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Center for International Security and Cooperation

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Conference Report

Strategic Stability and U.S.-Russian Relations

Report of the Twelfth Protocol Meeting between the
Center for International Security and Cooperation
and the Committee of Scientists for Global Security

Moscow

June 7–9, 1999

Taira Koybaeva, editor

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Preface

In early June 1999 a delegation from the Center for International Security and Cooperation traveled to Moscow for three days of meetings with active and retired Russian military officials and leading scholars and analysts to discuss key issues in the U.S.-Russian security relationship. The Committee of Scientists for Global Security, led by Lieutenant General (ret.) Mikhail S. Vinogradov, hosted the meetings, which were the twelfth in a series between CISAC and the Committee that began in 1990. These conferences have come to be known as the "Protocol Meetings" in reference to the Protocol Agreement originally signed by the Committee and CISAC (and initially authorized by the Soviet Politburo) to conduct joint research and discussions on "Strategic Stability to the Year 2000." Over the years this dialogue has proven to be a valuable forum for Russian and U.S. military officials, scholars, policymakers, and members of the business community to exchange views and develop separate and joint recommendations primarily on nuclear security and issues related to strategic stability.

The June meetings took place at a time when the U.S.-Russian security relationship had reached its lowest point since the end of the Cold War. The war in Kosovo had brought U.S.-Russian cooperation in the security realm virtually to a dead halt. Almost every leading figure in Russian politics and the Russian population at large strongly opposed NATO intervention in Kosovo. General (ret.) Vladimir Belous expressed deep dismay at the deterioration in U.S.-Russian relations that has taken place in the last seven to eight years and compared it to the period 1945–49, when the U.S.-Soviet relationship rapidly disintegrated from postwar partnership to Cold War hostility. While Kosovo was a watershed, our Russian hosts emphatically made the point that an accumulation of grievances had been building over a number of years. The leaderships of CISAC and the Committee agreed that these circumstances made it that much more important that our meetings take place as scheduled and not be postponed. During moments of unusual tension in bilateral or multilateral relationships, track-two dialogues can be especially helpful in providing a forum for discussion of sensitive issues that cannot be broached, at least temporarily, in official discussions.

There was unanimous agreement among conference participants that Moscow and Washington needed to resolve and move beyond Kosovo as quickly as possible in order to restore cooperative efforts on a number of issues. But many conference participants acknowledged that restoring trust in the bilateral relationship would be very challenging. General (ret.) Eugene Habiger, who until June 1998 was commander in chief of U.S. strategic forces, described his efforts to build relationships with his Russian counterparts, including current Russian minister of defense and former head of Russian Strategic Rocket Forces Marshal Igor Sergeev. These bilateral exchanges brought about unprecedented transparency between U.S. and Russian strategic forces, but Habiger expressed concern that a good deal of momentum in this area has been lost, in part due to Kosovo. Both Habiger and General Vladimir Dvorkin agreed that U.S.-Russian cooperation on nuclear security was exceedingly important, and that potentially much more could be done. In an interesting exchange, they also agreed that if it were left to the respective militaries without other institutional and political interference, there would be far more transparency on nuclear issues between the United States and Russia.

Not surprisingly, the issues of possible U.S. deployment of a national missile defense system and the future of the ABM Treaty emerged in the discussions as a very contentious topic in U.S.-Russian relations. Dvorkin agreed with Dean Wilkening's assessment that U.S. deployment of a "thin" system would not present a threat to Russian strategic forces. Still, Russians are very concerned that the technological advances achieved in efforts to deploy a thin defense could contribute to a more extensive national missile defense system that might have the potential to counter the effectiveness of Russian forces in the future. General Viktor Koltunov noted that the deployment options the United States will be considering next year would all require some modification of the ABM Treaty. Given the current political climate in Russia, Koltunov thought Russian agreement to treaty modification was very unlikely. The Russians were unanimous in the view that a U.S. unilateral decision to defect from the treaty in order to deploy a national missile defense system would strike a hard blow to an already gravely weakened U.S.-Russia bilateral relationship. Wilkening offered avenues whereby the United States and Russia might cooperate on missile defense, and Habiger went further by calling for the United States not to think in terms of a "national" missile defense, but rather in terms of a global missile defense that would not be perceived as threatening by the Russians and others. Both Geoff Forden and Aleksandr Menshikov discussed the status of the Russian early-warning system. While their assessments differed somewhat, both agreed that further cooperation between the United States and Russia would be very beneficial.

Viktor Koltunov expressed a skepticism shared by many Russian strategic analysts concerning the official U.S. rationale for deploying a national missile defense system to counter the "rogue state" threat (North Korea, Iraq, etc.) or the danger of an accidental or inadvertent launch. Russians do not view the threat from missile and WMD proliferators nearly as seriously as U.S. assessments (the Rumsfeld Report, for example), despite the fact that most of the likely proliferators are located far closer to Russia than the United States. Many in the meeting, both Americans and Russians, noted that Russian strategic analysts and planners continue to place great faith in the power of deterrence, while in the United States faith in deterrence has eroded. Mikhail Vinogradov also commented that on issues of proliferation and regional conflict, Russians are more likely to rely on diplomatic and political measures while Americans are more inclined to technological and military approaches. These fundamental differences between the United States and Russia on threat assessment and the most effective means to defuse threats have emerged in recent years as a major obstacle to bilateral

cooperation on security. This could be a fruitful topic for future collaborative research and dialogue.

The Stanford delegation came away from these meetings even more concerned about the deep differences between the United States and Russia on issues concerning missile defense and the future of the ABM Treaty. Although President Yeltsin and President Clinton agreed about a week after our meetings to discuss on a bilateral basis possible modifications of the ABM Treaty and a START III Treaty on further nuclear arms reductions, these discussions will undoubtedly be protracted and difficult. It is hard to imagine the two sides making a significant breakthrough before presidential elections in each country in 2000, but the United States is scheduled to make important decisions in June 2000 about deployment of a national missile defense system. These decisions will have a large impact on the U.S.-Russian security relationship as well as the future of nuclear arms reductions and the nonproliferation regime. A number of CISAC research staff and faculty are now considering how to most effectively contribute to this important policy debate in the coming year.

I would like to thank Carnegie Corporation of New York and the MacArthur Foundation for their generous support to make these meetings possible. Thanks are also in order to the Committee of Scientists for Global Security, especially Mikhail Vinogradov and Leonid Ryabikhin, for organizing the conference and so graciously hosting the group from Stanford. I especially want to thank Geoff Forden, Gene Habiger, and Taira Koybaeva, who served as rapporteur and the editor of this report, for joining us and making their valuable contributions.

ANDREW KUCHINS, ASSOCIATE DIRECTOR
Center for International Security and Cooperation
September 1999

Committee of Scientists for Global Security, Russia
Center for International Security and Cooperation, United States

XII Protocol Meeting

Moscow, Russia

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Stanford University

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Vladimir Bychkov, Interpreter

Session 1: Nonproliferation and the CTBT

Chair: Dr. Andrew Kuchins, Associate Director, CISAC

Nonproliferation and the CTBT

Mikhail Vinogradov, Center for Scientific Research, Committee of Scientists for Global Security

The Non-Proliferation Treaty and Comprehensive Test Ban Treaty remain the most important documents in the overall system of international agreements in the area of global nuclear threat reduction.

As we know, the NPT was signed in 1968 and entered into force in 1970. The list of signatories includes the five officially acknowledged nuclear powers and over 170 non-nuclear states. Next year will mark its thirtieth anniversary. The treaty has scored a number of significant achievements. Nuclear weapons of the Republic of South Africa were eliminated. Brazil, Argentina, and Algeria discontinued their military nuclear programs. North Korea took several positive steps in this direction too, although the overall process is not yet complete. In Iraq a legitimate framework was established for elimination of its arsenals of weapons of mass destruction. All nuclear weapons of the former Soviet Union were relocated to the territory of the Russian Federation. The NPT became permanent in May 1995.

The CTBT was the next logical international agreement on limitation of nuclear arms. It was in the CTBT that the world community declared its intention and commitment to put an end to all nuclear tests. Still, it took twenty-six years to make the provisions of the treaty acceptable to the majority of countries. The CTBT was signed in September 1996.

The CTBT is a document of major importance for increasing stability worldwide. The participants in the treaty are all five nuclear powers. Discontinuation of nuclear tests can curb the proliferation of nuclear weapons and erect a barrier to their qualitative improvement. Adherence to the CTBT will also help reduce the financial burden of military expenditures. Though the treaty has not yet entered into force, it has a beneficial effect on the environment even now, due to the actual moratorium on nuclear tests. Serious efforts were undertaken by the Preparatory Committee of the CTBT Organization to establish a test monitoring system. Over 150 countries have signed the treaty in the last three years.

Problems

At the same time, the achievements in countering proliferation of nuclear weapons and their delivery systems seem to have led to a certain self-content among the CTBT signatories, including Russia and the United States. In the last year several dangerous tendencies emerged that could put both the NPT and the CTBT on the verge of disruption.

First are the nuclear tests conducted in May 1998 by India and Pakistan, which took the world community by surprise. At the earlier meeting of our group held at Stanford in September of last year we discussed in detail the possible consequences of this event.

Great attention should be paid to the issue of North Korea's nuclear potential. On the one hand, the leadership of that country called on all the countries of the world to sign a new treaty on nonproliferation of nuclear weapons, which would legally bind the states possessing such weapons to cease all developments and tests in this area as well as to eliminate such weapons. On the other hand, there remains a well-grounded anxiety that the clandestine development of nuclear weapons and missile delivery systems still goes on in North Korea, despite the conclusion of the Framework Agreement with the United States in which North Korea promised to stop production of weapons-grade nuclear materials.

Regarding NATO's recent military actions against Yugoslavia, a number of Russian experts and members of the mass media believe that this aggression may provoke further proliferation of nuclear weapons. They assume that if Yugoslavia were in possession of nuclear weapons, the United States and NATO would have refrained from using military force in this conflict. This could give an incentive to third countries to acquire nuclear weapons in order to gain an option for pursuing a containment strategy via the threat of nuclear retaliation.

Noteworthy are recent decisions of the Ukrainian parliament, which declared Ukraine's previous avowal of its non-nuclear status erroneous and announced its intent to reverse it. Fortunately no practical steps have yet been taken, but this tendency is dangerous.

The world community should thoroughly analyze the events in several other regions of the globe. Voices of concern are heard in Israel. There are calls to prepare for the progress in Egypt's development of nuclear weapons, and also to investigate certain facts on nuclear collaboration between India and Israel. There remain doubts about the behavior of Iraq, which is bitter over its recent defeat in the Persian Gulf War. Iran can develop nuclear weapons within seven to ten years, according to the assessment of Robert Blackwill of Harvard University. Similar tendencies can be observed in Libya, as well as in Saudi Arabia—which maintains close ties with Pakistan. There is a lingering danger of interracial conflicts in the Republic of South Africa, which possessed nuclear weapons before. Experts are not certain about the future stance of such advanced countries as Germany and Japan—both have impressive military technology potential, while the latter is geographically close to troublesome neighbors. Evidently it was not mere coincidence that in early August 1998 the Japanese media reported that in the 1980s neutral Switzerland was preparing to develop its own atomic weapons. This program was cancelled only after the meeting in Geneva between President Ronald Reagan and President Mikhail Gorbachev in 1985.

The longer it takes the CTBT to enter into force, the greater the risk of upsetting global and regional stability. The more countries that possess even limited nuclear arsenals, the lower the nuclear danger threshold, and thus even a small-scale nuclear conflict could become the detonator for a global nuclear catastrophe.

Perspectives: What Can Be Done?

Nonproliferation of weapons of mass destruction and missile systems is a domain where Russian and American interests coincide. As a member of the expert group to the Council of Defense of the Russian Federation, I have been involved in research on this issue for three years. The research was conducted in collaboration with our American colleagues from the National Institute for Public Policy (project leader Dr. Keith Payne). We have developed a concept for countering proliferation (the Russian point of view) and a counterproliferation concept (the American point of view). Both countries unanimously confirm that no progress is possible without an integrated set of measures including political, diplomatic, economic, and military. Though the general principles of the concepts coincide, there exists a certain difference in approach—the Americans emphasize technological and military techniques, whereas the Russians favor political and diplomatic measures.

It is evident that in the foreseeable future global stability and nuclear security must be supported by strengthening and enhancing the nonproliferation regime, based on the NPT, the CTBT, and other existing international treaties. There is a need to coordinate activities on mediation of regional conflicts and crisis situations, which could become breeding grounds for proliferation of weapons of mass destruction as well as missile systems of all types.

The United States and Russia might implement the following practical steps related to the NPT and the CTBT:

First. Our countries should not delay ratification of the CTBT, bearing in mind that bad examples are contagious.

Second. We should persuade India and Pakistan to join the CTBT unconditionally since Article 15 of the treaty allows for no stipulations. These two countries have to accept the CTBT as is, or give it up altogether.

Third. We should energetically support collective pressure on India and Pakistan from other countries of the world community.

Fourth. Russia and the United States could offer to India and Pakistan their unique experience of interrelated activities in the nuclear sphere, especially in nuclear test monitoring. This could include expert discussions of test-ban verification issues (as was done in Geneva in 1958–1959); development of common requirements for the monitoring equipment and for the configuration of the regional control systems for non-conduct of tests; discussions of possibilities for on-site inspections; notification of plans to perform conventional explosions that could be mistaken for nuclear explosions, etc.

Fifth. All measures should be taken to render help for development and further improvement of the CTBT's international monitoring system.

Sixth. Transparency should be developed regarding the status and current activities of nuclear test sites and computational and experimental facilities of national nuclear laboratories, especially in such areas as development of nuclear and thermonuclear weapons by means of new technologies on ultra-high-performance computers, high-power lasers, and gamma-ray installations.

Seventh. The multilateral negotiations begun at the UN Conference of Disarmament in January 1999 should be facilitated. These negotiations should result in a fissile material cutoff

treaty. The treaty would cover both nuclear weapons and other nuclear explosives. These negotiations are being conducted in adherence to UN General Assembly Resolution 48/75L, unanimously adopted in December 1993.

Eighth. Both the United States and Russia (due to delays in ratification of the START II Treaty) must provide a new impetus to the nuclear arms reduction process. In this way we can alleviate criticism of our approach and eliminate the logjams that prevent India, Pakistan, and other countries from signing and ratifying the CTBT.

Ninth. National export-control systems should facilitate reliable functioning of the international export-control system, and preclude further proliferation of weapons of mass destruction and related technologies.

The Status of the Duma-Senate Logjam and Nuclear Proliferation

George Bunn, Center for International Security and Cooperation

Nuclear Reductions

The Status of the Duma-Senate Logjam on Treaties Discussed at the June 1997 Protocol Meeting

In my opinion, there have been no significant changes in the situation regarding the Duma-Senate "logjam" since June 1997, except that the Duma has approved and Russia has ratified the Chemical Weapons Convention. It is very unlikely that the Duma will give approval to START II before the late 1999 Duma election.

Even if START II were approved by the Duma with the agreed amendment extending its term for several years, this amendment would have to come before the Senate, because the Senate has not yet approved it. Also, the Duma's draft conditions for approval of START II require that the U.S. observe the agreement of September 1997 that says Russia succeeded to Soviet responsibility under the ABM Treaty, and that Belarus, Kazakhstan, and Ukraine are also parties because of their ABM radars, etc. The Senate has insisted that this come before it for approval.

The Senate is not likely to approve the change in parties to the ABM Treaty, at least not before the U.S. elections in 2000. Of course, conservative Republicans want to kill this change in an attempt to kill the ABM Treaty. The Senate majority leader, the chairman of the Foreign Relations Committee, and several others argue now that the treaty is dead because Russia did not succeed the Soviet Union as the main treaty partner with the U.S. Neverthe-

less, the Duma condition will make clear that the Senate can't have START II entry into force without the ABM Treaty and the agreement that Russia succeeded to Soviet responsibilities under the treaty.

The new U.S. statute calling for national missile defenses if that is technologically feasible is seen by many other countries as changing U.S. policy. Enemies of the ABM Treaty in the Senate sponsored it first.

The Clinton administration was successful in gaining amendments making clear that the statute does not require NMD even if NMD proves to be technologically feasible. The statute also provides that the effect of NMD on possible future nuclear reduction agreements with Russia will be considered, as well as the technological feasibility of NMD, before a decision to deploy is made.

Prospects for Agreed Non-Treaty or Reciprocal Nuclear Reductions

As elections approach in both countries, domestic politics in both countries are likely to make considering START II and III reductions rather difficult. Has NATO bombing of Yugoslavia without UN Security Council authority made reciprocal reductions very difficult for Russia? What is the meaning of the April 1999 Russian Security Council meeting on nuclear weapon strategy? Are the Bush-Gorbachev-Yeltsin reciprocal unilateral reductions of non-strategic weapons to be put aside? These are the questions which immediately arise.

On the U.S. side, reciprocal reductions are difficult. For example, to save money, the U.S. Joint Chiefs of Staff want to reduce the number of U.S. strategic Trident nuclear submarines to fourteen instead of the START I approved level of eighteen, and authority from Congress appears necessary just to do that. Congress may approve this, but not approve the Joint Chiefs suggestion that the fifty Peacekeeper missiles to be reduced in START II be dismantled now without waiting for START II approval by the Duma.

Two years ago Congress passed a statute prohibiting any reductions below START I levels, or removal of START I warheads or de-alerting such warheads, without approval of Congress. There is a pending attempt to amend this statute to permit some changes in START I warheads besides reducing the four Trident submarines.

Nuclear Non-Proliferation

Status of the Comprehensive Test Ban Treaty

Forty-four countries must ratify the CTBT before it can go into effect. These include the five nuclear-weapon states permitted by the nuclear Non-Proliferation Treaty, China, France, Russia, the United Kingdom, and the United States; plus particularly India, Israel, North Korea, and Pakistan. As we know, of the five only France and the UK have ratified.

Israel (but not India, Pakistan, or North Korea) has signed the CTBT. After condemnation by most of the world for their tests, the prime ministers of India and Pakistan suggested to the UN General Assembly that their two countries would sign the CTBT. But since then the Indian prime minister lost his majority in the parliament and India and Pakistan are fighting each other in Kashmir.

In the U.S. Senate, the chairman of the Foreign Relations Committee (which has primary responsibility for the CTBT) and the Senate's majority leader both oppose the CTBT. They refuse to bring it before the Senate for a vote—unless, perhaps, the Clinton administration gives up on the ABM Treaty, and permits it to die.

What are Russian plans for submitting CTBT to the Duma?

China has indicated that it will submit the CTBT to its national congress. But China has also said that Indian-Pakistani testing, U.S. NMD and theater missile defense efforts, and NATO bombing of Yugoslavia without UN Security Council approval may cause a new nuclear arms race. Does this mean new testing by China? What about Russia if China tests?

The CTBT authorizes countries that have ratified the treaty to hold conferences every year starting after September 24, 1999, to push other countries to ratify. Such a conference is supported by many countries that could make nuclear weapons but have chosen not to, such as Australia, Canada, Germany, Japan, Norway, and Sweden. The first such conference will likely be held this October in Vienna. What could the conference do?

- It can call for ratification by all forty-four but can't amend the CTBT to leave out some of the forty-four.
- The conference can call upon all countries that support the CTBT to trade with countries that have ratified the CTBT.
- It can condemn all future weapons testing and threaten economic sanctions against any country that tests, sanctions such as those imposed upon India and Pakistan. (Remember the "citizen boycotts" of France and China when they resumed testing in 1995?)

Status of Negotiations for the Follow-On Treaty to the CTBT

The Fissile Material Cutoff Treaty

As we know negotiations have not started in Geneva.

Status of the NPT

The NPT has been joined by 187 countries, more than the UN Charter. All but Cuba, India, Israel, and Pakistan.

In May 1999 the NPT Preparatory Committee meeting agreed upon procedures necessary for the 2000 NPT Review Conference. But, unfortunately, no agreed substantive recommendations appear in the May 1999 report. The architects of the 1995 NPT extension agreement's provision for strengthened procedures for the review of the NPT, Canada and South Africa, were very critical of the result for this reason.

The majority of NPT parties, at least 110, belong to the Non Aligned Movement. Its leaders were critical of the failure of the 1999 Preparatory Committee to recommend specific steps toward:

- nuclear disarmament including negotiation of START III or agreement to a negotiating committee for nuclear disarmament at the Conference on Disarmament.
- de-alerting nuclear warheads or removing them from missiles.

- legally binding negative security assurances (promises from the five NPT nuclear-weapon parties not to use nuclear weapons on NPT non-nuclear-weapon parties).

Egypt and Algeria, leaders of the Arab League, were also critical of the Preparatory Committee for not urging stronger steps against Israel to gain its adherence to the NPT.

Future NPT Problems

The issues which produced disagreement in 1999 will be raised again at the 2000 NPT Review Conference. These include:

- the failure of Israel, India, and Pakistan to join the NPT.
- the failure of the Duma and the Senate to approve START II, the failure of Russia and the United States to negotiate steps toward START III, and the refusal of the five to agree to a negotiating committee for nuclear disarmament at the Conference on Disarmament.
- the failure to negotiate legally binding negative security assurances.

The ABM Treaty controversy, NMD, and theater missile defense are likely to be significant issues in 2000. Both China and Russia criticized in 1999 what they saw as a change in U.S. policy toward NMD, and suggested that that change could trigger a new nuclear arms race. China expressed even greater concern about theater missile defense, particularly one designed to protect Taiwan.

Both Chinese and Russian representatives criticized NATO's bombing of Yugoslavia without prior UN Security Council authority as a threat not only to themselves but also to the nuclear nonproliferation regime. In informal discussions, they argued that if the UN Charter was not a protection from attacks by NATO or the U.S., then countries that feared that they might one day be attacked by NATO or the U.S. would seek nuclear weapons, the great "equalizers."

Many fear that a group of nonaligned NPT parties that are angry about lack of progress toward making the NPT universal (bringing in Israel in particular) and achieving nuclear reductions may together withdraw from the NPT, or threaten to do so, at the 2000 Review Conference. Egypt and some other Arab League members have already made such threats privately. Several of them have refused to join the CWC or the BWC because of Israel's nuclear-weapon capability. Progress in the Middle East peace process and then toward a Middle East "WMD-free zone" may be essential to keeping the NPT regime strong in the future.

If cooperation between the U.S. and Russia and China to implement the NPT fails, the treaty will also be in very serious trouble.

Session 2: Nuclear Safety and Security

Chair: Grigorii Chernyavski, Director, Center for Program Research, Russian Academy of Sciences

Nuclear Weapons Safety and Security

Eugene Habiger, Center for International Security and Cooperation

U.S. Exchanges with the Russian Military

My first visit to Russia was with Secretary of Defense Cohen in October 1996. When I accompanied him we had a meeting with Gen. Sergeev, commander in chief of the Russian Strategic Rocket Forces at the time. In our discussions there appeared a critical breakout issue. So we invited Russian commanders to walk around inside our missile silos.

In the spring of 1997 General Sergeev paid an official visit to the USA. He had come over earlier, in late 1993, when General Butler was commander in chief, and he went to a Minuteman II base which had been de-alerted, but he'd never been to a real operational base. So during his visit I took him to Francis E. Warren Air Force Base in Wyoming and showed him everything, including young lieutenants on alert in Minuteman III silos. I also took him into a nuclear weapons storage area. That's the first time that had ever been done, that a Russian had been taken into a nuclear weapons storage area. I showed him a lot, because he'd expressed some concern to me, a few months before his visit, that the United States would be able to upload its missiles, under START II, from a single warhead to multiple warheads. There was a concern in Russia that we could download, but if something were to go wrong in the international arena or in our relations with Russia, we'd be able to immediately put two additional warheads on those missiles, and give us a very distinct advantage, obviously. So by showing him that when we put that new bulkhead on, there was no way to have anything other than just one warhead on it, it eased his concerns. And he told me as we walked out of the facility, "You have given me a great deal of ammunition when I go back and talk to the people in the Duma, that their fears of America being able to upload nuclear weapons are unfounded."

When you get to know these people, you develop a level of confidence and trust. I also wanted to show him the security, because at that time there was a lot of talk about a lack of nuclear weapons security in Russia. So I was able to show him how we've applied a great deal of technology in our security practices, with the hopes that when he reciprocated and went back home and invited me over, that I'd be able to see some of their facilities and perhaps put to rest concerns in the USA about the Russian security of nuclear weapons.

Thanks to the efforts of Secretary of Defense Cohen and his direct discussions with Marshal Sergeev, this line of contacts progressed.

In October 1997 I had a trip to two missile bases. The first trip was to Russia, where I actually went out into the field and was taken to two missile complexes. Initially we went to a road-mobile SS-25 ICBM complex at Teykovo, 240 kilometers northeast of Moscow. The next day we visited the Kostroma rail-mobile SS-24 ICBM base, and that's where for the first time ever the Russians took a non-Russian into a nuclear weapons storage facility. There, about 350 kilometers northeast of Moscow, they actually took me into the bunker where the warheads were, and showed me the security, the door, the three-man policy in terms of getting into the facility. They took me into the guard shack, and I got to talk to the young, very sharp professional soldiers that were guarding those nuclear weapons. And I was impressed.

There were a lot of areas that they could have improved upon, especially with the application of technology. But one of the things that drove us to technology in the late seventies and early eighties was getting rid of manpower to reduce cost. And the Russians, at this particular point in time, have lots of manpower and they don't have the bucks to go out and apply technology to these security issues. I came back and handled a press conference at the Pentagon at which I said, "I want to lay to rest this idea that there are loose nukes running around in Russia."

In March 1998 General Yakovlev, commander in chief of the Russian Strategic Rocket Forces, visited the U.S. to meet with senior military leaders and have an exchange on nuclear safety and security experience and tour our nuclear facilities. These included an ICBM base, a weapons storage site, and an SSBN base in the Pacific, guarded by the U.S. Marine Corps. At the same time General Oparin, commander of Russian long-range aviation, visited two airfields—the Barksdale Air Force Base in Louisiana, a B-52H base, and the Dyess Air Force Base in Texas, a B-1B base. In October 1997 the B-1B was converted to a conventional role.

General Yakovlev first saw the ICBM missile silos. I wanted to show him that we were totally and completely open; that we had nothing that we wanted to keep from them. The primary purpose in taking him then to Bangor, Washington, to the SSBN base area, in addition to taking him in the Ohio-class submarine and showing him the quality of people and the condition of our equipment, was to take him to the nuclear weapon storage site there, to show him how the U.S. Marines guard that facility. There was an ulterior method to my madness, that the Russians would reciprocate. And they did, in less than ninety days. I went back over, and they took me to a Delta submarine base. And again, it's to build that confidence.

Now the next step is to get this to lower levels. In other words, start working on the seed corn of our military leadership five or ten years from now, down to the major and lieutenant colonel and the colonel level. We've got an exchange program with missileers. The Russians sent over a delegation of their line lieutenants and captains, they spent a very delightful week at one of my missile facilities. We're going to send a similar group over to one of their missile bases. It's what we call a shadow program, where they just kind of shadow their counter-

parts around for a week or so. My frustration now is that all these exchanges have significantly slowed down.

In June 1998, just three weeks before my retirement, I spent six days in Russia again and went to five major nuclear facilities, including the Kozelsk SS-19 silo-based ICBM site, the Engels heavy bomber airbase, the Saratov national nuclear storage facility, the Irkutsk SS-25 road-mobile missile base, and the Severomorsk Delta SSBN base. In Severomorsk, I was hosted by Admiral Erofeev.

Security Issues

On the whole, I have no concern about the security of the Russian nuclear arsenal, based upon what I saw. If you were to ask me, "What's your level of sensitivity today, taking into account the fact that there are significant economic problems in Russia?" I would say, "We need to be sensitive to what's going on in Russia." What if we had severe economic problems in the United States? Perhaps we'd be concerned about the security of our sensitive military forces, if our military people perhaps weren't being paid exactly on the 1st and 15th of every month. So it is something that we need to keep on our radar scopes. But do I see alarm bells going off at this time? No. By the way, I was criticized for these opinions. My response was that it is a representative sample.

In the spring of 1998 the Russians took a revolutionary step that did not get a whole lot of coverage. And that is General Valynkin, who is in charge of the 12th Directorate, took over control of the security of all nuclear weapons in Russia. When I talked to him in June, he had control of all nuclear weapons except those in the Strategic Rocket Forces. And he indicated to me that by the end of 1999, or perhaps shortly thereafter, he would have control over those. So I asked General Valynkin, "Why are you taking the tactical nukes, the bomber nuclear weapons, the navy nuclear weapons, and the ballistic missile nuclear weapons?" He said, "To standardize . . . and to make even better a system that is already good." And that makes sense. Now, I would submit that perhaps there were some tactical nuclear weapon storage sites in Russia that maybe weren't quite up to standards, and this is the reason why he got control.

Overall Approach

In general the Russian MOD takes a very conservative approach. The 12th Directorate employs a comprehensive, well-tried system. To name but a few features:

- We have a two-man policy while the Russians use a three-man policy.
- Strong control over the movement of nuclear warheads, e.g. bomber to bomber—a wing commander responsibility in the USAF versus a much higher authority in Russia.
- Restricted access, armed guards, special badges, etc.
- Routine inventory checks. Special software, including new software supplied via the Nunn-Lugar program.
- Highly centralized overall control and no-notice inventory checks—done within a few hours. There are some other differences such as Russians allow vegetation along the line of view whereas we do not allow that. I would say that the biggest difference is the number of storage sites: We in the U.S. have 11 sites and the Russians have 120.

Manpower and Morale

Currently the DoD strives to reduce manpower where possible. On the average, a U.S. military person costs $80,000 annually. So at the new Kirkland underground nuclear storage facility the incurred costs were absorbed in seven years, all due to manpower savings. With the people who deal with nuclear weapons, you go to great lengths to make sure that they're well fed, taken care of, get adequate housing, good medical care, because they have a special trust, whether you're talking about the United States, Britain, France, Chinese, Russians. So when things start happening which erode the morale, sure, you'd better be concerned. You don't want a disgruntled individual out there involved in nuclear weapons. And that's why we have in the USA something called the Personnel Reliability Program, where we specifically look at each of those several thousand people involved with nuclear weapons to make sure that they've got a full deck, they've got their heads on straight. So if conditions continue to erode in Russia, it's something we ought to be concerned about.

By the same token, the Russians have in place a series of programs to make sure that their people who are dealing with nuclear weapons are mentally prepared and trustworthy to be doing their daily jobs. And if they're not, they don't go to work. To be more specific, I was pleasantly surprised to find out that before any Russian missile crew member goes on duty, whether it's an officer in the control silo or a security individual, they are interviewed by a medical doctor and a psychiatrist or psychologist. The doctor examines him and the psychologist talks to him. We don't do anything like that. We tend to look at the individual, and if we see something wrong, then we will react. We talk to them, but it's not as formal as what the Russians do. Both systems work. Also we need to be a little bit concerned about what's going on in Russia and its armed forces in terms of the economic unrest. I don't think we ought to start crying "the sky is falling," but it's certainly something the USA needs to keep our eye on.

NPT, CTBT, and START Perspectives

The policy of the United States of America, as embodied in the 1968 Non-Proliferation Treaty, is zero nuclear weapons. But if you read Article 6 of that treaty, it says "under the proper preconditions." The problem is, I don't think we'll ever see the proper preconditions. And that's unfortunate. A respected ad hoc panel of experts was established by the U.S. Senate in 1995. It is chaired by Dr. Foster, director of the Lawrence Livermore Laboratory, and includes five individual members. As it has revealed, maintaining of U.S. nuclear weapons safety/security costs us $4.5 billion a year, so implementation of treaty-related comprehensive measures in the ten years' time frame would require at least $45 billion.

Nuclear Suitcases

In the context of proliferation this issue was mentioned in the U.S. first by General Lebed and then by Alexei Yablokov, President Yeltsin's former environmental adviser. Well, we knew such devices existed. But "suitcase nuclear bomb" is, I think, a little optimistic of a description. It's certainly something that I would be hard-pressed to carry—it's fairly big and heavy. The Russians go to great lengths in the accountability of the nuclear devices. We are spending a lot of money under Nunn-Lugar to automate that system. Our system is very

automated, and we test it on a regular basis. The Russian system is more manpower-intensive. It's pretty much a stubby pencil and a spreadsheet kind of thing. But I was shown how they account for their nuclear weapons. And I was told that these smaller devices are included in that same accountability system. General Yakovlev is the commander in chief of the Rocket Forces—he took me in his office and showed me an IBM computer screen, and Yakovlev can track where every nuclear weapon is in his system by serial number. I couldn't do that from my headquarters. If the Russians were as deadly serious about the accountability of the nuclear weapons that I saw and have been involved with, I can only surmise that they have the same concerns with the smaller weapons. There have been a number of Russians that have come to the USA and thrown a grenade on the table of some of our congressional committees, saying that there lots of loose suitcase bombs in Russia. I don't think so.

START Ratification and Perspectives

My understanding of the Russian concerns that are stalling the ratification of START II except, of course, the latest events, is that the Duma had three primary concerns about it. The number-one concern is our breakout of the ABM Treaty. The Russians are paranoid that we will come up with that golden BB that would negate any kind of Russian capability. By the way, I testified at several congressional hearings on the ABM Treaty. I strongly expressed my opinion that the ABM Treaty should not be violated. I support the idea that there could be an international early-warning system. Like one of the radars could be in Kamchatka. Second, the Duma is very, very much concerned about this upload issue . . . in terms of us being able to put more warheads on our missiles. Because when the Russians go to the START II and START III regimes, they're going to have missiles that there's no way they can put more warheads on. They're all going to be single-warheaded missiles. And the third area that the Duma is very much concerned about in terms of START II ratification is adequate funding of the Russian nuclear forces. Russian nuclear forces make Russia a superpower. I think one of the reasons why the Russians are so heavily involved in space, manned space, is its symbolic status as a superpower activity.

Now, de-alerting. We started at 12,000 nuclear weapons, most of those on alert during the Cold War. Today, under START I, the Russians have about 2,000 nuclear weapons on alert. Under START II, they'll be down to about 1,000 nuclear weapons on alert. Under START III, if all goes as planned, that number will be around 700 nuclear weapons. And everybody feels comfortable with that. You don't want to do anything unilaterally that's going to be destabilizing. You don't want to do anything that's going to create uncertainty. We've already taken some aggressive steps in this area. Getting back to 450 Minuteman II's, we unilaterally dealerted those with no reciprocal actions on the part of Russia then. As a matter of fact, if you go back and look at every initiative that's been taken since the end of the Cold War—dealerting of airplanes, missiles, command and control airplanes, that sort of thing—the United States has taken about nineteen separate initiatives. My point is that we have taken extraordinary steps—we're trying to get down to lower numbers, and we're doing that. So what we've done since 1991 is gone through a number of initiatives, detargeting being one, dealerting and bringing down our forces being another. So that we're on a very stable, verifiable glide path.

At the height of the Cold War we had 12,000 nuclear weapons on each side, a horrendous number of weapons. And under START I, we went to 6,000. That's where we're at now. Under START II, we'll go down to 3,000–3,500. Under START III, if the Helsinki Accords

hold up, we'll go down to somewhere between 2,000 and 2,500. And hopefully there will be a START IV and a START V. But when we get beyond START III, in my view, it's going to become a multilateral negotiation, and that's going to be a very painful process. I would submit that it's not going to take the Russians very long to figure out that when you do the math and you go from START III (the 2,000–2,500 number) and you go down to that next level (whatever that next level is), that, "Hey, there are some other players out there that have nuclear weapons, like the French and the Chinese and the Brits," that have to come into the equation. So when we go from the START I, START II, START III bilateral kinds of negotiations, and you go multilateral, say, with START IV, it's going to be a very painful process, I think, and it's going to be a very time-consuming process.

Russia-U.S. Cooperation on Nuclear Safety and Security

Vladimir Dvorkin, General, Director, Fourth Central Research Institute, Russian Ministry of Defense

First of all, I would like to mention that I read your report, General Habiger, and I was very impressed by it. It is a pity that you were criticized for it. It is a very good and true report.

I will talk in a very generic sense because in a narrow sense General Maslin knows everything much better than I do.

Strategic treaties basically define safety procedures. Just eight days ago I spent two days with Senator Lugar, Senator Nunn, and the other eight members of the Aspen Strategy Group discussing stability. I do not want to create a list of lamentations here but I would like to mention that we are in a logjam because of START II, START III, and ABM issues. START II was very close to ratification and yet just days before ratification the Iraq attack started. And on March 24 the attack on Yugoslavia started. So there is an opinion here that the U.S. does not need these treaties and, in fact, will abrogate the ABM Treaty. That is why we have a current crisis of trust. Unfortunately, I am less optimistic than my American colleague is. It is a real paradox, because during the Cold War we had more faith in fulfilling our promises. So, the coming Cold Peace could be even more difficult than the Cold War. But General Habiger, in my opinion, is absolutely right. We should continue and not capitulate. There must be a legal analysis and a scientific analysis of the current situation.

Safety and Security of Russia's Nuclear Arsenal Command and Control

The safety and security of Russia's nuclear arsenal is a very sensitive topic in our relations because it is considered to be directly linked to the security of each party. Also, when we talk about nuclear weapons, certain items are verifiable. Yet as far as command and control is concerned, verification is not possible. There were attempts to institute joint programs and there was a study on the reliability of control, especially so-called negative control. Negative control is a kind of control that provides for the reliable averting of unauthorized launches

of nuclear weapons. This was something that the Americans first and foremost were interested in, although I believe that some of the concerns expressed by the representatives of the United States on numerous occasions were overstated.

For example, the concern that the economic crisis in Russia negatively affects the reliability of the nuclear weapon control system in Russia. It is true that the crisis is deep, and it certainly affects both the state of the technical systems and the morale of the officers. However, there is centralization of command and control, which is built into the whole algorithm of control. That's why all kinds of difficulties, both technical and economic, affect primarily people. But these difficulties do not affect the technical features of the fully automated control system. Since the system is fully automated and very centralized, that, on the other hand, increases the reliability of negative control.

The command and control system has many different stages and levels and links. The highest link is the control center of the Joint Chief of Staff to the launch pads. Nobody can tamper with it. The degree of negative control is extremely high here. Usually the probability is assessed at 10 to the minus 15th or minus 16th degree. This degree of reliability is very high both in Russia and the United States. It took dozens of years to develop and perfect this system. Therefore no technical or economic difficulties can affect the operability of this system, from the viewpoint of decreased negative control. I'll reiterate that the only type of control that can actually be decreased is the positive control.

Fissile Materials and Non-Strategic Nuclear Weapons

I know that there is a lot of work that's being done jointly by the Ministry of Atomic Energy of Russia and the U.S. Department of Energy regarding fissile materials monitoring. In my opinion, there are adequate control methods, such as nuclear passports and radiation stamps. There are some technical issues that need to be solved with nuclear passports, such as accurate sensing. These are very doable things—only political obstacles stand in the way. I would also like to mention that the reliability and security of our storage facilities for all nuclear warheads, both strategic and non-strategic, is as strong as it used to be; it has not been affected by the crisis. It is true that there are a lot more crazy terrorists, or various incidents, than earlier, but that's a different story. However, no terrorists are capable of creating an active nuclear explosion anywhere, either on the territory of their country or anywhere else. I understand that some relatively small nuclear devices existed both in the United States and in Russia, but why they should be needed in a suitcase format—that's something really for terrorists. I don't think they can really fulfill any kind of deterrence function. But even if these kinds of mobile nuclear bombs or devices did exist, they would have to be reproduced on a regular basis. Any kind of nuclear device or bomb has a shelf life. And once its life has run out, the charges on these devices become more dangerous for the people that are in possession of them. There are a lot of other factors that lead to decreased efficiency of devices like that.

SPRN (Early Warning System)

There were eight ground-based early-warning stations in the Soviet Union and a space-based system. Of the eight large radar stations, five ended up outside of the Russian Federation. However, only one of them was destroyed. The radar station in Skrunda, Latvia, is not operational any more. As a result, a blind sector appeared. We had to take additional mea-

sures, otherwise we would not have been able to observe the launches with the second echelon of the early-warning system. We compensated in part for this empty sector with other stations. The other stations are fully operational, for example in Ukraine and Azerbaijan. We are planning to put into operation a station in Belarus, near Baranovichi. And another thing is that an attack from the West is probably the least conceivable given the current situation.

In 1995, the Strategic Rocket Forces mistook a NASA rocket launched from Norway for an incoming American nuclear missile. The launch of the rocket was detected and that information passed on to the president of Russia. There was nothing done, in terms of taking any kind of retaliatory measures. It is very hard to make a decision to initiate a massive retaliatory strike, even if you possess complete and true information concerning the fact that your country has been hit. It's totally impossible to make a decision based on information about a single missile. I will say it again. No president, no matter what president it is, will ever make a decision about launch-on-warning based on information about one rocket or missile or even two or three missiles. And I don't think that there are sufficient grounds for Americans to be concerned or worried about our command and control system.

Detargeting and Retargeting

The time that is required to retarget a weapon is very short, so it is comparable to the time that is necessary to check the technical readiness of the missiles. This is more of a political measure of confidence and nobody doubts that it has been implemented.

Accidental Launch

Nuclear warheads are on the missiles and at any time they can be launched at the targets. This is something that was done during the time of the Cold War and it has not been changed by anybody. The situation is such that we are really hostages of the software, technology, and equipment that was manufactured earlier. In a sense, the tail is wagging the dog. That is why measures are being taken to move away from the model that formed over the years. It makes no sense to deter each other from any kind of attack, not only from a nuclear attack, but from any kind of massive attack. But unfortunately, the nuclear deterrence doctrine has not really been changed yet. I'm talking about a change that would be supported by technical means. It appears to be a very hard thing to do, not only because of the inertia of thinking, but also due to a number of other factors. Just imagine, is it really possible for only the United States and Russia to de-alert their forces altogether while France, China and Britain maintain their forces on alert? In other words, it is a very long process and it probably should be a multilateral process at that.

De-alerting

The essence of de-alerting is that there are a number of technical measures that would prevent fast launch of nuclear missiles. Unlike the detargeting regime, these measures are transparent and verifiable. For example, one of them is that the gas generator can be separated from the cover of the silo. You can also remove onboard batteries. These are verifiable measures, and the missile would not fly anywhere until those onboard sources of power were replaced. But, in my opinion, these measures could have been undertaken with regard only

to a number of the missiles, not all the missiles, due to the reasons I mentioned earlier. We cannot fully de-alert all of our forces while other countries maintain their forces on alert.

START II, III, and the ABM Treaty

In the part of this process in which I was directly involved, the cooperation dealt with the intensification of the negotiation process and the reduction of strategic arsenals. However, we had covered much ground together even before the Cold War was over. The foundation for reducing nuclear arsenals was laid in the past. Just remember the signing of the INF treaty, SALT I, SALT II, START I, and START II. Americans say that modification of the ABM Treaty is possible. They claim it would affect only a thin layer of NMD. We basically agree with this. We do not think that this thin NMD threatens us, but it gives the immediate possibility of the fast deployment of more sophisticated systems. Americans tend to say that the ABM Treaty of 1972 is a product of the Cold War and is obsolete. But the Helsinki and New York agreements are fresh and based on the ABM. All future decisions on NMD will be based on the degree of achieved mutual trust.

Hopes

There were great hopes in December of last year and then again this March that the State Duma would ratify START II. Everything was ready for that to happen. The strikes delivered by the United States and Britain against Iraq and by NATO against Yugoslavia, however, moved this issue somewhere into the future.

Arguments against START

Apart from the latest events there are approximately ten major arguments against ratification. For example, opponents say that this treaty is going to cause a collapse of the structure of the nuclear forces of Russia. They also assert that the United States is going to have a much greater ability to build up its nuclear forces compared to Russia. So, I go through these arguments in much detail and I prove that they are groundless. But you know that the parliament is a parliament. There is not much you can do. Now we can probably say that we do have democracy. I can tell you that if we still had a totalitarian regime, we would have ratified this treaty ahead of the United States.

We have had this debate for almost six years in Russia. We are trying to convince the deputies that this treaty is in the interest of Russia because it would provide for a nuclear balance between Russia and the United States at a lower, acceptable level that would be economically advantageous for Russia. And that balance is necessary, not in order to deter the United States from attack, but in order to deter any kind of new confrontation or a new arms race. However, without the START II treaty, this balance will not be achieved. Furthermore, we should start thinking about START III and discussions on the ABM Treaty.

My suggestion here would be to start a dialogue on START III, at least unofficially since the Senate vetoed discussion on START III before START II is ratified.

Session 3: Export Controls of Conventional and Nuclear Technologies

Chair: Dr. Dean Wilkening, Science Program Director, CISAC

U.S. High Technology Export Controls: Commercial Satellite Case Study

Lewis R. Franklin, Center for International Security and Cooperation

Recent changes in international and U.S. domestic export-control regimes have reduced the ability to control transfers of militarily useful technology:

a. The dissolution of COCOM in 1994 left the United States without an effective multilateral means to control exports of militarily useful goods and technology. The subsequent Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies (Wassenaar) leaves international controls over the transfer of military technologies to national discretion. Other multilateral control regimes set guidelines for particular kinds of transfers (for example, certain transfers related to missiles [MTCR] or nuclear materials [NPT]). Additionally, in the post-COCOM period, the United States dramatically liberalized export controls on dual-use technologies, such as high-performance computers and encryption products.

b. The expiration of the U.S. Export Administration Act in 1994 (because the two political parties could not agree on changes to extend this legislation for another period of time), which is the basic legal authority for commercial and dual-use export controls administered by the Department of Commerce, has left export controls under different legislative authority than before. Export controls on these items have been continued under the provisions of the International Emergency Economic Powers Act implemented under a presidential authorization. This law carries significantly lesser penalties for criminal and civil violations of export controls than those that applied under the Export Administration Act.

While the general criminal penalties of Title 18 of the U.S. Code may be imposed under either scheme, administration of export controls would be enhanced by a reauthorization of the Export Administration Act that would restore more significant penalties for export-control violations and, more importantly, update the specified items to be controlled.

c. U.S. policy changes on dual-use technologies announced in 1995 that reduced the time available for national security agencies to consider export licenses need to be reexamined in light of the volume and complexity of high-tech licensing activities. It is argued that Commerce officials alone are less likely to have the expertise to identify national security implications of exports of militarily useful technologies. While national security agencies may be informed of applications, due time is needed for their consideration. However, the time frame for consideration is not always sufficient for the Department of Defense to determine whether a license should be granted, or if conditions should be imposed. In addition, the Intelligence Community has sought a role earlier in the licensing process in order to evaluate the technology and end user.

Dividing the licensing responsibilities for satellites between the Departments of Commerce (commercial communications satellites) and State (imaging satellites and certain specific technologies like satellite guidance and control) resulted in uncertainties as to which department's procedures applied to specific situations. The 1996 decision to give Commerce the lead role in satellite exporting was reversed by the Congress in a rider attached to the 1999 Defense Appropriations Act, passed in September 1998 and effective March 15, 1999.

Here is, in a nutshell, how the situation developed since 1992. In December 1992 a Long March 2E failed while launching the Hughes Optus B2 satellite. In January 1995 a Long March 2E failed again with the Hughes Apstar 2 satellite. In February 1996 the Long March 3B failed while launching the Loral Intelsat 708 satellite. In 1997 the DoD Defense Technology Security Agency (DTSA) charged that the company's activities in launch failure analysis constituted export-license violations and referred the cases to the Justice Department for investigation. In 1998 Congress became concerned, especially the Republican leadership. A House Select Committee (the Cox Committee) was assigned to investigate and report back in December.

On March 15, 1999, the newly passed law to transfer commercial/scientific satellite expert license control from Commerce to State went into effect. Among the many changes specified in this new law are that DTSA (now called DTRA) has monitoring authority over all meetings with foreign persons and at the launch sites; the list of satellite-related items that now require a license has greatly expanded to include space-qualified components and ground equipment; and there are provisions to license activities related to launch and space insurance. If there are no technological changes, grandfathered licenses will be valid.

In November 1998 Russia was accused of supporting Iranian programs to develop weapons of mass destruction. Trade sanctions were imposed on ten institutes, including the Moscow Aviation Institute. A temporary hold was imposed on exporting commercial satellites to Russia.

In December 1998 CISAC held a workshop on satellite export control. One of the conclusions of the workshop was that U.S. defense policy will be increasingly partisan and high-tech exports will be more restricted in the near future.

In January 1999 the classified version of the Cox report was delivered to the president. It contained an allegation of theft of nuclear weapons design by the PRC. The criminal investigation of Loral and Hughes is under way, but there is little public information available, and Loral and Hughes both publicly deny that any export laws were violated and that any missile technology was passed to the PRC. The president's focus is mainly on nuclear security issues raised by the Cox Committee, and he does not resist the export-control changes.

In February 1999 Hughes was denied a change to its existing export license which it needed to export the recently completed APMT satellite.

On March 15, 1999, the State Department became responsible for all satellite export licenses. It issued first of many changes to the International Traffic in Arms Regulations (ITARs). The Department of State admitted that it has insufficient staff to take on the new responsibilities, and it also complained that Congress had not provided adequate funds for the task.

On May 25, 1999, the redacted (unclassified) version of the Cox report was released, which contains about 900 pages. It made public for the first time the following recommendations for satellite launches:

1. The Select Committee expects that the Executive branch will aggressively implement the Satellite Export Control Provisions of the Strom Thurmond National Defense Authorization Act for FY 1999.

2. To protect the national security, the congressional judgment is that the Department of State is the appropriate agency for licensing both exports of satellites and any satellite launch failure investigations, which must be faithfully and fully implemented.

3. To protect the national interest in foreign commerce, the Department of State must ensure, consistent with national security, that satellite export licenses and notices to Congress are acted on in a timely fashion and that exporters are informed about the progress of their applications and have access to appropriate dispute resolution procedures. In order to achieve the foregoing, the Executive branch and the Congress should ensure that the Department of State has adequate personnel and resources devoted to processing export license applications.

4. To ensure that satellite manufacturers are not disadvantaged in such collateral areas as tax credits by the transfer to the State Department of responsibility to license satellite exports, the appropriate congressional committees should report necessary legislation.

5. The Department of Defense must give high priority to its obligations under the Strom Thurmond National Defense Authorization Act, including requirements for (i) recruiting, training, and maintaining a staff dedicated to monitoring launches in foreign countries of U.S. satellites; and (ii) establishing and monitoring technology control plans to prevent any transfer of information that could be used by the PRC to improve its missile launch capabilities.

6. The Select Committee recommends that the appropriate congressional committees report legislation providing that, in connection with foreign launches of U.S. satellites, the Department of Defense shall contract for security personnel who have undergone background checks to verify their loyalty and reliability. The number of guards shall be sufficient to maintain 24-hour security of the satellite and all related missile and other sensitive technology. The satellite export licensee shall, as a condition of licensure, be required to reimburse the Department of Defense for all associated costs of such security.

7. The Department of Defense shall ensure sufficient training for space launch campaign monitors and the assignment of adequate numbers of monitors to space launch campaigns. The Department of Defense also shall ensure continuity of service by monitors for the entire space launch campaign period, from satellite marketing to launch, and, if necessary, comple-

tion of a launch failure analysis. In addition, the Department of Defense shall adopt measures to make service as a monitor an attractive career opportunity.

8. The Department of Defense monitors shall maintain logs of all information authorized for transmission to the PRC, including copies of any documents authorized for transmittal, and reports on launch-related activities. Such information shall be transmitted on a current basis to the Departments of Defense, State, and Commerce, and to the Central Intelligence Agency. Such documents shall be retained for at least the period of the statute of limitations for violations of the International Traffic in Arms Regulations (ITAR). In addition, the Department of Defense shall adopt clear written guidelines providing monitors the responsibility and the ability to report serious security violations, problems, and issues at the overseas launch site directly to the headquarters office of the responsible Defense Department agency.

9. The Select Committee recommends that relevant Executive Branch departments and agencies ensure that the laws and regulations establishing and implementing export controls are applied in full to communications among satellite manufacturers, purchasers, and the insurance industry, including communications after launch failures.

10. In light of the potential impact on U.S. national security of insufficient domestic commercial space-launch capacity and competition, the Select Committee recommends that appropriate congressional committees report legislation to encourage and stimulate further the expansion of such capacity and competition.

The committee's recommendations for legislation and other technology controls were the following:

The Select Committee believes that it is in the national interest to encourage commercial exports to the PRC, and to protect against the export of militarily sensitive technologies. To this end:

1. The Select Committee recommends that the appropriate congressional committees report legislation to reenact the Export Administration Act, with particular attention to re-establishing the higher penalties for violation of the Act that have been allowed to lapse since 1994.

2. Relevant Executive departments and agencies should establish a mechanism to identify, on a continuing basis, those controlled technologies and items that are of greatest national security concern.

3. With respect to those controlled technologies and items that are of greatest national security concern, current licensing procedures should be modified:

- *To provide longer review periods when deemed necessary by any reviewing Executive department or agency on national security grounds; and*
- *To require a consensus by all reviewing Executive departments and agencies for license approval, subject to appeal procedures.*

4. With respect to controlled technologies and items that are not of greatest national security concern, current licensing procedures should be modified to streamline the process and provide greater transparency, predictability, and certainty.

5. The Select Committee recommends that appropriate congressional committees report legislation amending the Defense Production Act of 1950 to require notice to the Committee on Foreign Investment in the United States (CFIUS) by all U.S. companies that conduct national security-related business of any planned merger, acquisition, or takeover of the company by a foreign entity or by a U.S. entity controlled by a foreign entity. The amendment also should require Executive departments and agencies to notify CFIUS of their knowledge of any such merger, acquisition, or takeover.

So, what is the situation today? For months and months (during 1998) impeachment occupied the attention of the Congress and the White House. Now Kosovo has replaced impeachment. China stands accused of theft by Congress and the executive branch. Nuclear theft, which did not involve any export-license violations, was deemed more serious than missile technology but the export process has been severely affected. At present, the satellite export-license processing is stalled. There are more than six hundred applications in the pipeline. As it sometimes happens State bureaucratic zeal exceeds congressional mandate. The ITARs now have many conflicting regulations. Licensing procedures are now equally restrictive for allies and rogue states. Pre-1999 satellite export licenses are permitting launches from Russia/Kazakhstan, by Boeing Sea Launch, and from China, but Congress has announced that it has plans to legislate stricter export controls.

At this point both political parties are making positioning statements (trial balloons) about the Cox report conclusions and recommendations for their 2000 election campaigns.

Here are my cautious predictions for the nearest future:

There is little chance of needed export-control reform until the next president and Congress.

It is likely that bureaucracy in State and Defense will expand and strengthen without needed supervision by secretaries in this partisan environment.

Other high-tech dual-use export products could be reclassified as munitions.

The request for increase in the L-K-E Proton launch quota (nearly expended) will be resisted by Congress.

Republican partisan statements are increasingly connecting a number of proliferation-related issues as evidence of the failure of Clinton's foreign policy: NMD and the AMB Treaty conflict; Iran, North Korea, China and India/Pakistan nuclear weapons programs; and liberalized high-tech dual-use export controls.

Export Control in the Russian Federation

Rustam Safaraliev, Center for Export Control

The primary mission of export controls is rather straightforward in principle—to promote international trade through safe and secure export operations. Export control is a condition of national security and a significant part of foreign policy. One cannot sell a bomb easily, but those elements that are components of weapons of mass destruction are subject to strong export control. Only 10 or maybe 15 percent are purely military; the rest is dual-use technology. That is why we need to concentrate on dual-use. There exist objective tensions between demand and supply on the one hand and restrictions on dual-use technologies on the other. Our task is to find the optimal balance between our strict commitment to confining potentially dangerous exports and the internationally acknowledged principles of free trade.

The first steps toward establishing an efficient new national system of export control were taken by Russia in the early 1990s. The Russian Federation's government commission on export control and federal currency and export-control service is the kernel of the national export-control system. All activities involving the development of a comprehensive system of export control in the Russian Federation conform to the following major guidelines:

1. To ensure export control and prevent leakage of sensitive technologies that may inflict damage to the national interests of the country.

2. To comply with international commitments aimed at prohibiting uncontrolled exports of equipment, materials, and technologies that can be used for development of weapons of mass destruction and their means of delivery.

We should pay tribute to our governmental authorities since during the past five to six years Russia has made good progress in this field and formed a comprehensive system of export control. During this period our country has joined a number of international organizations on export control. We had certain difficulties in joining the Missile Technology Con-

trol Regime initially, but today we are working successfully in this direction. At the same time Russia is a major participant in the activities of the Nuclear Suppliers Group. There are a number of other international mechanisms that require serious attention from our side. At the same time we should not forget about protection of our own interests. We are of the opinion that Russia's system of export control is well advanced, structurally and operationally. It exists and works. It employs all appropriate international control lists, specialized procedures for considering sensitive technologies, etc.

It's no secret that Russian science and industry finds itself in a very difficult situation today. This is an underlying factor in the danger of leakage of dual-use technologies and materials. Our experts should explore together the possibility of Russia-U.S. interaction to provide more support for Russian science and technology centers and thus help secure the nonproliferation of WMD and delivery systems. Moreover, they could undertake a detailed analysis of measures necessary to expand Russian-American cooperation in the area of export control and nonproliferation.

A sophisticated system of control over dual-use goods and technologies will open international markets for Russian companies engaged in foreign trade and promote restoration of trust in our financial institutions and the Russian government on the whole. That will strengthen the position of Russia's defense industries in global markets.

Legislation

Fulfilling its commitments to the world community, the government of the Russian Federation has issued several important documents. These include:

- Resolution No. 57 of January 22, 1998, "On the Improvement of Controls over the Export of Dual-Use Goods and Services Related to Weapons of Mass Destruction and Missile Delivery Vehicles." The main point of the document is that all Russia's foreign trading companies (both state-owned and private) shall refrain from export deals involving any dual-use goods and services that are commonly not subject to Russian legal acts in the export-controls area if they know that such goods and services can be used for development of WMD and missile delivery systems. The government introduced a system of comprehensive control (referred to as "catchall" in the West), which enables it to consider any relevant issues that do not formally fall under restrictions of the export-control regimes but relate to dual-use technologies.
- On May 14, 1998, President Yeltsin signed Decree No. 556, "On Legal Protection of Results of Scientific Research and Technological Works for Military Specialized and Dual-Use Purposes," which declared all aforesaid results in the defense sphere to be the intellectual property of the state. On May 12, 1998, a special document was issued entitled "Manual on Establishment of the Internal System of Exports Control in a Company." The document was developed to provide organizational and methodological assistance in the elaboration and introduction of an intra-company export-control system for Russian enterprises and companies participating in the international exchange of goods and services.

However, it is evident that export controls cannot be efficient without appropriate national legislative acts. On July 30, 1998, the Russian government submitted for the State

Duma's consideration the Federal Law on Export Controls, which is aimed at establishing a profound legal basis for further improvement of the export-control system over sensitive technologies. The State Duma approved this important document with an overwhelming majority on December 18, 1999, in the first reading. Soon the second reading will take place and we expect that the new law will incorporate all amendments and more precise definitions, which will contribute to its efficient application and implementation in the Russian Federation.

Criteria for comprehensive export control over military and dual-use goods and services should be legislated. This is of vital importance to our country now and for the future.

Sanctions

I'd like to say a few words about recent U.S. sanctions imposed on ten Russian organizations. The overall situation looks rather strange. The USA decided to implement sanctions on the basis of its domestic legislation and then extrapolated this to international affairs, to its relations with other countries. This situation is quite dubious in the context of international law, though we understand current realities.

We are of the opinion that the situation should be assessed *cum grano salis*. The USA is using its comprehensive might to impose its internal legislative acts on us. One should admit this fact. Still, it is our firm belief that all efforts should be applied to establish equal rights and real partnership for the future. It could be reasonable to elaborate and then implement adequate Russian mechanisms of sanctions against the foreign companies suspected of being involved in proliferation of WMD and their delivery systems. These should be imposed on the companies, which work on the territory of Russia and violate Russian legislation.

Conclusion

Summing up I would like to reiterate that the Russian Federation has a viable system of export control, which is working and making progress. On the whole it meets respective international standards. Russia is an active participant in most important export-control regimes. We do follow the American pattern which, in my opinion, is the best in the world. Yet we have to admit that our system is far from being perfect. Our infrastructure is poorer but we are trying to improve it.

An advanced integrated system of export control should be based on stable economic progress and the rule of law in the country. Nowadays our primary mission is to provide for the Russian economy, with new possibilities for active participation in the international division of labor.

Some Aspects of Conventional and Dual-Use Technology-Transfer Control

Leonid Ryabikhin, Center for Scientific Research, Committee of Scientists for Global Security

A new system of international relations arising after the end of the Cold War era caused a departure from the bipolar military and political division of the world. Today a more diverse system is being formed. But this process has not been followed by a sharp increase in world stability, notwithstanding the fact that the threat of world nuclear conflict has been minimized. Now the possibilities of a destabilized international situation on the regional level are increased. Ethnic, national, and political conflicts have become more frequent. The territorial controversies have become aggravated, conflict areas enlarged. To the "traditional" zones of heightened risk—the Middle East, Gulf region, South and Northeastern Asia—have been added several zones in Europe (particularly the Balkans) and several southern regions of the former USSR.

While upholding their national interests nations more often rely on the possession of powerful armaments as means of intimidation, and in some cases they rely on their use. In spite of the serious threat posed by the proliferation of weapon of mass destruction and the means of their delivery, the actual facts demonstrate that even the most radical aggressors cannot so easily venture to use weapons of mass destruction in regional conflicts, even in the form of acts of terrorism, because those steps could cause reciprocal actions on the part of the victim or the world community. Therefore, only conventional weaponry is used in regional armed conflicts. But the participants in a military conflict usually have very serious goals to achieve victory over the enemy. In order to do so one should ensure the effective use of one's armed forces, which is determined by the quantity and quality of weapons and military equipment, the ability of personnel to apply these effectively, and purposeful control over combat operations.

The quality of its weapons is one of the most important indications of the military power of an army. Modern conventional armaments based on advanced technologies, with their capacity for destroying objects and manpower, have approached the characteristics of the tactical nuclear weapon. Those nations that do not possess advanced technologies have to purchase the necessary arms or acquire the needed advanced technologies in order to develop their own modern weaponry. In this case acquired weapons or technology can be used to protect national interests but also to implement aggressive plans.

The transfer of conventional arms and dual-use technologies has not been first among major proliferation concerns. The focus has been on weapons of mass destruction. But priorities have shifted to conventional arms. This has been a serious deficiency in arms-control efforts, since conventional arms and armament continue to be used in military conflicts.

Many conventional wars and internal conflicts have taken place since World War II. Since August 9, 1945, some forty million people have died in battle-related deaths. During this time, the proportion of civilian deaths has increased from 10 to 90 percent. "Conventional" weapons, including light arms, caused virtually all of these deaths. The numbers and capabilities of conventional weaponry are increasing constantly. Conventional forces constitute the major part of military spending throughout the world. Conventional weapons continue to improve technologically. The development of precision-guided munitions and the associated evolution of electronic warfare based on advanced technological achievements produced a major breakthrough in conventional warfare. The advanced technologies and "smart" weaponry are likely to be a crucial factor in future military conflicts and will have a significant influence on regional military balances. The technologies change so rapidly that the relative capabilities of different countries can be changed drastically in a short time.

The ability to secure a supply of arms from foreign suppliers is an important element of defense policy in almost every country in the world, except the United States and Russia (where the size and nature of defense industrial capacity eliminates the need to import arms). Most countries are dependent on arms imports to meet a significant proportion of their armed forces needs.

Most U.S. and international efforts to control the trade in weapons and weapons technology focus on the proliferation of ballistic missiles. More measures should be undertaken to encompass conventional weapons that already serve as the mainstay in regional and internal conflicts in Africa, Asia, Latin America, the Middle East, the Balkans, and the former USSR.

The invasion of Kuwait by Iraq on August 2, 1990, and the subsequent Gulf War between Iraq and coalition forces in 1991 have made the issue of international arms transfers a new focus of attention. The policy of sustained arms and dual-use technology exports by major powers to Iraq was correctly criticized as a failure of arms-export regulation. Some governments violated their own export laws. In other cases, governments have exported arms with no mechanism for control.

The debate about international arms-export regulation and control is at an early stage, but several obstacles stand in the way of successful negotiations. Great numbers of conventional weapons are already present in regional arsenals, and they figure centrally in regional defense planning. Some nations are not satisfied with the existing military balances in their regions. Many nations export conventional arms and most view the arms trade as a vital part of their economic activity. Finally, given motivated and multiple buyers and sellers of conventional arms, it will be difficult to prevent the circumvention of negotiated limits on their transfer. To the extent that producing nations can enforce export limits, importing nations

may turn increasingly to domestic production. The spread of advanced technologies including dual-use technologies diversifies the potential sources for their import.

The international system of multilateral control of the transfers of conventional arms and dual-use technologies is at a relatively primitive stage. In 1944 the Coordinating Committee on Multilateral Export Controls, COCOM, was established. COCOM was designed to help secure and advance the West's military edge by preventing Soviet access to both commercial and defense-related high-tech products, services, and know-how. The collapse of the USSR and dismantling of the Warsaw Treaty and the globalization of high-tech production undermined the existence of COCOM. In April 1994 COCOM was "disestablished" by its members. The UN Register of Conventional Arms, a voluntary reporting exercise that began in 1992, invites states to provide import and export information on seven categories of major conventional weapons: tanks, armored combat vehicles, heavy artillery, combat aircraft, attack helicopters, warships, and missiles and missile systems. Countries are also invited to volunteer information on military holdings, procurement through national production, and relevant policies.

The UN resolution on the register calls only for registration of major "conventional" arms transfer. Transfer of nuclear, chemical, and biological weapons as well as light arms and dual-use technology are not subject to registration. Moreover, the resolution does not directly address the problems arising from arms production and stockpiling, both of which are linked to arms transfer. The resolution fails to address the need, as publicly expressed by many states, for reduction of the overall volume of arms in the North as well as the South. Disarmament initiatives that focus exclusively on the arms problem of the developing world while ignoring arms production and stockpiling in the developed world can only reinforce the perception of double standards, which already inhibits efforts to promote global demilitarization, security, and trust in the world community. Only eighty-five countries submitted their reports to the register for 1994. Most Middle Eastern and African countries, including major arms importers, did not submit information.

In the beginning of the 1990s the United States initiated talks on effective new nonproliferation policies to address security. Formerly called the "New Forum," the new export-control regime is intended to replace the former COCOM, which imposed export control on transfers to Eastern bloc countries during the Cold War. It is the first real attempt to create a global multilateral regime covering both armaments and sensitive dual-use goods and technologies. According to the State Department, the new regime "seeks to prevent destabilizing buildups of weapons by establishing a formal process of transparency, consultation and multilateral restraint."

The "Wassenaar Arrangement" is just the first practical step to develop a new, efficient nonproliferation regime to control conventional arms and dual-use technology transfers. It looks mostly like a combination of COCOM and the UN Arms Register—with all the weaknesses and shortcomings of both. It does not meet all expectations with respect to openness and restraint, and needs additional provisions and improvements. There are also some principal differences in the interests and positions among the participants in the Wassenaar Arrangement.

Recently we have seen some new initiatives in the control of conventional arms and dual-use technologies. On May 25, 1998, the EU adopted the Code of Conduct on Arms Sales. Thirteen non-EU states declared that the non-legally binding code would guide them in their national export policies. The EU code lacks public transparency because the members did not agree to a list of weapons to be controlled. Until such a list is developed the code will

operate in accordance with each member's national control list. Some unresolved issues exist between code members. Twenty-seven current heads of state and fourteen former heads of state in the Western Hemisphere have called for a two-year moratorium on arms acquisition. This was done in response to President Clinton's decision to reverse a twenty-year policy of restraint on U.S. sales of advanced conventional weaponry to the region. Several African states came out with an initiative to impose limits on arms flows, especially for light arms.

Small-Arms Trade

Another headache for international stability is the threat posed by small arms and light weapons proliferation. Of the forty-nine major conflicts that have broken out since 1990, light weapons were the only arms used in forty-six of those; heavy weapons dominated only one conflict (the 1991 Gulf War). The global proliferation of small arms and light weapons has increased both the frequency and intensity of modern conflict. Such weapons are readily affordable on international markets, both legal and illegal. The global trade in small arms and light weapons has proved to be much more difficult to track than the major conventional weapons. About 25 percent is carried out through illicit and black-market channels. The global trade in such weapons ranges from $5 billion to $7 billion a year. Some fifty nations manufacture light weapons and/or ammunition of various types. Among them there are a dozen or more developing countries. The unchecked flow of small arms and light weapons to areas of conflict represents a significant threat to world peace and security. Policymakers are beginning to pay attention to the need for new international controls in this area. At the UN Conference on Disarmament in January 1998, UN secretary-general Kofi Annan said, "With regard to conventional weapons there is a growing awareness among member-states of the urgent need to adopt measures to reduce the transfer of small arms and light weapons. It is now incumbent on all of us to translate the share of awareness into decisive actions!" In order to deal with this problem we need to undertake real steps at international, regional, and national levels.

Conclusion

Between 1987 and 1997 world trade in conventional arms fell from $70 billion to $24.2 billion. Despite this dramatic drop in conventional arms trade we have a serious deficiency in export-control efforts and in the area of conventional arms and dual-use technology transfers. Existing multilateral agreements, regimes, etc. are weak.

The UN Register of Conventional Arms is a voluntary reporting regime. According to the Monterey Institute of International Studies, only 25 percent of total arms transfers is reported in this register. The Wassenaar Arrangement (at present membership is thirty-three) continues to demonstrate the presence of differences and tensions between the member states.

The main thought behind creating an effective system is that any global or regional nonproliferation or controlling regime must be supported by an appropriate international and national legal base and have proper organizational operational structures and a sufficient mechanism for efficient implementation, monitoring, and verification.

Session 4: Ballistic Missile Proliferation, Ballistic Missile Defense, and the ABM Treaty

Chair: General Mikhail Vinogradov, Center for Scientific Research, Committee of Scientists for Global Security

The NMD and ABM Treaty Situation in Connection with the U.S. Intent to Develop NMD

Viktor Koltunov, Member of ABM Treaty Consulting Group

I would like to say a few words about the ABM Treaty situation the way we see it at the present moment and in connection with the intent of the U.S. to develop NMD and what effect it could have on this treaty. To be more detailed I would like to discuss the following issues:

- U.S. NMD and how it correlates with the ABM Treaty
- The necessity of deploying such a system by the U.S.
- What are the possible consequences for strategic stability if such a system were actually deployed by the U.S.?

Let's discuss the first question. As far as we know, the U.S. House of Representatives voted for the Senate proposal on NMD (315 for and 171 against). There is only one step left, which is the signature of the president of the United States. The bill announces that "the U.S. will consider deployment of an efficient national system of anti-missile defense that would be capable of protecting the entire territory of the United States from a nuclear attack in the shortest technologically possible amount of time."

This decision caused different reactions in the Congress and the U.S. administration. Republican lawmakers stress that this bill basically prescribes that the administration deploy NMD as soon as possible. The White House, while expressing satisfaction with the adopted language, still maintains the position that it is not a final decision to deploy. The final decision on this matter will be made in mid-2000 and it will take into account technological readiness, costs, evolution of threat, and the status in the arms-control area.

Nevertheless it is reasonable to assume that the president will sign this bill and it will become law. I would like to bring to your attention the following: What kind of NMD are

we talking about? We are talking about a system which will be able to protect all fifty states of the United States. Thus such a system is a missile defense system of the state. But the ABM Treaty prohibits creating such a system and creating the basis for such defense.

The first conclusion is that the intent of the United States to create NMD is in direct contradiction to the key position of the ABM Treaty.

Let's go further. In the U.S. they say that such a system of NMD will be "limited"—that is, capable of intercepting a "small" number of warheads of strategic missiles—and that is why it will not destroy Russia's nuclear deterrence potential.

My second conclusion is that all the talk about the "limited" character of NMD is an attempt to create at least some kind of logic in this situation. And the situation is the following: On the one hand the U.S. program of preparation for NMD has become practical reality.

- The main contractor has already been appointed. The contractor will be responsible for systems integration.
- Research is being conducted which will identify the environmental impact of this system, and the components of the system are being designed.
- The U.S. defense budget for 1999–2005 has allocated additional funding of 6.6 billion dollars in case the NMD system will be deployed.
- The first demonstration of this system is being planned for the middle of the current year.

On the other hand, U.S. representatives at the highest levels stated more than once that they adhere to the treaty. It is absolutely clear that these two approaches, namely, adherence to the treaty and activities devoted to the deployment of NMD, are mutually exclusive. Obviously, understanding this the U.S. started talking about "limited" NMD.

The ABM Treaty does not specify the number of warheads against which it is possible to deploy a NMD system and what number is the limit. The treaty does not allow any BMD system. Even a "limited" system requires infrastructure that is basically prohibited by the ABM Treaty. Besides, it is clear that such a system will be an open module system and can grow. If, in fact, an infrastructure for such a system were created, building on it would not present a particular problem.

As far as the motivation for creating such a system, it is supposedly to defend against:

- the danger of ballistic missile launches by the rogue countries of the third world.
- accidental launches.
- the need to counteract proliferation of nuclear weapons and the means of their delivery.

What can we say about these arguments? I would say they are surprising. I cannot believe that third-world countries will be able to create ICBMs anytime in the near future. These countries will not have the necessary technology to create missiles (the reference to a North Korean rocket cannot be taken seriously). It is not even obvious that these countries will need ICBMs. These countries are more likely to get involved in regional conflicts and one does not need ICBMs for that. But even if a third-world country acquires an ICBM, even a rogue country, it is not obvious that it would dare attack the U.S., knowing very well that retaliation would be devastating. As far as accidental launches go, this is a theoretical issue.

It is well known that one of the first requirements of any nuclear weapon design is the mechanism that practically excludes such occurrences. But even in this case it seems far more reasonable to make an additional effort to work together to prevent this.

Based on all this more and more specialists think that such a system is designed against the nuclear arsenal of Russia and possibly of China, which is capable of reaching U.S. territory.

Now the second question: Does the U.S. need such a system? Here is my personal opinion. From the military standpoint, the U.S. does not need it. Why? Because it will not solve those problems which it is supposed to solve. It will not be able to protect U.S. territory 100 percent even against a limited attack of ballistic missiles and it will be entirely helpless against other means of nuclear weapon delivery. In addition, deployment of such a system will cause the most negative consequences for U.S. security, the nuclear arms reduction discussions, nuclear nonproliferation, and global security.

On the other hand it is clear that preparation for the deployment of NMD has a definite political coloring. It is also clear that implementation of this program will create many jobs and support the military-industrial complex. Missile defense is a technologically advanced area. But what is even more important, and this is my personal opinion, is that deployment of such a system is connected with the intent to guarantee U.S. strategic superiority.

That is why this is a crucial period of time, a time when it is necessary to carefully analyze all the pros and cons and evaluate how the situation will develop in the world. Will it develop in the direction of strengthening strategic stability or will we return to an arms race, distrust, and tension? I think that the voices of scholars and scientists should have significance and be heard by those in positions of authority.

Third question: the consequences of NMD deployment for strategic stability.

First of all this will destroy the ABM Treaty, which is the core agreement not to deploy NMD and create the basis for such a system. NMD deployment will very negatively affect the disarmament process. There should be no illusions about this. There is an objective link between the limitation on creating NMD and strategic offensive weapons. This link is officially stated in the Introduction to the ABM Treaty. The significance of this treaty for the process of further strategic offensive weapon disarmament was also stated in the joint Memorandum declaring the fifth consideration of the ABM Treaty. Already at this moment the preparation for NMD deployment announced by the U.S. is having a destructive influence on the START II ratification process. NMD deployment will immediately make implementation of the START treaties and other disarmament activities impossible. More than that, it could trigger a new arms race. It is also possible that an arms race under such conditions would spread into space.

One cannot doubt that destroying the ABM Treaty would negatively affect not only arms reduction but the whole process of nuclear disarmament and could lead to the destruction of the system of treaties and agreements in this area.

I would also like to mention that it would also negatively affect nonproliferation. Instead of slowing proliferation it could actually speed it up.

Taking into account all that has been said, we would like to stress again that the ABM Treaty is the key factor in maintaining strategic stability and international security. Everything that is being done against this treaty is against strategic stability and international security. That is why in spite of the fact that this treaty pertains to a narrow circle of participants, it nevertheless involves the interests of many countries in the world. It is not at all accidental that many leading countries in the world politically support the ABM Treaty (China, France, etc.) and are concerned with its destiny.

National Missile Defense and the ABM Treaty

Dean Wilkening, Center for International Security and Cooperation

This presentation discusses the U.S. rationale for national missile defense, provides a brief description of the C1, C2, and C3 deployment phases, and discusses conflicts with the ABM Treaty.

Ballistic Missile Proliferation

While the end of the Cold War greatly reduced the threat of global conflict and large-scale attacks on the United States, the proliferation of weapons of mass destruction (WMD) and the means for their delivery pose a major threat to the security of the United States. Over twenty nations, some with interests inimical to the United States, either possess or are developing nuclear, biological, or chemical weapons. Ballistic missiles also are proliferating and have been used in regional conflicts. In the future, longer-range ballistic missiles may proliferate that have the capability to strike the United States.

Concern with ballistic missile proliferation has grown considerably over the past two years owing to a series of ballistic missile tests and the release of the Rumsfeld Commission Report on the ballistic missile threat to the United States. Most missile tests have involved medium-range missiles such as the Pakistani Ghauri tested in April 1998 (1000 km range, nuclear capable), the Iranian Shahab-3 tested in July 1998 (800+ km, 500kg?), the North Korean Taepo Dong-1 launched on August 31, 1998 (1500 km, 1000 kg), and the Indian Agni-II (2500 km, 1000 kg) and Pakistani Ghauri-2 (2000 km, 500 kg) tests in April 1999.

The emerging missile threat to the United States was examined in the Rumsfeld Commission Report released in July 1998, a report that has received broad support in part because of the commission's bipartisan membership. The key findings of the report were the following:

- Emerging long-range missile programs are "broader, more mature, and emerging more rapidly" than previously thought.
- Long-range missiles may be fielded within five years of a decision to acquire them.
- The U.S. capability to detect programs is eroding, perhaps leading to scenarios of no warning before operational deployment.

Consequently, there is widespread belief in the United States that the emerging threat from ballistic missiles armed with weapons of mass destruction is real. However, even if such long-range ballistic missiles proliferate in the future, it does not necessarily mean that the probability of an attack on the United States is high because the United States has overwhelming offensive retaliatory forces with which to deter such attacks. While I believe that deterrence is likely to be effective against regional leaders under a wide range of scenarios, there is a growing belief in the United States that deterring so-called "rogue" states will be difficult. Consequently, many U.S. leaders are placing increased reliance on defenses as insurance again the possible failure of deterrence.

The belief that deterrence is becoming weaker rests on several broad trends. First, there is the belief that nuclear weapons are of declining utility for deterring a range of threats against the United States, partly for moral reasons, partly because of debates about the wisdom of using nuclear threats to deter chemical or biological attacks, and partly because of the increased interest in abolishing nuclear weapons altogether. There is also the belief that many regional leaders may be "non-deterrable," the argument being that such leaders are less rational than U.S. or Russian leaders. Despite the frequency with which one hears this argument, there is little evidence to suggest that leaders of such states are irrational. It would be more accurate to say that such leaders might find themselves in positions where they have relatively little left to lose if their state is collapsing or they are in the midst of a conflict and their regime is about to collapse. In such circumstances these leaders will be more difficult to deter than the leaders of status quo powers like the United States and the former Soviet Union during the Cold War. Finally, there is greater sensitivity in the United States to accepting casualties in foreign involvements, suggesting that there is a changing standard for what constitutes unacceptable damage to the United States. To the extent the threshold for unacceptable damage is dropping, in large part because the interests the United States is attempting to defend are less than vital, the United States becomes an easier target for intimidation by countries that can plausibly threaten to attack it with weapons of mass destruction.

For all these reasons there is a tendency within the United States to place less faith on retaliatory deterrence and consequently to find new means to limit the damage that countries can inflict. Hence the interest in active defense, national missile defenses in particular, to protect the United States while it goes about pursuing its interests in other regions of the world. This interest in defenses extends to both theater and national missile defense systems. In particular an array of theater missile defense systems (Patriot PAC-3, the Theater High-Altitude Area Defense, and Navy Theater-Wide systems) are being pursued to protect U.S. troops and U.S. allies from theater-range ballistic missiles. The interest in national missile defense obviously stems from a desire to protect the U.S. homeland from long-range ballistic missile threats.

Current U.S. NMD Architecture

The current U.S. NMD program is a ground-based missile defense system to protect the United States (all fifty states) against limited ballistic missile threats. The system must perform detection, discrimination, battle management, and intercept functions that require the integration of multiple sensors, communications, command and control, and weapon systems. The system will include:

- Ground-based interceptors using exo-atmospheric kinetic-kill vehicles (EKV)
- Upgraded early-warning radars
- Up to nine ground-based X-band radars (to provide surveillance, tracking, discrimination, and kill assessment)
- Six space-based infrared systems-high earth orbit (SBIRS-High) for ballistic missile early warning (a replacement for the DSP satellite), and twenty-four SBIRS-low earth orbit satellites for warhead tracking and discrimination.
- Battle management and C3 (located at the NORAD command post in Cheyenne Mountain, Colorado) and an in-flight interceptor communications system (IFICS) to relay track data to NMD interceptors in flight.

The NMD system works as follows: Currently DSP satellites, and eventually SBIRS-High satellites, will provide initial early-warning information on a ballistic missile launch. Early-warning radars will provide initial track data with which to cue X-band tracking radars and possibly SBIRS-Low. SBIRS-Low is a satellite containing multispectral sensors, in particular long-wave infrared sensors, designed to track targets against the cold background of outer space. As such, SBIRS-Low data would be used to discriminate decoys from actual warheads as well as to provide accurate tracking information to guide the NMD interceptors in flight. This early track data will be passed to the NMD C3 system again to cue the X-band ground-based tracking radars.

By providing early precision tracking data, NMD interceptors can be launched before the threats come within range of the X-band ground-based radars. This improves the coverage of the NMD system, as well as providing infrared and radar signature data with which to attempt decoy discrimination. After an accurate track has been established, preliminary decoy discrimination has been preformed (to the extent possible), and interceptor release authority has been granted, one or more interceptors will be launched against each apparent target. The BMC3 system will continue to process radar and other sensor data to provide better discrimination between debris, penetration aids, and real warheads. The interceptor also will use its onboard sensor to acquire the target and perform additional decoy discrimination. Finally, the EKV, using onboard computers and divert propulsion systems, attempts to collide at extremely high speeds with its target. During and after the engagement, the NMD sensor architecture continues to collect data to provide “kill assessment” information, thereby confirming the intercept success or failure.

NMD Deployment Phases

Current NMD plans envision an evolutionary deployment, with the initial NMD capability (C1) limited to 20 interceptor missiles to be deployed at a single site (either North Dakota or Alaska) by 2005, followed by a second-phase capability (C2) around 2010 and a third-phase capability (C3) approximately in 2015. The C1 deployment option will consist of 20 NMD interceptors, a single X-band radar located at or near the single NMD site, DSP satellites for ballistic missile early warning and queuing the X-band ground-based radars, possibly replaced by SBIRS-High around 2004, upgrades to the five existing early-warning radars, and three IFICS transmitters. At this point, it appears that the Alaskan NMD site option is preferred by the Defense Department because it provides better coverage of Hawaii and Alaska from threats emanating from North Korea. A single NMD site in North Dakota would have more difficulty providing coverage to these two states especially from threat emanating from North Korea.

The C2 deployment option envisions adding up to 80 interceptors at the single site chosen for the C1 deployment option. In addition, X-band tracking radar are to be co-located with the ballistic missile early-warning radars at Clear, Alaska; Fylingdales Moor, UK; and Thule, Greenland. An additional IFICS system may also be deployed in Missouri. Finally, SBIRS-Low may also become available in this time frame since it currently is planned for deployment in 2006.

The C3 deployment option envisions adding 25 interceptors to the single site selected in phase 1 and 2 (most likely Alaska) as well as adding a second site containing 125 ground-based interceptors at some other location in the continental United States (most likely Grand Forks, North Dakota). In addition, a new early-warning radar is being discussed for deployment in South Korea (specifically to handle North Korean threats) and additional X-band radars are being discussed for deployment at Beale Air Force Base in California; Cape Cod, Massachusetts; Grand Forks, North Dakota; Hawaii; and in South Korea. The evolution of the system from C1 to C3 deployment phases is designed to handle larger threats, with the number of interceptors increasing from 20 to possibly 250 in the year 2015, as well as increasingly sophisticated threats including countermeasures due to the existence of multiple X-band radars (which provide multiple viewing angles on a target) and the addition of infrared signature data provided by SBIRS-Low.

Deployment Decision Criteria

In 1996 the Defense Department completed a comprehensive review of its theater and national ballistic defense program. One outcome of this review was to shift the NMD program from a technology readiness program to a deployment readiness program, with the potential to deploy an NMD system within three years of a decision to do so. At the current time the deployment readiness review decision is scheduled for June 2000. At this time the Defense Department will recommend to the president whether or not to go ahead with the C1 deployment option. Although the original intent was to have an NMD system deployed within three years of a decision to do so, a more recent assessment placed the likely deployment date at five years after the decision point due to constraints in the NMD interceptor test schedule. Hence, the current nominal deployment date for the C1 option is 2005, although both the

deployment readiness review date as well as the actual deployment date may slip due to slips in the NMD interceptor flight-test schedule, delays in amending the ABM Treaty, and the electoral politics in Russia and the United States during the upcoming year.

The deployment readiness review will examine four issues in making a decision about whether to recommend deploying a thin U.S. national defense. The first decision criterion is whether a threat actually exists to the United States homeland. While there is still some debate about the seriousness of such a long-range missile threat, the Rumsfeld Commission Report essentially laid the issue to rest, at least in the American political debate. There seems to be broad bipartisan consensus within the United States that a long-range ballistic missile threat is emerging, potentially quite rapidly.

The second decision criterion is whether the NMD system will work as a technical matter. Again there is a serious debate about whether ground-based national missile defense systems can work, especially against a responsive opponent who deploys penetration aids, although this debate is less intense than ballistic missile defense debates in the past. Regardless of the merits of the technical debate, if two of the three scheduled NMD flight tests that are to occur before the June 2000 deployment decision review succeed, then as a political matter many people will conclude that the NMD system is technically effective. Obviously, there is a large difference between a system working on the test range and a system working under realistic battlefield conditions. The debate about whether an NMD system will work in the battlefield against a responsive opponent is an esoteric technical debate, and one for which there is not a lot of information available in the public domain because most of the sensor performance and test performance data that would be useful for deciding this question will remain classified. Hence, although there are serious technical questions that need to be addressed about whether a future NMD system can work against a responsive opponent, as a political issue the technical feasibility of national missile defense will likely be decided based on the interceptor test results during the next year.

The third decision criterion is whether the system is affordable. Current estimates place the acquisition cost for the C1 deployment at $13 billion, and a recent Congressional Budget Office study states that the twenty-year life-cycle cost for such a system will likely be in the $20–28 billion range. This amounts to an average cost of approximately $1.5 billion per year for building and maintaining a C1 deployment. Since the United States is currently spending approximately $1 billion per year for research and development on national missile defense alone, it is hard to argue that $1.5 billion per year would not be affordable in the current political environment. On the other hand, the cost for C2 and C3 deployment options may be at least two to four times this estimate. An annual acquisition and operating cost for an NMD system of $3–6 billion per year may not be affordable. Nevertheless, since the debate will likely focus on the affordability of the C1 deployment option alone and not the affordability of future systems it is quite likely that the deployment decision review will conclude that the initial NMD system is affordable.

The fourth decision criterion is whether or not an NMD system can be deployed within the context of an amended ABM Treaty, and what the consequences of either amending or withdrawing from the treaty might be for other arms-control agreements, specifically further U.S.-Russian strategic force reductions. I would prefer to broaden this criterion to suggest that the administration should consider the implications of withdrawing from the ABM Treaty on broader alliance and other foreign policy issues, specifically alliance relations with NATO, Japan, and South Korea, as well as U.S.-Russian relations and Sino-U.S. relations. The United States is currently engaged in discussions with Russia about possible modifica-

tions to the ABM Treaty that would allow the deployment of at least the C1 option in Alaska, along with parallel discussions about a possible future START III Treaty. Whether the ABM Treaty can be amended, and if not what the implications of ABM Treaty withdrawal are for broader U.S. foreign policy interests, is a very difficult question to answer. While there have been some indications coming out of Washington that Russia might be willing to amend the ABM Treaty, there is also ample public commentary by Russian political and military leaders to the effect that they are adverse to any modifications of the treaty. At this point, it is too early to say whether or not the treaty can be successfully modified. Nevertheless, we can ask the questions of what modifications would be required in order for the United States to go forward with C1, C2, or C3 deployment options.

Conflicts between NMD and the ABM Treaty

The first and most obvious conflict between the current U.S. NMD plans and the ABM Treaty is that the plans violate Article 1, which states that each party to the treaty undertakes not to "deploy ABM systems for a defense of the territory of its country," or to "provide a base for such a defense, or to "deploy ABM systems for defense of an individual region except as provided for in Article 3." Clearly all current U.S. NMD plans intend to provide a thin national missile defense over the entire national territory and not a regional defense. Modifying Article 1 to allow a limited nationwide defense essentially changes the ABM Treaty from a ban on national missile defenses to a limit on such deployments. Changing Article 1 in this manner, it could be argued, is a slippery slope since it opens the door to unlimited NMD deployment.

If the initial C1 deployment were at Grand Forks, North Dakota, with a single X-band radar located within 150 kilometers of this NMD site, then no further modifications of the ABM Treaty would be required. However, if the C1 deployment site is in Alaska, as seems likely, then Article 3 of the ABM Treaty would also have to be amended to allow a single site in Alaska. Moreover, the single X-band radar is to be located at Shemya Island on the tip of the Aleutian Island chain in Alaska. This radar site would be over 1,000 kilometers away from the NMD interceptor site. Nevertheless, if Article 3 could be modified to allow an Alaskan site with up to 100 interceptors and an X-band tracking radar located further than 150 kilometers from this site, then the Alaskan C1 deployment option could also be made consistent with an amended ABM Treaty. In some respects, Russia should prefer the Alaskan deployment option because it provides less coverage of SLBMs launched from the North Atlantic Ocean or from the Barents Sea against targets along the U.S. eastern coast.

ABM Treaty compliance becomes more difficult to ensure with the C2 deployment option. While the C2 deployment calls for no more than 100 interceptors at a single site, which would be consistent with an amended Article 3, the C2 option also calls for several significant sensor upgrades. In particular, three additional X-band tracking radars are to be located at Clear, Alaska; Fylingdales Moor, United Kingdom; and Thule, Greenland, giving rise to a total of four X-band tracking radars in the C2 architecture. Not only does this violate Article 3, but it also violates Article 9, which states that "Parties should not transfer to other states outside its national territory ABM systems or their components." Clearly X-band tracking radars deployed at Thule and Fylingdales would violate Article 9. Finally, the SBIRS-Low sensor system may be deployed in this time frame (currently scheduled for 2006). Not only

can SBIRS-Low potentially substitute for X-band ground-based radars, thereby violating Agreed Statement D, but SBIRS-Low constitutes a space-based ABM component, which is not an adjunct sensor, thereby violating Article 5 of the treaty. Whether or not the ABM Treaty could be amended to allow a broader geographic deployment of X-band radars as well as SBIRS-Low satellites is questionable, particularly because these components represent the long lead-time components for building a more robust NMD architecture. Hence, Russia would have reason to be concerned about the breakout potential of a thin U.S. NMD system once these long lead-time sensors are in place because the only requirement for expanding the capability of this system would be to add more interceptors at multiple sites around the United States. Finally, one should note that the presence of the IFICS implies that SBIRS-Low can substitute for X-band tracking radars, in violation of Agreed Statement D, because track data from any source, including SBIRS-Low, can be relayed to the NMD interceptors in flight via the IFICS, implying that one could remove the X-band radar entirely from the system and still have a functioning NMD architecture, albeit with one less sensor type to provide target discrimination information.

The C3 deployment option requires greater amendments to the ABM Treaty, although ones that may not be insurmountable if amendments have been made to allow the C2 deployment option. In particular, the C3 deployment potentially would consist of up to nine X-band radars spread around the United States as well as an additional X-band radar in South Korea along with a new early-warning radar in South Korea. Again, the additional X-band radars would require amending Article 3 as well as Article 9 banning the export of ABM components to other states. In addition, the C3 option envisions up to 125 interceptors each at two sites around the continental United States, thereby requiring a higher interceptor ceiling as well as an additional ABM site. The original ABM Treaty did allow for two regional ABM sites although this was later modified by the 1974 ABM Treaty Protocol to only one ABM site. Thus, it is not implausible that one could go back to the two-site structure envisioned in the original ABM Treaty, although the original treaty envisioned these sites to be regional ABM defenses and not defenses that could cover the entire national territory.

The ground-based interceptors, with their exo-atmospheric kinetic-kill vehicles, should be allowed by the ABM Treaty. In addition, upgrades to the existing early-warning radars should be allowed. The SBIRS-High early-warning satellite should be allowed as a replacement for the current DSP ballistic missile early-warning satellite. Finally, the battle management and command and control elements of the NMD architecture, including a command post located at Cheyenne Mountain, should all be compliant with the current ABM Treaty.

Therefore, while the C2 and C3 deployments would require extensive amendments to the ABM Treaty, especially to allow greater sensor support, the initial C1 deployment option may not require extensive modifications to the treaty. Therefore, it is conceivable that the American negotiating strategy will be to modify the ABM Treaty incrementally, requiring only modifications of Articles 1 and 3 to allow the initial Alaskan C1 deployment, and leaving the more substantial amendments to the treaty for negotiations which would take place three to five years from now.

Concluding Observations

At this juncture, it is difficult to predict how events will unfold. Suffice it to say that it is reasonable to think that Russia might agree to some limited amendments to the ABM Treaty, potentially allowing up to 100 interceptors at an Alaskan site. While such a defense would require amending Articles 1 and 3 of the ABM Treaty, it would not pose a realistic threat to Russian strategic nuclear forces so long as Russia maintains more than 1,000–1,300 strategic nuclear weapons in its arsenal, as seems likely according to current strategic force projections. Moreover, an Alaskan site would not provide complete coverage of the United States against Russian SLBMs launched out of the North Atlantic or the Barents Sea against targets on the eastern coast of the United States. Hence, an Alaskan site would be less threatening to Russia than a North Dakota site. However, modifying the ABM Treaty to allow the sensor architectures envisioned in the C2 and C3 options may prove to be much more difficult because it raises the specter of a U.S. NMD breakout capability. To minimize this concern, Russia could retain extra strategic nuclear warheads in its arsenal with plans to upload these warheads onto ICBMs and SLBMs that had previously had their warhead counts reduced under START II and START III. In addition, Russia could maintain a sizeable strategic bomber force which, of course, is not affected by the presence of a thin U.S. NMD system. Finally, it may be important to include confidence-building measures to give Russian leaders greater confidence that they could detect early signs of a U.S. NMD breakout. Such confidence-building measures might involve on-site monitoring of NMD interceptor production sites and potential deployment sites.

How far Russia is willing to go toward amending the ABM Treaty is, of course, an open question at the current time. Incremental amendments as required for the C1 deployment option may not be too difficult to achieve, especially if the United States makes concessions with respect to Russian interests in a future START III Treaty, for example, by reducing the overall START III warhead ceiling from the START II levels of 2,000–2,500 warheads down to approximately 1,500 strategic nuclear warheads. In addition the United States might consider allowing Russia to deploy MIRVed land-based ICBMs, especially mobile ICBMs. MIRVed mobile ICBMs are not destabilizing like MIRVed silo-based ICBMs and hence should not create strategic instability.

If suitable amendments to the ABM Treaty cannot be negotiated with Russia, the United States has the right to unilaterally withdraw from the treaty upon six months' notice that its supreme national interests are in jeopardy. U.S. withdrawal from the ABM Treaty would likely cause Russia to withdraw from the START process. Moreover, it may spur Russia to modernize its strategic nuclear forces with the addition of large MIRVed ICBMs, penetration aids, and perhaps a modernized strategic bomber/cruise missile force. Whether or not this would ignite an arms race of the sort with which we are familiar from the Cold War is unlikely because of the financial weakness of the Russian state. In addition, there is not much political support in the United States for achieving strategic superiority over Russia by deploying a large ballistic missile defense system. Nevertheless, one can imagine that unilateral U.S. withdrawal from the ABM Treaty would not only poison U.S.-Russian relations but have a substantial impact on Sino-U.S. relations, as well as relations with other allies and friends around the world. A detailed consideration of the implications of such a move is beyond the scope of the current paper.

Finally, one should at least raise the possibility of joint U.S.-Russian national missile defense cooperation. Russia might be interested in modernizing the Moscow ABM system, or it

could be interested in deploying ground-based radars on its territory that might be part of a network for a joint U.S.-Russian NMD system, or one could conceivably imaging joint deployments of hardware on Russian territory. Ever since President Reagan suggested during the mid-1980s that the United States might be willing to share ballistic missile defense technologies with the Russians, there has been a smoldering debate within the United States about the wisdom and political feasibility of actually carrying out such cooperation. Perhaps now is the time to seriously consider cooperative options that would help allay Russia's concern about the intentions and capability of a unilateral U.S. NMD system, particularly one that is deployed after the United States unilaterally withdraws from the ABM Treaty. The character and extent of such U.S.-Russian cooperation, as well as its political feasibility, is a subject that I will leave to our discussions.

Session 5: Shared Early-Warning Cooperation

Chair: General Eugene Habiger, CISAC

U.S.-Russian Cooperation in Early Warning

Geoffrey Forden, Congressional Budget Office

At the request of Senator Tom Daschle, the Democratic leader of the Senate Congressional Budget Office has examined ways that the U.S. and Russia can reduce the danger associated with nuclear weapons outside the framework of START treaties. Specifically, CBO has looked at measures that reduce the likelihood of an unintended nuclear attack—a possibility that has received considerable interest recently as information about Russia's aging nuclear command and control system becomes available. The approach discussed in this presentation strives to improve Russia's confidence that it is not under attack, by providing Russia with a global awareness of missile launches. While Geoff Forden is an analyst at CBO, this presentation represents his own views and not those of the Congressional Budget Office. In a published analysis CBO has explored various ways of lending technical assistance to Russia to eliminate these shortcomings. The analysis can be obtained from CBO's website at http://www.cbo.gov.

Assured Early-Warning Information and Strategic Stability

U.S. False Alarms

The United States has long been aware of the dangers posed by false alarms. For example, several incidents in 1979 and 1980 precipitated increased levels of alert in U.S. nuclear forces and air defenses. The most serious of those incidents were ultimately judged to be false alarms—caused by either human or software errors—when the U.S. National Command Authority checked the raw data from its global early-warning assets.

Soviet and Russian False Alarms

In September 1983 the Soviet satellite early-warning system sent a false signal to the central ground station that a multi-missile (about half a dozen) attack from the United States was under way. After several anxious minutes, the mistake was recognized by an officer on duty.

On January 25, 1995, researchers from the National Aeronautics and Space Administration launched a Black Brant XII sounding rocket from an island off the coast of Norway, hoping to learn more about the northern lights. As the rocket climbed, it was picked up by a Russian radar 470 miles away at Olenegorsk, Russia. To the Russians the trajectory could have been that of a Trident missile launched from a U.S. submarine. Such a single launch might be intended to blind Russia's early-warning radars to a massive first strike, which even then could have been just below the earth's horizon and minutes away from disabling Russia's Strategic Rocket Forces. Within minutes, Russia's nuclear command and control system was placed on a higher level of alert, and President Yeltsin activated his nuclear briefcase in order to be able to issue launch orders if necessary. However, President Yeltsin was probably reassured by data from Russian early-warning satellites, which view continental U.S. missile fields, that no U.S. ICBMs had been launched. We believe that this fleet of satellites was up to full strength based on reconstructing their orbital positions at the time of the incident.

An Overview of Existing Space-Based Early-Warning Systems

U.S. DSP Satellite System

The United States solved the technical problems of detecting missiles from space almost thirty years ago. The resulting systems used sophisticated sensors capable of scanning the earth's surface and detecting the infrared radiation—light invisible to the human eye but given off by heated objects—emitted by a missile's hot exhaust. The systems also used advanced data processors to help them distinguish a missile from the natural backgrounds, such as bright sunlight reflected by high clouds, that obscure the view of the missile.

Soviet and Russian Early-Warning Systems

The breakup of the Soviet Union left several of Russia's radar installations on what is now foreign soil (in Latvia and Kazakhstan, for example). According to an agreement between Russia and Latvia, the Russian-operated radar station in Latvia shut down on September 1, 1998. Even if Russia's other radar stations are still operational, Russia's early-warning radars will not detect all missile attacks, especially missiles launched on shallow trajectories from submarines.

Russia's satellite-based early-warning system also has shortcomings. One of its two deployed satellite systems is dedicated to watching for missiles launched from the continental United States. Those satellites are in highly elliptical orbits that allow the use of less sophisticated sensors—by positioning the satellite to view missiles against the black background of space—but even under ideal conditions, they provide, on average, a view over U.S. missile fields for only a quarter of each satellite's orbit. At present, the fleet of satellites does not give complete twenty-four-hour coverage.

Russia has six of those satellites in its fleet today: five were launched between 1993 and 1995, and the sixth was launched in 1998. Using orbital parameters supplied by NASA, CBO has estimated that this fleet currently provides coverage of the U.S. missile fields for less than seventeen hours per day. Thus, Russia cannot depend on its fleet to detect a U.S. missile launch.

The coverage could be significantly less. CBO's estimate of seventeen-hour coverage assumes that all satellites perform optimally. However, most of the older satellites have stopped maneuvering to maintain their position and have drifted far from their original orbits. As the satellites drift, their viewing time is greatly reduced. The fact that the Russians have allowed them to drift so far might indicate that the satellites' sensors are not working.

The other component of Russia's space-based early-warning system is in geostationary orbit—an orbit so high it takes twenty-four hours to complete one circuit around the earth and, hence, the satellites appear fixed over the same spot. Those satellites have, at best, a very restricted view of the earth's surface because their sensors are small. Furthermore, because of the locations chosen for those satellites, they cannot detect ballistic missiles launched from large areas of the earth's oceans—areas where the missiles carried by Trident submarines are within striking range of Russian targets.

How Could the United States Assist Russia to Improve Its Access to Early-Warning Information?

CBO has examined five options for improving Russia's access to early-warning information. The options differ in the amount of autonomy Russia is given to improve its early-warning system and in how rapidly the improvements can be made. In general, the solutions that can be implemented more rapidly give Russia less control over the resulting system and therefore less confidence in the system's reliability. That is an important consideration, since increasing Russia's confidence is the goal of these efforts.

Costs of Improving Russia's Access to Early-Warning Information (in millions of dollars)

Option	Activities	Total Cost (1999 to 2003)
I	Provide data from U.S. early-warning satellites	5
II	Waive U.S. export controls and allow the sale of sensor and data processor equipment to Russia	1
III	Implement Option II and also fund the salaries for personnel at Russian space institutes that develop and fabricate the early-warning satellites	60
IV	Fund development, hardware, and other costs, including launch services using Russian space-launch vehicles	1,340
V	Fully fund a joint research venture between the U.S. and Russia to explore the technology needed for the next generation of satellites	190

What Is the Current Status?

Russia appears to lack the technologies needed to make sophisticated detector systems that are capable of long-term operating in space. Various methods have been proposed for improving Russia's early-warning system. Concerned that the Y2K problem will seriously affect Russia's early-warning computer system, Deputy Secretary of Defense John Hamre has suggested that the United States send Russia information from U.S. early-warning satellites. In fact, Presidents Bill Clinton and Boris Yeltsin signed an agreement on September 2, 1998, to do just that.

Others have emphasized the importance of Russia having its own highly capable system. Those proposals have centered on lending some form of technical assistance to improve Russia's satellite-based system. Measures aimed at improving its ground-based radar system would not instill the same levels of confidence. Ground-based systems within a country's borders are inherently limited in coverage regardless of any improvements. A space-based system would enable the Russians to know whether an attack has been launched.

Summary

In summary, Russia's early-warning system is incomplete and does not provide the level of assurance that the U.S. has demanded from its own system for many years. The shortcomings in Russia's early-warning capability could be dangerous for the U.S.; a partially blinded Russia could mistake some benign event as an attack and launch a nuclear strike against the United States. CBO has explored a variety of different approaches to improving Russia's early-warning capabilities. Some things could be done quickly and inexpensively but would give Russia less confidence than those that enhance Russia's ability to construct its own system. Options that provide more confidence are more expensive and will take longer to improve Russia's early-warning system. More than one of the options could be pursued simultaneously. For example, combining Option I with Options II, III, or IV would quickly improve Russia's early-warning system and would increase Russia's confidence in the medium term by helping it to develop its own system. Adding Option V would help ensure that Russia's early-warning system continues to be effective in the long run.

Subsequent Informational Exchanges

Unattributed Sources

U.S. DSP Satellite System

The United States solved the technical problems of detecting missiles from space almost thirty years ago. The resulting systems used sophisticated sensors capable of scanning the earth's surface and detecting the IR radiation—light invisible to the human eye but given off by heated objects—emitted by a missile's hot exhaust. The systems also used advanced data processors to help them distinguish a missile from the natural backgrounds, such as bright sunlight reflected by high clouds, that obscure the view of the missile. Current U.S. early-warning space systems evolved from a series of experimental MIDAS satellites in 1960s in the low earth orbit, followed by the operational geostationary Defense Support Program spacecraft (earlier IMEWS) developed stepwise since the 1970s.

DSP Engineering History

	Phase I	Phase II	MOS/PIM	Phase II UG	DSP-1
Flight no.	1,2,3,4	5,6,7	8,9,10,11	12,13	14–23
Launch years	1970–73	1975–77	1979–84	1984–87	1989+
Weight, lbs	2,000	2,300	2,580	3,690	5,250
Power, watts	400	480	500	680	1275
Design life, years	1.25	2.0	3.0	3.0	3.0
Detectors: 2000 PbS SWIR	X	X	X		
6000 PbS SWIR				X	X
2nd color HgCdTe MWIR				Demo	X
Capability: Below the horizon	X	X	X	X	X
Above the horizon		Demo		X	X

Typical DSP Geostationary Positions (early 1990s, as reported by the FAS)

Region	GSO position, deg	Spacecraft
Pacific Ocean	132–136 E	DSP-14
West Atlantic	39 W	DSP-13
Europe	10 E	DSP-15
Indian Ocean	70 E	DSP-16
Far East	TBD	DSP-12

Russian Early-Warning Satellite Systems

The Soviet early-warning satellite program officially began in the late 1960s. Designers selected for evaluation three basic types of sensors capable of detecting and tracking a ballistic missile during powered flight. Vidicon tubes sensitive to the near IR and the UV were tested for the first-generation system. IR solid-state detectors with a mechanical scanner were viewed as a logical improvement for a second-generation spacecraft. The early Vidicon telescopes employed sensor diameters of 0.3–0.5 m with 4 degree FOV for both IR (0.9-2.2 mkm) wavelengths. The IR sensors successfully detected missiles in flight by late 1976, while the UV sensors failed repeatedly and then were abandoned. Sensors were positioned to concentrate surveillance on a region just above the earth's limb in the vicinity of anticipated ballistic missile launches. This requirement in turn made highly elliptical, inclined orbits more attractive for the first generation of spacecraft than geostationary orbits.

HEO Early-Warning System

The first in-orbit tests of the Russian early-warning spacecraft started with the launch of Cosmos 520 in September 1972. The first missile detection sensors were reportedly flown in 1976 when the preoperational early-warning spacecraft network began with Cosmos 862. The satellite was initially 1250 kg with a diameter of 2.0 m and a length of 1.7 m, excluding the solar arrays and the sensor sunshield. Each satellite possessed a perigee of about 600 km and apogee of nearly 40,000 km and an inclination of 63 deg. The orbit was similar to that employed by Molniya comsats but was distinguished by initial argument of perigee 316-319 deg. The difference significantly affected the shape of the satellite's groundtrack in the Northern Hemisphere. Russian early-warning spacecraft are more affected by gravitational perturbations due to their higher argument of perigee and therefore perform periodic station-keeping maneuvers to maintain an acceptable groundtrack. The argument of perigee migrates slightly over time due to inclination variations, causing an alteration in the shape of the groundtrack. Instead of expending propellant to prevent the argument of perigee shift, Russian spacecraft controllers alter the satellite's ascending node. This has the effect of stabilizing the apogee point about which surveillance operations are performed.

In 1979 the transition to a full operational capability with nine 1900 kg Oko satellites in evenly spaced orbital planes was initiated. The constellation made up the first echelon of the missile attack warning system (SPRN), operated by the National Air Defense Forces. These spacecraft have above-the-horizon detection capability. According to Soviet officials the early-warning satellites could detect missile launches within twenty seconds of liftoff.

During 1995–1998 only four of the nine operational spacecraft were replaced. Cosmos 2340 and 2342 were launched in 1997 and C-2351 in 1998. At the end of 1998 the constellation appeared to be only partially functional with its oldest member, C-2286, less than five years old. The orbital complement was still nominal with nine spacecraft in January 1995 (the Norwegian Sea sounding rocket event), but it was reduced to six spacecraft only by late 1998 (Cosmos 2286, 2312, 2340, 2342, 2351). Only three to four of them are considered to be fully functional. Respectively time periods when the continental U.S. ICBM fields were not viewed by Russian HEO early-warning spacecraft became as long as six hours a day.

GEO Early-Warning Systems

An early-warning satellite network located in geostationary orbit could significantly reduce the number of spacecraft necessary for twenty-four-hour surveillance. HEO-orbit spacecraft are typically only used for two hours and forty minutes during each twelve-hour orbit. The first USSR prototype GEO early-warning spacecraft was actually tested in 1975, but the first operational spacecraft appeared in March 1984 as Cosmos 1546. The first three missions, C-1546, C-1629, and C-1894, apparently employed modified Oko 2000 kg spacecraft. The next spacecraft, Cosmos 1940, was experimental in nature.

The second-generation early-warning satellites debuted under the Prognoz name with Cosmos 2133 in February 1991. Based on a new 2150–2500 kg spacecraft bus similar to Lavochkin's Spektr design, it apparently carries a 1 m dia sensor with a 12,000 element, discrete linear detector array of PbS material. Earlier, three to four spacecraft were normally operational at two to three positions in the ITU/IFRB listed Prognoz series. The preferred locations were 12 deg E, 80 deg E, and 336 deg E with expansion sites at 35 deg E, 130 deg E, 166 deg E, and 201 deg E. At the beginning of 1999 two Russian GEO early-warning spacecraft were apparently operational—Cosmos 2282 and 2345, positioned at 12 deg E and 336 deg E. Cosmos 2350 was orbited in April 1998, but its functionality is questioned.

Cooperation on Early-Warning Systems

Aleksandr Menshikov, Vimpel International Corporation

The main task of all information systems is timely assessment of the situation. I would make a statement that the role of the space-based segment of early-warning systems is greatly overrated. The multiplicity of data should come from all sources.

Taking into account the fact that early-warning systems have a favorable impact on strategic stability, we are of the opinion that enhancement of their effectiveness through cooperative activities fully corresponds with our common interests.

Goals and Objectives

Goals

1. For each participating country the goal is to enhance its own strategic security, reducing the probability of a conflict in which missile and nuclear weapons could be employed.

2. The goal for the world community is to increase the overall level of strategic stability.

Objectives

1. Increased confidence of missile and space situation assessments on the basis of information from the early-warning system, and reduced probability of erroneous or inadequate employment of strategic nuclear forces.

2. Increased effectiveness of monitoring/control over the development, proliferation, and combat employment of missile delivery systems in third countries.

3. Increased effectiveness of peacekeeping operations by transmission of information on launch coordinates and missile firings and by feeding the cueing data for non-strategic BMD complexes.

4. Increased level of mutual confidence since cooperation in this significant and sensitive national security area is impossible without common trust.

Areas for Cooperation

Our cooperative activities could encompass the following domains:

1. Exchanging a priori information on planned tests and operational and training launches of ballistic missiles as well as space vehicles.

These exchanges could include information on the launch time intervals, throw angles, points of launch, and impact. Incompleteness of data should not preclude exchange of information. It is desirable to achieve a situation in which the abovementioned information is provided by all countries voluntarily, but we shouldn't preclude the possibility of obtaining it from other countries not directly involved in a particular launch.

2. Developing and adopting a code of conduct for strategic nuclear forces that would reduce the probability of their use for a surprise attack.

This objective could include:

- controlled reductions in the number of nuclear delivery vehicles capable of participating in a surprise attack.
- controlled relocation of nuclear delivery vehicles (first and foremost all SSBNs) from those areas of combat patrol which are not controlled well enough by the early-warning systems;
- controlled relocation of nuclear delivery vehicles from combat patrol areas from which they can launch ballistic missiles into fast time-to-target trajectories.

3. Developing and adopting limitations on the design and development of new strategic offensive arms, nuclear weapons, or techniques of their combat employment, against which the early-warning systems are not effective enough.

This objective could include:

- refusal to develop and test missiles with short time-to-target flight times, e.g. gliding warheads and ballistic missiles with depressed trajectories;
- refusal to develop penetration aids, including jammers against the information assets of the early-warning systems.

Cooperation in this area depends largely on the intent to create a territorial BMD system, since early-warning systems would become its vital information support asset.

4. Developing and adopting a code of conduct aimed at precluding unintentional disturbances to the early-warning systems that reduce their effectiveness, and establishing a conflict-resolution mechanism for such situations.

This could involve identifying areas adjacent to the location of early-warning assets and measurements in the RF bands prohibited for unauthorized use there. An appropriate conflict-resolution mechanism is needed in order to speedily discontinue such disturbances.

5. Exchanging and jointly working on the background and targets situation assessment, which is necessary for proper functioning of early-warning systems.

This objective could include acquisition and exchange of information on the background radiation of Earth, outer space, and the atmosphere in the spectral bands used by the early-warning sensors.

6. Exchange of data on missiles of third countries.

This improves early-warning effectiveness and could include information on basing, missile flight ranges, type of engines, signatures in various spectral bands, etc.—various data necessary to solve effectively the task of early warning.

7. Exchanging information acquired from measurements taken by the national early-warning assets.

This area of cooperation could include detection and measurement of flight ballistic missiles parameters data on results of space-launch vehicles or their elements at the boost and passive flight phases. This data is obtained by space-based sensors and/or ground-based radars and processed by national early-warning centers.

8. Establishing a joint/international center for missile and space situation assessments.

This could include joint development and operations of the International Early-Warning Center. This center would make situation assessments from the data inputs received from the information assets of all cooperating countries.

9. Exchanging/transferring technologies to increase effectiveness of early-warning systems.

This could include:

- exchanging experience on measures, aids, and algorithms to counter false alarms;
- exchanging experience on the algorithms for accurate assessment of the missile and space situation;
- Exchanging/transferring technologies to enhance the effectiveness of early-warning systems, e.g. transferring technologies involving highly sensitive IR sensors, radar technologies, and modern means of computation and telecommunications.

10. Jointly developing new early-warning assets.

This could include joint cooperative work on developing new detection and warning assets, such as space-based systems and ground-based radars.

Necessary Conditions

The following conditions are mandatory for selecting appropriate areas, forms, and methods of cooperative activities:

1. Full sovereignty over the national early-warning assets must be retained, along with the freedom to make decisions based on the data.

2. Cooperative activities must not reduce the effectiveness of the national early-warning assets.

3. Existing relations with allied and friendly countries cannot be infringed upon by new cooperation.

4. The conditions stipulated by international treaties on cooperation in the early-warning area must be adhered to. In particular, Russia must comply with all conditions outlined in the CIS Joint Early Warning and Space Control Systems Agreement of 1992.

IV. Problems

1. Lack of trust remains the main problem. Cooperation in this highly sensitive area of national security requires a higher level of confidence, since in the course of joint activities the partner country could obtain information in nearly all specific areas—both on the strong and the weak points of the national systems. In case of actual combat employment of strategic nuclear forces such information can be readily used for penetration of the early-warning system or for its purposeful deception.

2. Though only Russia and the U.S. have both the potential and the necessary experience to solve early-warning problems, the bilateral format of negotiations could arouse a negative reaction as well as counteractions from a number of other countries.

In Russia the idea of cooperation in this field dates back more than ten years. It was first discussed during the Gorbachev era and was widely supported in the USSR. Since then the issue has twice been the focus of attention of top officials. In 1992 Russian president Yeltsin proposed the establishment of a Global Protection System, and U.S. Secretary of State Baker offered to establish a joint early-warning center as one element of it. Negotiations were eventually terminated since the U.S. linked its consent to implementation of this idea with the need for modification of the ABM Treaty. In 1998 President Yeltsin and President Clinton signed the agreement on the exchange of information on missile launches and early warning. Still, the expected breakthrough in cooperation on early warning did not occur.

I believe that the slow progress is caused mainly by a lack of trust. Russia has doubts that the U.S. is serious about cooperation in the early-warning area. Our anxiety increased significantly after the U.S. supported politically, technically, and financially the destruction of the early-warning radar in Skrunda, Latvia. This episode is not in line with the declarations of U.S. experts on the need to cooperate with Russia and to retain the adequate effectiveness of Russia's early-warning system.

V. Proposals

Still, our cooperation in the area of early warning has good prospects. Perceived results could be the following:

1. Increased confidence in early-warning information and a reduced probability of inadequate reaction in situations involving employment of strategic nuclear forces.

2. Increased effectiveness of the control/monitoring of missile proliferation.

3. Increased effectiveness of peacekeeping operations.

In order to achieve success in these areas of cooperation we should work hand-in-hand and find solutions jointly. Cooperative solutions should comply with the official requirements of our governments, but all relevant issues should be addressed together during non-official meetings and informal discussions.

The RAMOS Program, a Successful Example of U.S.-Russian Space-Based Early-Warning Cooperation

Taira Koybaeva, Utah State University

Both Geoff Forden and Aleksandr Menshikov mentioned the need to develop cooperative efforts in the area of early-warning systems. I have been involved as an international-relations adviser in the program called RAMOS (the Russian American Observational Satellite Program), which is an example of such cooperative efforts. RAMOS is a joint Russian-American space research and development program. It will provide unique multispectral stereoscopic imaging of the earth from space. Prior remote-sensing satellites generally obtained stereo images by looking ahead to view a given scene, and then looking back at the same scene from a later point in the orbit. While effective for viewing unchanging scenes, this technique cannot capture the dynamics of an evolving event. RAMOS will use two satellites to observe a given scene simultaneously, providing "instantaneous" stereo images. Since the satellites can watch a scene continuously as they pass over it, they can capture three-dimensional images of dynamic events as those events occur. Each country is responsible for constructing its own satellite and instrumentation. Russia provides rocket and launch for both satellites.

The goals of the RAMOS program are:

- to cooperatively engage the Russians in early-warning and theater missile defense related technologies
- to foster a climate of cooperation on matters related to ballistic missile defense and early warning
- to support Russian space-segment early-warning organizations and lessen the danger of false alarms
- to conduct environmental/scientific measurements of mutual interest

- to function as a pathfinder for future DoD and MOD cooperative research and development efforts.

I would like to comment on the political, administrative, and cooperative aspects of this, in my opinion, truly groundbreaking program.

RAMOS was initiated by the Ballistic Missile Defense Organization in 1992. The Space Dynamics Laboratory of the Utah State University Research Foundation is the main subcontractor of the program. Major Russian participants are Cometa (the space-based early-warning design bureau in Moscow), Vavilov Optical Institute (Saint Petersburg), Khrunichev Center (Moscow, spacecraft/rocket design and manufacturing company, Proton manufacturer), and Astrophysica (a Moscow company specializing in algorithm development for background suppression).

Since 1993 the program has enjoyed strong bipartisan congressional support. In 1994 Lieutenant General Malcolm O'Neal, at the time the director of BMDO, stated that "RAMOS is a cornerstone of U.S.-Russian cooperation." At the same time, Russian organizations (mainly the Russian Ministry of Defense and Ministry of Foreign Affairs) expressed serious doubts about the sincerity of the intentions of the American side. Their suspicion was that the program was specifically designed to "steal" Russian defense secrets and "run away with them" or intentionally violate the ABM Treaty. The Russian government delayed the approval of the full program but approved preliminary research experiments. That allowed us to conduct a series of aircraft background measurements for future satellite design, joint measurements involving already existing U.S. and Russian space-based assets (resource satellite on the Russian side and MSX, MSTI on the American side), and begin computer modeling and simulation. These preliminary steps allowed us to build the necessary degree of trust and helped create a mechanism of cooperation in this sensitive area. Together we learned how to:

- conduct technical discussions, image processing, and computer simulation, and exchange data files without compromising the security of either side,
- create mechanisms for financial transactions between the countries, which have profoundly different economic and financial systems (a huge challenge given the financial situation in Russia),
- obtain necessary export-license documents,
- overcome customs hurdles while transporting equipment and instrumentation,
- identify and learn to work with proper U.S. and Russian political and government channels, especially in the quickly changing political and administrative environment of Russia in a period of profound political and economic change.

This newly built trust and positive momentum on the Russian side led to the Russian government's approval of RAMOS. On August 14, 1997, Russian president Boris Yeltsin signed a special presidential decree, and on August 20, 1997, Prime Minister Viktor Chernomyrdin signed a government decree giving RAMOS full government support.

On January 20–22, 1998, both technical teams conducted a successful preliminary design review of the program.

At present the program is at a crossroads. RAMOS enjoys very strong support in the U.S. legislature. Nevertheless, the Ballistic Missile Defense Organization has not yet given the go-

ahead to design and build satellites. This has caused a lot of frustration on the Russian side and there is an opinion there that this is a “usual” American tactic to use whatever is useful in Russian technology and then dump the partners. It is my personal opinion that the delay in approval from the American side fosters Russian paranoia and creates more obstacles to building trust.

Session 6: Strategic Stability in South and Northern Asia

Chair: Dr. Leonid Ryabikhin, Committee of Scientists for Global Security

Stability in South Asia: What Can Be Learned from the U.S.-Russian Cold War Experience

Dean Wilkening, Center for International Security and Cooperation

Now that Pakistan and India have become de facto nuclear powers, the issue of stability in South Asia is of paramount importance. Fostering stability may be an important area for cooperation between the United States and Russia because they share many common goals and interests in the region. Moreover, the U.S.-Russian relationship in the region is one of cooperation and not competition, as it was during the Cold War. Specifically the historical Russian partnership with India and the U.S. association with Pakistan could be used to advantage to help influence and shape the emerging dynamics between these two regional nuclear powers. In principle, the United States and Russia may influence the character of the arms race between Pakistan and India (as well as that between India and China), the amount of money each country spends on its security, the first-strike instabilities inherent in their emerging nuclear force structures, and the potential for miscalculation or misunderstanding in a crisis. These are fruitful areas for discussion between the United States and Russia.

There are, however, many differences between the U.S.-Soviet Cold War interaction and the one emerging in South Asia today. First, there has been a long history of war between Pakistan and India, including the current tensions in Kashmir. Second, being neighboring states that share a long border, the warning times for attack are much shorter than in the U.S.-Soviet case, especially if ballistic missiles are used. Third, the domestic politics of both countries are less stable, especially in Pakistan. Fourth, these countries are relatively poor and hence have less ability to develop large, sophisticated nuclear arsenals and command and control systems. Hence, the evolution of Indian and Pakistani nuclear doctrines and nuclear force structures may be quite different than was the case for the United States and the former Soviet Union during the Cold War. Nevertheless, the U.S.-Russian experience should shed some light on the emerging Indo-Pakistan nuclear interaction. What follows is a list of possible areas for U.S.-Russian cooperation.

India and Pakistan are likely to view each other in a hostile light because of their historical animosity, which implies that hostile intent will be assumed, and because there will be little transparency regarding the size and character of the opponent's nuclear arsenal. The latter is especially true for opaque nuclear powers to ensure the survivability of their force. Therefore, it is easy to imagine that military planners in each country will pursue worst-case planning with relatively limited intelligence on the size and the character of the opponent's arsenal. Hence, it will be easy for India, Pakistan, and even China to misestimate the size and character of the opponent's nuclear capability.

Thus one possible role for U.S.-Russian cooperation would be to provide greater transparency into Indian and Pakistani nuclear force structures but not into the operation of these forces. The United States and Russia, if they are trusted partners to India and Pakistan, can help dispel myths and misperception about the size and character of the other's nuclear capability. Moreover, based on their own experience, they might be able to encourage military-to-military exchanges to help foster greater understanding between India and Pakistan (if not China). It is more difficult to see how the United States and Russia could alter the perceptions of hostile intent that exist in the subcontinent. Perhaps the most important approach would be for the United States and Russia to become diplomatically involved in settling the Kashmir problem. At the very least the United States and Russia should begin discussions between themselves about the role they might play in resolving this ongoing issue. This is important because the most likely scenarios for nuclear use in the subcontinent will probably involve misperceptions, misunderstandings, and crisis instabilities that emerge from a border clash between these two states, probably involving Kashmir. Moreover, in a crisis the possibility of accidental or unauthorized use cannot be ignored because these states may have much less secure command and control systems compared to the United States or Russia.

During the Cold War, crisis stability and stable deterrence forces became the hallmark of stability between the United States and the former Soviet Union, especially after the advent of long-range ballistic missiles. The same problems will arise between India and Pakistan because both sides are pursuing ballistic missile forces. The shorter ranges between these contestants imply that the attack timeline will be even more stressful for ensuring the survival of each side's nuclear force. It will also strain the reliable functioning of each side's command and control systems, potentially opening a window for decapitation attack scenarios. Currently India, Pakistan, and China are all relying on force dispersal for survival. In particular each country is developing mobile medium-range ballistic missiles and intermediate-range ballistic missiles. In the case of China, mobile intercontinental ballistic missiles (ICBMs) are under development as well. India and China are also developing submarine-launched ballistic missiles (SLBMs). This suggests that the United States and Russia may be able to play a constructive role in helping India and Pakistan ensure the safety and security of dispersed weapons. If nuclear warheads are dispersed via multiple specialized teams and the warheads are mated with delivery systems days or weeks after a war starts, then each country must make sure that the location of these teams is kept secret and that the teams remain loyal so that accidental and unauthorized attacks do not occur.

The United States faced similar problems during the Cold War with a widely dispersed nuclear force structure. Hence, the United States might be able to advise, if not share hardware, to help form secure command and control systems for nuclear force operations. The United States and Russia may also be able to encourage India and Pakistan to adopt nuclear force doctrines that do not rely on prompt response, and hence have fewer inherent pressures

toward preemption. From what we know, this seems to be the emerging character of Indian nuclear doctrine. It also may be true for Pakistan. Nevertheless, the United States and Russia should discuss the wisdom of either sharing knowledge or actual hardware systems to improve the safety and security of India's and Pakistan's nuclear force. Having said this, one must address the charge that the United States and Russia would be helping India and Pakistan develop a more effective nuclear arsenal, contrary to the nonproliferation policies of both states. The United States and Russia also could begin discussions with the Indians and Pakistanis about some of the subtleties of how to handle nuclear alerts in a crisis. This is an area in which the United States and the former Soviet Union have had considerable experience.

Finally, the United States and Russia should begin discussions with the Indians and Pakistanis about the dangers of accidental and unauthorized launches. Depending on the eventual force structure and command and control arrangements that emerge in South Asia, the likelihood for accidental or unauthorized launches may either be fairly high or reasonably low. If nuclear weapons are kept unassembled and under civilian control, the chance for accidents or unauthorized use in peacetime might be quite low. On the other hand, if such a "recessed" deterrent posture is not forthcoming, there may be more problems with accidental or unauthorized launches. Moreover, in a crisis, when weapons may be assembled and transferred to military control, the problem of accidental and unauthorized launches may become much more troublesome.

Another area of U.S. and Russian experience during the Cold War was with the issue of strategic and tactical warning, and how leaders should respond to such warnings. The Cuban missile crisis and various Berlin crises may shed light on some of the strengths and weaknesses in the U.S. and Soviet handling of these crises. For example, should the United States and Russia encourage a "hot line" to be established between Indian and Pakistani leaders? Should we encourage the development of dual phenomenology sensors to reduce the likelihood of false warning of Indian or Pakistani air and ballistic missile attacks? Lessons that the United States and Russia have learned from false warning episodes during the Cold War may provide valuable lessons. Finally, there is the issue of whether the United States or Russia should share early-warning information with India and Pakistan, potentially augmenting national systems to reduce the probability of false alarms. Such information sharing could play a stabilizing role in a regional crisis.

At a broader level, there is the question of whether U.S. and Russian nuclear doctrines will have an impact on India, Pakistan, and perhaps even China. Here such issues as "no-first-use" pledges may be important to discuss with the Indians and Pakistanis, as well as the pros and cons of different nuclear targeting doctrines. While the United States and Russia developed robust counter military nuclear targeting doctrines during the Cold War, India and Pakistan will be financially constrained in the arsenal size each can develop and hence will probably adopt pure counter value targeting doctrines. Understanding the requirements for sufficiency in such doctrines, the strength and weaknesses of such doctrines for deterrence, and the role—or lack thereof—for tactical nuclear weapons could all be topics for U.S.-Russian discussions with India and Pakistan. Finally, there is the issue of how nuclear threats will affect the dynamics of crises. In particular the United States and Russia could play a useful role in discouraging the use of nuclear saber-rattling as a way of influencing or signaling during a crisis since such actions can be misinterpreted easily.

The final area where the United States and Russia might play a constructive role is with respect to Indian and Pakistani involvement in various arms-control regimes. Obviously

there has been an ongoing effort to encourage India and Pakistan to sign the Comprehensive Test Ban Treaty as well as to join negotiations on a fissile material cutoff treaty. More difficult are issues having to do with the status of India and Pakistan under the Non-Proliferation Treaty since this treaty would have to be renegotiated to include these two states as nuclear powers.

In summary, the United States and Russia might be able to play a constructive role in encouraging confidence-building and transparency measures in the region—for example, no-first-use pledges, military-to-military exchanges, joint Indian and Pakistani discussions about nuclear force operations in a crisis, the benefit of a non-alert status for their nuclear forces, the ultimate purpose or role of nuclear forces in each state's security policy, agreements not to interfere with the early-warning capabilities of the other side, and the establishment of "hot line" communications between political and military leaders on either side so that misunderstandings can be clarified quickly in a potential crisis.

Not all of these ideas are likely to bear fruit. However, the above list gives one a feel for the range of possible issues where the United States and Russia could potentially cooperate to alleviate some of the more troublesome aspects of the India-Pakistan nuclear competition. Without illusions as to the likelihood of success, the time has arrived for the United States and Russia to begin discussions about possible constructive roles these two major powers can play in the emerging dynamics of a nuclear South Asia.

Strategic Stability in Northeast Asia

Andrew Kuchins, Center for International Security and Cooperation

Introduction

During the Cold War, issues of strategic stability focused on the U.S.-Soviet nuclear standoff, and the potential battlefield of greatest concern was Europe, in particular the line of confrontation in divided Germany. In the first half of the coming century, the greatest challenges to strategic stability will be in Asia, and it is not clear whether clearly demarcated lines of confrontation will be drawn. Asia is likely to be more complicated than Europe since the region is multipolar in its structure of power while the Cold War confrontation in Europe was bipolar. In Asia you find a group of great powers including the U.S., China, Japan, Russia, and India—some rising, some falling—but no obvious institutional framework or conceptual architecture to facilitate security. Then you have a group of medium-power states, Pakistan, Korea (divided but later united?), Taiwan, Vietnam, and Indonesia—which for different reasons further complicate the security agenda. For security analysts and policymakers, this is likely where a lot of the action will be in coming decades. Kosovo was a sideshow, perhaps a strategic hangover, and it diverts our attention from what should be the core interests of not only the U.S., but Russia, China, and others also.

Whether one looks at Northeast Asia or South Asia, you find proliferation of nuclear capabilities, conventional arms buildup, and the potential for a number of regional conflicts. The good news is that great-power relations in the region are better than at any time this century. The major power shifts under way, however, are a cause for concern. And with the rise of China and the fall of Russia, the juxtaposition of two great powers experiencing such different fortunes and sharing a long border is a particular concern for Moscow in the long term. Historically the international system has had a difficult time accommodating emerging great powers (Japan, Germany, USSR), and this has increased the likelihood of hegemonic

war, or war that could change the shape of the international system. We are also in transition to a multipolar world, and some theorists of international relations, notably Ken Waltz, have argued that multipolarity is prone to instability and war because of greater potential for miscalculation and complicated balancing. With the exception of Germany or a more united Europe, all the new poles (China, Japan, India, Russia) are either in Asia or have a major presence there. Looking at the World Bank figures for GNP adjusted for purchasing power parity in 1997, four of the five largest economies of the world are considered major powers in Asia, although the U.S. holds the unique status as global superpower.

The focus of my remarks today will be Northeast Asia, and in particular:

1. North Korea and the Korean peninsula
2. China
3. The U.S.-Japanese security alliance
4. The future role of Russia

While the organizing principle of my remarks is geography, many of the more technical issues we have discussed relating to nuclear weapons, missile defenses, and missile proliferation are extraordinarily important for understanding the security dynamics of the region, and I will address each of these three phenomena in different contexts.

North Korea and Security

It seems rather curious that one of the poorest countries in the world, North Korea, presents perhaps the greatest near-term threat to stability in Asia. It appears to be a state on the verge of failure and breakdown, although we have very little intimate knowledge to go on. Concern about the North Korean nuclear program brought the U.S. very close to war in June 1994. Its missile program has provided strong justification to those who advocate national missile defense and theater missile defenses in the United States as well as in Japan. Virtually abandoned by its former ally, the Soviet Union, and maintaining quite complicated relations with China, in the ’90s the DPRK has been more internationally isolated and economically decimated to the point where it has been using its nuclear and missile programs as bargaining chips with the United States and others in order to secure more economic assistance. This is a very dangerous game that has ramifications for international security far beyond the Korean peninsula. Suspected WMD and missile capabilities of North Korea contribute to:

1. U.S. conventional force structure to support two major regional conflicts (Iraq and North Korea). In turn, the tremendous conventional force predominance enjoyed by the United States encourages asymmetrical responses involving terrorism and/or weapons of mass destruction.

2. Impact of the missile program, especially the August 31, 1998, launch of the Taepo-Dong 1 for national and theater missile defenses. In turn, U.S. development of national and theater missile defenses hurts chances for advancing the nonproliferation and arms control agendas globally.

3. The U.S. policy of "strategic ambiguity" on possible nuclear response to possible use of chemical and biological weapons. This policy also runs contrary to the goals of the nonproliferation and arms-control agendas.

Obviously North Korea is not the only factor contributing to U.S. conventional force structure, support for missile defenses, and U.S. refusal to adopt a nuclear no-first-use policy. All three policies, however, push other states to more highly value nuclear weapons —thus they do not support stated policy goals of nonproliferation, nuclear arms reductions, the MTCR, etc. The U.S. government must be aware of such trade-offs, and any states or nonstate actors that might covertly support missile and/or WMD programs in the DPRK should be fully cognizant of how these programs play out in U.S. policymaking and especially the Congress.

It is fairly remarkable that a state such as North Korea could elicit such a response from the U.S. The odds are high that North Korea will not even exist long into the next century. If it did not exist, would the U.S. need to invent it? How is this perceived in Moscow and Beijing? My concern is that by heavily relying on military tools of policy, the U.S. and others may compromise other policy goals (great-power security, nonproliferation) of much greater long-term importance. I think that we all must be very hopeful that South Korea's "sunshine policy" and the efforts of our friend Bill Perry will be successful with the DPRK.

China

You cannot overstate the extent to which the strategic stability of both Northeast and South Asia depend on the future behavior of China. China straddles both regions, and Southeast Asia as well. It is a regional linchpin. Let me posit three simplified scenarios of Chinese development and the likely U.S. policy responses:

1. benign prosperity (engagement)

2. aggressive regional hegemon (containment)

3. disintegration and regional instability (quarantine)

We must avoid overstating Chinese military power, conventional or WMD. This is particularly important in the U.S. in the post–Cox Committee report environment.

1. conventional forces—one to two generations behind the U.S.

2. nukes and delivery systems—far behind both Russia and the U.S.

China's near-term military policy goal appears to be improving its ability to project power into the Taiwan Strait and the South China Sea—particularly regarding Russian arms sales. Projecting power into South Asia and Northeast Asia appear to be secondary goals at best.

In the nuclear field, despite espionage allegations, overall China has been quite restrained in the development of nuclear forces. China could have tested a lot more and could have built a lot more but chose not to put more resources there. China is very concerned about potential deployment of TMD, particularly in Taiwan.

1. potential threat to strategic forces (test and build)

2. technology transfer to Taiwan/Japan/maybe Korea

3. U.S. regional engagement

After North Korea, Taiwan is the most dangerous potential conflict in Northeast Asia. The best-case scenario for all involved is eventual and gradual peaceful reunification with the mainland. There is a great danger, however, of misperception or mutual underestimation of the will to back up commitment in China for uniting with Taiwan and in the U.S. in defending Taiwan's independence. This issue must be handled with extreme care to avoid war that nobody really wants.

The U.S.-Japanese Security Alliance

Like NATO, despite the disappearance of the apparent main reason for establishment of alliance (USSR) the alliance is being reinvigorated and its mission expanded. Is this evidence of the U.S. extending global power or was there always more to the alliance? It is likely both. How is the alliance changing?

1. A broader geographical purview: "situations in areas surrounding Japan." This is a situational rather than a geographical determination that would be finally decided by the Japanese government.

2. cooperation on TMD development. The development of a joint U.S.-Japanese TMD system will necessitate a higher degree of interoperationality than has ever existed in the alliance.

North Korea is the first-cited threat driving both these developments. It is difficult to believe that containment of China, while not officially acknowledged, does not drive the reinvigoration of the alliance also. China has long held a deep-seated ambivalence about the role of alliance. On the one hand the alliance helps to contain Japanese power and potential militarization efforts and it constrains Japan's independence. For Beijing this is positive. But the broader geographical purview could be potentially applied to the Taiwan Strait, and this is a serious concern for the Chinese. U.S.-Japanese TMD could affect the Chinese ability to project power in the Taiwan Strait and also impair its strategic forces. As noted, cooperation on TMD will require a far higher degree of interoperability in the alliance, and it will provide for considerable technology transfer to Japan as well as support indigenous technology development in Japan. Anything that supports efforts at indigenous militarization in Japan is viewed very dimly by China.

Russia had been more supportive of the alliance, but joint development of TMD and possible "out-of-area" operations are negatively affecting Russia's position on the alliance. Just as there is talk that NATO might intervene someday in the Russian Federation, one reads comments from Russian leaders and analysts that the Japanese-American security alliance may be applied in the Kurile Islands. Like everything, Russia's concerns about the alliance have been heightened by Kosovo.

Russia

Russia's influence in Asian security has declined, partially by design, partially by neglect. In recent years Moscow has had a mixed picture of positive and negative developments. Some of the most significant include:

1. border demarcation and demilitarization agreements with China

2. military-to-military cooperation with Japan and China

3. loss of leverage on the Korean peninsula (excluded from the Four-Party Talks)

4. deteriorating prospects for regional conventional and nuclear forces

5. reinvigoration of arms sales to China and India (There has been a growing willingness to transfer more sophisticated conventional and nuclear technologies, and this trend will likely be accelerated by Kosovo.)

Sino-Russian Strategic Partnership

China and Russia have drawn closer in recent years, and they share a mutual concern about U.S. predominance and unilateralism, the desire for a stable border, stability in Central Asia, and opposition to U.S. development of national and theater missile defenses. There have even been some discussions at high levels about the possibility of a collaborative response to missile defenses, but like many aspects of the relationship, Moscow has been considerably more enthusiastic than Beijing. In the economic sphere there is complementarity and further potential for military sales and energy development. In South Asia, there are differences since India has long had close ties to Russia while China has been more supportive of Pakistan. However, if Pakistan continues to provide support for Islamic terrorism, Moscow and Beijing may find more in common in South Asia as well.

It is quite difficult to imagine Moscow and Beijing moving their relationship from the status of "strategic partnership" to alliance. While both countries are unhappy with the United States on a number of issues, each has a bilateral relationship with the U.S. that is far more important than the one between themselves. This is especially true for China, whose trade with the U.S., for example, is about ten times the level of its trade with Russia. Russia is very concerned about the power trajectories of the two countries, and particularly the long-term vulnerability of the sparsely populated but resource-rich Russian Far East. Concern about the growth of possibly malign Chinese power is the main factor why Russia has been supportive of the Japanese-American security alliance. American power in Asia, in this view, helps provide stability and maintain the status quo during a period of growing Russian weakness.

VI. Conclusions

While great powers in Asia enjoy better relations between one another than any time in recent memory, current trends and policies will likely make the challenges of strategic stability greater. U.S. overall military dominance coupled with the strengthening of its alliance with Japan will likely elicit efforts from China to continue to bolster its military forces. This

will also affect India and consequently Pakistan. The deployment of TMD will also impair efforts in the fields of nonproliferation of WMD and ballistic missiles as well as regional arms-control efforts.

Two recommendations emerge from this analysis:

1. Efforts to promote deeper regional military-to-military cooperation and transparency amongst regional powers should be promoted with greater vigor.

2. There must be a greater commitment to building multilateral security arrangements including all major powers, and in Northeast Asia I have in mind the U.S., China, Japan, Russia, and eventually a unified Korea. Maybe the first step here will be managing the Korean peninsula, as at some point the Four-Party Talks will need to expand to a six-party format because Japan and Russia will have to be part of the solution to a peaceful reunification of the Korean peninsula.

The Situation in the Asian Pacific and How to Protect Russian Interests in the Region

Evgeny Bazhanov, Institute of Contemporary International Studies

In my opinion the situation in the Asian-Pacific region is now much more stable than it is in Europe. The countries of this region cooperate more than they fight. There is no danger of potential conflicts that could threaten global security. Nevertheless there are certain problems in this region which more or less infringe on Russian interests and require action on our part. I would like to stress those issues which are only potential but could become real in the future.

Social, Economic, and Other Globally Relevant Problems

The financial crisis is not over yet but it is already possible to derive certain conclusions:

- Predictions that the Asian-Pacific region is becoming a global economic leader were too optimistic. The crisis not only damaged the economies of the countries but became a depressing psychological factor for them.
- The role of the U.S. in the region became even more important.
- The position of China, at least in the short term, became more visible and influential, since China escaped the worst of the financial tempest.
- The crisis did not increase conflicts between the countries of the world community; on the contrary, there has been a unified effort to assist those countries that suffered the most.
- At the same time the crisis adversely affected the internal political situation in some countries, especially Indonesia.

- There is a danger that the crisis will expand to other countries, especially to China. It cannot be ruled out that the economic problems in the region will start affecting international stability.

In my opinion, Russia needs to derive the following lessons from the Asian crisis:

- Russia cannot rely on the Asian-Pacific region for major aid to Russian reforms (as a source of capital, technology, financial aid).
- It should not follow the Asian economic development model. The Western model is more advantageous.
- The world has become so interrelated that the Asian crisis continues to pose a threat to our economy.
- The possibility of crisis in China is the major danger. That is why Russia should contribute as much as it can to helping Asia overcome the economic crisis and simultaneously create a plan aimed at defending the economy of Russia against it.

We cannot allow Russia's eastern territories to lag behind economically and technologically. This is very dangerous. If the gap in technological and economic development becomes too wide it sooner or later becomes a threat to the national security of Russia. Its neighbors will simply stop taking Russia into account and will use the Russian Far East and Siberia as an object of economic pressure. At the same time, we ourselves cannot overturn this negative situation without outside help. We need to think of strategic alliances with foreign partners.

There are other problems of a global nature. Economic development in the Asian-Pacific region has its negative consequences. Environmental problems, uncontrollable population growth, drugs, white-collar crime, terrorism, and depletion of natural resources are only some of them. It is not realistic to deal with these problems without the coordinated efforts of several countries. Russia must be proactive in promoting a dialogue with other Asian countries and insist on creating a regional system of economic security.

Regional Tension Points

The only unresolved argument for Russia in the Far East is the issue of the Kurile Islands. At one point in time we unrealistically promised to sign a peace treaty with Japan before the year 2000. The major task now is to promote Russian-Japanese relations in the region, avoiding territorial arguments. This seems feasible given the present situation in the region. The Japanese are very interested in good-neighborly relations with Russia because of the aftereffects of the financial crisis and friction between Japan and China.

The situation on the Korean peninsula is becoming very dangerous. The only way to keep the situation under control is to help North Korea overcome its deep economic and social crisis and establish a normal relationship between North and South.

In connection with this it is very important for Russia and Japan to participate in this process. We, for example, could reassure Korea as far as its security and at the same time exercise a positive influence there. It is time, I think, to insist on negotiations according the

formula (North Korea, South Korea, U.S., China) + (Russia and Japan). Seoul's proposal to establish a consulting forum of these six countries should be supported by us.

At the same time we should not push toward unification of the two parts of Korea. This could destabilize the situation close to the Russian border and in any case will divert financial resources of South Korea, Japan, and the United States in the direction of Korea, which does not coincide with our needs. Nevertheless, it is necessary to develop a strategy in case of the uncontrollable disintegration of North Korea.

There is also the problem of Taiwan. As Andrew Kuchins said, it is a serious problem. Lately we have observed an accelerated arms race in this region. There is more competition between Beijing and Taiwan. On the one hand this tension could seem favorable for Russia because it makes the relationship between China and the U.S. more tempestuous and that means they could be more amicable in negotiations with Russia. But on a large scale this game is in conflict with Russian interests because it diminishes stability and cooperation in the Asian-Pacific region, with unpleasant consequences for everybody.

It seems that the best course of action is to exercise tact and caution and try to prevent extreme actions between the conflicting sides.

In general, territorial disputes of third countries are not good for Russia. They do not promote our interests in the region. Our main interests in the Asian-Pacific region are security and cooperation.

If Russia does not tangle itself in these arguments, it can foster peaceful, orderly resolution of the conflicts in the region.

Nuclear and Conventional Weapons Control

The nuclear preparations of India and Pakistan that are taking place along the western borders of the Asian-Pacific region threaten the process of nonproliferation and create a very dangerous tension point very close to the borders of Russia.

The most important task of our diplomacy is to unite our efforts with those of the U.S., China, and other interested countries in promoting peaceful resolution of the disagreements between India and Pakistan and encouraging them to let go of their nuclear ambitions.

If North Korea continues to have missiles and nuclear weapons it will cause further acceleration of tension in Northeast Asia. It will also lead to a new, very powerful round of an arms race with the participation of Japan, South Korea, and the United States. The danger of a nuclear conflict in the Far East close to the borders of the Russian Federation will greatly increase. It is in the best interests of Russia to encourage North Korea to fulfill its promise not to develop nuclear weapons. Russia should energetically oppose nuclear proliferation in North Korea. This should be done by

- improving our bilateral relationship with North Korea
- employing a non-threatening attitude
- participating in multilateral negotiations in Northeast Asia.

Military preparations in the Asian-Pacific region are continuing in spite of the financial crisis. This tendency is not favorable for us, especially since our military potential in the Far East is steadily declining.

Moscow can contribute to the arms-control process in the Asian-Pacific region by supporting adequate arms-trade regimes and strengthening state control of arms export in Russia. Special attention should be given to military technology transfer to China. We need to be very careful not to overlook our own security. In my opinion, it is doubtful that selling arms is a very good approach for us, especially if we sell them to the countries of the Asian-Pacific region. We cannot rely on this type of export as the most important, as it could backfire in the future.

Power Struggle in Asia

China is definitely growing. This causes concern, even fear, in the U.S. The balance of power in Asia is changing. Anytime the balance changes it causes problems. The United States tries to take measures. Japan tries to keep up. Russia is in a losing position because it will not be able to keep up. The U.S. controls this region. Maybe Russia does not like it but we know all the pluses and minuses of this situation. If the balance changes we do not know what the consequences may be. For example, Japan immediately attacked neighbors when it thought that it was stronger. China, when it was in a strong position, dominated the area. It is in our best interests not to rock the boat and to promote security and cooperation.

Recommendations

1. Our policy in the Asian-Pacific region should be in tune with our national interests in other areas and keep Western interests as a priority. It must be a very balanced course.

2. We should take advantage of our benign situation in the region. Russia does not have sharp disagreements with anyone there and should strengthen its close trustworthy relationships with the countries of the region.

3. Let's not rock the boat as far as U.S. leadership in the region. We do not have the energy to fight it and we should strive to preserve the power balance as is.

4. It is very dangerous to seek anti-American alliances. Even if such an alliance were to be created Russia would not gain anything by it.

5. We must make an effort to create a comprehensive system of political communication at a regional level that would help to promote cooperation. This is the best way to ensure the strategic security of Russia at the present moment.

6. We cannot leave Siberia and the Far East unattended. We need to promote the industrial development of these regions. We should use the appeal of our natural resources to attract capital to these areas.

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