a commercial avenue for scientific and technical expertise in Russia. This venture provides

such an avenue, and a strong record of compliance with export regulations proves that this venture provides a positive incentive for nonproliferation.

The launch market is robust and the quota should be allowed to expire. Current demand for launch services far exceeds market projections. If the Proton business is not allowed to operate in a free and open trade environment, not only will this be ignoring directives set forth in our country's National Space Policy, but our space industrial base could be threatened along with Russia's economic stability. Should this occur, the principal beneficiary would be the French Ariane program, currently the only launch system capable of taking heavier payloads to Geostationary Transfer Orbit (GTO). The United States would lose in this highly competitive international launch market. The positive nonproliferation incentives the LKEI joint venture provides to more than 100,000 Russian engineers, scientists, and technicians also would be lost. And the critically important RD–180 engine program would be adversely affected.

This Russian engine, the best rocket engine in the world, is currently available to Lockheed Martin in the United States through a United Technologies, Pratt and Whitney, and NPO Energomash joint venture, RD–AMROSS, that was established in 1997. This U.S. joint venture has two key components: The RD–180 engines built in Russia that will power our new commercial Atlas vehicles, the Lockheed Martin Atlas 3 and the Atlas 5; and the RD–180 engine built in the United States that will power the next generation launch system for U.S. Government payloads. The reliability and consistency of the United States as a partner in these two joint ventures is critical to their success.

In summary, Mr. Chairman, we have a great deal at stake in our joint ventures with our Russian partners. America's national security, economic competitiveness, and assured access to space in the next century will be affected by the way the Proton quota issue is addressed. I am ready for your questions. Thank you, Mr. Chairman.

Senator COCHRAN. Thank you. Let me first ask you the purpose for the joint venture to start with. Why did Lockheed Martin decide to enter a joint venture with the Russian firms Khrunichev and Energia?

Mr. TRAFTON. In 1992, Lockheed was looking for a way to enter into the space launch business. At about that same time, with the end of the Cold War, there was a conscious policy decision by the U.S. Government to encourage joint ventures with Russia. Lockheed approached Khrunichev and Energia and in 1993 signed an agreement that gave Lockheed Martin—Lockheed at the time—worldwide marketing rights for the Proton vehicle.

Senator COCHRAN. When you entered into this joint venture, or before you did, or as you were considering it, did you consider the possibility that these Russian firms might be engaged in missile proliferation activities?

Mr. TRAFTON. Yes, sir, we did. I will say that Lockheed was very sensitive to proliferation concerns. We were also very sensitive to and compliant with U.S. Government guidelines on this issue. We consulted very closely with the U.S. Government. We implemented

a very rigorous export control compliance program and, in fact, we put it into the by-laws of the joint venture that our Russian partners would comply with nonproliferation regimes.

Senator COCHRAN. Do you think that this joint venture in particular is useful in any way as a nonproliferation tool or to encourage nonproliferation?

Mr. TRAFTON. Absolutely, Mr. Chairman, I do. As I have stated in my opening statement, 100,000 very skilled Russian engineers, technicians, and scientists get a regular paycheck thanks to this joint venture. We have transferred since the inception of the joint venture about $1.5 billion to Russia. I think the fact that these 100,000 Russians would like to keep their jobs, the fact that the Russian Government, Khrunichev, and Energia would like to see that this payment stream continues, we think is pretty important motivation for them to be very, very careful about proliferation.

Senator COCHRAN. The U.S. Administration negotiated a launch quota agreement with Russia. And as I understand it from your statement, it was important to have this agreement because of concerns over predatory pricing possibilities. Could you tell us what that means? Why was that a concern, and was that a sufficient reason to negotiate a trade agreement?

Mr. TRAFTON. It was a viable concern and I think it was sufficient reason to negotiate a trade agreement. We, in this country, in the space launch business did not want to see the Russians or other foreign entities coming into the marketplace with predatory pricing and, in fact, adversely affecting our position in the global market.

Senator COCHRAN. How could that have happened and how would that have worked?

Mr. TRAFTON. They could have come in with prices that far undercut the then-current competitive market pricing that we were seeing at the time.

Senator COCHRAN. Wouldn't that have been helpful to you?

Mr. TRAFTON. Absolutely not. This is a tough marketplace and the people looking for commercial launch services are in many cases going to go to the lowest bidder.

Senator COCHRAN. Well, you said they would undercut the pricing.

Mr. TRAFTON. The trade agreement, as it was written, uses a 15 percent rule, that the Russians—and, by the way, the Chinese and the Ukrainians are involved in this as well, in the quotas—that they could not come in 15 percent below the lowest competitive market price. How that was established is perhaps a little bit fuzzy. But it was a real threat and everybody in this country understood at the time that a trade agreement was a good idea. I will state that it worked; that predatory pricing did not occur. You will find Proton has been, and is today, very competitively priced in the marketplace.

Senator COCHRAN. So that leads me to the next question then. Has the purpose of the agreement in your judgement been satisfied?

Mr. TRAFTON. Absolutely. Yes, sir.

Senator COCHRAN. What is the purpose of continuing the trade agreement then?

Mr. TRAFTON. We see no purpose. We think, as I have stated, that the quota should be lifted in its entirety.

Senator COCHRAN. Under the terms of the agreement, how do you get out from under such an agreement? Do you just terminate it by mutual agreement between you and the Russian joint venturers?

Mr. TRAFTON. The trade agreement is due to expire December 31, 2000. It had built into it that if certain conditions were met the quota would be automatically increased. So from 1996 to 1998, if an average of 24 satellites per year were launched to GTO, that the quota would be increased from 16 to 18; and then from 1996 to 1999, if an average of 24 satellites per year were launched to GTO, it would be increased from 18 to 20. These were to be automatic increases. The U.S. Government has chosen not to implement these automatic increases. But what has happened is that the Launch Trade Agreement has become an instrument in addressing the issue of nonproliferation. We at ILS are being held hostage; the trade agreement is being used for a purpose other than the one for which it was implemented.

Senator COCHRAN. Have the joint venturers violated any terms of the agreement?

Mr. TRAFTON. Absolutely not.

Senator COCHRAN. Have you violated any terms of the agreement?

Mr. TRAFTON. No, sir.

Senator COCHRAN. It creates a cloud of uncertainty then, doesn't it, for our own government to come in and actually interfere with the automatic escalation of launch quota? Is that correct?

Mr. TRAFTON. That is correct. And what is happening is, even though the President increased the quota by 4, from 16 to 20, again which we very much appreciate, it is still impacting our business. Our customers cannot stand the uncertainty of whether they can get their satellites up when they need to. In fact, when we signed a contract in October 1997 for the last competitive Proton that we have sold, the customer demanded off-ramps because of the quota issue. We had never seen that before.

Senator COCHRAN. Demanded what?

Mr. TRAFTON. Off-ramps. These are contractual provisions. That if the quota impacted the customer's ability to get his satellite up, then he had the choice of going to another launch service.

Senator COCHRAN. That he could get out of the agreement without penalty?

Mr. TRAFTON. That's correct. And there is only one other launch service provider that can compete with Proton today, and that is the French Ariane.

Senator COCHRAN. OK. Then the central issue is in spite of the compliance by your joint venture partners in Russia with all the terms of the agreement and your compliance with the agreement—and the added thing I guess is has there been any proliferation conduct by the joint venturers that would justify this action by our government?

Mr. TRAFTON. Mr. Chairman, there has not been. Our partners are clean. And each time that the State Department issues a new list of companies that are going to be sanctioned, we go imme-

diately to our partners, we check to see if they are currently dealing with them, or if they have ever dealt with them in the past. In every case, the answer has been, no, they have not.

Senator COCHRAN. You mentioned that last week the President increased the quota from 16 to 20. Has that had any effect on the joint venture relationship? Has it improved it? Does it give you hope? Or is it a continuing problem even though he has lifted it from 16 to 20?

Mr. TRAFTON. Well, we have four more customers that are breathing a bit easier today. But it has not solved the problem. We still have two Protons under contract which fall outside of the quota, and we still have this issue of uncertainty. Additionally this sends a very inconsistent message to Russians across the board when we use a launch trade agreement for purposes for which it was not intended.

Senator COCHRAN. I understand the agreement is going to expire at the end of the year 2000.

Mr. TRAFTON. That is correct.

Senator COCHRAN. That seems like a fairly short period of time away, 17 months. Why can't you book launches after the expiration of this agreement?

Mr. TRAFTON. Again, we are aggressively pursuing customers; we have been, and continue to do so. But, again, the quota issue is generating uncertainty for customers that are wondering whether this quota business will continue beyond December 31, 2000. There is absolutely no assurance at this point that the State Department won't choose to continue to use this as leverage in the nonproliferation area.

Senator COCHRAN. Have you been able to book any launches at all since the quota became an issue?

Mr. TRAFTON. No, we have not. The last Proton that we sold competitively in the marketplace was in October 1997, and that is about the time when this quota issue bubbled up to the surface.

Senator COCHRAN. And do you attribute the failure to book launches as being attributable to the uncertainty over the quota issue? Is that your testimony?

Mr. TRAFTON. Yes, I do.

Senator COCHRAN. You said in your testimony also that Russian assistance to the Iranian ballistic missile program is a serious problem that our government must address. If the government doesn't use the leverage given them by this quota arrangement, what other leverage would you suggest it consider using that would encourage Russia to deal with proliferation problems more effectively?

Mr. TRAFTON. I would only ask that the U.S. Government follow a two-track policy—encourage and support the companies, the joint ventures that comply with nonproliferation, and punish the companies and joint ventures that do not comply. What is happening today is we are all being lumped together and we are all being shot together. We would only ask that the government go to a two-track policy.

Senator COCHRAN. There seem to be two issues here that you have identified. You mentioned the RD–180 engine issue. It is my understanding that Lockheed Martin is one of two companies in

the United States participating in the Defense Department's so-called Evolved Expendable Launch Vehicle (or EELV) program. Tell us about that program and why it is important to our Nation's defense and to the U.S. commercial space launch industry.

Mr. TRAFTON. We at Lockheed Martin believe that EELV is the future of the U.S. space launch industry. The Air Force has put in a half billion dollars and Lockheed Martin has put in one billion dollars to develop the new family of EELV vehicles, which we call Atlas 5. The RD–180 engine is the engine of choice for this vehicle, and you have heard me briefly describe that engine. It is a superior rocket propulsion system, reliable and cost-effective, and it contains technology that we in this country don't have and haven't developed. It is a very powerful engine and, again, it is our future.

Senator COCHRAN. Is it your judgment that you are better off purchasing this technology and this engine rather than developing your own heavy engine?

Mr. TRAFTON. Yes, Mr. Chairman, it is. We in this country haven't done well in rocket engine development. In contrast, over many years, the Russians have developed what we think is about 45 different rocket engines. In the last 25–30 years, the United States has developed just one rocket engine, the Space Shuttle main engine. The Russians are very far ahead of us in rocket engine technology, as demonstrated by the RD–180. This is not a paper engine. We have had it on a test stand at the Marshall Space Flight Center, and have almost 15,000 seconds of testing completed. The first RD–180 is in our first Atlas III–A rocket on a launch pad at the Cape in Florida, ready for launch as we speak.

The RD–180 is a wonderful engine. To illustrate: Today's Atlas 2 launch vehicle has nine engine staging events to get a satellite to Geo Transfer Orbit. The RD–180 takes us there with two staging events. We can install this engine in 6 hours, and test and check out the rocket in 12 days, a process that today can take us up to 80 days.

Senator COCHRAN. So what you are saying is that this would put us far ahead of where we are if we could buy this technology, buy this engine and use it in our launching capacity commercially and for——

Mr. TRAFTON. And for the U.S. Government.

Senator COCHRAN. For the U.S. Government. This is an Air Force program, is that right, that you would be participating in with this engine?

Mr. TRAFTON. Yes, that is correct.

Senator COCHRAN. Do you feel that you could compete in this program without acquiring this engine?

Mr. TRAFTON. No, I don't. I think—I will tie the two together. If the quota issue brings down the LKEI joint venture, it is my position that the RD–180 joint venture will fail as well. That will have a devastating impact on the EELV program and the future of the space launch business in this country.

Senator COCHRAN. Why are they tied together in your mind? Why is there a relationship between the quota issue and the ability of Lockheed Martin to participate competitively in the EELV program?

Mr. TRAFTON. It is an issue of whether we can be seen as a reliable partner. The Russians are very confused over the quota issue. They see the U.S. Government acting in a very inconsistent manner. I feel that if they see the U.S. Government let the LKEI joint venture come unravelled and fail, they will then have to ask themselves, why should we risk going down the same road with an RD–180 joint venture.

Senator COCHRAN. You have also had a payment to your contracting partner in Russia held up by the government, have you not?

Mr. TRAFTON. That is correct.

Senator COCHRAN. On a license application procedure. Tell us about that.

Mr. TRAFTON. The issue is a brokering license. Again, we don't understand the requirement for it but we certainly have complied. We wanted to make a $25 million advance to NPO Energomash on a $1 billion contract for 101 RD–180 engines. The purpose of the advance is to enable them to retool and modernize their plant by buying off-the-shelf machine gear, tools, etc., from Russian and European vendors. We want them to be able to produce 19 engines a year; currently, they can only produce 9.

Acting as a "middleman" between a customer and a provider, that is our definition of brokering. We don't see advancing $25 million on a $1 billion contract to help Energomash retool as a brokering activity. But the State Department said it is brokering and they wanted to see a license application. We immediately complied, by submitting in July 1998 a license application for a brokering license. We are not advancing the $25 million to NPO Energomash until we get the license. Today, 1 year later, we are still awaiting approval of this license.

Senator COCHRAN. And you entered into the arrangement to buy the engine, the RD–180 engine back when, 1996, was that the date?

Mr. TRAFTON. In 1996, yes, sir.

Senator COCHRAN. Well, let me ask you this, and I think you have fully explained what the relationship is in the RD–180 engine transaction. But let me just ask you what you expect to happen if this joint venture collapses under the weight of the quota issue. Would you be able to continue in the launch business, or will the Khrunichev and Energia be able to continue in the launch business with somebody else if the relationship with your company falls through? What do you expect to happen?

Mr. TRAFTON. I would expect Khrunichev and Energia to find another partner. The French have been aggressively pursuing Russian space entities looking for partnerships. I would expect that shortly after this joint venture failed you would see a joint venture between probably a French company and Khrunichev to market Proton worldwide.

Senator COCHRAN. That would not have any effect one way or the other on proliferation, would it?

Mr. TRAFTON. Well, I think it would. I think it would have a very negative effect.

Senator COCHRAN. But it wouldn't have a positive effect, though?

Mr. TRAFTON. It certainly wouldn't.

Senator COCHRAN. It wouldn't keep Russia from proliferating missile technology to Iran, for example.?

Mr. TRAFTON. We think that not all governments in the Western world are as concerned as we are about proliferation. I think that in a new joint venture with perhaps a European company you wouldn't see the Russians as concerned about proliferation as they are today. I think the fact they are in partnership with us is making them tow the line very carefully.

Senator COCHRAN. And then what would the impact of the loss of the relationship on the RD–180 transaction be, both to the Defense Department and to the commercial launch industry here in the United States?

Mr. TRAFTON. Well, we would have to drop out of the EELV program and we would not then be in a position to compete with Boeing for future U.S. Government launches. I think it would have a tremendous negative impact on the space launch business in this country. It would affect jobs, too. There are a lot of American jobs that aren't discussed when we talk about these joint ventures. A lot of folks are involved in these two programs.

Senator COCHRAN. Would it be accurate to say that the only beneficiaries of this result would be some foreign country getting the new engine that you are trying to buy, like France, and possibly the Iranian ballistic missile program standing to gain because of the lack of influence of the U.S. Government on these companies?

Mr. TRAFTON. That is a correct assessment, Mr. Chairman.

Senator COCHRAN. Mr. Trafton, I appreciate your testimony and your comments in answering our questions very much.

I am pleased to welcome my friend and colleague from Hawaii. I have no further questions of the witness, Senator, and I would turn to you if you have any questions of Mr. Trafton at this time. Or if you have any opening statement or comments you would like to make, you certainly are recognized for that purpose.

OPENING STATEMENT OF SENATOR AKAKA

Senator AKAKA. Thank you very much, Mr. Chairman. I regret that I am late in getting here.

Senator COCHRAN. There was a lot going on.

Senator AKAKA. Yes. I have a statement I would like to place in the record.

Senator COCHRAN. Please.

[The prepared statement of Senator Akaka follows:]

PREPARED OPENING STATEMENT OF SENATOR AKAKA

I join with the Chairman in welcoming the witnesses today to testify on commercial space launch quotas and Russia.

There are two important issues here. The first concerns commerce and the second concerns proliferation of weapons of mass destruction.

In terms of commerce, the United States has been eager to promote its commercial satellite industry while not jeopardizing the development of an American commercial satellite launch service. We turned to Russia because demand was greater than launch supply. The Russian capability to launch payloads has benefited our satellite industry.

This should be a model for Russian-American commercial cooperation: Building a future in which both sides benefit from each other's expertise.

At the same time, there has been a dark side to Russian-American cooperation.

Fears that Russian companies involved in the Russian space program have also been involved in assisting Iran develop a ballistic missile program have led to American economic sanctions being imposed on certain Russian companies.

In fairness, the two Russian companies involved with Lockheed-Martin in forming International Launch Services (ILS) have not been sanctioned for this type of activity. But the administration has hesitated to lift the quota on Russian satellite launches in an effort to persuade the Russians to take more seriously the issue of controlling dual use exports and other assistance to the Iranian missile program.

An unspoken goal of our trade agreement with Russia was to promote cooperative programs providing commercial opportunities for Russia's military-industrial complex. Russia would thus see its self-interest served better by working with the United States rather than cooperating with rogue states developing weapons of mass destruction. Our policy has been based on the view that carrots work better than sticks.

But there are limits to the use of carrots as we have seen elsewhere in the world. The most recent issue of *The Economist* editorializes that the lesson North Korea's leader seems to have learned "is that the worse he behaves, the more desperately outsiders will try to buy him off."

This is not a pattern we want to see repeated with Russia.

Unfortunately, there continues to be disturbing reports that Russian companies aid the Iranian missile program. Our efforts to convince the Russians to pursue alternative policies have only been partially successful.

At times it seems the only way to get the Russian bear's attention is to hit it *hard* over the head with the large stick of sanctions.

I hope this hearing will help clarify in which direction American policy should go in regard to continued cooperation with the Russian on commercial satellite launches. Our current trade agreement with Russia on launches ends next year. If we are to extend it, it should be in the context of benefiting our larger foreign policy goals.

Thank you Mr. Chairman and I welcome the witnesses.

Senator AKAKA. I have some questions here and I hope they were not asked earlier. If so, please inform me about it.

Mr. TRAFTON. Yes, sir.

Senator AKAKA. My first question is whether the commercial space launch quota has achieved its purpose. U.S. policy for the termination of the trade agreement quota system is based upon the premise that Russia would develop a market economy and thus compete fairly with American satellite launch providers. In Mr. Corcoran's, president and chief operating officer of Lockheed Martin Space and Strategic Missile Sector, written testimony of June 24, 1999, he stated: "The terms of the launch trade agreement have been fully complied with and the trade criteria for lifting the quota have been met." With regard to the trade agreement expiring on December 31, 2000, what is the administration's position toward extending or renegotiating a new trade agreement?

Mr. TRAFTON. Senator, I can't speak for the administration. We are hopeful that the trade agreement is permitted to expire without extension on December 31, 2000.

Senator AKAKA. To combat the loss of critical technology that occurred during the launches of U.S. satellites by Chinese launch providers the Cox Committee recommended establishment of a more robust domestic commercial satellite launch service industry. Congress has enacted legislation and is working actively on new legislation to aid U.S. industry in the development of domestic commercial satellite launch services. It is evident that Lockheed Martin, as part of a joint venture with a Russian launch provider, would benefit financially by raising the quotas. The question is, how do you see continuing cooperation with Russia as benefiting the development of our market and helping guard our national security interests in regard to satellite launch technology?

Mr. TRAFTON. We have proven, I think, since 1993 that Proton is a robust, reliable vehicle. It is well thought of in the industry and it is key to meeting current demands for putting satellites into Geo Transfer Orbit. It has been a very successful joint venture. We at Lockheed Martin have absolutely no evidence that our partners have done anything wrong with regard to proliferation. We think as we approach the next century in the space launch business that these two joint ventures with the Russians, the Proton and the RD–180, are key to bringing Russia into the $1 trillion global telecommunications industry. That is good for us, and it is good for the Russians. It keeps their engineers and scientists occupied doing good things for the industry and not proliferating. Frankly, it brings a source of revenue into this country as well. A lot of Americans benefit from the LKEI joint venture.

Senator AKAKA. It appears Lockheed Martin is heavily reliant on RD–180 as its booster rocket for the next generation of Atlas rockets. I understand that the RD–180 is a high performance booster and offers an increased capability for Lockheed Martin's space launch services. The question is, has the Russian Government or any Russian entities involved in business relationships with Lockheed Martin discussed the topic of tying continued cooperation with Lockheed Martin and use of the RD–180 to the United States lifting or removing the launch quota?

Mr. TRAFTON. Well, the Russians are watching the quota issue very closely. As I have stated earlier, they are confused by the inconsistency they see in U.S. Government policy with regard to applying a trade agreement to another issue called nonproliferation. We are relying very heavily on the RD–180. Frankly, we anticipate success with the quota issue and we are very hopeful that it will be resolved, and that on December 31, 2000, the trade agreement will be allowed to expire without extension. That is key to the continued success of the Proton side.

On the RD–180, again, now we are talking about transfer of technology into this country of significant, valuable technology that we don't have. The Russians don't have to do that. They are wondering why it is taking over a year for us to obtain a brokering license to advance them $25 million in order to make some very basic improvements to their factories.

Senator AKAKA. So what you are saying is this affects both Lockheed Martin and ILS if the launch quota agreement remains in place, that is, reviewed and renegotiated on a routine basis as was done in the past?

Mr. TRAFTON. I think it will eventually cause a failure of the joint venture. This continuous uncertainty will create risk in the marketplace that satellite end-users cannot and will not tolerate. They will go to other launch service providers. I have heard the words, and they are very appropriate, that "continuing the trade quota will eventually squeeze the life out of this joint venture." This joint venture will not survive.

Senator AKAKA. I thank you very much for your responses.

Thank you very much, Mr. Chairman.

Senator COCHRAN. Thank you, Senator.

Thank you, Mr. Trafton, for your cooperation with the Subcommittee and for your testimony.

Senator COCHRAN. We will now hear from our second panel of witnesses. Our second panel includes Catherine Novelli, Assistant U.S. Trade Representative for Europe and the Mediterranean; Walt Slocombe, Under Secretary for Policy of the Department of Defense; and John D. Holum, Senior Advisor for Arms Control and International Security at the Department of State.

We appreciate very sincerely the cooperation and attendance at the hearing of our witnesses in this panel. We have asked Ms. Novelli to lead off because the U.S. Trade Representative undertook the negotiation of this trade agreement which was described by our first witness.

So we ask Ms. Novelli to proceed. You may proceed in any way you think would be helpful to the Subcommittee. Thank you.

STATEMENT OF CATHERINE NOVELLI, ASSISTANT U.S. TRADE REPRESENTATIVE FOR EUROPE AND THE MEDITERRANEAN

Ms. NOVELLI. Thank you very much, Mr. Chairman, Senator Akaka. I will just give brief oral remarks and then take your questions however you would like to do that.

The first thing that I would like to say is that international commercial space launch market and the development of U.S.-Russia cooperation on commercial trade is a very important issue for the administration. We have pursued policies that are aimed at developing new, lower cost U.S. space launch capabilities and leveling the playing field in commercial space launch trade simultaneously.

Over the past decade, in particular, increasing commercial demand for launch services, added on top of the already existing government demand, has led to a marked increased in the number of launch vehicles needed to supply the space launch market. In that situation, U.S. launch vehicles have performed very well in recent years in terms of market share. Our vehicles accounted for 40 percent of the market for internationally competed commercial launches in 1997, and 44 percent of the market in 1998, which is the largest percentage of any one country. Launches, of course, are a means to an end of supporting a high technology, high value global satellite industry which U.S. firms traditionally have dominated. Satellite firms take in billions of dollars of revenue annually and employ tens of thousands of people in some of America's highest paid, most skilled jobs.

The end of the Cold War brought new opportunities for commercial partnerships between U.S. firms and economy in transition countries, like Russia and the Ukraine. One of the first of these opportunities was in the space launch area, where Lockheed Martin sought to form a joint venture with Russian rocket firms Khrunichev and Energia and created the venture now known as LKE. LKE's plan was to offer the highly reliable heavy lift Russian Proton vehicle for commercial launches. Simultaneously with that, the United States responded to the changing nature of the demand for space launch services where there was more demand now for commercial launches, and to the new opportunities that were created by these kinds of joint ventures by beginning negotiations on bilateral commercial space launch trade agreements with China, Russia, and then finally Ukraine.

In order to prevent the disruption that these economies in transition providers could produce in the commercial space launch market, the agreements were built around core provisions of a quota on the number of launches to Geosynchronous Earth Orbit, or GEO, and price baselines of 15 percent below Western price levels. So that if the price of an economy in transition launch fell below the 15 percent price benchmark, the United States had the right to hold immediate consultations with the government that was involved. All these agreements now offer economy in transition providers a potential or actual total of 20 launches to GEO. Launches to Low Earth Orbit, or LEO, are treated less specifically because of the still evolving nature of the demand for such launches.

We think that the agreement with Russia has in many ways operated satisfactorily with respect to GEO. I think there is no question that the LKE joint venture has prospered and moved its pricing levels rapidly up to Western market levels, and we don't foresee that there will be any disruption due to the LKE joint venture in the GEO market.

With respect to the LEO launches, however, the situation is not quite as clear. We have had some complaints from U.S. firms that have alleged that the Russian ex-ICBMs could represent a competitive threat to some U.S. small launch companies. There is scant evidence of market disruption because there is an uncertain situation in the LEO market right now. But we have told the Russians that we want to continue talking about these pricing issues, and they have agreed to do that.

Though the administration encourages innovative use of space for commercial purposes, we remain deeply committed to preventing the proliferation of technology which could help spread the use of weapons of mass destruction. I know that my colleagues from the State Department and the Defense Department are prepared to address the nexus between nonproliferation and our commercial space launch policy objectives.

One of the critical questions demanding attention as we contemplate the future of the commercial space launch agreement with Russia is the extent to which the continuance of our existing policies, and in particular the quotas, will impact the business prospects of U.S. space companies. USTR has been conducting active consultation with U.S. space firms. Most of the firms that we have talked to over the last couple of years support significant liberalization or elimination of the use of launch quotas as a tool for regulating the economy in transition market behavior. There are many firms who are concerned that maintaining a tight quota on Russian launches will jeopardize a number of the LKE's existing contracts, pushing those customers towards European or perhaps even Chinese rockets as the only available avenue to Geosynchronous Earth Orbit in the immediate future. In the longer term, U.S. satellite firms fear that unavailability of Proton rockets for U.S.-built satellites could give a competitive advantage to European satellite makers.

Just this month, as you know, the administration decided to modify the space launch agreement with Russia to allow four more opportunities to launch commercial payloads to GEO, bringing the GEO quota for Russia up to a total of 20 launches through the end

of 2000. This decision was made in part in response to the positive Russian moves in the proliferation area. Beyond this, the administration is actively examining all issues relating to the question of what U.S. policy should be once the commercial space launch agreement with Russia expires at the end of next year. As always, the impact of our commercial space policy on our proliferation objectives will be one of our key concerns.

For its part, USTR plans to continue its consultations with the private sector, with you in the Congress, and throughout the administration interagency in the coming months as it prepares recommendations on what the appropriate options should be. We look forward to working with you and the other Members of this Subcommittee, and we hope that we will be able to find the appropriate balance that ensures the future health and growth of the American space industry—launch providers, satellite producers, and providers of satellite base services—and also meets our overall national security, foreign policy, and economic interests. Thank you.

Senator COCHRAN. Thank you, Ms. Novelli.

I think we will go ahead and hear from the other members of the panel and then we will have an opportunity to ask questions of you as a group.

Secretary Slocombe, you may proceed.

STATEMENT OF HON. WALTER B. SLOCOMBE,[1] UNDER SECRETARY FOR POLICY, DEPARTMENT OF DEFENSE

Mr. SLOCOMBE. Thank you, Mr. Chairman. As always, it is an honor to appear before this committee, in this case to address the national security implications of the space launch policy issues that are the subject of the hearing this afternoon. You have my full statement and, with your permission, I will summarize it.

It is a pleasure to be here with representatives from the Department of State and USTR. As the Defense Department representatives, I will obviously focus on the national security aspects of these issues. But I think it is fair to say that, although all the Executive Branch agencies involved in formulating space launch policy approach the subject from somewhat different institutional viewpoints, we do agree that ultimately national security considerations have to take priority.

In order to protect the U.S. space launch industry initially from predatory pricing, the quota arrangements were negotiated to establish price discipline on launch providers in non-market economies. Those apply to Russia, China, and Ukraine. As I understand it, the Ukraine quota doesn't have much impact in the real world because of limits on capacity, and the issues having to do with Chinese satellite launches are, perhaps mercifully, not before us this afternoon. And so the issue is the Russian quota.

I have read prior testimony from Lockheed and other business representatives and listened carefully to Mr. Trafton's statement. I think we understand fully the position of Lockheed Martin, which I take to be broadly representative of the industry view, that the

[1] The prepared statement of Mr. Slocombe with an attachment appears in the Appendix on page 43.

concern about predatory pricing that was the initial reason for the quotas and the limitations on the number of launches no longer apply. That said, it is also clear that the arrangements have made possible a good cooperation and partnership between American industry and Russian firms and entities, and have made possible the entry in an orderly way of the Russian launches into the international market and have promoted responsible market conduct.

But the quota arrangements and, in general, the restriction on dealings in satellite launch technology also have a foreign policy dimension which goes beyond their economic purpose. The quota system continues to be an element in our nonproliferation goals. I want to emphasize it is far from being the only element. First of all, we have a comprehensive licensing system which would apply to all these transactions with or without a quota arrangement.

Second, there is a complex of Executive Orders and statutes which require that sanctions be imposed on Russian entities that are involved in improper transfers of technology to Iran or, indeed, to certain other countries of concern and we have invoked those provisions as appropriate. We have also made the issue of proliferation a major focus of all of our contacts with the Russian Government. It remains at the top of the U.S.-Russian agenda.

In December 1998, the administration affirmed that the United States would not increase the then current launch quota for Russia without improved efforts on the part of the Russian Government to halt missile proliferation, particularly to Iran. In pursuance of this policy, we imposed tough trade penalties against ten Russian entities with respect to which we had specific and credible information that they were transferring missile technology to Iran.

We continue to be concerned about the problem of transfers of missile technology from Russian entities to Iran. Our approach has yielded some success and has produced modifications in our policy. The steps the Russian Government have taken are represented by the new Stepashin government putting in place tough new nonproliferation policy, creating institutional foundations to implement that policy, and passing Russian domestic laws that punish wrongdoers. Those steps are specified in the full statement.

Given these developments, the President decided earlier this month to increase incrementally the quota to allow the launch of four additional U.S. satellites on Russian launchers through the LKEI arrangements beyond the 16 previously authorized. We are not, however, prepared at this point to dispense with the quota arrangements altogether. We are conscious of the need to balance our nonproliferation interest against the potential impact on U.S. space launches. We believe we have struck an appropriate balance by, in effect, keeping the launch quota well ahead of current contracts. However, I understand and respect the point that Lockheed Martin has made about the long term impact on their ability to negotiate future contracts, and we will bear that very much in mind as we consider both the specific policy with respect to quotas and the broader question of what to do as we look toward the expiration of the current agreement.

Now, turning to the RD–180, there is no question that the RD–180 engine is an important element of our domestic space launch policy. From the point of view of the Department of Defense, it is

extremely important to have a strong domestic space launch industry. That industry cannot continue to rely entirely on government launches. It is also for very standard competition reasons in our interest to have two potential U.S. suppliers engaged in the business. And two are engaged—Boeing, which has a developmental engine, and Lockheed Martin, which has the RD–180 arrangement. It is also a matter of very strongly held policy that U.S. Government launches should not be dependent on the continued willingness of any foreign supplier to supply the launch technology. Therefore, there is an important link between our domestic space launch industry and the RD–180 deal.

I have to say that I think the link between our current constraints on the number of launches, the quotas essentially, and the RD–180 deal is not a direct one. We don't dispute the concerns that Mr. Trafton raises, but the RD–180 deal and the space launch arrangements in Russia are quite separate arrangements, both as a business and as an economic proposition. Obviously, the quotas don't restrict the RD–180 purchase.

There is this brokerage license issue which is directly related to the transfer of the technology to allow the RD–180 to be manufactured in the United States. That license is currently under review at the Department of State and approval will depend on assessment of relevant nonproliferation considerations.

In sum, there is a complex relationship between our commercial space launch policy, the defense-industrial base, and the related issue of the domestic launch industry and U.S.-Russian engagement to try to deal with the proliferation problem. We believe that we have struck the right balance at this point between the legitimate needs of our domestic industries and our insistence on providing effective safeguards and using appropriate leverage to attempt to restrict the proliferation of sophisticated launch technology, particularly to Iran.

With that background, I look forward to answering the Subcommittee's questions.

Senator COCHRAN. Thank you very much, Secretary Slocombe.

Mr. Holum, you may proceed.

STATEMENT OF JOHN D. HOLUM,[1] SENIOR ADVISOR FOR ARMS CONTROL AND INTERNATIONAL SECURITY, DEPARTMENT OF STATE

Mr. HOLUM. Thank you, Mr. Chairman. It is a pleasure to be back before the Subcommittee. The quota for launches of satellites to geosynchronous orbit on Russian boosters raises complex issues that touch on our nonproliferation objectives, our space launch and satellite industries, and on the integration of Russia's space sector into the international economy. I welcome the opportunity to address these issues with you today.

The space launch quota was part of the solution to a nonproliferation problem we faced in the early 1990's. At that time, a Russian company had a contract to sell production technology for cryogenic rocket engines to India for a space launch vehicle. Trans-

[1] The prepared statement of Mr. Holum appears in the Appendix on page 80.

ferring missile technology to India was a sensitive nonproliferation issue then, as it remains today.

Following intense, high level negotiations, an agreement was reached in which Russia agreed to cancel the contract to transfer rocket engine production technology to India and to abide by the Missile Technology Control Regime guidelines, and the United States agreed to permit Russia to launch U.S. satellites to geosynchronous orbit, subject to a quota. That quota is now 16 through the year 2000, and the administration has decided, as you have heard, to increase the quota to 20.

At the time of the 1993 agreement, the purposes of the quota were to protect the U.S. space launch industry from unfair competition from a non-market economy as we worked to allow the U.S. satellite industry the benefits of access to Russian launches, and to give Russia access to the space launch market in return for important nonproliferation commitments. It also made sense from a nonproliferation point of view to engage thousands of high-tech scientists and engineers in legitimate commercial activity in one of the few areas in which Russia has world class technology. We made clear to the Russians at the time that the continuation of the space launch agreement was contingent on Russian missile nonproliferation behavior.

Today the market for space launch has grown substantially beyond what it was in 1994 and the commercial rationale for quotas is much less than it was then. But the nonproliferation problem is very much still with us, in particular, Russian transfers of missile technology to Iran, and I know I don't have to underscore the seriousness of that problem with you, Mr. Chairman, or Senator Akaka. We have devoted a great deal of effort over several years to halt cooperation between Russia's aerospace industry and the Iranian missile program. First, Frank Wisner, and now Bob Gallucci have led teams that have engaged in intensive exchanges with the director general of the Russian Space Agency, Mr. Koptev.

This issue remains at the top of the U.S.-Russian agenda, and our concerns have been addressed numerous times by President Clinton and President Yeltsin, most recently at the G–8 summit in Cologne last month. Vice President Gore has made this a major issue with a series of Russian prime ministers, including Mr. Stepashin, and plans to address the issue in their meetings next week. As part of the administration's effort on nonproliferation, Secretary Albright, National Security Advisor Berger, and other senior officials actively engage their Russian counterparts on the Iran missile program at every opportunity.

This intensive effort has achieved some important results, the most important of which is the passage of new export control legislation by the Duma and the Federation Council in the last few weeks. The new law provides a strong legal basis to stop transfers and punish violators. The Russian Government has also committed itself to implementation of a plan of action, drawn up by Gallucci and Koptev, designed to bring about an end to cooperation between Russian entities and the Iranian missile program.

A key element of our nonproliferation strategy was our decision in early 1998 to tie an increase in the space launch quota to Russian performance on curtailing missile cooperation with Iran, just

as we tied the original quota to Russian performance on missile cooperation with India. Our strategy includes other elements, including the trade penalties we have imposed on ten Russian entities for missile and nuclear cooperation with Iran.

We believe it is both logical and in our security interest to control Russian access to the U.S. space launch market as long as Russian aerospace companies are cooperating with the Iranian missile program, and to encourage commercial space ventures consistent with our nonproliferation objectives. By providing both incentives and penalty, our policy is intended to encourage the Russian Government to police the Russian aerospace industry. So here's the crux of the matter: We do not want to wind up with a situation in which some Russian companies are responsible and work with the United States and others remain free to contribute to Iran's missile effort. Again, our policy is aimed at the organization that can resolve this across the board, and that is the Russian Government.

Our decision to increase the space launch quota was taken not because the Russia-Iran missile problem has been solved, but because the Russian Government has taken steps in recent weeks to support a strong nonproliferation policy and direct government agencies to implement it, to create institutional structures to enforce compliance and strengthen export controls, and to pass laws needed to punish wrong-doers. But we need to sustain the pressure, to use these new tools to curtail technology transfers to Iran. That is why our increase is incremental, to give the Stepashin government time, perhaps another 6 months, to follow through on the commitments it has made to us.

We remain hopeful that our strategy will in the end give us both the nonproliferation benefits of a cutoff in assistance from Russian entities to the Iranian missile program and the commercial and nonproliferation benefits of a strong commercial partnership between the United States and Russian commercial space industries. There are, of course, risks. But we continue to pursue an outcome that achieves both of these benefits for the United States. Thank you, Mr. Chairman.

Senator COCHRAN. Thank you, Mr. Holum.

Ms. Novelli, the principal objective of the trade agreement, as I understand your testimony, was to ensure that Russian launches of payloads into GEO orbit were priced at the prevailing market rate, or within 15 percent of that rate. Has the launch agreement achieved that purpose?

Ms. NOVELLI. With respect to Russia, Mr. Chairman, we believe that the launch agreement is operating to achieve that purpose, and that LKE, because they are in a joint venture, has greatly helped that situation by having U.S. pricing methods laid on top of what the Russians would normally do. So, we do believe that that purpose is being achieved, which was one of the purposes of the agreement.

Senator COCHRAN. What were any of the other purposes that we don't know about? I thought that the purpose of the agreement was to guard against predatory pricing.

Ms. NOVELLI. Yes. Of just the NIRO agreement per se, yes. That was how we were trying to balance our own defense industry's launch capability with the needs of our satellite community from

a strictly commercial purpose. But the link with nonproliferation is part of the whole commercial space launch policy. But the provisions of the agreement per se were aimed at ensuring that there was not predatory pricing or detriment to our own domestic industry which was trying to launch satellites.

Senator COCHRAN. That was the principal objective, isn't that correct, of the agreement?

Ms. NOVELLI. Yes.

Senator COCHRAN. Mr. Holum, given that the principal objective of the agreement, as we have established, has been met, specifically that Russia has complied with the pricing condition in the agreement, what is the justification for continuing to impose quota restrictions on this commercial launch venture?

Mr. HOLUM. Well, as I said in my statement, we tied this agreement and our entire space launch policy in Russia to nonproliferation as well as to the commercial aspects. We made that clear at the time. And as Under Secretary Slocombe has noted, we have, irrespective of the quotas, a licensing requirement for commercial satellite launches in Iran that is obliged to take into account——

Senator COCHRAN. Not Iran, we don't do that.

Mr. HOLUM. I mean in Russia, a licensing requirement that is obliged to take into account nonproliferation concerns. The reason we have employed this in particular is that we need the incentives to flow to the right people in Russia to control exports of missile technology to Iran. The Russian Space Agency needs to be a believer. We have made de marches at all levels to the Space Agency and to other parts of the government and find that the effect of words, even at the highest levels, are insufficient. Costs to enterprises in the space sector in Russia get the attention of the Russian Space Agency, and therefore we have, as we have seen in recent weeks, begun to see some progress. I think there is a connection.

Senator COCHRAN. Is there a connection between a commitment by the new Russian prime minister to the lifting of the quota, was that the action that you are talking about, a verbal commitment that he would work more effectively to control proliferation to Iran?

Mr. HOLUM. Well, there are a series of tangible steps. One of the reasons why we have made this incremental is it is largely verbal at this stage and we want to make sure that it works. The tangible step that has been taken is the adoption, with strong support from the government, of the new export control law which includes criminal penalties for entities that make these transfers, including individual penalties.

Senator COCHRAN. Isn't it also true that neither one of these entities who are involved in the joint venture have been involved in any proliferation activity with respect to Iran's missile or weapons program?

Mr. HOLUM. That is, so far as we know, correct. We have made no suggestion that they have been involved. But my concern is that we don't want to set up a situation where some companies are free to trade with Iran and others aren't because the government is only regulating the ones that are dealing with the United States.

Senator COCHRAN. But neither Khrunichev nor Energia, as I understand it, is involved in proliferation. Therefore, why is the ad-

ministration singling out these companies to impose quotas on in their transaction with Lockheed Martin?

Mr. HOLUM. Because we want the government to take action. And the way to provide an incentive for the government to act across the board against all of the aerospace companies in Russia is to deny or limit the benefits of commercial space launches.

Senator COCHRAN. Does this not operate in your view as a disincentive for good behavior if you penalize companies that are not engaged in proliferation?

Mr. HOLUM. No, I don't think it does. First of all, we are doing this in a calibrated way. As of now, no agreed contracted space launch has been refused. But we do need to keep the leverage in place to encourage the government to adopt and implement the appropriate policies.

Senator COCHRAN. Aren't there actions that could be taken other than this? Is there no other leverage available to our government that would motivate Russia to do a better job of controlling proliferation?

Mr. HOLUM. Well, as I said in my statement, we are taking other actions. We have targeted the companies that are specifically involved that we have identified and have strong evidence with regard to with trade and administrative actions. We have, under the terms of last year's appropriation act, refused to certify Russia as being compliant with requirements on missile and nuclear proliferation and therefore have withheld or have had the effect of redirecting 50 percent of Freedom Support Act funds to Russia, redirecting those funds to other countries. So there are other areas where we are applying leverage.

But I continue to maintain that the most effective single element we have, our greatest ability to influence the Government of Russia to apply strict controls across the board on the aerospace industry, is the space launch quota.

Senator COCHRAN. Secretary Slocombe, do you view continuation of the Russian launch quota as the best nonproliferation tool available?

Mr. SLOCOMBE. I don't think it is the best but I do think it is, under present circumstances, a legitimate part of a range of instruments that we have to try to influence the actions of the Russian Government.

Senator COCHRAN. Mr. Trafton testified that the ability of Lockheed Martin to acquire the Russian RD–180 engine would become highly questionable if the LKEI joint venture collapses from the weight of the quota issue. He also said that Lockheed Martin couldn't compete in the Defense Department's Evolved Expendable Launch Vehicle program without this RD–180 engine. How important is this program to the Defense Department?

Mr. SLOCOMBE. It is very important to the Defense Department.

Senator COCHRAN. Is the RD–180 engine more capable and more advanced than any heavy lift engine produced in the United States?

Mr. SLOCOMBE. My understanding is that that is true as of now. Presumably the Boeing competitor would seek to meet that requirement as well. But certainly, as of now, that is the case, as I understand it.

Senator COCHRAN. What would be the impact to the Defense Department of losing Lockheed Martin participation in the EELV program?

Mr. SLOCOMBE. As I said in the statement, we believe it is advantageous from the point of view of the Department of Defense and the taxpayer that there be two competitive U.S. companies participating in the program. So, therefore, we would not want to see Lockheed Martin drop out of the EELV program. Another company might decide to come in, but we certainly would not like to see Lockheed Martin drop out.

Senator COCHRAN. Ms. Novelli, you heard the comment I think Mr. Trafton made in his statement or in answer to a question that I asked about one of the likely outcomes of the continuation of the quota system to be the gain of market share from U.S. industry by the French company Ariane space. How else would you expect the U.S. commercial space launch industry to be affected by the continued use of the quota as a nonproliferation tool?

Ms. NOVELLI. Mr. Chairman, I hope that we will be able to strike a balance so that we are not in a situation where there is any adverse effects on our commercial space launch capabilities or industries. I think that when we did these agreements and looked at the number of launches, and also with the EELV coming on line, we feel that we should be in a pretty good situation for meeting demands of our satellite industry and of U.S. launchers being able to launch satellites for the future. At this moment, in terms of demand, while it is true that there has been an increased demand for launches, there is not a situation right now where even the automatic triggers of the agreement are triggered for raising quotas. They are based on the number of commercial launches that are done worldwide, an average of those being 24, and we are not close to that average; we are only at an average of 21 right now.

Senator COCHRAN. What do you expect will happen when the agreement expires December 31, 2000? What do you expect will happen regarding Russian launches of U.S.-built satellites? Is there any authority to prohibit them, for example?

Ms. NOVELLI. In terms of what we think will happen, we recognize that we need to come up with a plan of how we are going to deal with this at the end of the year 2000, and that is why we have begun consulting with our industry and interagency to discuss what should be the next steps. So it is hard for me to say exactly what those will be since we haven't reached any decision yet.

Senator COCHRAN. Are you surprised to learn as a result of this hearing that this cloud of uncertainty that has been created by the quota imposition and the future of the quotas has so adversely affected the ability of this company to get any future business even beyond the expiration date of the agreement?

Ms. NOVELLI. I was aware that they were having trouble selling more launches because of the uncertainty regarding quotas. So it was not surprising.

Senator COCHRAN. Is it the policy of the U.S. Trade Representative of the United States to take actions or participate in the development of policy that makes it harder to do business by American companies with legitimate foreign businesses that are not engaged

in any kind of illegal conduct? How do you justify that as an agency of the U.S. Government?

Ms. NOVELLI. Obviously, it is not our policy to try to make it harder for companies to do business. We are one element in decision-making in the administration and there are, as my colleagues have said, many interests that the U.S. Government has, including nonproliferation interests, and those interests all have to be brought to bear in making any kind of decision on commercial space policy.

Senator COCHRAN. Secretary Slocombe, does working with Russian companies like Khrunichev and Energia make it less likely that they will engage in missile proliferation with Iran or other rogue states?

Mr. SLOCOMBE. I think it does, for two reasons. One is negative. That is, if they have a substantial commercial relationship with the United States, then the sanctions which would be imposed if they did engage in missile proliferation with Iran would have real bite to those companies as such. And second, there is an obvious affirmative advantage in providing legitimate work for Russian companies with technological expertise to allow them to work on these projects, rather than something illegitimate.

Senator COCHRAN. We have spent about $2 billion in U.S. taxpayer dollars for the Cooperative Threat Reduction program, the Nunn-Lugar program, or now, since Senator Nunn is no longer here, it is the Lugar-Nunn program.

Mr. SLOCOMBE. I thought that happened in 1994.

Senator COCHRAN. Well, it did. But some of this money is used to do exactly what we are seeing done by Lockheed in this joint venture, and that is to engage space and defense workers in Russia in legitimate economic activities that don't threaten the security interests of the United States. It seems to me that this sort of activity ought to be rewarded and not punished or penalized or made more difficult. Doesn't working with companies like this on this cooperative launch venture accomplish the same kinds of goals, and not at government expense, without the use of tax dollars?

Mr. SLOCOMBE. It does, there is no question about that. But that does not entirely answer the question of whether maintaining the quota system as one of our sources of incentives or disincentives is appropriate. But I agree, this is a creative program. It is the reason that we agreed to the agreement in 1993 when we did.

Senator COCHRAN. It is my understanding that many national security related problems have resulted from launching U.S.-built satellites in foreign countries such as China. Does the Defense Department regard the EELV program as one way to decrease reliance on foreign launch and thus more easily safeguard U.S. technology and control that technology to serve our security interests?

Mr. SLOCOMBE. First of all, from the point of view of the Department of Defense, we absolutely do not want to be in the position where the launch of military or other government payloads would depend on the continuing availability either of foreign launch services, in the sense that the launch took place in a foreign country, or of a foreign product, as will be the case for the initial RD–180 launches, imports from Russia or anywhere else. So it is extremely important from a Defense Department and the broader government

point of view that there be a domestic industry that is not dependent on foreign sources that can launch government payloads.

We also believe that given the changes in the market, that industry is not going to be viable if it is dependent entirely on U.S. Government launches. It needs to be able to compete and operate in the commercial market as well.

Senator COCHRAN. Mr. Holum, the Arms Export Control Act was amended in 1996 to add a munitions list licensing requirement for brokering activities. We heard Mr. Trafton talk about the fact that State Department interpreted this transaction between Lockheed Martin and Energomash as a brokering arrangement. He says it was like part of a transaction to buy the technology and buy the engine. That this $25 million payment is going to permit the company to upgrade and retool so that it can carry out the transaction. It is not a relationship between Lockheed Martin and some third party. How did the State Department come up with this interpretation that requires a separate license for that payment to be cleared? Isn't that a stretch?

Mr. HOLUM. I don't believe it is a stretch. But I will have to provide for the record a detailed description of the legal rationale.

[The information to be provided follows:]

BROKERING ACTIVITIES

Question: It is my understanding that this amendment was not intended to cover activities in the normal course of ventures already authorized by a Munitions List license, such as transferring funds between or among joint venture partners. Is that your understanding as well?

Answer: Yes. Payments made pursuant to the terms of contracts that have been fully disclosed in a munitions license application would rarely, if ever, require a separate brokering license. In formulating the regulations to implement the brokering amendment to the Arms Export Control Act (Public Law 104–164), the Department took great care to limit the impact on routine business operations. As an example, the requirement for prior approval (licenses) for brokering activities is satisfied under the ITAR by "a license or other written approval . . . for the permanent or temporary export or temporary import of the particular defense article, defense service, or technical data subject to prior approval under this section, provided the names of all brokers have been identified. . . ." (22 C.F.R. § 129.7(b)(1)).

Question: Can you explain, then, why the State Department has required Lockheed Martin to obtain a "brokering license" to pay the $25 million to Energomash, even though Energomash is Lockheed Martin's joint venture partner in the acquisition of the RD–180 engine, and that acquisition is properly licensed in and of itself?

Answer: Lockheed Martin is seeking authority to transfer $25 million in order to finance tooling and equipment (e.g., machine tools) purchases abroad for the modernization of Energomash's rocket engine production line in Khimki, Russia. This was not disclosed in Lockheed Martin's April 1996 munitions license application for the cooperative activities it is currently authorized to execute with Energomash. Therefore, this activity was never licensed in and of itself. In fact, the specific terms of Lockheed Martin's 1996 munitions license expressly prohibit ". . . any production process improvements; including any production line management process/techniques that result in production line efficiency improvements (i.e., greater throughput, higher yields, lower cost per unit, etc.)." The matter of a separate contractual commitment by Lockheed Martin to finance the modernization of the Khimki plant was not made know to the Department until 1998. It has only been in recent months that the Department has received from Lockheed Martin the names of the Russian and other foreign equipment providers from whom the tooling and equipment are to be purchased in order to modernize the Energomash plant. The Department believes that financing of improvements to foreign military infrastructure, such as rocket engine plants in Russia, is properly regulated through a requirement for a brokering license in accordance with section 38 of the Arms Export Control Act.

Among other things, section 38 of the AECA ensures that U.S. defense firms do not, unintentionally, provide financial support to foreign persons whose behavior may present proliferation concerns. As an example, in this case, Lockheed Martin has already been informed that one of its proposed equipment suppliers (Moscow Aviation Institute) may not be involved in this activity.

Senator COCHRAN. Well the purpose, as I understand it, just for the record, would be to help regulate activities that were not captured by the prohibition on importing or exporting defense articles and services without a license. My understanding is the amendment sought to ensure that the activities of international arms dealers acting as an intermediary between two parties would be covered by U.S. munitions list licensing requirements. I guess, to be on the safe side, that my understanding of the industry's statement is they asked the State Department if a license were required just to check, and the State Department says, well, as a matter of fact, yes, a license is required. They didn't think it was but they asked. And so they are complying with the interpretation by sitting and waiting, and they wait, and they continue to wait.

It is my understanding that this amendment was not intended to cover activities in the normal course of ventures already authorized. This transaction was already authorized by a munitions list license. That's the point. They applied for a license to engage in the transaction. That was granted. Now they make a payment under the agreement, they stop and say we better check and be sure this doesn't require a separate license, and they get back, oh, yes, it does. It is an almost Kafkaesque experience. That is my reaction to it anyway. I may be totally wrong.

But you are going to supply an answer and an explanation for that for the record.

Mr. HOLUM. Yes. I will supply a more detailed answer.

Senator COCHRAN. How many brokering licenses, while you're at it, have been applied for, and how long did it take to grant them?

Mr. HOLUM. I can provide that. I don't know the answer.

[The information to be provided follows:]

BROKERING ACTIVITIES

Question: How many brokering licenses have been applied for and how long did it take to grant them?

Answer: Since enactment of the brokering amendment to the Arms Export Control Act (Public Law 104–164), there have been 329 requests for brokering licenses or for advisory opinions as to whether a brokering license would be required. The time required for approval has ranged from a few days to 180 days for more complex proposals.

Senator COCHRAN. And what criteria are being used by the State Department to determine whether a brokering license is required or not in the payment for services or in payment under an agreement which has already been licensed?

Mr. HOLUM. I will supply that.

[The information to be provided follows:]

BROKERING ACTIVITIES

Question: What criteria are being used to determine whether a brokering license is required or not?

Answer: The criteria for when a brokering license is required are set forth in considerable detail in the International Traffic in Arms Regulations at § 129. generally, only brokering activities pertaining to certain defense articles involving countries other than members of the North Atlantic Treaty Organization, Japan, Australia

and New Zealand, require a separate license. That is because the Department specifically sought to avoid unnecessary regulation of routine business transactions involving U.S. friends and allies when the underlying transactions were already properly disclosed and approved. Accordingly, the regulations provide a variety of ways by which the requirements of the law may be satisfied without need for a separate brokering license.

Senator COCHRAN. Senator Akaka.

Senator AKAKA. Thank you very much, Mr. Chairman. I want at this time to thank you for holding this hearing on the Russian space launch quota, which has implications for commerce in our country and proliferation of weapons of mass destruction. I will be very brief.

Mr. Slocombe, did the threat in December 1998 to increase the launch quota have a major effect on having the Russians take their recent actions in export controls?

Mr. SLOCOMBE. Senator Akaka, I would associate myself with what Secretary-designate Holum said, which is that I believe the quota is a way, in effect, of getting the attention of the authorities in Russia who are responsible for the overall Russian space effort directed to this problem that we are so concerned with. So I think it did have a favorable effect.

Senator AKAKA. Mr. Holum, on January 28, 1998, the United States sanctioned seven of the Russian entities believed to have assisted Iran's missile program. About a year later, on January 12, 1999, the Clinton Administration announced economic sanctions against three more Russian entities for sharing nuclear missile technology with Iran. Has the Russian Government taken any action against these entities? And if so, what actions have they taken?

Mr. HOLUM. They have taken action to the extent of commencing their own investigation with reference to these various entities. Eight of them were engaged, by our information, in missile cooperation, and two in nuclear. But the Russian Government has been investigating those cases and made a public announcement to that effect.

Senator AKAKA. Mr. Chairman, those are my brief questions. Thank you very much. Thank you for the responses.

Senator COCHRAN. Thank you very much, Senator.

Senator Cleland, one of the very important Members of this Subcommittee, we welcome you and recognize you for any comments or questions you might have.

OPENING STATEMENT OF SENATOR CLELAND

Senator CLELAND. Thank you very much, Mr. Chairman. Thank you for our distinguished panelists today.

I tell you, it has been fascinating the last 2½ years to sit here in this Subcommittee that deals with proliferation issues and also the Postal Service. I came in here 1 day not knowing whether I was dealing with nuclear proliferation and found that the Postal Service was here, and I told them that when they tried to shut down the post office in my home town, then that was nuclear proliferation. [Laughter.]

Senator CLELAND. But it does seem to me that in terms of space launch or satellite launch capacity, when we tried to broadside, particularly through the Hughes experience, and I guess it was

Loral, too, that we had some problems with the Chinese, that this seems a little bit different here. It does seem that Lockheed has got a good argument here. I kind of feel like I echo the sentiments of Mr. Trafton that this is not only of critical importance to Lockheed and international economic viability, but their ability to provide the space launch services to the commercial satellite market. I think U.S. national security interests are at stake, too. But I think they are, quite frankly, enhanced by the Lockheed venture with its Russian partners.

I just have a couple of questions.

Mr. Slocombe, it seems to me that it is in the best interest of the Pentagon and our national security to have a U.S.-based company such as Lockheed in a partnership with the Russian launch industry as opposed to maybe a French company in such a partnership. Is that your feeling?

Mr. SLOCOMBE. It is. And it is the reason that the Department of Defense supported the 1993 arrangement and continues to support it.

Senator CLELAND. Is the Pentagon gaining any insight into the Russian aerospace industry through these joint ventures, especially with what I am told is the RD–180 engine joint venture in which technology flows from Russia into the United States? Are we gaining in this arrangement?

Mr. SLOCOMBE. This is an interesting example of a reverse technology transfer. For the reasons that Mr. Trafton explained, which I think correspond to the analysis of our experts, the RD–180 engine is a unique capability in terms of what is presently available in the world, and the access to that capacity is important to the domestic launch industry for supporting both military and other government and commercial launches in the United States.

Senator CLELAND. Yes, sir, I think so and I agree with that point of view.

Another point I would like to just mention, I guess it is sensitive too, since I sit in Senator Nunn's former seat, I am not sure I am up to that task, but it did seem like it was in the national security interest for the Lugar-Nunn legislation to go through. I think it has been very successful. It is interesting, I understand Lockheed Martin's joint venture in Russia actually employs about 100,000 Russian scientists, technicians, and engineers. What do you believe would be the consequences for these workers should the United States not end the quota? Would there be a risk that some of those people would not be employed and might be courted by rogue nations such as Iran, Iraq, and North Korea, and actually enhance the chances for proliferation of nuclear technology?

Mr. SLOCOMBE. We certainly see advantages to having the Russian scientists, engineers, and technical people employed on legitimate activities. They are now employed under the quota system and I wouldn't necessarily agree with the proposition that simply continuing the quota system would mean that they would go off and do other work. But one of the reasons why we have supported these arrangements is exactly the point you make, that it is very much in our interest that the Russian space industry work on legitimate activities, preferably in partnership with Western, and

particularly American, organizations, rather than go do things that would cause us very serious proliferation problems.

Senator CLELAND. If these positives that we just talked about are there, what is the rationale for the quota system? I am not sure I am clear on that. Ms. Novelli, would you like to try to take a stab at that? What is the rationale, the justification for quotas being established? Why not lift the quotas and magnify some of the pluses we discussed here?

Ms. NOVELLI. Well, the agreements, when they were first negotiated, were negotiated in a very different commercial environment, Senator, and they were negotiated in an environment where we had many more providers of commercial launch services and where the commercial space launch portion of the industry hadn't really taken off. So there was less demand and more supply and there were these new suppliers who wanted to come into the market. So there was a fear that because they were coming in as non-market economies at the time that they would be able to not only price very low because they didn't have to meet normal pricing, but also that they would create a glut of supply on the market and depress prices as well. So that is why the quotas were establish, to provide an ability for these countries to actually play in the market but not kill off our own domestic launchers. When they were established we were just in a different situation.

The situation has changed. The agreements are due to expire, the Russian one at the end of 2000, Ukraine and China at the end of 2001. That is why we are examining right now what should our next steps be in light of all of our concerns, including the fact that the market has changed dramatically.

Senator CLELAND. Yes. It does seem to me that every American now wants to go into their own internet company and have their own satellite. My understanding is that there is much more demand out there now for commercial satellites.

Ms. NOVELLI. Yes.

Senator CLELAND. I sit on the Telecommunications Subcommittee of the Commerce Committee and the whole telecommunications world is exploding. It seems to me it would be in our interest as a Nation to have some capability here, especially with an American company like Lockheed partnering with the Russians, and it would be in our interest to take a new look at this when this expires. Do you see that, with seeing the market change and that now there is more demand than I think supply, that it would be in our interest to maybe think of a new arrangement where there might not be a quota with the Russians in this particular arrangement?

Ms. NOVELLI. Mr. Senator, our national space policy contemplated the fact that we were going to have to basically rethink what we were going to do when these agreements expired and set forth the fact that we were going to have to have some sort of transition policy so that we would be able to deal with the fact that the market is changing. That is why we are currently beginning discussions of how we are going to deal with this change and balance all of our other priorities that we have.

Senator CLELAND. Mr. Holum, any comment on some of the things we've been talking about here—changing markets, shifting

from the original agreement? Does that bring forth to your mind a need to look at some of these arrangements anew?

Mr. HOLUM. Well, we'll certainly look at it again, we will be obliged to when the agreement expires. But let me underscore that we have two goals here. One which we all support, the administration strongly supports, is this space launch cooperation with Russia and with these particular companies. We have supported it, we think it is good, we think it should continue. At the same time, we have got a deep concern about the spread from Russia of missile technology to Iran, not by these companies but by other companies in Russia.

We need to figure out a way to have leverage over the Russian Government to induce it, to give it incentives to strengthen export controls, to lay down the law, to police the entire industry, all of the companies that have this technology to transfer. Sanctions generally are a blunt instrument; they are difficult to deal with, they are inherently hard to calibrate. You either have blow-back on our interests, if they are effective, because they are usually involving trade with the United States, or they don't have any effect on the target because there is no meaningful trade there. But sanctions are an indispensable part of our nonproliferation strategy internationally. They are not the only tool we use. We use a whole range of things, including positive incentives. But sanctions are a crucial part of what we need to do.

In this case, I think the sanctions are appropriately directed to get the attention of the people who administer, who have responsibility over the entire Russian space industry. What we are trying to do is reward positive progress on proliferation behavior, and there has been some lately, by increasing the quota, by allowing it to go up, but to not throw away the leverage because we want to make sure that those promised steps are fully implemented, the export control plans in the companies, the implementation action plan that they have agreed to but haven't yet implemented. So we have got a 6-month breathing space now by raising the quota to see if those commitments are in fact carried out. And if they are, then we will have a more positive environment. So it is a balancing act that we are trying to maintain, with full support, with a strong belief in what Lockheed and their partners are engaged in here, but also with a strong commitment to have an impact on our nonproliferation objective.

Senator CLELAND. So this is caught up in the sanctions, the whole relationship with Russia and the proliferation policy over the technology leaking out to other rogue nations. Did I hear you say that there was a 6 month——

Mr. HOLUM. Well, we have raised the quota from 16 to 20, and our anticipation is that that will take launches through roughly a 6-month time period. There won't be any inhibition or prevention of launches during that period and that will be some time for the Russian commitments recently made and the new export control law recently enacted to be fully implemented.

Senator CLELAND. So there might be some hope if we get some positive response from the Russians that we might be able to do better with the quota after 6 months?

Mr. HOLUM. I certainly hope so. It is not my objective to infer with this business, but it is my objective, it is our objective as an administration to do all we reasonably can to cut off this deadly cooperation in missile technology between Russian entities and Iran. And we don't have a lot of opportunities to apply leverage.

Senator CLELAND. And this is somewhat the carrot I guess.

Mr. HOLUM. Precisely.

Senator CLELAND. I think this is a fascinating subject, Mr. Chairman, and I appreciate your holding this hearing and I appreciate our panelists being here and engaging this quite impressive conversation. I think it is in our Nation's interest to make sure that we do all we can with our Russian partners along these lines. Thank you very much.

Senator COCHRAN. Thank you, Senator, for your contribution to the hearing. We appreciate it.

We thank the witnesses for testifying today. There are very few issues our government must contend with that are more important than how our government can effectively act to halt missile and missile technology transfers from Russia to Iran. I am convinced that among all who are involved, Congress, the administration, and U.S. industry, we can all agree that the U.S. Government must try its best to persuade the Russian Government to do a far better job of stopping the assistance that continues to flow from Russia to Iran's ballistic missile program.

But I think today's hearing makes clear there is a major disagreement within our government over how we can best persuade the Russian Government to act. If there is sufficient evidence to impose sanctions on Lockheed Martin's joint venture partners, sanctions should be imposed. What the administration is doing, however, is imposing sanctions through the use of the commercial space launch quota contrary to the trade agreement's principal objective.

The administration may mean well, but here are the real effects of the administration's approach:

First, Russian companies not engaged in proliferation are being punished for proliferation while other entities we know are involved in proliferation are not punished.

Second, a legitimate, mutually beneficial U.S.-Russian joint venture could be driven out of business. If it collapses under the weight of these quotas, an American company will end up penalized and the Russian companies will obtain other partners, most likely from France. The leverage the administration says it needs to pressure Russia will disappear.

And third, the United States likely will lose the opportunity to acquire the world's best heavy rocket engine, the RD–180, along with related technology only the Russians have. Loss of the RD–180 will harm the Defense Department's Evolved Expendable Launch Vehicle program and America's commercial space launch industry. The RD–180 will be sold probably to some other foreign customer, and only the United States will lose in that event.

I urge the administration to reconsider its policy.

The hearing is adjourned.

[Whereupon, at 3:45 p.m., the Subcommittee was adjourned, to reconvene at the call of the Chair.]

APPENDIX

TESTIMONY OF
WILL TRAFTON
PRESIDENT, INTERNATIONAL LAUNCH SERVICES
PRESIDENT, LOCKHEED KHRUNICHEV ENERGIA INTERNATIONAL, INC.
BEFORE THE
SUBCOMMITTEE ON INTERNATIONAL SECURITY, PROLIFERATION AND FEDERAL SERVICES OF THE SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS
ON
QUOTA BASED TRADE AGREEMENTS AS AN INSTRUMENT OF COMMERCIAL SPACE LAUNCH TRADE POLICY BETWEEN THE UNITED STATES AND RUSSIA

JULY 21, 1999

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to testify before you today on the utility of the administration's reliance on a quota-based trade agreement as an instrument of commercial space launch trade policy between the United States and Russia. This issue is critical to our international economic competitiveness and our ability to provide space launch services to the robust commercial satellite market. Mr. Chairman, let me begin by expressing our deep appreciation for your leadership and support in addressing this important issue, culminating today with this hearing. The progress that we have made thus far is due, in no small measure, to your efforts to advance US policy objectives for cooperative threat reduction and economic competitiveness.

In my remarks, I would like to talk about International Launch Services (ILS) and, in particular, the arm of ILS -- the Lockheed Khrunichev Energia International (LKEI) joint venture -- that supplies commercial Proton launches to international satellite operators and service providers. I will also tell you what I believe will happen to this venture if it continues to be restricted by quota-based trade agreements or "held hostage" to proliferation concerns and the potential adverse impact on another very important US-Russian joint venture that will co-produce in the US the world's best rocket engine—the Russian RD-180. Lastly, I would like to offer our recommendation for addressing these issues.

International Launch Services was established in 1995, upon the merger of the Lockheed and Martin Marietta companies, to market Atlas and Proton commercial launch services in the world wide satellite telecommunications marketplace. Lockheed and Martin Marietta, prior to the merger, were each individually competing in the commercial launch service market with their Proton and Atlas launch vehicles respectively. Lockheed entered the launch market in 1993 with the establishment of the Lockheed Khrunichev

Energia International (LKEI) joint venture to exclusively market the Russian Proton launch vehicle. Similarly, Martin Marietta had entered the commercial launch market with the purchase of the General Dynamics Space Systems Division and its Commercial Launch Services subsidiary (now LMCLS) which marketed the Atlas launch vehicle. Both LKEI and LMCLS are within the ILS structure, and serve as the contracting entities for executing Proton and Atlas launch service contracts.

ILS, headquartered in San Diego, California, is a commercial company servicing a broad range of both domestic and global satellite operators and manufacturers, as well as the US government. Today, ILS has a backlog of $3.5B representing launch contracts for 23 Atlas vehicles and 19 Proton vehicles. This is comparable to Ariane, which reports a backlog of 42 satellites at this time. To date, Atlas and Proton have flown 68 launches commercially, with the largest component being 52 Atlas launches. The Atlas began flying commercially in 1990 following the change in National Space Policy to require all commercial satellites to fly on expendable launch vehicles after the *Challenger* disaster. Sixteen commercial Proton flights have been conducted since Proton entered the western market, 12 of which have been under the auspices of ILS. Three Iridium satellites and the INMARSAT 3 were contracted directly with Khrunichev prior to the establishment of the LKEI joint venture. The LKEI Proton program has already provided over $1.5B of revenue to our Russian business partners, which is forecasted to grow to nearly $2B by 2003. A significant number of Russian engineers, scientists, and technicians -- some 100,000 -- are gainfully employed as a result of this very successful joint venture.

The demand for launch services has experienced significant growth since the early 1990's and remains very robust. In fact, this market far exceeds the anticipated demand for launch services when the trade quota was initially established. The worldwide launch revenue in 1998 was slightly over $2B, however, it is important to note that these space transportation services enabled a global telecommunications market that was estimated to have revenues of approximately $1 trillion in 1998, and a satellite market having revenues of $27B. Satellites requiring launch into Geostationary Transfer Orbits have represented the majority of the launch demand until only recently. The total number of commercial GTO satellites placed into orbit has grown from 8 in 1989 to 23 in 1998.

The emergence of the new Low Earth Orbit (LEO) telecommunications constellations utilizing medium-to-heavy lift launch vehicles began with the initial deployment of Iridium satellites in 1997. The LEO market is projected to require an average of 15 medium-to-heavy launchers and 11 small-to-medium launchers over the next ten years, essentially doubling the overall demand for launch services. Because both GTO launch requirements and LEO deployments favor the use of medium-to-heavy launch vehicles, the same launch assets and launch capacity are required to support the two market segments. The 1999 COMSTAC and FAA forecasts indicate the total demand for launches will continue into the next decade at an average annual rate of 51 per year. While the new entrants in the launch market may cause supply to eventually exceed demand, the availability of Proton is critical to the interests of a large customer

base in the near future as GTO growth continues and the initial LEO constellations are deployed.

With its proven reliability and value, the Proton performance level has begun to emerge as a "sweet spot" in the market. Satellite operators and manufacturers have designed their systems to make full use of the Proton's performance, which can only be matched by the French Ariane. Although the next generation of US launchers is expected to meet and perhaps exceed Proton's capability, the current generation of US launchers falls short of Proton's 4,500kg performance level. In fact, the evolutionary Proton M/Breeze M will increase the Proton performance to 5,500kg at least one year before the next generation Atlas and Delta launch vehicles are available. Consequently, those customers who have already contracted for Proton launch services must turn to Ariane in the event the Proton is not available in the market due to quota restrictions.

The background and history of the US – Russia Launch Trade Agreement is important to understanding why we believe the quota has served its purpose and should be lifted in its entirety. The US – Russia Launch Trade Agreement was signed in September, 1993, "to facilitate early Russian entry into the international commercial space launch market in a manner that encourages market-oriented reform in the Russian economy, including its space launch sector; permits Russian entities to offer commercial space launch services to international customers at fair and reasonable prices, consistent with market principles; and does not disrupt the international market for commercial space launch services." Essentially, the quota was designed to protect the US launch industry from non-market economy entrants gaining significant market share at prices significantly below those of Western launchers.

This agreement allowed for the launch of 8 Western GTO satellites, including INMARSAT 3, which was contracted outside the auspices of ILS. The agreement stipulates holding regular annual consultations to review and examine its implementation and to review market developments in commercial space. If the market develops more favorably than anticipated, the parties may increase the quantitative limit by amending the agreement. In 1996, the agreement was in fact amended and a total of 16 launches to GTO or GEO orbits was agreed upon.

The amended agreement also included a provision for automatic increases of 2 launches if the market sustained an average of 24 GTO satellites launched over 1996-1998 time period, and another 2 increase if the average of 24 was sustained through 1999. As of mid-July this year, we are pleased that the Administration has decided to increase the quota by 4 additional Proton launches, for a total of 20. This is a significant step and will enable ILS to meet our 1999 launch commitments.

To date ILS has launched 12 GTO satellites including Inmarsat. We have nineteen additional launches under contract, of which 7 are non-GTO launches, and therefore, unaffected by the quota issue. ILS has 12 contractual commitments to provide GTO launches. Of these, 8 are still covered by the quota and 4 are potentially outside the

quota. As our manifest currently stands, there are customers with launch commitments in the year 2000 who would not be covered by the quota, even at 20. We risk losing those customers, most likely to Ariane. In addition, as long as the quota remains in place, ILS has been unsuccessful in selling additional GTO launches on Proton. As a result, the quota continues to seriously affect our ability to compete in the international launch market today.

It is also important to understand the broader context of the commercial space industry and I would like to highlight some of the key aspects of this international market. The major players are the satellite manufacturers, the launch service providers, and the customers – satellite operators, service providers, PTTs (government-owned Post, Telegraph & Telecommunications providers). The customers provide telephone and paging services, carry voice, fax and data traffic, communicate radio and television signals, and so on. A customer wants to place a particular satellite at a particular orbit at a particular time. The customer hires satellite manufacturers and launch service providers to perform that mission. To the customer, time is money -- the services of a single satellite may generate hundreds of millions of dollars in annual revenues to the customer. Uncertainty over whether or not the satellite will appear at the right orbit at the right time jeopardizes both the revenue stream and the substantial investment behind it.

For these reasons, the customer cannot tolerate substantial delays and uncertainty. The use of quota restrictions on launch services leaves the customer uncertain as to when or if a launch will occur. Our marketing teams from ILS and Lockheed Martin Commercial Satellite Systems report conversations with a major European customer that has in the past bought US-built satellites for launch on the Proton vehicle, but is now forced to consider alternatives. The principal beneficiaries of a decision not to "buy American" will be European satellite manufacturers and the French Ariane launch provider.

This demonstrates that the United States has no monopoly in the global market for either satellites or launchers.

It has taken nearly fifteen years to recover from the effects of the *Challenger* disaster on America's ability to launch commercial payloads to space. We have risen to the challenge with grit, determination, and a major investment of resources. Nevertheless, foreign competition has come on strong, and is still growing. The European Ariane launch vehicle, which operates at capacity without any US-imposed trade constraints, has been the international market leader for commercial GEO/GTO satellite since 1986, with a 50-60% market share until this year, when US launch providers led the field for the first time (albeit by the slimmest of margins). Competition also has intensified with China's introduction of the Long March 3B, and the Ariane 5. Japan is still working to bring down the cost of the H-II launch system and its eventual emergence will further fuel competition.

Along the way, we have risen to other challenges. First, defense and civil space budgets have been declining and the demand for government launches has diminished accordingly. The government no longer can be counted on to the extent it once was to act as the core -- let alone sole -- customer. Industry no longer can look to government to shoulder the entire burden of non-recurring investment in technological development or infrastructure. These developments have forced American launch providers to pursue commercial customers to survive, an effort the US government has actively supported since the price it pays for a launch is largely dependent on the extent to which industry can spread its costs across production lines for both government and commercial customers.

Second, the break-up of the Soviet Union created the potential for former Soviet space launch vehicles either to flood the marketplace at prices that could undermine American launch providers' competitiveness, or to become a major national security threat should Former Soviet Union (FSU) republics, now independent countries, sell missiles or related technologies to third countries for use in their ballistic missile programs.

Faced with the end of the Cold War and the break-up of the Soviet Union, both the Bush and Clinton Administrations, as well as the Congress, fully recognized new threats associated with the proliferation of nuclear, chemical, and biological weapons and the means to deliver them. In response, both Administrations adopted a vigorous policy of opposing such dangerous transfers, while promoting cooperative programs that would provide commercial opportunities for Russia's vast military industrial potential, so that Moscow would see its self-interest best served by cooperating with the United States rather than with rogue states. The cooperation between the United States and Russia on commercial space ventures is particularly noteworthy. In several ventures, Russian technology is being exported to American partners.

The United States has opposed dangerous transfers through a variety of means, including direct diplomatic engagement with Russia and other nations, and through the use of export controls and interdiction of illicit commerce where possible. We have promoted cooperative programs through such efforts as the establishment of the International Science and Technology Center, through which Russian weapons scientists and engineers are supported in redirecting their talents toward peaceful endeavors.

Turning to commercial space, we have encouraged industry-to-industry partnerships in US-Russian commercial space business ventures – like Lockheed-Khrunichev-Energia International (LKEI). These partnerships engage thousands of highly-skilled Russian aerospace engineers and scientists in commercial pursuits, thereby fulfilling cooperative threat reduction objectives. Because this is being done on a company-to-company basis, there is no expenditure of public funds and the opportunities to effect real change in the way business is carried out in Russia -- to establish greater accountability and adherence to export control regimes -- are significant. In the case of LKEI, Khrunichev and its subcontractors employ thousands in the production and launch

of the Proton, which generates economic activity supporting one million Russians. Moreover, Khrunichev has instituted a rigorous program of export controls and is fully integrated into the ILS-LKEI market-oriented approach to the marketing and supply of commercial Proton launch services.

US-Russian commercial space cooperation not only benefits the Russian economy, but it also has promoted US interests. US military superiority, and therefore our national security, depends upon our dominance of space. US partnership with Russia -- like the LKEI business which offers one of the world's most powerful launch capabilities available today -- has contributed to our competitiveness in the international marketplace. Particularly as the Pentagon turns more and more to commercial suppliers of space technology and services, it is critical that we keep America's launch and satellite industries strong.

We have survived the end of the *Challenger* era, the end of the Cold War, and the threat of unfair competition from the FSU. However, I respectfully submit, it is less clear that we will be able to survive our own policies.

Let me explain. In the case of Russia, I believe that the two-track non-proliferation strategy the United States has pursued -- vigorously opposing Russian entities that proliferate, while promoting commercial engagement with compliant Russian entities to provide incentives for them to refrain from proliferating or doing business with proliferators -- is fundamentally sound. Last summer, and earlier this year, the United States imposed sanctions against Russian entities found to be assisting others in the development of ballistic missile capabilities. At the same time, to the best of our knowledge, the Russian entities that are participating with Lockheed Martin in commercial space ventures are not engaged in any proscribed activity. It is therefore critical that we keep the incentives to comply properly aligned.

That is why I am troubled by the current situation in which the two tracks are tangled up with one another. Specifically, the effective extension of US economic sanctions from Russian entities that *are* engaged in illicit commerce to those that are *not*, by blocking the latter from conducting commercial launches of commercial satellites, is a serious mistake.

There are two reasons why this is so. First, from a nonproliferation perspective, a policy of "shooting the hostages" will either be counterproductive, ineffective, or both. Second, such a policy will also damage long-term American interests.

From a nonproliferation perspective, the original premise of US policy -- that it is in our national interest to provide peaceful civil and commercial avenues for Russian military capabilities -- remains valid. To the degree that we close off those avenues, we risk a counterproductive result: driving our would-be Russian partners straight into the arms of whatever rogue state will pay the freight for buying Russian missile technologies, equipment and know-how. Beyond its purely financial dimension, such an approach

would reinforce those within the Russian Federation who believe that Moscow's long-term strategic interest is better served not through partnership with the United States, but rather through leveraging their nation's diminishing economic and military strength through assistance to rogue nations and America's rivals. This could better position Russia to act as a potential spoiler in relation to US interests, thereby enhancing Russia's ability to seek to extract concessions on critical issues.

In the short run, if the United States blocks access to Russian launchers, customers for launch services -- satellite builders and satellite telecommunications and information services providers -- can and will go to Europe to buy another ride to space. Moreover, the Russian companies involved in these ventures with US industry may find the lure of other partners irresistible. If that happens, any US "leverage" will evaporate. Since no other nation has export controls as strict as the United States, Russia would face fewer nonproliferation constraints let alone incentives to refrain from proliferation in any such transactions. In the long run, launch services customers may very well invest in European and other launch systems in order to assure their access to space, further diminishing US ability to exert meaningful leverage through coercive use of launch quotas. And the business base for the US satellite industry -- which has long been the undisputed leader in cutting-edge space-based information and communications technology -- may erode as customers turn to our European and other foreign competitors that are not limited in their access to the full range of launch capability available in the marketplace.

This prospect leads directly to my second concern. Denying Russian entities not involved in proliferation activity the opportunity to provide commercial space launch services will damage US interests in the long-term. Such a policy sends a signal not just to Russia, but to the world. It tells every nation, every telecommunications company, and every satellite services provider, that *the United States is an unreliable partner in commercial space business ventures.* The long-term strategic damage this could inflict on our country cannot be overstated. As I stated earlier, American leadership in space is vital to this nation's economic future and, more importantly, to our ability to prevail in any future military conflict. In the current defense budget climate, preserving that leadership depends on a robust commercial space industry. Actions that tell customers of US goods and services to shop elsewhere if they need a predictable, transparent environment in which to conduct their business play right into the hands of our already formidable foreign competitors.

This policy -- of restricting compliant Russian launch suppliers from commercial satellite launch opportunities -- also calls into question for key market participants the commitment of the US to execute the agreed-upon terms of its bilateral launch trade agreements. LKEI has facilitated the smooth transition of Proton vehicles into the market, ensured market pricing for commercial Proton launch services and accomplished the transition of our Russian partners to market-oriented, commercial business practices. Moreover, market demand is robust and far exceeds the forecasts on the basis of which the quota was put in place in 1993 and amended in 1996. Yet, despite the fact that the

terms of the launch trade agreement have been fully complied with and the trade criteria for lifting the quota have been met -- and, further, despite the fact that our Russian partners are not engaged in proliferation -- the quota continues, albeit at a new ceiling of 20 launches. Mr. Chairman, this is a good first step toward the elimination of the quota. It demonstrates that the Administration recognizes the importance of this venture and that its near term viability is dependent on the continued availability of Proton launch services.

But the fact remains that the quota should be lifted entirely. As long as the quota exists, there will continue to be uncertainty as to the long term viability of this joint venture. Therefore, it will be necessary to increase the number of allowed launches before the expiration of the Launch Trade Agreement at the end of next year. In holding the quota hostage to the proliferation issue, under these circumstances, US credibility to make and keep its trade-related commitments may be seriously compromised. If Proton is not allowed to enter into a free and open trade environment, not only will this be ignoring requirements outlined in our country's National Space Policy, our space industrial base could be threatened along with Russia's economic stability.

Should this occur, the principal beneficiary would be the French Ariane program, currently the only launch system capable of taking the heavier payloads to GTO orbits. The US would lose market share in the highly competitive international launch market; it would lose the positive non-proliferation incentives the LKEI venture provides to Russia; and the RD-180 engine program could be adversely impacted.

This Russian engine, the best rocket engine in the world, is currently available to Lockheed Martin in the US through a United Technologies/Pratt & Whitney and NPO Energomash joint venture, RD-AMROSS, that was established in 1997. This joint venture has two key components: RD-180 engines built in Russia, that will power our new commercial Atlas vehicles, the Lockheed Martin Atlas III and Atlas V, and through a co-production arrangement, the RD-180 engine for the Lockheed Martin EELV launch system, the Atlas V, will be produced in the United States and will power the next-generation launch system for US government payloads. The reliability and consistency of the US as a partner in joint ventures with Russia is critical to their success.

In conclusion, Mr. Chairman, I believe that -- in the specific instance of the Proton space launch quota we need a more reasoned, deliberative process to increase the chances that U.S. policies will achieve their desired results. Removing the quota on commercial Proton launch services now and preserving the LKEI venture, will yield significant economic and national security benefits to the United States.

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Wilbur C. Trafton
President

99 AUG -6 AM 9:

August 2, 1999

The Honorable Thad Cochran
Chairman
Subcommittee on International Security,
Proliferation, and Federal Services
Governmental Affairs Committee
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

I would like to thank you for the opportunity to testify before the Senate Subcommittee on International Security, Proliferation, and Federal Services on the Russian space launch quota. We at ILS and Lockheed Martin appreciate your leadership on these matters that are critical to the continuing success of this US-Russian commercial joint venture and to the nation's objectives for cooperative threat reduction and international economic competitiveness. I would like to request that my comments be included in the Hearing record.

The Administration's decision to increase the quota by 4 launches is an excellent first step. However, it is critically important to lift the quota entirely in order to preserve the LKE joint venture, which as I have testified, serves as an excellent mechanism to protect our national security interests.

For the record, I would like to address and clarify several issues that were discussed by the other witnesses during the hearing.

1. ILS and Lockheed Martin reaffirm that the market conditions necessary for enabling an automatic increase in the quota, in fact, have been met. The robustness of the space launch industry is ultimately measured by the number of satellites launched to orbit in any given year. In this regard, it must be noted that the Ariane vehicle can launch payloads in a dual mode. The numbers of GTO satellites placed into orbit in 1996, 1997 and 1998 were 26, 28, and 23 respectively with an average of 25.6 over the period. This exceeds the quota trigger of 24. In fact, the average could have been higher if not for significant satellite quality problems and delivery delays in 1998.

2. Since the quota was initially raised as an issue by our customers in 1997, Ariane has signed 28 commercial launch contracts. Of these, ILS participated in 6 competitions directly bidding Proton against Ariane. The results of these competitions were: 1 Proton win and 5 Proton losses.

3. ILS is certainly pursuing launch opportunities beyond 2000, when the current quota is set to expire. However, the general uncertainty in the market because of the quota, and the fact that the US government is using the quota as leverage in nonproliferation policy, creates enormous concern for our customers. The customer's view is that there is risk as to the future availability of Proton and therefore it renders Proton as less competitive in the market, even for launches beyond the year 2000.

4. A point of clarification on the RD-180 engine – current US engines on Atlas (MA5) take 80 days to install, test and check out. This is with our experience of 43 launches. The first RD-180 only required 6 hours to install, 12 days to test and check out on the first flight article.

Again, I greatly appreciate your leadership in examining the impact of the US-Russian Launch Trade Agreement on our national security and economic competitiveness, and I look forward to continuing the dialogue.

Sincerely,

Wilbur C. Trafton

Testimony of Walter B. Slocombe
Before the Senate Committee on Governmental Operations
Subcommittee on International Security, Proliferation,
and Federal Services
on
SPACE LAUNCH QUOTA ISSUES
July 21, 1999

Let me begin by thanking the Sub-committee for this opportunity to address U.S. commercial space launch policy. I will focus on the national security considerations that guide our policy. The Executive Branch agencies involved in formulating space launch policy approach the subject from different institutional viewpoints, but we have been united in developing a balanced policy that seeks to foster a domestic space launch vehicle industry that is modern, reliable, and cost-effective. Our approach also recognizes that in this area national security considerations must ultimately take priority.

We are still working to recover from mistaken assumptions that were made two decades ago about space launch technology. At that time, it was assumed that the space shuttle would provide a reliable, low-cost alternative to expendable rockets. As a result, expendable launch technology was neglected. When it became clear that the space shuttle would not be able to fill this need, the United States began to develop an expendable launch vehicle program.

Bilateral Agreements for Commercial Space Launch Services:

As U.S. commercial space-launch began in the late 1980's, U.S. companies had concerns about competition from countries with non-market economies that could subsidize launch costs. In order to protect the U.S space

launch industry from predatory pricing, the U.S. Trade Representative negotiated trade agreements that featured quotas and price discipline on launch providers in non-market economies. These negotiations were conducted in tandem with efforts to address non-proliferation concerns and have resulted in agreements with Russia, China, and Ukraine. Last year, these three countries accounted for 28 percent of worldwide commercial launches. All three agreements allocate a specific number of launches for U.S. commercial satellites into geosynchronous orbits from the three respective countries. The agreements require launch prices to be within 15% of those offered for equivalent launch services in market economies. The quotas have on occasion been adjusted based on world launch requirements. The three agreements include the following elements:

- **Russia**- The 1993 U.S.-Russia Space Launch Agreement (amended in 1996) sets a limit of 16 launches through 2000. Twelve of the sixteen launches have occurred on PROTON launch vehicles (built by Khrunichev and Energia) with the remaining four scheduled for launch by early 2000. The 1993 agreement was negotiated in parallel with the resolution of Russian missile technology transfers to India and was linked to Russian control of missile technology exports.

- **China**- A 1995 agreement (a follow-on to the original 1989 agreement) authorized 15 launches through 2001 of which six have occurred. Each requires a presidential waiver of sanctions imposed after the Tienanmen Square massacre to proceed.

- **Ukraine-** A 1996 accord authorized 16 launches through 2001. The joint venture "Sea-Launch" project plans on slowly building up to six launches per year rate over the next three years, which would be in no danger of exceeding the quota.

Non-Proliferation Objectives:

In addition to whatever economic basis these quotas may have had as a way of pressing the launch industries in these countries to adhere to market standards, the quotas continue to pay dividends in meeting our non-proliferation goals. The United States Government continues to expand efforts to respond to this serious problem, and this issue remains at the top of the U.S.-Russia agenda. In December 1998, the Administration affirmed that the United States would not increase the current launch quota for Russia without improved efforts to halt missile proliferation, in order to demonstrate to Russia our serious proliferation concerns. We realized this action would put at risk additional contracts for U.S. commercial payloads requiring launches in excess of the current quota. We had to strike a balance between the desire of U.S. commercial satellite builder to unlimited access to foreign space launch capabilities and our determination to halt dangerous proliferation activities.

This action was, of course, only one part of a much broader effort to discourage missile technology transfer to Iran. We have used the President's authority under an executive order aimed at curbing the proliferation of weapons of mass destruction and their delivery systems in order to impose tough trade penalties against ten Russian entities for transferring missile technology to Iran. We have worked to convince the Russian government to help in this effort.

Presidents Clinton and Yeltsin established a high-level forum to exchange information about suspected proliferation activities and to intervene when violations occur. Currently Ambassador Robert Gallucci represents the United States in this forum.

We continue to be concerned about transfers of missile technology from Russian entities to Iran, but our approach also has yielded some success. In recent weeks, the Stepashin government has put in place a tough new nonproliferation policy, created institutional foundations to implement that policy, and passed laws to punish wrongdoers. Key steps include:

- Pushing new export control legislation through the Duma and Federation Council. The legislation tightens Russia's control over sensitive technologies, and provides for criminal penalties against violators.

- Directing Russian agencies to implement a work plan designed in cooperation with the U.S. and aimed at a number of our most pressing concerns.

- Working with U.S. experts to strengthen export control systems at Russian aerospace companies.

Given these developments, the President decided on July 13, to increase incrementally the quota to allow the launch of four additional U.S. satellites beyond the 16 previously authorized. We are not prepared at this point to dispense with the quota altogether. While we have assurances from the new

Stepashin government that it will continue efforts to stem proliferation, we want to see sustained progress before further relaxing constraints on commercial space launch activity.

The Department of Defense depends heavily on space assets; however, the U.S. military is no longer the dominant customer for space launch services. A domestic launch service industry is an essential defense capability, and must be preserved. Today, we are dependent on a robust space launch provider network that maintains its skills through successful participation in competitive commercial markets. For example, there is a significant demand for launches to geosynchronous orbit. Trade journals estimate that the European Space Agency (ESA) and its ARIANE launcher has been the international market leader since 1986 and, in some years, has captured over 50% of this market. Furthermore, the ESA has an ambitious program to significantly reduce launcher costs in order to maintain or even increase this market share. We are conscious of the risk that the injudicious use of quotas poses to U.S. space launch industry, but we believe we have struck an appropriate balance.

Obtaining Advanced Space Launch Technology:

In response to the President's National Space Transportation Policy, which articulated a need for a modern, reliable, and cheaper launch vehicle, the United States Air Force has developed the Evolved Expendable Launch Vehicle (EELV). Originally, the EELV program was conceived to have only one contractor produce one space launch system for both commercial and national security launches. As it became clear that the commercial market was expanding enough to support two contractors, the U.S. Air Force, in November

1997, restructured the acquisition strategy by adding a second contractor to the program. Between August 1998 and May 1999 a string of space launch failures led to a back up in our launch schedules. This caused the Administration to request a report from the Secretary of Defense on the failures, their causes, and corrective action to assure our access to space.

Given both the current situation of a string of launch failures and launcher shortages, we are even more persuaded of the need for two viable contractors and launch systems. With the current EELV program plan of two continuously competing contractors, we have a guarantee that we will not be constrained with the liability of a "single path to space" in the future. We envision national security payloads will constitute only one-third of the EELV launches, hence the need for a more commercial approach to DoD participation in space launch vehicle development. An additional benefit of the EELV program is that the availability of competitive U.S. launch providers will reduce the need to launch U.S. payloads on foreign launchers with its attendant export licensing reviews and technology transfer safeguarding processes.

Given this need to work closely with the commercial sector, we crafted a partnering arrangement with two contractor teams, led respectively by Boeing and Lockheed-Martin, that will develop a national launch capability that satisfies government and commercial medium and heavy launch requirements. The Air Force has invested $1 billion in this program, which has been matched by each of the contractors. Having two robust contractor teams in constant competition for the life of the program will allow us to eventually replace the current DELTA, ATLAS, and TITAN space launch vehicles with flexible systems that are more reliable and cheaper to operate.

Let me say a few words about the approaches the contractors are taking. The Air Force has set a program goal of 98% launch reliability, as well as a 25% reduction from current levels in launcher costs. The Air Force also requires standardized payload and launch pad configurations that will allow the same launcher to be used for both commercial and national security payloads.

Boeing will develop a Delta IV family of launchers around a common core booster, which will be powered by a new Boeing/Rocketdyne liquid hydrogen-liquid oxygen RS-68 engine. This 650,000 lb. thrust engine is the first new liquid propulsion engine developed in the U.S. since Rocketdyne developed the space shuttle engine in the early 1970's. While we currently have no reason to think it will not be successful it is, nonetheless, still in the developmental stage.

Lockheed-Martin also proposes a family of launchers built around a common core, which will be powered by the Energomash RD-180 liquid oxygen-kerosene engine. This 860,000 lb. thrust engine is derived from the RD-170 engine currently used in the Russian/Ukrainian Zenit launcher. The RD-180 is the world's highest specific thrust liquid oxygen/kerosene engine. It is reliable, demonstrated, and currently ready for its first launch of a commercial payload in a Lockheed-Martin ATLAS III. It provides the Lockheed-Martin team with credible competition to the Boeing team. The Lockheed-Martin/ Energomash team's agreement provides not only for the purchase of the RD-180 engine produced in Russia, but also for the creation of a RD-180 production line in the United States.

Production of the RD-180 in the U.S. is important because of the long-standing DoD policy that launch vehicles used for national security missions cannot be dependant on foreign suppliers. Propulsion systems for these missions must be converted to U.S. production within four years of a contract award for engineering development so that access to space cannot be compromised. Since the RD-180 development contract was awarded in October 1998, our goal is to see coproduction established by 2002. In the interim, while this production technology is being transferred to the U.S., Lockheed-Martin will continue to receive deliveries on its agreement to buy 101 fully assembled RD-180 engines from Energomash.

Lockheed-Martin's engine production technology acquisition is an important component of our goal of achieving a robust, redundant assured capability for national security missions. Failing to obtain RD-180 production technology from Russia would leave the Lockheed-Martin team dependent on engines built in Russia for the life of the program. Additionally, failure to obtain the RD-180 production technology would jeopardize the currently successful, competitive strategy developed by the USAF and could put us back into the situation, for national security payloads, of a "single access to space" with its inherent risks. Having said that, before a license for such an acquisition can be approved, the Administration will continue to ensure that our acquisition of this technology stays in line with our non-proliferation goals.

I have been asked to address the impact of the launch quotas on the ability of the United States to obtain advanced space launch technology, such as the RD-180 engine, from Russia. The link between our current constraints on the number of U.S.-owned, geosynchronous satellites launched on Russian systems

and Lockheed-Martin's acquisition of RD-180 production technology is minimal. The quotas do not restrict the RD-180 purchase. The license for future cooperation on the RD-180 purchase is currently under review and approval will depend on an assessment of relevant non-proliferation considerations.

Cooperative Threat Reduction:

The subcommittee also asked me to address the impact of not lifting the current quota on both cooperative threat reduction activities and related U.S. commercial launch ventures that help transition Russian aerospace entities to market-oriented and export compliant business. Our activities under the Nunn-Lugar initiated programs, commonly referred to as Cooperative Threat Reduction, do not involve any space launch activities. However, one of our goals under cooperative threat reduction is to reduce the risk of proliferation. Clearly if our commercial space activities with Russia were to collapse, thousands of high-tech engineers and scientists would go unemployed, increasing their susceptibility to the lure of rogue states.

Since we are considering business decisions, it is somewhat speculative for me to predict what will happen if the launch quotas are not removed. Presumably, some other launch provider, perhaps the European Space Agency or China, could pick up the contracts if the U.S. quotas were not lifted. It is also possible Krunichev and Energia would just change to a different joint partnership and maintain their overall launch business without Lockheed-Martin.

We would prefer not to see this outcome. As I mentioned earlier, we want to see U.S. launch providers continue to develop their launch capabilities. Both the ILS joint venture and Lockheed-Martin's partnership with Energomash have been productive. Just last week Lockheed-Martin announced a contract to launch 288 satellites on PROTON and EELV boosters. This is the kind of effort that keeps 5000 Russian missile and engine specialists at Energomash employed and engaged with Western business partners, moving Russian industry to self-sufficient commercial ventures.

In sum, there is a complex policy relationship between commercial space launch trade, the defense industrial base, and U.S. Government engagement with Russian aerospace entities. We believe we have struck the right balance at this point between the needs of our indigenous launch industry and our insistence on providing effective safeguards to prevent the proliferation of sophisticated launch technology. I am happy to address any additional questions.

AUTHENTICATED TEXT AS SIGNED SEPTEMBER 2, 1993

AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE RUSSIAN FEDERATION REGARDING INTERNATIONAL TRADE IN COMMERCIAL SPACE LAUNCH SERVICES

The Government of the United States of America and the Government of the Russian Federation (hereinafter the "Parties"),

Recalling the contributions of all space-faring nations in developing space launch industries,

Taking note of the importance of access to space for peaceful purposes,

Recognizing the utility of developing multilateral principles for government involvement in commercial space launch activities,

Bearing in mind that the Russian space launch sector is in the process of transition to operation based on market principles, and

Desiring to facilitate early Russian entry into the international commercial space launch market in a manner that encourages market-oriented reform in the Russian economy, including its space-launch sector; permits Russian entities to offer commercial space launch services to international customers at fair and reasonable prices, consistent with market principles; and does not disrupt the international market for commercial space launch services,

Have agreed as follows:

ARTICLE I

DEFINITIONS

For the purposes of this Agreement,

1. "Commercial space launch services" means the commercially offered or provided services to launch into space any spacecraft or satellite, including but not limited to communications satellites, for an international customer;

2. "Russian space launch service providers" means any entity, or agent or instrumentality acting on its behalf, permitted by the Government of the Russian Federation to provide commercial space launch services or the space launch vehicles for such services.

3. "International customer" means: any person; or any kind of corporation, company, association, venture, partnership, or other entity, whether or not organized for pecuniary gain, or privately or governmentally owned or controlled; or any governmental body, excluding the Government of the United States of America and the Government of the Russian Federation; or any intergovernmental organization or quasi-governmental consortium, including but not limited to INTELSAT, INMARSAT and their respective legal successors, that is the ultimate owner or operator of a spacecraft or satellite or that will deliver the spacecraft or satellite to orbit for use by such ultimate owner or operator.

4. "Contract" means (i) to agree or commit to the provision of commercial space launch services such that a launch

is effectively removed from competition in the international market, or (ii) any such agreement or commitment.

5. "Comparable commercial space launch services" means commercial space launch services offered to launch a spacecraft of the weight class that is the subject of a launch competition, taking into consideration specific factors that may be considered when evaluating the price, terms and conditions of such services, including, but not limited to, intended orbit, risk management, financing, satellite lifetime on orbit and integration costs.

6. "Inducements" means any incentive offered or provided to influence the purchase of commercial space launch services, including, but not limited to, the provision of any resources of commercial value unrelated to the launch service competition as well as offers to participate under favorable conditions in the implementation of defense and national security policies and programs, and development assistance policies and programs.

7. "Unfair business practices" includes the making of any offer, a payment, a promise to pay, a promise or offer of anything of value or to authorize the payment of anything of value, or any promise to make such payment, to any official, individual, or any other entity for the purpose of obtaining or retaining business for or with, or directing business to, any person; including making payment to a person while knowing that all or a portion of the payment will be offered, given or promised, directly or indirectly, to any official, individual or

any other entity for the purposes of obtaining or retaining business.

8. "Geosynchronous earth orbit" means an orbit approximately 19,400 nautical miles (35,900 kilometers) above the surface of the earth at the equator in which a payload completes one Earth orbit in a 24-hour period, holding a fixed position relative to the Earth.

9. "Geosynchronous transfer orbit" means a temporary orbit used to reposition a spacecraft or satellite into a geosynchronous Earth orbit.

10. "Low earth orbit" means an orbit approximately 100 to 1,000 nautical miles (185 to 1,850 kilometers) above the surface of the Earth.

11. "Principal payload" means a telecommunications satellite or, in the absence of a telecommunications satellite, any other spacecraft or combination of spacecraft.

ARTICLE II

SCOPE

This Agreement applies to commercial space launch services for launches to geosynchronous earth orbit or geosynchronous transfer orbit. Except for the pricing provision set forth in Article V, paragraph 2, this Agreement applies to commercial space launch services for launches to other orbits and suborbital launches. Nothing in this Agreement applies to launches of payloads for military purposes or for use in the non-commercial,

civilian space programs of either Party, including programs using spacecraft or satellites made by and primarily for the use of members of the Commonwealth of Independent States and which are executed in accordance with existing cooperative agreements.

ARTICLE III

GENERAL PRINCIPLES

1. The Parties shall endeavor to ensure the application of market principles to international competition among providers of commercial space launch services, including the avoidance of below-cost pricing and unfair trade practices.

2. Neither Party shall engage in practices that distort competition among providers of commercial space launch services, including, but not limited to:

a. the provision of grants or subsidies that distort the production or operation costs for suppliers of commercial space launch systems;

b. the provision of inducements to international customers or potential international customers for commercial space launch services;

c. the offering of additional services such as insurance or reflight guarantees except on a par with prevailing rates and practices in international markets for comparable risk;

d. the provision of government-supported financing for commercial space launch vehicles or services except in accord

with the terms of the OECD's "Arrangement on Guidelines for Officially-Supported Export Credits."

3. The Parties, including their agents and instrumentalities, shall not engage in unfair business practices to secure contracts to provide commercial space launch services. Each Party shall also endeavor to ensure that any entity or organization, subject to its jurisdiction whether or not owned or controlled by that Party, shall not engage in corrupt business practices to secure contracts to provide commercial space launch services.

ARTICLE IV

QUANTITATIVE LIMITS

1. During the term of this Agreement, Russian space launch service providers may contract with international customers to provide commercial space launch services for the launch of up to eight (8) principal payloads (in addition to the INMARSAT 3 satellite) to geosynchronous earth orbit or geosynchronous transfer orbit, except that the Russian space launch service providers may not conduct more than two (2) such launches in any twelve-month period. The Russian Federation will ensure a proportionate distribution of contracts by Russian space launch service providers within any two-year period.

2. Up to four launches of principal payloads to geosynchronous earth orbit or geosynchronous transfer orbit may consist of two principal payloads on a single launch vehicle.

The Parties shall jointly evaluate each such launch on a case-by-case basis and, taking into account the current situation in the international commercial space launch market, may decide by mutual agreement to treat that launch as a single principal payload for the purpose of Article IV, paragraph 1.

3. During the term of this Agreement, Russian space launch service providers may contract to provide commercial space launch services for up to three (3) launches of satellites to low earth orbit for the Iridium system.

4. In the course of consultations under Article VII, paragraph 1, the Parties shall consider jointly on a case-by-case basis and decide by mutual agreement on proposals by Russian space launch service providers for commercial suborbital launches and additional commercial launches to orbits other than geosynchronous earth orbit, geosynchronous transfer orbit, and low-earth orbit for the Iridium system, where there are competing comparable commercial space launch services.

ARTICLE V

PRICING

1. The contractual terms and conditions, including the price, of commercial space launch services offered or provided by Russian space launch service providers to international customers shall be comparable to the terms and conditions, including prices, for comparable commercial space launch services offered

by commercial space launch services providers from market economy countries, including the United States.

2. A bid or offer by Russian space launch service providers to provide commercial space launch services at a price more than seven and one-half (7.5) percent below the lowest bid or offer by a commercial space launch service provider from a market economy country, including the United States, shall require special consultations between the Parties under Article VII, paragraph 2, of this Agreement.

ARTICLE VI

TECHNOLOGY CONTROLS

Notwithstanding any other provision of this Agreement, the Parties shall negotiate and conclude prior to each launch a satisfactory technology safeguards agreement for each payload subject to a United States export license. Such technology safeguards agreement will be intended to facilitate the issuance of United States export licenses and shall include requirements relating to the control of the transfer of missile technology.

2. Any application for a United States export license will be reviewed on a case-by-case basis consistent with United States laws and regulations. Nothing in this Agreement shall be construed to mean that the United States is constrained from taking appropriate action with respect to any United States export license. The United States will use its best efforts to assure, consistent with United States laws and regulations,

authorization and completion of technology transfers subject to this Agreement.

ARTICLE VII

CONSULTATIONS

1. The Parties shall hold regular consultations on an annual basis to review and examine implementation of the Agreement and market developments in commercial space launch services.

2. The Parties shall hold special consultations on an urgent basis, prior to the conclusion of a contract for commercial space launch services if possible, at the request of either Party, if that Party has reason to believe that such contract or pending contract is inconsistent with the terms of this Agreement.

3. If, after consultations provided for under this Article, either Party determines that the provisions of this Agreement have been violated by the other Party, each Party reserves its right to take any action permitted under its national laws and regulations.

4. If, in the course of the annual reviews provided in paragraph 1 of this Article, the Parties agree that the market for commercial space launch services has developed more favorably than anticipated and if each Party is satisfied with the other Party's compliance with terms of this Agreement, the quotas set

forth in Article IV of this Agreement may be increased, by written agreement of the Parties.

ARTICLE VIII

INFORMATION EXCHANGE

1. The Parties shall exchange all information, including prices, terms and conditions offered for commercial space launch services, that is necessary to monitor implementation of the Agreement and carry out regular and special consultations. Such information shall be provided promptly, in any case no later than 30 days after receipt of a request by the other Party for such information, except that such information need not be provided prior to bids for commercial space launch services.

2. Parties shall protect the confidentiality of information exchanged, shall not use any such information for pecuniary gain and shall not release such information to third parties.

ARTICLE IX

TERM AND REVIEW

1. This Agreement shall enter into force upon signature and remain in force until December 31, 2000.

2. The Parties shall review the implementation of this Agreement after three years from its entry into force. Following such review, the Parties may, by mutual written agreement, terminate this Agreement.

3. Either Party may request negotiations to amend the terms of this Agreement to take account of developments in the international market for commercial space launch services and progress in the transition of Russia's space launch sector to a market basis.

4. Any contract entered into pursuant to this Agreement will continue to be subject to the provisions of this Agreement even if the duration of the contract extends beyond the expiration date of this Agreement. Termination of this Agreement will not affect contracts entered into pursuant to this Agreement.

DONE at Washington this second day of September, 1993, in duplicate in the English and Russian languages, both texts being equally authentic.

FOR THE GOVERNMENT OF
THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF
THE RUSSIAN FEDERATION:

AGREEMENT BETWEEN THE
GOVERNMENT OF THE UNITED STATES OF AMERICA AND
THE GOVERNMENT OF THE RUSSIAN FEDERATION
TO AMEND THE

"Agreement Between the Government of the United States of America and the Government of the Russian Federation Regarding International Trade in Commercial Space Launch Services"

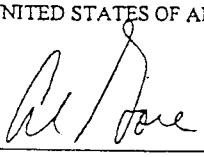
The Government of the United States of America and the Government of the Russian Federation hereby agree, with respect to the *Agreement Between the Government of the United States of America and the Government of the Russian Federation Regarding International Trade in Commercial Space Launch Services*, signed in Washington, D.C. on September 2, 1993, as follows:

1. the provisions of that agreement are hereby amended as provided in the attached Appendix; and

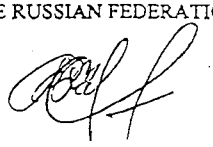
2. the requirement for a review of implementation of that agreement under Article IX, paragraph 2, is deemed to have been met.

DONE at Washington this 30th day of January, 1996, in duplicate in the English and Russian languages, both texts being equally authentic.

FOR THE GOVERNMENT OF
THE UNITED STATES OF AMERICA:



FOR THE GOVERNMENT OF
THE RUSSIAN FEDERATION:



APPENDIX

The *Agreement Between the Government of the United States of America and the Government of the Russian Federation Regarding International Trade in Commercial Space Launch Services*, signed in Washington, D.C. on September 2, 1993, is amended by:

1. Amending Article I, paragraph 10, to read as follows:

ARTICLE I

DEFINITIONS

10. "Low earth orbit" means any orbit below geosynchronous orbit or geosynchronous transfer orbit.

2. Amending Articles IV, V, VII, and VIII to read as follows, and:

ARTICLE IV

QUANTITATIVE LIMITS

1. During the term of this Agreement, Russian space launch service providers may contract with international customers to provide commercial space launch services for the launch of up to fifteen (15) principal payloads (in addition to the INMARSAT 3 satellite) to geosynchronous earth orbit or geosynchronous transfer orbit. The Russian Federation shall make its best efforts to ensure a proportionate distribution of contracts by Russian space launch service

providers within any two-year period. If the average annual number of internationally competed commercial launches, including launch failures, is 24 or more over the three year period 1996 through 1998 or if the Parties, by mutual agreement, conclude that commitments for such launches indicate that an average annual number of internationally competed commercial launches of 24 or more will occur during that period, then this quantitative limit shall be raised to seventeen (17) (in addition to the INMARSAT 3 satellite). If the average annual number of internationally competed commercial launches, including launch failures, is 24 or more over the four year period 1996 through 1999 or if the Parties, by mutual agreement, conclude that commitments for such launches indicate that an average annual number of internationally competed commercial launches of 24 or more will occur during that period, then this quantitative limit shall be raised to nineteen (19) (in addition to the INMARSAT 3 satellite).

2. Up to four launches of principal payloads to geosynchronous earth orbit or geosynchronous transfer orbit may consist of two principal payloads on a single launch vehicle. The Parties shall jointly evaluate each such launch on a case-by-case basis and, taking into account the current situation in the international commercial space launch market, may decide by mutual agreement to treat that launch as a single principal payload for the purpose of Article IV, paragraph 1.

3. During the term of this Agreement, Russian space launch service providers may contract to provide commercial space launch services for up to three (3) launches of satellites to low earth orbit for the Iridium system.

4. Both Parties agree that Russian participation in commercial space launch services to low earth orbit that are single launches and that are not part of the initial deployment of a satellite

constellation shall not be disruptive to the normal functioning of the market. The United States shall be guided in its assessment of the effect, or potential effect, of Russia's participation in this low earth orbit market segment by, inter alia, the extent and growth of overall Russian and U.S. participation in this market. If either Party believes that the other Party is participating, or may participate, in this market in a manner inconsistent with its commitments under this Agreement, the Parties shall meet pursuant to the consultations provided for under Article VII, paragraph 2, of this Agreement to ascertain the facts of the situation and take appropriate corrective action.

5. With respect to proposals to deploy satellite constellations in low earth orbit during the term of this Agreement, the United States shall assess the effect or potential effect of Russia's participation in this low earth orbit market segment relative to Russia's commitments under this Agreement in terms of the extent of participation by Russian, U.S., and third country commercial space launch services providers in the deployment. In particular, the United States will consider whether the overall level of participation by commercial space launch services providers in countries with whom the United States has concluded a bilateral commercial space launch services agreement (measured according to distribution of payloads) in the deployment of any single LEO communications satellite constellation is greater than the participation of market economy commercial space launch services providers. The following factors will, inter alia, also be taken into account:

a. launch scheduling requirements and the need to optimize launch vehicle selection to meet deployment or operational requirements;

b. the availability of competitively-priced market economy launches to meet these requirements;

c. opportunities made available to other parties for participation in the replacement market;

d. reasonable considerations by the proposed system operator regarding commercial risk sharing; and

e. customers' requirements.

If either Party believes that the other Party is participating, or may participate, in the low earth orbit satellite constellation market in a manner inconsistent with its commitments under this Agreement, the Parties shall meet pursuant to the consultations provided for under Article VII, paragraph 2, of this Agreement to ascertain the facts of the situation and take appropriate corrective action. The criteria set forth in this paragraph may be reconsidered by the Parties. Among the events that would justify favorable reconsideration for elimination of the criteria in this paragraph would be a commercially viable project for satellite services that fundamentally changes demand for commercial space launch services.

6. In the course of consultations under Article VII, paragraph 1, the Parties shall consider jointly on a case-by-case basis and decide by mutual agreement on proposals by Russian space launch service providers for commercial suborbital launches where there are competing

comparable commercial space launch services.

ARTICLE V

PRICING

1. The contractual terms and conditions, including the price, of commercial space launch services offered or provided by Russian space launch service providers to international customers shall be comparable to the terms and conditions, including prices, for comparable commercial space launch services offered by commercial space launch services providers from market economy countries, including the United States.

2. When a bid, offer or contract by a Russian space launch service provider is less than 15 percent below a bid, offer or contract by a commercial space launch services provider from a market economy country, including the United States, to provide the commercial space launch services described in Article IV, paragraphs 1 and 2, it shall be assumed, unless information is provided to the contrary, that such bid, offer, or contract is consistent with paragraph 1 above and that no special consultations are needed. When a bid, offer or contract by a Russian space launch service provider is greater than 15 percent below a bid, offer or contract by a commercial space launch services provider from a market economy country, including the United States, the United States, after taking into consideration the comparability factors described in the Annex to this Agreement, may request special consultations under Article VII, paragraph 2.

ARTICLE VII

CONSULTATIONS

1. The Parties shall hold regular consultations on an annual basis to review and examine implementation of the Agreement and market developments in commercial space launch services.

2. In addition, each Party undertakes to enter into special consultations within thirty (30) days of a request by the other Party to discuss matters of particular concern. In particular, special consultations will be held to review the situation in which there is an absence of Western launch availability due to full manifests or launch failures during the required launch period (generally within three (3) months before and after the preferred launch date), if Russia has reached a limitation set out in Article IV, paragraph 1. If information is provided that verifies, to the satisfaction of the United States, that the situation described above exists, the United States may increase the quantitative limits on available launches established under Article IV, paragraph 1, to permit the satellite to be placed on a launch vehicle manifest for launch.

3. If, after consultations provided for under this Article, either Party determines that the provisions of this Agreement have been violated by the other Party, each Party reserves its right to take any action permitted under its national laws and regulations.

4. If, in the course of the annual reviews provided in paragraph 1 of this Article, the Parties agree that the market for commercial space launch services has developed more favorably than anticipated and if each Party is satisfied with the other Party's compliance with terms of this Agreement, the quotas set forth in Article IV of this Agreement may be increased, by written agreement of the Parties.

5. The Parties agree to work toward a common understanding of the application of

market principles to prices, terms, and conditions of commercial space launch services for international customers.

ARTICLE VIII

INFORMATION EXCHANGE

1. To facilitate the annual consultations under Article VII, the United States and Russia agree to exchange information as follows:

a. The United States shall each year in advance of such consultations provide to Russia such publicly releasable information as it possesses with respect to prices, terms and conditions prevailing in the international market for commercial space launch services. Russia may request that the United States provide additional publicly releasable information with respect to international prices, terms and conditions, and may in addition request United States views regarding prevailing international market conditions and likely future developments, as well as government supports or inducements. The United States shall respond to such requests within thirty (30) days. If such information cannot be provided directly because of business confidentiality, the United States shall provide such information in summary form.

b. Russia shall in advance of such consultations provide comprehensive information to the United States regarding prices, terms, and conditions offered by Russian space launch service providers for the launch of satellites. The United States may request additional information with respect to the prices, terms, and conditions offered by Russian space

launch service providers and any government supports or inducements. Russia shall respond to such requests within thirty (30) days. If such information cannot be provided directly because of business confidentiality, Russia shall provide such information in summary form.

c. The United States and Russia shall keep all information received from each other under subparagraphs (a) and (b) strictly confidential and shall not provide it to any other government or any private person without the written consent of the other.

d. The United States and Russia shall also provide each year, in advance of annual consultations, information on a consolidated basis concerning the commitments their space launch service providers have undertaken to provide commercial space launch services for international customers. This information may be made publicly available.

2. If a launch of a satellite for an international customer which is subject to the terms of this Agreement will not be performed as scheduled, Russia shall notify the United States regarding any significant change in launch scheduling affecting the implementation of this Agreement and the new date for such launch as soon as possible.

3. Adding the following Annex:

ANNEX: Pricing Comparability Factors for GEO and GTO Commercial Space Launch Services

The Parties agree to the following factors as being relevant to the comparison or evaluation of commercial launch services offered in the international market for launches to geosynchronous earth orbit or geosynchronous transfer orbit. Such factors can often explain legitimate distinctions in the price offered for the launch of a particular payload by different launch providers, and are particularly useful in comparing bids from market economy providers to those from economy-in-transition providers of commercial space launch services.

Comparability Factor	Description
Intended Orbit	Based on delivery orbit for launch provider, and the provider of perigee kick motor (PKM)
Risk Management	Addresses potential differences in insurance for customer, based on vehicle and scheduling reliability (and the different forms of risk management, such as political risk insurance)
Additional Costs	

- Integration Costs	Addresses different types of payload/vehicle integration costs, and software/hardware modifications necessary for the mission
- Launch Support	Involves extra transportation expenses, security costs, extra equipment, and personnel support costs (relative to western launches) due to launching in the New Independent States of the former Soviet Union
Required Vehicle Lift Capability	Ensures comparison of vehicle classes providing similar performance that are matched to the payload mass and that are adequate to place the payload into the desired orbit
Payment Conditions/Terms	Relates to various payment and financial conditions or incentives that may be offered as part of a commercial space launch services bid (governed by the provisions of any relevant trade agreements and OECD

guidelines)

Lifetime

Addresses impacts of different satellite lifetimes (on orbit) resulting from the commercial space launch services (this is not always a factor - the impact varies depending on case in question)

Type of Review: Extension.

Title: Alternate Methods or Procedures and Emergency Variations from Requirements for Exports of Liquors.

Description: ATF allows exporters of liquors to apply for and receive approval of variances from the requirements of regulations under 27 CFR part 252. ATF uses the application to evaluate need, jeopardy to the revenue and compliance with the law.

Respondents: Businesses or other for-profit, Small businesses or organizations.

Estimated Number of Respondents: 500.

Estimated Burden Hours Per Respondent: 2 hours.

Frequency of Response: On occasion.

Estimated Total Reporting Burden: 200 hours.

Clearance Officer: Robert N. Hogarth (202) 927–8930, Bureau of Alcohol, Tobacco and Firearms, Room 3200, 650 Massachusetts Avenue, NW., Washington, DC 20226.

OMB Reviewer: Milo Sunderbauf (202) 395–6880, Office of Management and Budget, room 3001, New Executive Office Building, Washington, DC 20503.

Lois K. Holland,

Departmental Reports, Management Officer.

[FR Doc. 94–5472 Filed 3–9–94; 8:45 am]

BILLING CODE 4810–31–M

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Termination of Sanctions With Respect to the Federal Republic of Germany Pursuant to Title VII of the Omnibus Trade and Competitiveness Act of 1988

AGENCY: Office of the United States Trade Representative.

ACTION: Termination of sanctions imposed on the Federal Republic of Germany under Title VII of the Omnibus Trade and Competitiveness Act of 1988.

SUMMARY: The U.S. Trade Representative has determined to terminate sanctions imposed on the Federal Republic of Germany on May 28, 1993 (58 FR 31136) on the basis of assurances from Germany that it would not apply the discriminatory provisions of the Utilities Directive of the European Union to procurement of U.S. goods by its telecommunications utilities. The termination of sanctions is effective upon publication of this notice. A copy of the USTR's determination is attached.

FOR FURTHER INFORMATION CONTACT: Mark Linscott, Office of GATT Affairs (202–395–3063), or Laura B. Sherman, Office of the General Counsel (202–395–3150), Office of the United States Trade Representative, 600 Seventeenth Street NW., Washington, DC 20506.

Frederick L. Montgomery,

Chairman, Trade Policy Staff Committee.

Determination Under Title VII of the Omnibus Trade and Competitiveness Act

On May 28, 1993, the United States imposed sanctions on nine member states of the European Union under Title VII of the Omnibus Trade and Competitiveness Act of 1988 (19 U.S.C. 2515, as amended) for maintaining, in government procurement of telecommunications goods, a significant and persistent pattern or practice of discrimination against U.S. products or services that results in identifiable harm to U.S. businesses (58 FR 31136).

I have received official assurances from the Federal Republic of Germany that: (1) Telecommunications entities owned in whole or in part or controlled by the German Government apply national treatment towards U.S. goods and suppliers; (2) Germany will not apply Article 29 of the Utilities Directive against U.S. goods and suppliers; and (3) Germany is not applying the counter-sanctions imposed by the European Union against U.S. goods and suppliers.

Pursuant to the authority vested in me by the President of the United States by Presidential Determination No. 93–16, I have determined that the Federal Republic of Germany has eliminated the discrimination identified under Title VII and have therefore terminated sanctions effective upon the publication of this determination in the **Federal Register.**

Michael Kantor,

United States Trade Representative.

[FR Doc. 94–5497 Filed 3–9–94; 8:45 am]

BILLING CODE 3190–01–M

Guidelines for U.S. Implementation of the Agreement Between the U.S. and Russian Federation Government Regarding International Trade in Commercial Space Launch Services

AGENCY: Office of the United States Trade Representative.

ACTION: Notice of guidelines for U.S. implementation of the agreement between the Government of the United States of America and the Government of the Russian Federation regarding international trade in commercial space launch services.

DATES: The Agreement entered into force on September 2, 1993. These guidelines on monitoring and enforcement are effective upon publication.

FOR FURTHER INFORMATION CONTACT: Scott Monier, (202) 395–3320, Director for European Industry and Technology, Office of the U.S. Trade Representative, 600 17th Street, NW., Washington, DC 20506. (Copies of the Agreement referenced herein can be obtained from the official designated above.)

SUMMARY: On September 2, 1993, the United States and the Russian Federation entered into the Agreement Between the Government of the United States of America and the Government of the Russian Federation Regarding International Trade in Commercial Space Launch Services (Agreement). The Agreement allows the Russian Federation (Russia) to enter the international commercial space launch market during the country's transition to an economy based on market principles in a manner intended to prevent disruption of normal competition. In order to assist in the successful operation of the Agreement, the U.S. Government has established certain guidelines it intends to follow in implementing the Agreement. This notice sets out those guidelines.

SUPPLEMENTARY INFORMATION

Background

At the June 1992 Summit between former President Bush and Russian President Yeltsin, the United States announced that it was granting a one-time exception to its policy of prohibiting the export of U.S.-made satellites or satellites incorporating U.S technology (essentially all Western satellites) to Russia for launch on Russian space launch vehicles. This one-time exception allowed the International Maritime Satellite Organization (INMARSAT) to select a Russian launcher to launch an INMARSAT 3 satellite. At the same time, the United States stated that, while no further exceptions would be granted, it was willing to undertake negotiations on Russian entry into the international commercial space launch services market. The negotiations culminated in an agreement which would provide Russia, during its transitional phase from a non-market to market economy, access to the international commercial launch services market yet ensure against severe market distortion or disruption to the market. The Agreement was signed by Vice President Gore and Russian Prime Minister Chernomyrdin and entered into force on September 2, 1993.

The Agreement

Definition of Terms

The Agreement defines certain terms, as follows:

Contract means (i) to agree or commit to the provision of commercial space launch services such that a launch is

effectively removed from competition in the international market, or (ii) any such agreement or commitment.

International customer means any person; or any kind of corporation, company, association, venture, partnership, or other entity, whether or not organized for pecuniary gain, or privately or governmentally owned or controlled; or any governmental body, excluding the Government of the United States of America and the Government of the Russian Federation; or any intergovernmental organization or quasi-governmental consortium, including but not limited to INTELSAT, INMARSAT and their respective legal successors, that is the ultimate owner or operator of a spacecraft or satellite or that will deliver the spacecraft or satellite to orbit for use by such ultimate owner or operator.

Principal payload means a telecommunications satellite or, in the absence of a telecommunications satellite, any other spacecraft or combination of spacecraft.

Russian space launch service provider means any entity, agent or instrumentality acting on its behalf, permitted by the Government of the Russian Federation to provide commercial space launch services or the space launch vehicles for such services.

Agreement Terms

The Agreement establishes basic rules for avoiding distortion which results from government involvement in the commercial space launch market by prohibiting such practices as certain subsidies, marketing inducements, and corrupt business practices. The terms of the Agreement also include the following specific provisions:

Quantity Provisions

The Agreement permits Russian space launch services providers to contract with international customers for the launch of up to eight (8) principal payloads, in addition to the INMARSAT-3 satellite, to geosynchronous earth orbit (GEO) or geosynchronous transfer orbit (GTO), for the duration of the agreement (through December 31, 2000). Not more than two (2) such launches may be conducted in any twelve-month period.

Up to four (4) of these launches may be of two principal payloads, and each of these may be counted against the quantity limitation as single launches if the parties mutually agree that the international space launch market so warrants.

The Agreement also allows Russian space launch service providers to contract for up to three (3) launches to low earth orbit (LEO) for the Iridium system. Proposals by Russian space launch service providers for commercial suborbital launches LEO and launches to orbits other than GEO and GTO will be considered on a case by case basis, where there are competing comparable commercial space launch services.

Pricing Provisions

The Agreement provides that prices, terms, and conditions offered by Russian space launch service providers shall be comparable to those offered for comparable space launch services by commercial launch service providers from market economy countries. For GEO and GTO launches, the Agreement establishes a specific pricing mechanism. Bids or offers for launches to GEO or GTO more than 7.5% below the lowest market economy bid trigger special consultations in which Russia must demonstrate that its offer conforms to the principles of the Agreement. Bids or offers for Russian launch services to orbits other than GEO/GTO are not subject to a specific pricing mechanism; however, prices, terms, and conditions must be comparable to those offered by providers from market economy countries. Accordingly, the comparable pricing provision of the Agreement applies to all launches by Russian space launch service providers, including those to LEO.

The pricing provisions of the Agreement apply to bids or offers made as part of a sole-source procurement as well as to completed contracts.

Consultations

The Agreement requires the United States and Russia to hold annual consultations to "* * * review and examine implementation of the Agreement and market developments in commercial space launch services." The Agreement also allows the United States or Russia to request special consultations "on an urgent basis" prior to the conclusion of a contract, if possible, if either Party has reason to believe that a contract or pending contract is inconsistent with the terms of the Agreement.

Applicability Guidelines

Russian Launch Vehicles

All types or classes of launch vehicles that may be used by a Russian space launch service provider to provide commercial space launch services are subject to the Agreement.

Russian Space Launch Service Providers

Transactions involving launch service providers, regardless of nationality, permitted by the Russian Federation to provide commercial space launch services on Russian launch vehicles are subject to the terms of the Agreement.

Leasing on-Orbit

Leasing a satellite on orbit or satellite transponders does not remove a transaction from the terms of the Agreement. As a general rule, the Agreement applies to a contract calling for the leasing of a satellite on-orbit as to one requiring the launch of a satellite purchased by the customer. The definition of "international customer" as defined in the Agreement makes no distinction based upon the financing arrangement selected for the satellite. There will be no special consideration given to leased satellites launched solely for use by an international customer.

Nationality of Satellite Manufacturer

The terms of the Agreement apply to all satellites, regardless of the manufacturer's nationality. The Agreement is intended to be neutral in its effects on the satellite market.

Contracts Signed Prior to the Agreement

Contracts signed prior to the Agreement for the launch of a satellite subject to United States export controls will be considered under the terms of the Agreement.

Contracts signed prior to the Agreement for the launch of a Russian-built satellite for purchase or lease by an international customer are excluded from the terms of the Agreement.

Options Agreements/Reservations

An option agreement or reservation for Russian commercial space launch services, entered into on or before September 2, 1993, is subject to the terms and provisions of the Agreement.

Monitoring and Enforcement

A. *Designation of Responsibility*

The Trade Policy Staff Committee Subcommittee on Russian Space Launch Services (Subcommittee), will be responsible for overall implementation of the Agreement.

B. *Subcommittee Organization*

For purposes of carrying out its responsibilities with respect to overall implementation of the Agreement, the Subcommittee will be chaired by the Office of the United States Trade Representative (USTR) and will be composed of the Departments of Transportation, State, Commerce, Justice, Defense and Treasury, the Office of Management and Budget (OMB), the National Aeronautics and Space Administration (NASA), the Office of

Science and Technology Policy (OSTP), the Joint Chiefs of Staff, and such other departments and agencies as may be invited by the Chair to participate. A Working Group on Information (WGI) will be established to assemble such information as is necessary to enable the Subcommittee to carry out its responsibilities. The WGI will be chaired by the Department of Transportation (DOT) and will include the Departments of Commerce, State, Defense, and such other departments or agencies as designated by the Chair of the Subcommittee.

C. Monitoring and Data Collection

The Subcommittee will monitor Russian compliance with the Agreement. To this end, the Subcommittee will review market and other information relevant to participation in the commercial launch services market by Russian space launch service providers and compliance by those providers with the terms of the Agreement. This information will be assembled, together with a preliminary assessment, and presented to the Subcommittee by the WGI. In monitoring Russian compliance with the Agreement, particular attention will be given to information on the number of contracts with international customers and the distribution of contracts by Russian space launch service providers within any twelve-month period; prices, terms and conditions offered or provided by Russian space launch service providers; unfair business practices; grants and subsidies to commercial space launch services suppliers; inducements to international customers; insurance or reflight guarantees; and government-supported financing for commercial space launch vehicles or services except in accord with the Organization for Economic Cooperation and Development's (OECD) "Arrangement on Guidelines for Officially-Supported Export Credits."

The Subcommittee will review and determine which information is to be provided to Russia to comply with U.S. obligations under the Agreement. This information will be assembled, together with a preliminary assessment, and presented to the Subcommittee by the WGI in a timely fashion so that it could then be made available to Russia in accordance with the terms of the Agreement.

Particular attention will be given to U.S. obligations under the Agreement with respect to the provision of publicly releasable information to Russia on prices, terms, and conditions offered in the international market for commercial launch services, including insurance arrangements relating to such services.

The WGI will periodically produce information and preliminary assessments of conditions in the commercial launch services market, including prices, terms and conditions, commitments, and market forecasts for the Subcommittee as needed to implement effectively the Agreement and at least 30 days prior to annual consultations.

The WGI will also provide to the Subcommittee such additional information and preliminary assessments on compliance by Russian space launch service providers with the provisions of the Agreement as needed, and at least 30 days prior to annual consultations, or as needed prior to any additional or special consultations.

D. Consultations

The Subcommittee will hold annual consultations with the Russian Federation as outlined in the Agreement. The Subcommittee will exchange information with Russian authorities in advance of such consultations.

The Subcommittee will meet in advance of the annual consultations. The Subcommittee will provide all information, including prices, terms and conditions offered for commercial space launch services, necessary to monitor the Agreement and carry out regular and special consultation. Such information shall be provided to U.S. and/or Russian government authorities promptly, and in any case, no later than 30 days after a request, except that such information need not be provided prior to bids for commercial space launch services.

Following consultations, the Subcommittee will also report on the results of the consultations and recommend any follow-up actions to the TPSC or other appropriate government agencies.

The Subcommittee will consider whether consultations with other international parties could be beneficial, by aiding in the monitoring of the Agreement. If the Subcommittee determines that consultations could be beneficial, it will recommend to the TPSC and to the USTR that such consultations be initiated.

The Subcommittee and the WGI may, in carrying out the functions and procedures set forth herein, consult with U.S. commercial launch services providers, launch vehicle and satellite manufacturers, and, as appropriate, interested Congressional committees, the user community, and other interested parties, including the relevant private sector advisory committees. Such contacts will be made in conjunction with the information collection and assessments referred to herein and U.S. preparation for, and follow-up on the results of, meetings with Russia held under the Agreement. The Subcommittee will also, as appropriate, inform such interested parties of significant requests or notifications made by Russia under the Agreement, or significant developments under the Agreement.

E. Information Sharing

In the course of consulting with interested parties, in particular prior to annual consultations under the Agreement, the U.S. Government may provide such information provided by Russia as is allowed and appropriate under the Agreement, subject to business confidentiality.

F. Collection of Information

DOT, as Chair of the WGI, will have primary responsibility for soliciting and receiving relevant information, and will maintain data to be collected and reviewed by the WGI for purposes of this Agreement.

Members of the U.S. industry, and other interested members of the public, are invited to submit written comments on issues related to the Agreement and its operation. Comments must be provided in twenty copies to the DOT Office of Commercial Space Transportation, Attention: Working Group on Information for Russian Space Launch Services, 400 7th Street, SW., room 5408, Washington, DC 20590–0001.

Submissions from the public will be placed in a file open to public inspection at the above address pursuant to 15 CFR § 2003.5, except confidential business information exempt from public inspection in accordance with 15 CFR 2003.6. Confidential business information submitted in accordance with 15 CFR 2003.6 must be clearly marked "Business Confidential" at the top of the cover page or letter and each succeeding page, and must be accompanied by a nonconfidential summary of the confidential information.

G. Enforcement

If the Subcommittee is of the view that the provisions of the Agreement have been violated as a result of information obtained in any annual or special consultation and review required under Article VII of the Agreement or on the basis of information presented to it by the WGI, the Subcommittee will notify the TPSC and recommend consultations with

Russia. If consultations proceed and satisfactory resolution is not achieved with Russia, or if consultations are deemed to be inappropriate in the circumstances, based on recommendations of the Subcommittee, the Section 301 Committee may be requested to review the case.

The USTR will, from time to time, advise the Secretary of State and the Secretary of Commerce of the status of the implementation of the agreement in order that this information may be available to the Secretaries with respect to the State Department export license responsibilities under the Arms Export Control Act and the implementing regulations, the International Traffic in Arms Regulations, 22 CFR parts 120–130 and the Commerce Department export license responsibilities under the Export Administration Act.

Frederick L. Montgomery,

Chairman, Trade Policy Staff Committee.

[FR Doc. 94–5498 Filed 3–9–94; 8:45 am]

BILLING CODE 3190-01-M

TESTIMONY OF JOHN D. HOLUM
SENIOR ADVISOR
U.S. DEPARTMENT OF STATE

Space Launch Quota

The quota for launches of satellites to geosynchronous orbit on Russian boosters raises complex issues that touch on our non-proliferation objectives, our space launch and satellite industries, and on the integration of the Russia's space sector into the international economy. I welcome the opportunity to address these issues with you today.

The space launch quota was part of the solution to a non-proliferation problem we faced in the early 1990's. At that time, a Russian company had a contract to sell production technology for cryogenic rocket engines to India for a space launch vehicle. Transferring missile technology to India was a sensitive proliferation issue then, as it remains today.

Following intense, high-level negotiations, an agreement was reached in which Russia agreed to cancel the contract to transfer rocket engine production technology to India and to abide by the MTCR guidelines, and the U.S. agreed to permit Russia to launch U.S. satellites to geosynchronous orbit, subject to a quota. That quota is now 16 through the year 2000, and the Administration has decided to increase that quota to 20. The agreement also imposes certain restrictions on the prices charged for these launches.

At the time of the 1993 agreement, the purposes of the quota were to protect the U.S. space launch industry from unfair competition from a non-market economy, as we worked to allow the U.S. satellite industry the benefits of access to Russian launches, and to give Russia access to the space launch market in return for important non-

proliferation commitments. It also made sense from a non-proliferation point of view to engage thousands of high-tech scientists and engineers in legitimate commercial activity, in one of the few areas where Russia has world-class technology. In fact, we made clear to the Russians at the time that the continuation of the space launch agreement was contingent on Russian missile non-proliferation behavior.

Today the market for space launch has grown substantially beyond what it was in 1994, and the commercial rationale for quotas is much less than it was then.

But the non-proliferation problem is very much still with us, in particular Russian transfers of missile technology to Iran. We have devoted a great deal of effort over several years to halt cooperation between Russia's aerospace industry and the Iranian missile program. First Frank Wisner and now Bob Gallucci have led teams that have engaged in intensive exchanges with the Director General of the Russian Space Agency, Mr. Koptev.

This issue remains at the top of the U.S.-Russian agenda, and our concerns have been addressed numerous times by President Clinton and President Yeltsin, most recently at the G-8 summit in Cologne last month. Vice President Gore has made this a major issue with a series of Russian Prime Ministers, including Mr. Stepashin, plans to address this issue in their meetings next week. As part of the Administration's press on non-proliferation, Secretary Albright, National Security Advisor Berger, and other senior officials actively engage their Russian counterparts on the Iran missile problem at every opportunity.

This intensive effort has achieved some important results, the most important of which is the passage of new export control legislation by the Duma and the Federation Council in the last few weeks. The new law provides a strong legal basis to stop transfers and punish violators. The Russian government has also committed itself to implementation of a plan of action drawn up by Gallucci and Koptev designed to bring about an end to cooperation between Russian entities and the Iranian missile program.

An important element of our non-proliferation strategy was our decision in early 1998 to tie an increase in the space launch quota to Russian performance on curtailing missile cooperation with Iran, just as we tied the original quota to Russian performance on missile cooperation with India. Our strategy includes other elements, including the trade penalties which we have imposed on 10 Russian entities for missile and nuclear cooperation with Iran. We believe it is both logical and in our security interest to control Russian access to the U.S. space launch market as long as Russian aerospace companies are cooperating with the Iranian missile program, and to encourage commercial space ventures consistent with our non-proliferation objectives.

By providing both incentives and penalties, our policy is intended to encourage the Russian government to police the Russian aerospace industry. We do not want to wind up with a situation in which some Russian companies are responsible and work with the United States, and others remain free to contribute to Iran's missile effort. Again, our policy is aimed at the organization that can resolve this across the board - the Russian government.

We have recently decided to pursue an incremental increase of the space launch quota from 16 to 20 launches through 2000. This decision was taken not because the Russia-Iran missile problem has been solved, but because the Russian government has taken steps in recent weeks to support a strong non-proliferation policy and direct government agencies to implement it, to create institutional structures to enforce compliance and strengthen export controls, and to pass laws needed to punish wrongdoers. But we need to sustain the pressure to use these new tools to curtail technology transfers to Iran. That is why our increase is incremental, to give the Stepashin government time, perhaps another 6 months, to follow through on the commitments it has made to us.

We remain hopeful that our strategy will in the end give us the non-proliferation benefits of a cut off in assistance from Russian entities to the Iranian missile program, as well as the commercial and non-proliferation benefits of a strong commercial partnership between the U.S. and Russian commercial space industries. There are of course risks, but we continue to pursue an outcome that achieves both of these benefits for the United States.

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