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(NUCLEAR CONTROL)

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Editorial

THE MAY SUMMITS: A TIME TO GATHER STONES TOGETHER

The Russian/American summit of May 2002, as well as the almost immediately subsequent session of the NATO-Russia Council and the Russia-European Union meeting, are of importance in a number of regards.

The summits have confirmed the policy and (let's hope for the best) consolidated the efforts towards overcoming the confrontation between Russia and the Western states, typical of the XX and XXI centuries' boundary. In fact, they put an end to sharp discussions concerning anti-missile defense and the North-Atlantic Alliance enlargement to the East. Antagonisms related to these problems spoilt the international climate in the course of the last several years. And the realization by Russia of political and military "countermeasures" in response to the US withdrawal from the ABM Treaty or the invitation of Lithuania, Latvia and Estonia to join NATO could turn out to be a lingering serious crisis reminiscent the worst times of the Cold War.

Conceptual, legal and institutional bases of a new model of Russian relations with the Western states have been laid, although only partly. In this respect the Declaration on A New Strategic Relationship Between the USA and Russia, the establishment of the Russia-NATO Council, the Treaty on Strategic Offensive Reductions, the transformation of the U.S.-Russia Working Group on Afghanistan into the U.S.-Russian Working Group on Counterterrorism, the formation by Russia and the USA of a Consultative Group for Strategic Security, are of fundamental importance. Therewith, joint efforts aimed at the counteraction of international terrorism, proliferation of weapons of mass destruction and their delivery systems are of particular significance, as well as the development of anti-missile defense.

The results of the May summits highlighted the vector of Russia's strategy in the world arena, and have confirmed that it is solely Vladimir Putin who determines its essential principles. In particular, there are a lot of reasons to suppose that only the political decisions of the President of Russia made it possible to surmount a number of barriers which had blocked the preparation of the Treaty on Strategic Offensive Reductions. This, in its turn, allowed key points to be highlighted in the on-going Russian discussion of its foreign policy and security issues.

The US approach to Russian/American relations fixed in the May agreements is of no less importance. Washington's interest in cooperation with Russia on a wide spectrum of international security problems – from counteracting international terrorism to environmental protection – has been clearly revealed. And it is hardly possible to be explained simply by the feelings of personal sympathy between the presidents Bush and Putin. To all appearances, Washington comprehends that the new global situation, including the nature of the threats typical to the beginning of the XXI century, dictates the necessity of concerted efforts, and – in perspective – allied relations with Russia. Evidently, the serious US concessions, first of all the very fact of signing the legally binding treaty, accounted for that.

However, the May agreements are a necessary but far from sufficient condition for the formation of new relations between Russia and the West. The potential contained in them should be realized. In other words, time has come "to gather stones" littered in great number in the second half of 90's. Meanwhile, both in the West and, more particularly, in Russia there are a lot of people who would like to depreciate the significance of the May summits, and moreover – to commit sabotage of the gained agreements. Not only the paranoiac mentality inherited from the totalitarian past, including the permanent pursuit of enemies and certain offstage "puppeteers" spinning the global plots, is behind that. Much more serious is the fact, that some influential groupings of bureaucratic and military leaders do not like or are not able to adapt themselves to the new conditions, to stop preparing for wars of the past and to focus on a parry of real threats.

Hot Topic

GRAY ZONES: THIS IS WHERE THE THREAT TO THE NONPROLIFERATION REGIME COMES FROM[1]

by Dr. Vladimir Orlov
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While major attention in efforts to prevent the proliferation of weapons of mass destruction (WMD) and their production technologies is focused on a handful of *states of concern*, the most potentially threatening challenges come not from there. The enumeration of certain states allegedly comprising "the axis of evil" not only smacks of ideological clichés, but also confuses and may distract from these emerging threats.

The primary cause of concern actually comes from *gray zones*, spread all over the world where non-recognized regimes or separatist movements rule under the cover of *self-determination* slogans. But in reality, they instead gather radicals of all colors under the flags of *pirate republics* of the 21st century.

They are forgotten

Under the guise of military conflicts, anarchy, or post-war chaos, billions of dollars are pumped through these *gray zones*. The epicenters of the world's black market of drugs, forged money and documents, arms, and humans, are right there. These zones are international criminal crossroads. They are world depots and transit knots for commodities and materials from internationally adopted *stop-lists* or *control lists*. The poverty, lack of prospects and *the permanent war* syndrome solidly built in the local psyche are thickly intermingled here with easy money, freemen and the cult of lawlessness. Such a *cocktail* has become a magnet both for *robin-hood-style* individuals and international organized crime communities, as well as political, ethnic and cult extremists.

One will never find names of these *republics* in the lists of participants in international agreements on export controls or counteracting terrorism. The conventional arms shipments to – or, most likely, via - these *black holes* are not declared in the UN Register. Nobody here takes care to be aware of *international obligations* or *rule of law*. And the local authorities are quite outspoken about that: *come on, you guys don't recognize us as independent states and equal players, why should we care then about international law*? The anonymity of operations predominates here just as in off-shore banks. The difference is that here one does not experience the pressure of developed nations: one either neglects it or smartly plays upon the contentions between various states. It turns out that the most powerful states of the planet can much more easily apply sanctions to some financially dishonest Pacific island of Nauru than to clean Augean stables in Abkhazia, Waziristan, or Transdniestra… The Americans still remember how they burned their fingers in the conflict in a *pirate territory* of a failed nation of Somalia.

Two antiterrorist operations, the Russian one against Chechen separatists and the US- led one against the Taliban regime and Al-Qaida in Afghanistan, indicate that it is possible – in principle – to cut off the oxygen to *pirate republics*, though the transition of the zone from *vacuum* to *normalcy* will take years if not decades. One cannot help greeting warmly the US steps aimed at assisting the government of the southern Philippines in the fight against *Abu Sayaf*, forming a climate of stability in Yemen and narrowing the *black hole* of a drug trafficking empire in Colombia. However, such steps are belated ones. And more, it is now too premature to conclude whether they have been or would become efficient enough.

If finally successful, these operations would send a clear warning message to those non-state actors with growing ambitions who are even now still drafting their plans. If failed, it would probably become if not a green but a yellow light for a number of separatist groups with different kind of rhetoric.

But they exist throughout the world

In this context, the whole region of Southeast Asia is particularly vulnerable, with at least two giant shaky zones: one, in the golden

triangle between Myanmar, Thailand, and Laos; and the other throughout the Indonesian archipelago, including, but not limited to the Moluccas, Aceh, and Irian Jaya. The region may become the worst case scenario of proliferating *vacuum zones*.

Another shaky area is on the territories of the former Soviet Union states, mostly to the south from Russian border, but still including some southern Russian lands.

It is, primarily, Central Asia, where governments through authoritarian rule try to avoid the crisis and to block the Taliban echo. Yet, Tajikistan is more of a failed nation, with its part under no control by the Dushanbe government. According to the director of the Tajikistan Agency of Drug Trafficking Control, the border control between Afghanistan and Tajikistan is very weak. This year, there is a considerable increase in heroin trafficking though the Pyandzh river bordering the two countries. As a rule, smugglers use three or four countries in transit before heroin is supplied to end-users in Europe.[2]

In the Caucasus region, anarchy spreads throughout Abkhazia and Southern Ossetia – separatist parts of Georgia. According to former head of the Abhkazian parliament, his country "has become a safe heaven for narcomafia, smugglers, radical Islamists, and terrorists."[3]

Black holes are not yet erased in the mountainous parts of Chechnya. A very weak, if not symbolic, control by the federal government provides grounds for the existence of a semi-pirate republic in Ingushetia, with no official border demarcation with neighboring Chechnya.

It is not chance that a number of stories or rumors about illicit trafficking of nuclear material mention Central Asia or the Caucasus as transit routes; once, even *suitcase nuclear devices* were reportedly lost by Russia in Southern Ossetia. Though many actively circulating rumors, like one about *nuclear suitcases* lost and not yet found in Ossetia do not have confirmation, security analysts watching the dynamics in the region cannot be relaxed. As a reminder, some of them look at the history of the Taliban air communications. Afghanistan's *Ariana* under the Taliban used to have irregular but intensive non-custom clearance flights to Dubai and Sharjah and, probably, to other destinations. For the Caucasus region, the main transit routes to the south go through Turkey (to go there, no visa is required), Amman, and, again, Dubai.

Last but not least, the tiny *pirate republic* of Transdniestra, a separatist territory of Moldova, with its currency, border control, police, and a Soviet-style-rhetoric wild-capitalist-style self-proclaimed government, serves as an exemplary criminal *off-shore haven*, conveniently located next door to key Southern European and Mediterranean transport routes. According to the U.S. government assessment, "[o]rganized crime has flourished in Moldova over the past decade, especially in the breakaway Trans[d]niestra region. Moldova's local crime groups have established close ties to Russian, Ukrainian, and other foreign criminal syndicates that also act in the country. […] Political connections have assisted criminal groups and their front companies' efforts to acquire lucrative contracts or state-issued licenses for exports…"[4]

In Transdniestra, arms production and arms sales is the only national business. For international terrorists, this is the best market they could imagine: cheap, efficient, and forgotten by the entire world. All the trade is controlled by the *Sherif* company owned by Vladimir Smirnov, a son of the Transdniestra President Igor Smirnov. According to Paolo Sartori, of the Interpol, Vladimir Smirnov is also the head of the Transdniestra Customs Service. Thus, his company can export whatever it wants to, avoiding any taxation, duties, and reporting. Moreover, the airport in the capital town of Tiraspol is defended by missiles and looks very much like a territory under pirate rule. According to the Moldovan law enforcement services estimates, *Sherif*'s annual sales are around $4 billion. Ironically, the total officially declared Transdniestra GDP is $85 million, i.e. 47 times lower that of the President's son favorite toy.

Gnom, *Grad*, *Vasilyok*, *Duga*, *Igla*… everything is on sale on the local black arms market.

Among the shoppers attracted by supermarket-wide choice and permanent discounts, there have been seen visitors from *Al Qaida*, *Hamas*, *Hezballakh*, guests from Iran, Iraq, Abkhazia, Nagorni Karabakh, former Yugoslavia, Kurdistan, and Chechnya.[5] There are rumors that radioactive materials have been smuggled via Tiraspol, but there are no methods to independently check them. At any rate, with the Russian peacekeepers preventing entrance by undesirable visitors into this territory, as Transdniestra authorities see it (smugglers are definitely not those in the stop lists), with the local police in the *red star* Soviet uniform, and with an odd combination of old-style communist rhetoric by the unrecognized President and mushrooming of criminal businesses, this is a juicy land for *The Sum of All Fears* kind of movie making… but this is also a place when you may feel that the fears are much real than Hollywood thrillers.

The are networking

Leaders of major Russian organized crime groups have particularly benefited from having the *pirate republics* in Russia's neighborhood. In many cases using the gray zones as bases or transit routes for the criminal transactions, Russian mafia leaders "have broadened their influence worldwide through political and business contacts which they have used to facilitate their legitimate and illicit business interests on a global scale. Since the collapse of the Soviet Union, Russian organized crime groups have spread rapidly beyond the former Soviet borders and have a presence in some 60 countries in Europe, North and South America, the Caribbean, Asia, and Africa."[6] They have established particularly close ties with criminal groups in Italy, former Yugoslav republics, and Colombia.

Such *gray zones* in the territory of the Former Soviet Union states are the best soil possible for *entrepreneurs* like Viktor Bout. His group, according to former director for transnational threats on the U.S. National Security Council Lee Wolosky, "is probably the largest arms trafficking network in the world. Besides Afghanistan, it delivers large and small arms to all of Africa's major conflict zones [and] operates or has operated criminal cells in the United Arab Emirates, Belgium, Russia, the United States, Rwanda, South Africa, Swaziland, Uganda, Angola, and Liberia, among other places…"[7] A native of Tajikistan, graduate of the elite Moscow defense language institute, fluent in five foreign languages, this 35-year-old businessman, once referred to by a U.S. official as the "Bill Gates of arms trafficking", has built an empire from Aruba to Cambodia and has never had any hesitations about shipping arms and providing other support to both sides in conflict, if they paid, like he once did in Angola, supporting both the rebels and the government.

Those who are familiar with the role of Ulba metallurgic plant in Kazakhstan in the nuclear fuel cycle of that state and who still remember the origins of the "Sapphire" operation by the United States in Kazakhstan in 1994 would probably be surprised to find the name of Viktor Bout's brother, Sergei, as the owner of Air-Cess company which has provided its aircraft for the Ulba plant aviation transportation company. At the same time, it is little surprise that corruption-dominated Kazakhstan has become a safe haven for the Bouts, who actively used it as a strategic and comfortable crossroads for their operations in the failed state of the D.R. of Congo and in the gray zone of the Taliban-controlled Afghanistan.[8]

It is remarkable how easily and quickly *businessmen* like Bout find common language with the elites of the kleptocracies like Kazakhstan or *states of concern* like Libya. Bout has developed a "working relationship" with the Libyan leader Moammar Gadhaffi. Bout provided assistance when Gadhaffi negotiated the release of European hostages held in the Philippines by Abu Sayyaf, an Islamic rebel group whose leader had trained in Libya. Libya hired a plane provided by Bout to deliver the freed captives.[9]

Bout's strongest point has been the use of aviation to serve the needs of guerrillas, or terrorists, or corrupted rulers. His success story in transporting arms and goods for the Taliban, connecting it with the outer world is the best example of how one can avoid customs checkpoints whether he carries heroin, Kalashnikovs, or plutonium for sale.

Another success story of that kind was, until recently, the *pirate republic* of Chechnya. In the early 1990s, every month there were from 100 to 150 unauthorized flights of big passenger or transportation planes from its capital Grozny to Yemen, Abkhazia, Lithuania, Turkey, Iran, Jordan, United Arab Emirates, Afghanistan, and Saudi Arabia, among others. The airport in Grozny had no customs checkpoint at all. In 1991–1992, the most active drug air corridor was "Grozny–Tripoli", but later on leaders of Chechen rebels calculated that use of Russian transit bases would be much cheaper.

Information about international drug trafficking routes may give some hints for those who are involved in expertise of other kinds of illicit trafficking. For instance, Libyan security services, in cooperation with the former GDR Stasi senior officers, in 1991-1992 established a cocaine transportation sea route from the port of Buenaventura in Colombia to Tripoli and Bengazi in Libya, from where cocaine was shipped to Western Europe through terrorist groups traditionally supported in Europe by Gadhaffi. The same channels were used by the Libyans while transporting heroin from Iran and Lebanon to Europe. Members of crews were composed, as a rule, of individuals close to the IRA or ETA.[10] Another example is the international heroin trafficking ring operated from the Russian territory in early and mid-1990s, with financial or transit bases reportedly located in Luangphabang (Laos) and the Caymans, as well as with links with security structures in Cambodia, North Korea, Cuba, and rebels in the Shan province of Myanmar. According to some reports, in late 1993 North Korean "comrade Khvan" involved in this criminal ring requested from his Russian counterparts to buy chemical weapons and sensitive electronic equipment. According to the same reports, the request has never been met.

The level of cooperative ties among *godfathers*, and military, security, and financial structures of the *gray zones* is impressive, particularly if we take into consideration that we can see only the very tip of the iceberg. And, enjoying the lack of attention from the international community, on one hand, and the growth of its financial empires, on the other, the leaders of *gray zones* have already proclaimed the slogan: "Organized criminal communities and terrorist organizations of all the world unite!" This is where the process of globalization has already taken place and will soon produce its fruits, in this case, poisonous.

As a Russian senior diplomat, in charge of new challenges and threats assessment, put it, "Despite significant variations in means, methods, goals, and forms of the activities of terrorist and criminal organizations, there is a clear trend of merging of these structures, which may become irreversible. One of the signs of this threat is direct use of terror by criminal groups. Mafia and drug dealers, through terrorist acts against the state and state officials, attempt to impede investigations and implementation of governmental policies to fight them."[11]

The Taliban, when it was in power in Afghanistan, controlled around 90% of opium production. Part of the profits from drugs were redistributed by the Taliban among the Islamic Movement of Uzbekistan, guerrillas of the United Tajik Opposition, Chechen field commanders, and the Liberation Front of Eastern Turkestan in northwest China.[12] According to some reports, made public as early as 1995, "drug trafficking groups have made attempts to acquire, in violation of international sanctions and regulations, advance technologies, weapons and some types of dual-use materials and equipment, or clearly military purpose equipment unrelated to drug business. It is mostly related to representatives of Libya, North Korea, and Burma…"[13]

They are dangerous

Detailed case studies are required before offering the prescription to cure such *gray zone* tumors. No doubt, the situation varies dramatically from zone to zone and from region to region. While in some cases surgical interference is unavoidable, in most of cases there are still ways for diplomatic solutions. The most harmful response would be, however, the ostrich pose: when one pretends that there is no problem at all.

At the same time, it is damaging for international stability if such zones are artificially established, even is the declared purpose is to have them *temporarily*. Though situation and political context of establishing such zones in Kosovo and Northern Kurdistan have been quite different, both zones are not solutions to the problem but rather delayed-action landmines. For instance, some of the reports made by Russian security analysts have concluded that, after the defeat of Iraq in the Gulf War in 1991, Northern Kurdistan has become a "free criminal zone", serving "as a critically important regional base for trafficking drugs and arms". There is little doubt that the United States would prefer not to publicly notice this problem now when the Kurds are their key partners in a future military operation against Saddam. And the leaders of Northern Kurdistan appreciate this policy of double standards. Their key partner in illicit trafficking business has been the so-called Abadan group, composed mostly of ethnic Arabs and having its roots in Iranian provinces of Khuzestan and Bushehr and later on adding Southern Lebanon to its zone of influence. The Abadan group has established particularly close links with the Hesballakh. Its main transportation routes of heroin are "Mediterranean", "Caribbean", and "Rumanian", based on the traditionally close ties between Iranian and Rumanian secret services inherited from the 1980s.

Most of the *nuclear thefts* currently reported to the International Atomic Energy Agency (IAEA) and included into its data bank may look like mere trifles in comparison to the possibilities obtained by international smugglers thanks to the transport corridors of *pirate republics* where there are neither real borders nor real customs, and where everything is sold and bought (at incredibly low dumping prices). And when one learns, for example, of multimillion deals concerning the illegal arms trade passing through the *pirate republic* of Transdniestra, is it not just the tip of the iceberg?

International organized crime communities (*mafias*), in their majority, operate according to long-established notions, and would unlikely let themselves become involved in extremely politically slippery trades with radioactive and other proliferation-sensitive materials. As for those from *pirate republics*, this is only the amount of a possible profit from a deal that matters for them.

The international community is, perhaps, on the threshold of a new round in the proliferation cycle. And, actually, *axis* is the right word to use in this particular context. It is a threat of proliferation along the axis of non-state (or failed state) actors successfully matured in the unattended and forgotten *gray zones* of the world, and examining ways of future networking.

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[1] I would like to thank Tariq Rauf, Lee Wolosky, Igor Khripunov and Dmitry Kovchegin for their comments on the draft of this article.

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[12] A. Zmeyevsky. Presentation at the symposium on international terrorism and the role of the United Nations. Vienna. June 4, 2002.

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Commentary

MILITARY ACTIVITIES IN SPACE AND INTERNATIONAL LEGAL REGULATIONS

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Nowadays all leading nations of the world realize their geopolitical interests in space and have started large-scale space activities. Economic and social development is impossible without space activities. At present, space systems provide efficient solutions to many problems, including environmental monitoring, control of emergency situations and supervision of activities to eliminate their consequences, global and high-precision positioning in time and space in any part of the world, surveys of natural resources, and global and uninterruptible communication at any distance, etc.

There are a number of tasks accomplished by these space systems in the area of national defense and security, which enable:

- political leaders to be sure that any preparations for war and the outbreak of hostilities will immediately be detected and the state will be able prepare for counteractions or prevent such aggression;
- the supreme military command of the state to have reliable control of the forces and to conduct combat operations in all four media;
- the supreme staffs to develop plans for military campaigns and strategic operations, and to control their implementation;
- to conduct operations of force, if necessary, and ensure superiority in low-earth space and hence, to deprive the enemy of the capability to use outer space as an asset;
- to interact with Army and Navy groups in attacking (via outer space) enemy forces in any region of the world and to transform strategic, operational, and even tactical operations into global ones.

To understand the scale of the process, one has to remember that more than 130 states conduct some activities in space, out of which 40 develop space defense programs and 20 have their own space programs. There are more than 700 spacecraft in the world, costing billions of dollars. A substantial portion of these spacecraft serve military purposes. More than 1,000 companies in the world are directly connected with space industry.

The use of space facilitates the informatization of the global community. The expensive space systems, belonging to sovereign states, are deployed into orbit. At the same time, such an informational leap by the world community in outer space without the improvement of international legal regulations may pose a significant threat to mankind. The pre-requisites for the accelerated emergence of such challenges are as follows. The exploration of outer space facilitates the transformation of information into weapons and encourages the development of prospective weapon systems, which creates a combination of space information systems and other combat means. As a result, these means will be able to accomplish both tactical and strategic missions.

The reason for such impressive changes is that a number of space systems have already achieved certain quantitative and qualitative characteristics that are within in the framework of combat control of weapons. This is why the general classification of space systems is starting to contain a new classification parameter – space information systems as functional sub-systems of prospective weapon systems.

Under these circumstances, an important question arises: does the development of information attack systems with space guidance meet the interests of the international community? This problem should be solved with the use of international legal mechanisms.

Moreover, a number of nations possess the scientific and technological capability to develop and produce attack systems that may be employed in all media, including space. In the long run, outer space may become the source of military threats and the arena of armed struggle.

In this regard, several conclusions can be made. Firstly, the willingness to ensure the absolute domination in outer space may become a significant element of the national military strategies of some states. As a result, outer space may fall under national sovereignty and this will prevent other nations from exploring low-earth space and getting benefits from its use. Secondly, one cannot preclude the development of new space weapons by the leading countries. Thirdly, the number of commercial and civilian satellites is increasing. They support military activities and combine this with civilian tasks – communication, distance probing of the Earth, etc. Such activities should also be regulated. Fourthly, there is a danger that national security planning will shift from the support functions of the space systems to assigning combat missions to them. Fifthly, without additional international legal documents, outer space may become an independent area of planning and implementation of combat operations.

These aforementioned conclusions force the international community to devise norms and regulations for the use of outer space. Nowadays the basic principle is "something not banned is allowed". Taking this principle into account, space military activities have been divided into three groups: allowed, banned, and unconditioned (not mentioned in international law).

Under these circumstances, the most difficult task would be to regulate those space military activities not covered by the international law, such as:

- practical military experiments and tests to develop the technology of space guidance;
- development and deployment of electronic warfare systems in outer space;
- development, testing and deployment of attack systems capable of destroying targets *in* space and *from* space.

Moreover, there is a need for identifying and verifying the threshold amount of spacecraft in certain information orbital groups, above all the number of space intelligence systems. The unilateral buildup of orbital groups used to control the weapons may undermine strategic stability in outer space and on the Earth.

Such verification and oversight can be based on a comprehensive assessment of the total number of functioning spacecraft and their technical capabilities (counting both military and dual-use spacecraft at the orbit).

It would also be useful to establish an international legal regime banning the deployment of combat means and military personnel in outer space and hence, to prevent the weaponization of space. Such a regime would:

- envisage the development of international legal norms to prevent the arms race in outer space and the elaboration of confidence-building measures;
- rule out the possibility of transforming outer space into the theater of war or the assault ground.

The existing international legal regime regulating space military activities is falling behind the progress in missile and aerospace technology and equipment. The current political measures cannot ensure effective control of the development of space weapons either.

In this context, it is necessary to promote international cooperation, which is crucial for sustainable security:

- to develop and strengthen the existing international legal mechanisms, which reduce tensions and prevent the outbreak of conflicts in outer space;

- to establish the international legal regime for the nonproliferation of space weapon technologies and technologies that strive to combine the space information systems and the attack means;
- to enhance the international system of collective security.

Therefore, the efforts of the global community should be aimed at international legal regulation of development and deployment of any weapons in outer space. Such a regime would prevent the arms race in outer space.

Under these circumstances, it is advisable to promote the coordination of some space military activities of different countries, in order to:

- improve the terminology used regarding space military activities (the notions of space military activities, space-based weapons, space dual-use and combat systems, etc.);
- update and expand the definitions of the 1975 Convention on the registration of spacecraft launched in outer space.

In addition, to prevent further militarization of outer space, the following steps should be taken:

- international agreements banning tests and deployment of any weapons in outer space should be signed;
- an international agreement on the immunity of satellites should be concluded;
- the number of spacecraft in information orbital groups used for command and control of weapons should be identified and verified;
- quantitative characteristics of weapon systems related to information space systems should be subject to limitation;
- an international space inspectorate and arbitration bodies for space inspection should be set up;
- a code of conduct in outer space should be negotiated (including a ban on dangerous maneuvers, chasing, approaches; maintenance of minimal distance between the spacecraft, etc.);
- inspections of space launches on launching sites and test ranges should take place.

Thus, one may conclude that an arms race in outer space cannot enhance anybody's security. The development of weapon systems on the basis of space technologies may result in an increasing number of parties involved in armed conflicts and in the increasing scale of conflicts, for outer space multiplies the military capability of the armed forces. The states with substantial space capabilities will have significant strategic advantages. This will force other states to develop and deploy (without controls) such military systems. A chain reaction will occur.

These problems may be resolved through a course of constructive and fruitful cooperation of the entire global community under the UN aegis. In the near future, the lack of efficient measures to curb the proliferation of military space systems, notably attack space systems, may cause a similar challenge to the threat of nuclear proliferation.

Commentary

MISSILE DEFENSES: TOWARD COOPERATION OR CONFLICT? A EUROPEAN PERSPECTIVE

by Ian R. Kenyon
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Historical Background

Since the late 1990's European Governments have been faced with the need to react to a new generation of proposals from the United States relating to Ballistic Missile Defense. There has been a certain sense of *déjà vu* as Western European States encountered similar problems when President Reagan launched his Strategic Defense Initiative ("Star Wars") nearly twenty years before. On this occasion the issue came back into focus with the Clinton administration's debate with Congress about whether the time was ripe for a decision to start preparations for deployment of a National Missile Defense (NMD) for the continental United States, involving ground-based interceptors based in Alaska and targeted on ballistic missiles in mid-course. The decision was deferred to the new Administration (President Bush having actively championed deployment during his presidential election campaign in 2000). After taking office, the Bush administration first expanded the scheme both technically and geographically to involve a layered approach, including boost phase and terminal intercept systems (which were already at various stages of development) as well as the mid-course system. The title "National" has been dropped from a Missile Defense (MD) whose stated objective is now to defend America's allies also from limited or accidental missile strikes. In December 2001, despite strong domestic and international expressions of concern and strong protest from Russia (and China), the President gave the statutorily required six months notice of withdrawal by the United States from the Anti-Ballistic Missile Treaty (ABMT), originally signed with the USSR in 1974.

To understand European reactions it is necessary to examine the differences between Europe and the United States in two areas: threat perception; and principles of security and the Transatlantic relationship.

Threat perception

Any analysis of European attitudes to BMD needs to take into account the perceptions of the general public in different countries (often, of course, shared by their leaders). Europe has a history of at least one major war per generation until 1945. The territory of France was invaded by German forces three times between 1870 and 1940. The older generation in Britain still remember the successful rescue of the bulk of its trained army manpower from Dunkirk, also in 1940, after which the enemy was only 35 kilometres away across the Channel. Even after the immediate threat of invasion was lifted following Hitler's decision to turn East against Russia instead, aerial bombardment of British cities continued for five years, culminating in attacks by what, today, we would call cruise and ballistic missiles (the V1 and V2). After 1945 for more than 40 years Europe was divided by the Iron Curtain; Warsaw Pact troops were expected to roll across the inner German border at any time; and the massive nuclear might of the Soviet Union was capable of delivering annihilating destructive force to the principal cities with a warning time of four minutes or less. The situation today could not be more different, with Russia perceived as friendly and preoccupied with its own internal problems; the former members of the Warsaw Pact in the process of joining NATO and the European Union; and the rest of the world distant and with no perceived reason to pick a quarrel with the principal European powers. All this leaves the "man in the street" feeling far more secure than his parents or grandparents could have done.

By contrast, the United States has not suffered war involving the forces of a foreign state on its continental territory since the War of 1812. The two World Wars saw a magnificent contribution from the US armed forces but they fought overseas and the "folks back home" were seen as safe, if concerned for the welfare of their fighting men. This situation changed, in terms of threat if not of actual conflict, with the Cuban missile crisis and the subsequent appearance of ICBMs with sufficient range to strike the US from the USSR This new danger was successfully managed through the deterrence theory of `mutual assured destruction' and the series of bilateral arms control agreements which were one of the major diplomatic achievements of the last century. The United States population, however, remained nervous and supported President Reagan in his dream of a defensive shield against ballistic missiles, initially pursued through the Strategic Defense Initiative (SDI). Now Russia is seen as a friend but in its place has arisen the fear of the "rogue state", whose leaders are believed to stop at nothing to acquire weapons of mass destruction and their means of delivery, and who are seen as mad enough to use them despite the certainty of massive retaliation. The terrible events of September 11 can only increase this feeling of increased vulnerability.

Arguments on the nature of the threat have been central to differences at the official level between the United States and the Europeans over missile defenses. Hubert Vedrine, the French Foreign Minister, remarked in May 2000 that he did not see the missile threat as "dire enough" to warrant deploying missile defenses, and this appeared to be a widely-held view among European states. These doubts were accompanied by skepticism that the United States would become vulnerable to ICBMs from "rogue states" in the way predicted by the Rumsfeld Commission. European members of NATO and the United States thus exhibited visible differences over their perceptions of the threats arising from missile proliferation. One facet of this was highlighted in a report by the Atlantic Council of the United States, which stated that: "the most pervasive differences in threat perception across the Atlantic derive from a different weighting of technological capabilities as opposed to political intentions"[1]. The possession of a capability does not in itself constitute a security threat: that is derived from perceptions of the political relationships between a "state of concern" and others.

This greater emphasis by the European allies of the United States on political intent in making threat assessments helps to explain why the Clinton Administration encountered such difficulties in generating significant allied support for the policy of acquiring an NMD, even after it had made a case for ICBM capabilities in "rogue states" being closer to deployment than had been initially thought. One consequence of this difference is that the development of a long-range missile capability by states on the periphery of NATO Europe seems unlikely in itself to create automatically a pro-MD constituency within Europe. For as the US Atlantic Council reported, "until there is a real prospect of a ballistic missile threat to European countries from a state that Europeans see as potentially harboring ill designs on them in a crisis, their inclination will be to argue that intentions are more important than capabilities and that to base policy responses too heavily on the latter risks undesirable and unnecessary strategic consequences"[2]. Admiral Sir Michael Boyce, Chief of the British Defence Staff, in an interview with the Guardian newspaper on July 28, 2001 said that it would be irresponsible not to face up to the proliferation of missiles which could be fired at Britain and to explore ways of dealing with the potential threat. But with regard to Europe embracing the US concept of BMD he said "There is no point in completely impoverishing ourselves in order to provide ourselves with a defense against one particular system and not being able to do anything else.[3] This month, responding to a speech by President Bush about the dangers of proliferation by Iraq, Iran and North Korea, European Commission spokesman Gunnar Weigand said that the EU shared US aims on weapons proliferation but "believe that engagement and rapprochment … should be used to achieve these aims."[4]

Principles of security and the importance of the transatlantic relationship

The United States is, in the last resort, self-sufficient in providing for its own security. Whilst the contribution of allies is undoubtedly valued militarily, it is probably more important as a sign of political solidarity. For the Europeans, however, the involvement of the United States was crucial to their security during the Cold War and is likely to remain fundamental to security planning whilst a common European defense identity remains embryonic. It has , therefore, been a basic element of the policy of most European States to encourage factors tending to tie the United States to Europe, such as the presence of sizeable US ground forces, and to resist developments which might tend to tempt the US Government to withdraw to its own borders. The extension of deterrence by US nuclear forces to the European allies, even with its corollary of 'mutual assured destruction' provided comfort and each successive proposal to resort to missile defenses, with the perception that this could reduce the reliance on deterrence, has caused concern. The 1972 Anti-Ballistic Missile Treaty, like the SALT and START Treaties, whilst legally purely bilateral, was considered by European Governments as directly (and positively) affecting their national security. The recent formal announcement by President Bush of intention to withdraw after the required six months, whilst fully within US sovereign rights, fill Europeans with unease.

It follows from the foregoing that sound political relations with the United States are of great importance to European Governments. This results in the 'catch 22' situation that, whilst they might be unhappy about certain aspects of United States policy which might weaken the transatlantic ties, to resist too strongly risks the unwanted result. It is probably for this reason that European Governments tend to be most outspoken when unpopular policies first emerge, then, if the United States persists, they go quiet and, at the end of the day acquiesce, preferably with some face-saving arrangement. In the case of President Reagan's 'Star Wars' project this arrangement took the form of promises of major contracts for European industry (which largely failed to materialize).

History also appears to indicate that, just as European states prefer to use political criteria in assessing security threats, they also display a clear preference for deploying political and diplomatic, rather than military, responses when threats are seen to exist They have tended to view nuclear deterrence as inherently political, involving the manipulation of choices, and have placed greater faith in its continued efficacy, and that of international regimes, than the United States sometimes seems to do. This difference was highlighted in a 1999 North Atlantic Assembly report which argued that: "it is not clear why deterrence, which proved so effective at deterring the Soviet Union, is not applicable to lesser powers whose own capability to strike the United States is in doubt and who would not survive a retaliatory attack by the United States."[5]

All of the above can be taken to explain why the anti-NMD rhetoric heard in many parts of Europe during the latter part of the Clinton Presidency has diminished in tone and frequency of utterance in the past year. The recent commissioning by NATO of the Theatre Ballistic Missile Defense Feasibility Study gives further excuse for a "wait and see" attitude.

Technical factors

NMD, as proposed by President Clinton, was essentially a system to combat ballistic missiles on intercontinental flight-paths. Whilst it is technically feasible to combat a missile flying from North Korea, Iran (or Russia or China) to the continental United States with an interceptor launched from Alaska, this system would not, in its basic form be able to protect Europe or Japan. Even if the problems of siting interceptor fields and radars and the complex questions of multilateral command and control could be overcome, it is not evident that this would be the technology of choice for European defence, given the much shorter ranges from, say, the Middle East or North Africa to the Southern and Eastern flanks.

European leaders need to deal with the prospect that European security could be negatively affected by three factors. First, that the cancellation of the Anti-Ballistic Missile Treaty, without its replacement by an alternative arrangement would be likely to force Russia and, particularly, China into actions which would reduce global stability. Second, that the regime of arms control agreements, which had been progressively built up over 40 years to underpin global security, could unravel. (Recent statements that the US intends to rely on informal arrangements in the future reinforces this concern.) Third, that a degree of invulnerability achieved by the United States could cause an aggressor to look for softer targets in Europe whilst encouraging the United States itself to disengage. In other words, a 'state of concern' might try to force restraint on the part of the US, as well as limiting its basing options, by threatening one of its unprotected NATO allies. Thus, even if the European states feel that there is no threat to them at the moment from "states of concern", the deployment of an effective missile defence by the US might change those circumstances.

President Bush's team, by expanding their defensive concept to include boost phase and terminal technologies has made the potential acceptability of the missile defense scheme for European Governments much greater by making extension of cover more feasible. Several of them were already keen to acquire terminal phase systems such as Patriot Advanced Capability 3 (PAC3) under the old name of Theater Missile Defense (TMD) and many experts have suggested that boost phase intercept is likely to be more effective against missiles with chemical or biological warheads or employing sophisticated counter-measures. Nonetheless, European leaders remain to be convinced that the threat is such as to justify the immense resources which such a European defense would require.

Conclusion

As to the question posed in the title of this session "cooperation or conflict?" the most authoritative statement comes again from Sir Michael Boyce in the same interview: "We must make sure we don't leave out the Russians or indeed the Chinese. We must be sensible about how we work with them, we-the West in general-and the Americans in particular. It is important for the West to move forward with the Russians alongside us rather than in political confrontation."[6]

The preference for political cooperation is thus clear. Whether this could extend to technical cooperation is a more difficult question and probably cannot even be seriously opened until the long term decisions on the need for, and the shape of a European missile defense have been more seriously addressed.

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[1] Stephen Cambone, Ivo Daalder, Stephen J. Hadley & Christopher J. Makins, *European views of National Missile Defence, ACUS Policy Paper, September 2000.*
[2] ACUS Policy Paper, p.9.
[3] http://www.guardian.co.uk/Archive/Article/0,4273,4229934,00.html.
[4] The Guardian, Tuesday, February 5, 2002.
[5] North Atlantic Assembly Political Sub-Committee on Transatlantic Relations, *NMD and Implications for the Alliance,* p.10.
[6] Op. cit.

Analysis

SUB-STRATEGIC NUCLEAR WEAPONS: RUSSIA'S SECURITY INTEREST AND PROSPECTS OF CONTROL[1]

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Russia's Security Challenges and Sub-Strategic Nuclear Weapons

The discussion under way in Russia highlights a number of important problems. Russia can hardly afford to conduct a large-scale war today or in the near future in Europe or in the Far East without nuclear weapons, either strategic or sub-strategic. How realistic is such a war? This issue is connected with a more general problem – the prospects for the development of a military-strategic situation in the neighboring regions and the character of challenges originating from there.

The developments of the late 1980s and early 1990s have dramatically changed Russia's strategic environment. The most dangerous security threat caused by the tough East-West ideological confrontation is no longer relevant. After the demise of the Soviet Union, a security belt emerged along the Russian borders in Europe and Central Asia. This buffer zone separates Russia from unstable Muslim regions (including Tajikistan, Southern Kyrgyzstan and Eastern Uzbekistan) and from NATO armies. The states that make this buffer zone have lower military capabilities than Russia and are interested in maintaining normal relations with Moscow. The single European theater of war (Europe and adjacent seas) split into several zones with specific strategic situations. These are:

- the *western* zone – from the Russian-Norwegian border to Kaliningrad and Belarus;
- the *southwestern* zone – Ukraine, Moldova, and parts of the Black Sea region;
- the *Caucasian* zone – North and South Caucasus.

At the same time, there is the *Central Asian* zone and the *Far Eastern* zone.

Western Zone. In the western zone the military-strategic situation depends on the interaction between Russia and NATO. The enlargement of the Alliance washes out the security zone separating Russia from NATO. Hence, there is a growing danger of Russian and NATO involvement in local conflicts that may emerge in the areas situated "between Russia and NATO". But the matter of particular concern for the Russian elite is that after the enlargement the Alliance will consolidate its decisive military superiority over Russia and the large contingents will be deployed near the Russian borders. Many experts assume that the zone of the Russian territory vulnerable to NATO aircraft will significantly expand and NATO planes (armed with nuclear weapons) will be able to destroy the critical military and civilian infrastructure. These considerations make up the basis for the concept of deterrence of the Alliance with strategic and sub-strategic nuclear forces. These approaches deserve particular attention.

NATO member states already enjoy substantial superiority over Russia in Europe. NATO enlargement will strengthen the military potential of the Alliance. If one looks at the levels envisaged in the CFE Treaty, NATO has twice as many aircraft, three times more personnel, and heavy Army weapons.

However, such simplified calculations distort the real state of affairs. The comparison of NATO to Russian military capabilities would make sense if all European troops attached to NATO could be deployed near the Russian borders immediately after the beginning of the conflict and could be engaged in combat operations. This scenario is improbable and the corresponding calculations are mostly propagandistic. It would be better to compare the Russian forces and the armed forces of Germany, Poland, Hungary, the Czech Republic, and Turkey, which are situated closer to Russian borders. After the adaptation of the CFE Treaty in November 1999, the ratio is the following.

In the process of CFE adaptation the United States has significantly reduced its quota of conventional armaments in Europe. According to the initial version of the CFE

*Table 1. The levels of weapons subject to the CFE limitations for Russia (European zone) and NATO member states, which are geographically close to Russia**

	Russia	NATO*	NATO*/Russia
Battle tanks			
Ceilings under non-adapted CFE Treaty	6,400	14,392	2.2
Available by late 1999	5,613	9,916	1.8
National ceilings	6,350	11,133	1.7
Territorial ceilings	6,350	10,581	1.6
Armored combat vehicles			
Ceilings under non-adapted CFE Treaty	11,480	16,770	1.5
Available by late 1999	10,492	10,687	1.0
National limits	11,280	14,030	1.2
Territorial limits	11,280	14,484	1.3
Artillery			
Ceilings under non-adapted CFE Treaty	6,415	11,927	1.9
Available by late 1999	6,404	8,598	1.3
National ceilings	6,315	10,108	1.6
Territorial ceilings	6,315	9,707	1.5
Attack helicopters			
Ceilings under non-adapted CFE Treaty	875	1,128	1.3
Available by late 1999	761	563	0.7
National ceilings	855	1,075	1.5
Combat aircraft			
Ceilings under non-adapted CFE Treaty	3,431	3,304	1.0
Available by late 1999	3,057	1,651	0.54
National ceilings	3,416	3,169	0.9

Note * - the Czech Republic, Poland, Hungary, Germany, U.S. forces in Europe, Turkey

Source: Protocol on National Ceilings for Conventional Armaments and Equipment Limited by the Treaty on Conventional Armed Forces in Europe; Protocol on Territorial Ceilings for Conventional Armaments and Equipment Limited by the Treaty on Conventional Armed Forces in Europe.

Treaty, the United States had the right to deploy up to 4,004 battle tanks, 5,152 armored combat vehicles and 2,742 artillery pieces. After the adaptation the U.S. quota decreased by 2,200 tanks, 2,000 combat vehicles, and 1,200 artillery pieces. Moreover, it is important to note that the new NATO member states – the Czech Republic, Hungary and Poland – agreed to reduce the total of 338 tanks and 396 artillery pieces in comparison to the real level of the early 1990s. One should also remember that territorial and national ceilings for these states coincide and they committed not to raise the territorial ceilings. In practice, this means that foreign troops and armaments can be deployed on their territories only on the basis of a temporary increase in ceilings.

Ukraine and Belarus undertook similar commitments. Moldova pledged not to deploy on its territory foreign troops even for provisional deployment. These measures stabilize the situation in Central and Eastern Europe. Russia cannot permanently station its Army and Air Force units on the territory of Belarus and has to complete the withdrawal of forces from Transdniestria by late 2001. Thus, Russia's maneuver is partly limited, but this prevents the emergence of a relatively long line of direct contact between the Russian troops and NATO members. Moreover, Russia undertook a political commitment to show restraint in deploying armed forces on the territories of Pskov and Kaliningrad regions (without mentioning any specific quantitative parameters). Meanwhile, the Russian diplomacy has reserved the right to rapid deployment of armed forces in these regions if the military-political situation changes.

The adapted CFE Treaty contains the limits on deployment of armaments in the flank zones on the territory of Russia and Ukraine. Russia has made a certain concession to the West, notably Norway and Turkey, which insisted on preserving the flank limits. However, the decisions of May 31, 1996 (on changes in the geographical borders of the flank zones) were reaffirmed and the initial limitations of the CFE concerning armaments of the regular units and stockpiles were modified. According to the adapted version, all armaments situated in the flank zone can be available to the regular units. As a result, Russian combat capabilities, above all in the south, have significantly been enhanced.

Despite certain concessions in the course of negotiations on the CFE adaptation, Russian diplomats have managed to accomplish the strategic task – to limit to some symbolic levels the ability of NATO member states to deploy foreign troops on the territory of newly adopted members. Additionally, the armed forces of Poland, the Czech Republic and Hungary are subject to reduction. As a result, the strategic situation in Russia's neighboring zones has substantially stabilized. Russia's rapid deployment capabilities with respect to the flank zone have also been enhanced.

Thus, it would be wrong to say that NATO has an overwhelming military superiority over Russia sufficient for a successful massive offensive, which can be prevented only with nuclear deterrence or nuclear weapon use. For instance, Turkey, if it wants to attack Russia, should move its Army units through the states of South Caucasus. Taking into account the landscape in the Caucasus, this objective can hardly be pursued. The Hungarian troops are separated from Russia with Ukraine and Slovakia. Unless Ukraine changes its neutral status, there is a vast zone between the Russian forces and the NATO forces, which prevents them from direct contact.

The most strategically important region in the *western zone* is the southern Baltic region covering the Baltic states, Poland, Belarus, and adjacent Russian regions. The situation here is more contradictory. The Baltic states are ready to solve the border problems if the territorial *status quo* is approved, and the final solution depends today only on Russia. The Estonian, Latvian, and Lithuanian armed forces cannot be compared to the Russian armed forces deployed in the regions adjacent to the Baltic states. The Kaliningrad region makes a new line of contact between Russian and NATO armed forces. However, the balance of power in the Southern Baltic region (taking into account the Polish troops) is favorable for Russia. If NATO decides to have significant superiority in this region, the Alliance will have to deploy in Poland and in the Baltic states some large foreign units and armaments – about 2,000 tanks, 4,000 combat vehicles, 2,500 artillery pieces, 100-200 attack helicopters, and several hundreds of combat aircraft. Such an amount of foreign troops and armaments may be sent to the region if the international situation deteriorates seriously and nearly reaches the level of the Cold War, thus, leading to the abrogation of the CFE Treaty.

The most dangerous consequence for Russian security in the *western zone* would be a conflict with NATO as a result of an escalation of tensions in the Baltic region. Its starting point may be Russia's attempt to forcibly prevent the accession of the Baltic states to NATO. Another scenario – tensions concerning the Kaliningrad region, due to the problems with transportation of military cargoes via Lithuania, or due to the growing separatist sentiments in the Kaliningrad region (and Russia's intention to suppress them).

Any military pressure on the Baltic states would inevitably provoke a tough response on the part of the United States and Europe. They will take measures to neutralize such Russian pressure. Russia may count on limited nuclear strikes (e.g. *demonstrative* strikes) if there is nothing else it can use against NATO's advanced military machine. To prove Russia's resoluteness in using TNW, some weapons may deployed in the Kaliningrad region and in Belarus (if Minsk allows this). Such scenarios are often mentioned in the Russian media. Moreover, in April 1999, Yegor Stroyev, Speaker of the Federation Council, maintained that the issue of returning Russian missiles to the Belarusian territory "is always on the agenda and has never been removed from the agenda."[2] U.S. and NATO actions would then be confined to tough political pressure and if the latter is ineffective, Washington may strive to destroy Russia's nuclear weapons.

To stabilize the situation in the Southern Baltic region after the next wave of NATO enlargement, Russia's interests concerning the Kaliningrad region should be taken into account. Kaliningrad will be separated from Russia with a zone covered by the Alliance.

Table 2. Armaments of the Russian regular units in the flank zone

	Battle tanks	Armored combat vehicles	Artillery
CFE Treaty as initially signed	700	580	1,280
Adapted CFE Treaty	1,300	2,140	1,680

Russia would like to ensure effective communication (including military) with the Kaliningrad region. Along with such assurances, it would make sense to include the Kaliningrad region in the nuclear-weapon-free zone. Such an approach may help Russia to gain additional political dividends and to lessen the risk of crisis, which would be sensitive for its security.

The Southwestern Zone. The importance of the nuclear factor in maintaining Russia's security in the *southwestern zone* is extremely low. Military threats to Russia will hardly emerge there. On the one hand, Ukraine is a vast neutral zone separating Russia and NATO member states. The chances for Ukraine being admitted to NATO in the foreseeable future are quite slim. On the other hand, Ukraine itself has no capability or reasons to threaten Russia. In theory, one cannot rule out the domestic sociopolitical and economic tensions in Ukraine or Moldova, though the possibility is quite low. The experience of the recent decade indicates that Ukrainian society is quite stable, as the elite strives to avoid serious crises and rivalry in order not to undermine the regime. There are no reasons to believe that the situation in Moldova deteriorates, though the separatist regime in Transdniestria nowadays impedes the conflict settlement.

Even if the situation worsens, Russia would strive to stabilize it. The stable and friendly Ukraine is an additional assurance against different *surprises* along the Russian-Ukrainian border. Russia's involvement in domestic conflicts in Ukraine will aggravate the Russian-Ukrainian relationship and give impetus to anti-Russian trends in Ukrainian policy. It will make Kyiv seek rapprochement with the West and force the latter to develop military and political cooperation with Ukraine. Any attempt of power and pressure on Ukraine on the part of Russia (let alone the military engagement in internal developments) will cause a tough response by the United State and NATO, up to the use of the armed forces to protect the independence and territorial integrity of Ukraine. The political settlement of such a conflict would be possible only if Russia recognizes Ukraine's sovereignty over its entire territory.

The Caucasian Zone. The situation in the *Caucasian zone* is totally different from the situation in the aforementioned zones. In the southern regions of the former Soviet Union, including the North Caucasus, there are some hotbeds of local conflicts and a zone of instability, which threaten Russia's security. These threats should be neutralized with police operations or peace-enforcement actions, but not with the use of nuclear weapons of any type.

In the south of Russia there is a favorable climate for international terrorism and the activities of large and well-organized criminal communities with established international contacts. There are the channels for smuggling and illicit drug trafficking, and the Chechen militants tried to invade Daghestan and, perhaps, other republics of the region. The uncontrolled situation in the North Caucasus and unrestricted activities of the criminal groups demoralizes the Russian armed forces, undermines the respect of the authorities, and causes many more security challenges. Growing instability in the Russian part of the North Caucasus or in the neighboring regions of the South Caucasus (Abkhazia or South Ossetia) may be a menace to the largest Russian Black Sea port – Novorossiisk.

The instability in the North Caucasus is caused by a number of serious reasons – the low level of economic development, poverty, mass unemployment, clan system, traditional mentality, degrading and fragmenting ruling apparatus, etc. All this facilitates the activities of criminal communities, the penetration of radical Islam, the clashes between the clan groups (even in the ruling elite), ethnic and religious conflicts. In fact, the republics of the North Caucasus are not under efficient control of the federal authorities and the loyalty of their leaders is based on their economic dependence on Moscow (federal subsidies, sales of spirits and smuggled goods in Russia, and transfers from the compatriots working in the Russian regions).

The experience of Israel, the UK, Colombia, or France demonstrates that there are no effective means to combat terrorism and large well-organized criminal communities (especially if they are formed on a religious or ethnic basis). Counter-guerilla operations

have mostly led to the defeat of the regular units and the victory of the militants. The exceptions are massive repression or ethnic cleansing (e.g. in Western Ukraine or in the Baltics in the 1940s and 1950s), or the alienation of the local population (normally, for ethnic reasons, like it was in Malaya in the 1950s or as it happened to the failed Cuban export of guerilla warfare to Latin America in the 1960s).

The situation in the South Caucasus is also a matter of concern. Serious ethno-political conflicts continue there and they cannot but affect Russia's security interests. Most of these conflicts have already passed the stage of armed struggle and are now *frozen* (neither party has a decisive superiority over the adversary). But the situation is dangerous in Abkhazia, where the withdrawal of peacekeepers may result in the resumption of hostilities. The status of Nagorny Karabakh is also called into question and no political solution is seen so far. In Azerbaijan and Armenia there are forces that strive to deteriorate the situation and to resolve the conflict with military means. However, neither Armenia nor Azerbaijan are currently economically and militarily ready for the resumption of armed struggle.

The hypothetical aggravation of the situation in Nagorny Karabakh and the involvement of Turkey, the threat of the defeat of the Armenian army and occupation of Armenia may force Russia to intervene. Then the Russian armed forces may clash with the Turkish troops. Taking into account Russia's military capabilities and limited levers to exert pressure on the South Caucasus, such clashes may result in Russia's defeat or in the threat or use of nuclear weapons. Such a threat will cause the tough response of the United States and NATO, for it will be targeted against one of the NATO member states.

The Central Asian Zone. The military-political situation in Central Asia is quite contradictory as well. On the one hand, a protracted internal conflict in Tajikistan has been settled and the process of national reconciliation is under way, despite numerous difficulties. On the other hand, the extremist activities of Islamic groups in Uzbekistan and Southern Kyrgyzstan take place. Their objective is to overthrow the Karimov regime and to make an Islamic state in Uzbekistan. The source of instability in the region is Afghanistan, where the Taliban regime supported terrorist organizations and extremist movements. The Taliban has also become the major drug dealers of the global market. U.S. operations against this regime may change the situation in the region and much will depend on the success of U.S. actions.

It is difficult to say how dangerous for Russia the security challenges in Central Asia are. Much depends on the interpretation of Russia's security interests there. If Russia's vital interest is the establishment of *de facto* protectorate in Central Asia or inclusion of the newly independent states into Russia's military and political orbit, the extremist movements in this relatively distant region make a direct military threat to Russian security. But if one speaks about neutralization of military and other challenges (including non-traditional) originating from the region and affecting the situation on the territory of Russia, the picture may be different.

Real and potential hotbeds of tension and instability in Central Asia (Eastern Uzbekistan, Tajikistan, and Southern Kyrgyzstan) are separated from Russian borders with vast deserts and semi-deserts of Northern Kazakhstan. This is a natural buffer protecting the Russian territory from extremist movements and attacks. The regions of tensions in Central Asia are the historical zones of settled agriculture with a strong influence of Iranian culture and Islamic traditions. On the contrary, the population of Kazakhstan and Kyrgyzstan – nomads in the recent past – are not strongly affected by Islam, especially its extremist schools. Educated and elite circles of these two states prefer European culture paradigms, which are more close to Turkey, rather to Iran or Saudi Arabia. In other words, Kazakhstan and Northern Kyrgyzstan make not only the geographical, but also the cultural buffer between Russia and Islamic extremism and terrorism concentrating in Afghanistan and some other Muslim states.

However, there are a number of non-military security challenges to Russia originating from

Central Asia. The lack of effective border controls on the Russian-Kazakhstani border facilitates the penetration of drugs, smuggling, and inter-state criminal interaction. The Russian Frontier Guard and the 201st motor rifle division in Tajikistan cannot stop the flow of drugs over the Afghani-Tajik border and suppress the drug trafficking in Tajikistan (for drugs make a living for a large part of the population in Tajikistan).

Under these circumstances, the most reliable way to ensure Russia's security in Central Asia would not be military intervention in Tajikistan or in Uzbekistan (and this is not the case so far), but the efforts to maintain stability in Kazakhstan. A stable, friendly or, at least, neutral Kazakhstan can help to stop the transit of drugs, arms, and terrorists at its southern borders and become a key factor for promoting Russian security. This option is quite attractive, for today and in the foreseeable future Russia will hardly be able to station a substantial military contingent in Central Asia (until the radical military reform is over), which may take appropriate measures if the situation requires military intervention.

The use of nuclear weapons against the extremists in the course of local conflicts and even in relatively large counter-guerrilla operations in the former Soviet republics of Central Asia is militarily senseless and politically counter-productive. However, according to Western experts, Russia does not rule out the possibility of deploying its TNW in the region. For instance William Potter and Nikolai Sokov stated in 2000, "One can also observe a shift in Russian diplomacy, which now interprets the Tashkent Treaty on Collective Security to allow for Russian deployment of nuclear weapons in Central Asia under certain conditions. This policy shift, evident after April 1999, is apparent in quiet but effective Russian diplomacy to weaken the Central Asian Nuclear-Weapons-Free Zone Treaty which is currently under negotiation."[3]

Perhaps, this position depends not on the concerns of the Russian establishment about the developments in Central Asia, but about the apprehensions concerning the role of China in the region.

The Far Eastern Zone. At present, there are no sources of direct military threat to Russia in the Far East. The border settlement with China, the agreement on confidence-building measures and conventional arms reduction in the regions adjacent to the former Soviet-Chinese border. and general normalization of relations with China in the recent decade have stabilized the strategic situation in the region. There are no more sources of tension, which used to raise reasonable concerns of the Soviet Union.[4]

China, for its part, is not interested in deteriorating relations with Russia, bearing in mind Beijing's differences with the United States and the potential exacerbation of the problem of Taiwan. Russia is a source of advanced military technologies for Russia. Under these circumstances, in the near future China will not be a source of military threats to Russia and will not have reasons for hostile actions against Russia (e.g. interventions in the Russian Far Eastern provinces). Chinese foreign policy will be balanced and Beijing will try to avoid needless tensions in relations with Russia and the West.

In the recent decade, the Russian military-political elite has significantly changed its perception of China and Chinese leadership. In the mid-1990s, the military were suspicious of China or advocated the cautious approach. For instance, in October 1994, Gen. Leonid Ivashov argued, "In the next decade China will become a nuclear superpower with an enormous economic and military might and unlimited human resources. China's territorial claims to Russia, Kazakhstan, and Mongolia are reflected in the Chinese media. There are more and more articles of anti-Russian and anti-Soviet character… The force and ideological pressure on the part of China will most probably grow."[5]

By the end of the last decade, however, the attitude of the Russian elite to China has changed. It is not seen as a potential rival, but as an ally against hypothetical U.S. hegemony in the world. It seems that both approaches simplify the problem.

China's tangible economic success and demographic potential raise the issue of the nature and evolution of its political regime and its activities beyond the Chinese borders

in the distant future. The questions (with no answer) are what the Chinese policy will be, and whether Beijing will successfully complete the modernization of its economy and armed forces.

The evident achievements have not yet resulted in the emergence of a modern economy in China, and have not resolved many urgent socioeconomic problems. A large part of the Chinese population lives in rural areas with a low or very low level of economic development and standards of life. Urban centers face the growing pressure of rural immigrants; there is an increasing gap between the material demands of the population and the possibilities of meeting them.

Unresolved socioeconomic problems, increasing tensions between the totalitarian political regime and the modernized economy, and divides in the level of economic development of different regions may lead to political upheavals, destabilization, change of the regime, or collapse of the state and other unpredictable consequences. It is hardly possible to assess their impact on foreign policy now. However, if the centralized control of the situation in the country diminishes or is eradicated, the population of the northern provinces may start moving to the adjacent Russian regions. This may result in a number of conflicts in the Russian Far East fraught with the use of the Russian Armed Forces. The outcome of such clashes can also hardly be predicted today.

Another hypothetical scenario of Russian-Chinese clashes may take place if after this turmoil China gets a new regime capable of uniting the country, resuming centralized control of the regions, and interested in streamlining the domestic tensions within the country (resembling the cultural revolution of the 1960s). In this case, one may expect a more or less organized intervention of the Chinese population on the Russian territory, which will escalate to a Russian-Chinese conflict.

In theory, one cannot rule out the possibility of accelerated democratization of China after the collapse or transformation of the totalitarian regime, though one cannot define today the pace of this process and its parameters. If it takes place, this will make a revolution in global developments.

Regardless, China is a serious source of uncertainty in the global system. This uncertainty does not necessarily mean an automatic threat to Russia, but will make Moscow plan its security activities to prevent any negative scenarios.

A hypothetical conflict with China is one of the major arguments in favor of preserving Russia's large nuclear arsenal, especially as far as sub-strategic weapons are concerned. However, in case of nuclear attack, China will not wait for a nuclear strike against its armed forces or large military facilities and may make a pre-emptive strike. The modernization of China's nuclear arsenal is followed by the spread of a doctrine that envisages the counter-force strikes. Thus, Russia finds itself in quite a difficult situation. On the one hand, the threat or limited use of sub-strategic nuclear weapons in a hypothetical conflict with China to contain its expansion to the Russian territory may provoke a Chinese nuclear strike against numerous targets in Siberia and the Far East. On the other hand, Russia's conventional forces may not be able to repel the Chinese massive attack.

There are no reasons for expecting an armed conflict between Russia and Japan. The Japanese approach towards the "northern territories" does not provide for any use of force to return the islands. Tokyo assumes that the deteriorating economic situation in Russia and in the Far East will weaken the political and administrative control of Moscow over the distant territories; separatist trends will increase and general destabilization will take place. As a result, Japan may benefit from this situation and use political means to resolve the problem.

The situation on the Korean Peninsula is still complicated, though one can hardly expect the conflict to escalate and armed struggle to begin. Such escalation may occur if the situation in North Korea destabilizes and Pyongyang finally acquires the missile and nuclear capabilities in order to deter against U.S. intervention in such conflict. At the same time, the armed conflict on the Korean Peninsula will require Russia's interference, but not in the form of a military intervention.

Thus, in the foreseeable future military security challenges to Russia in the regions

adjacent to Russian borders may emerge due to instability in the North Caucasus and in the Far East (in the distant future). As for some other potential conflicts, their impact on the Russian security will depend on Moscow's ability to prevent the escalation or to avoid the engagement in conflicts that do not directly affect Russian territory. Meanwhile, one cannot rule out the escalation of a local conflict resulting in the confrontation with the leading Western powers. In this case, Russia should try to ensure the restraint of the Western states, to avoid tough military pressure and pre-emptive measures of the West, which may be fraught with grave consequences for Moscow.

The Instability Zone in the Islamic World

Russia's security depends on the developments in the vast zone of instability and conflicts in the Islamic world. The reasons for such instability may be divided into several groups. First of all, it is caused by low (except the Gulf oil exporters) standards of life of the population and a considerable gap within the society. Economic difficulties are exacerbated by technological backwardness and the existence of many poor rural areas. Mass rural-urban migrations result in the emergence of marginalized crowds, which make a rich medium for extremists.

The second group of factors is related to the particularities of the cultural evolution of Islamic societies in the conditions of globalization. The contradictions between modernization and the traditional social structures increase, especially in the authoritarian-type regimes (with he exception of Turkey and India). This provokes the growth of extremist and fundamentalist movements in the majority of Muslim states, and creates the conditions for the activities of non-Communist leftist radical movements and groups, which may collaborate with Islamic extremists.

The third group of factors is connected with inter-state differences and conflicts. The clashes for energy, notably oil, resources are quite likely. There are leaders who strive for regional hegemony. The implications of such conflicts may be even more serious, bearing in mind the WMD proliferation.

Under these circumstances, there are reasons to believe that in the next 10-15 years, some inter-state conflicts, tensions, coups and other extremist clashes may break out in the regions geographically close to Russia. One can hardly assess the impact of such developments on the stability of the world system, but this impact will grow as the economic and other relations of this region with developed nations (notably Europe) intensify. In the era of globalization, the destabilizing influence of local situations (so typical of the Third World) will increase, the possibilities for their horizontal and vertical escalation will grow and many more countries, including leading global powers, may be involved in such conflicts. The unpredictability of global development will grow and new types of security challenges may emerge. Such threats may be even more serious if the extremist regimes acquire missiles and nuclear weapons (including medium-range weapons). The prospects for such developments emerged in Pakistan, where the Islamic extremists intensified their activities in protest against the U.S. anti-Taliban operation. Such forces may destabilize the regime and establish their own control of the Pakistani nuclear arsenal.

Sub-Strategic Nuclear Weapons in the New Military-Political Environment

Many analysts make parallels concerning the current Russian nuclear policy and NATO's strategic concepts of the Cold War era. This does not take into account the fundamental changes in the strategic situation in Eurasia. Before the withdrawal of Soviet troops from Europe and the collapse of the Warsaw Treaty Organization, there was a long line of direct contact of the armed forces of two confronting blocs. The main group of Warsaw Pact forces was deployed in Central and Eastern Europe and it was capable of conducting massive offensive operations. NATO forces in Central Europe were supposed to confront this aggression. The high level of military-political confrontation and mutual suspicions could have at anytime provoked an armed conflict automatically escalated to a large-scale continental war.

The current situation in Europe is different. Except some limited parts of the Russian-Norwegian border in the north and Russian-Polish border in the Kaliningrad zone, there

are no more regions of direct contact between Russian and NATO armed forces. Even after the new wave of enlargement, there will be a vast buffer zone to the west of Russia separating the Russian and NATO troops. A hotbed of serious tensions may emerge in the Southern Baltics, if the Baltic states are invited to NATO. But one can hardly expect large contingents to be deployed in Poland, Latvia, Lithuania, and Estonia and there will more mechanisms to deter against such threat without nuclear weapons.

At the same time, taking into account the situation in the Far East and in the Islamic world, one cannot exactly identify the external threats to the Russian Federation right now. A reasonable strategy would be to preserve some nuclear might to ensure the national security. However, such an arsenal should comprise the minimal strategic force to deter against the hypothetical conflicts in the Far East and challenges originating from the proliferation of missiles and nukes in the Third World.

Key security challenges to Russia are caused by local instability and conflicts. Russia's persistent emphasis on nuclear deterrence limits Russia's maneuvering in local and regional wars (in the spectrum from low-intensity operations to nuclear warfare). Limited or demonstrative use of nuclear weapons in the armed conflict is unacceptable in the world public opinion. The threat or use of nuclear weapons, when there is no threat or use of such weapons against Russia, mean the breach of the limits of acceptable use of military force. The targets of such demonstrative strikes will do their best to prevent it with political and military means; this increases the danger of total nuclear war.

Finally, the adherence to nuclear deterrence originates from the perception of the West as a powerful Russian adversary threatening its vital interests. This results in the Russian vision of U.S. NMD plans and NATO enlargement. They are regarded as aimed against Russia. This is why Moscow threatens to withdraw from the arms control agreements, including the INF Treaty and the CFE Treaty. However, it is forgotten that such actions will inevitably lead to a crisis replicating the developments of the early 1980s – but the Russian military and economic might cannot be compared to the Soviet assets.

In general, the essence of the problem of military security is that Russia's armed forces are in a critical situation and Moscow cannot afford a significant increase in defense spending. Under these circumstances, the only way out is to change the priorities for the military construction and focus the resources on strengthening the general-purpose forces. In opposition to the missile and nuclear lobby, Gen. Anatoly Kvashin argued in June 2000, "Russia should have the minimally sufficient amount of nuclear weapons, not the excessive amount." He emphasized that nuclear weapons are the factor of political deterrence of extremist plans, but "everybody understands that the use of nuclear weapons is insane."[6]

The aforementioned ideas are more political than military. In the military terms, all Russian approaches towards the use of sub-strategic nuclear weapons to deter the conflict or to ensure its de-escalation do not take into account the reaction of the adversary. There are no reasons to believe that a potential enemy will wait for Russia's limited nuclear strike (even with sub-strategic weapons) and for the difficult dilemma that follows (to stop the war or to continue the escalation, despite the devastating consequences). On the contrary, the only reasonable strategy would be to eliminate even the possibility of such dilemma. That is to make a pre-emptive strike against the Russian strategic and sub-strategic weapons. In this case, the dilemma will face Russia is whether to put up with the defeat or to continue the hostilities.

Control of Sub-Strategic Nuclear Weapons: Problems and Prospects

To preserve sub-strategic weapons in order to deter against a hypothetical aggression against Russia is counter-productive, to a large extent. On the one hand, the sub-strategic deterrence of a nuclear-weapon enemy would provoke escalation. On the other hand, the maintenance of a large arsenal of such weapons causes concerns for the United States and Europe, which regard this as evidence of Russia's preparation for limited nuclear wars, or as evidence of Russia's

inertial military thinking, which is unable to adapt to the new strategic environment.

Under these circumstances, the international agreements on control or reduction of sub-strategic nuclear weapons could strengthen stability in Europe and, hence, to enhance Russia's position in the dialogue with the West. On the other hand, they would enable Russia to devise new military-political concepts adequate to the global strategic situation. The success stories of the past – the INF Treaty and the U.S.-Russian unilateral initiatives on TNW reduction – indicate that the parties can reach significant progress in this area, if there is political will. However, the commencement of negotiations on this topic is blocked by the positions of some states and by a number of technicalities; unless they are resolved, any agreement on sub-strategic arms would be impossible.

The First Steps to Sub-Strategic Arms Limitation and Reduction

The first stride forward, as far as sub-strategic arms were concerned, was the U.S.-Soviet INF Treaty of 1987. The treaty had been preceded by the military-political crisis caused by the deployment of Soviet highly effective SS-20 missiles to destroy key military, economic, and other targets in the territory of the European states. The deployment of these missiles was regarded in the West as evidence of Soviet preparations for the limited nuclear war in Europe and depreciation of U.S. nuclear assurances. NATO's response and the political changes in the USSR made it possible after long negotiations to achieve the agreement on elimination of the Soviet and U.S. land-based ballistic and cruise missiles with range of 500-5,500 km.

The next step in the area of sub-strategic arms limitation was the talks on START I. The unilateral statements annexed to the treaty maintained that the U.S. and the Soviet Union would undertake certain commitments with respect to SLCMs. They pledged:

- not to deploy more than 880 SLCMs with a range exceeding 600 km and armed with nuclear warheads on the surface ships and submarines;
- not to produce SLCMs armed with two or more nuclear warheads;
- to inform each other confidentially on:
  the maximum amount of deployed nuclear SLCMs with a range exceeding 600 km;
  the types of surface ships and submarines capable of carrying such SLCMs;
  the number of deployed nuclear SLCMs with a range of 300-600 km.

In addition, the Soviet Union committed:

- not to enable the Backfire bombers to make inter-continental flights and not to equip such aircraft with air refueling systems;
- not to possess more than 300 Backfire bombers, excluding naval aircraft; and more than 200 Backfire bombers in naval air force units.

Unlike START I, these commitments were more political than legal and were not subject to any verification. This was a compromise, which took into account the Russian concerns about the U.S. long-range SLCMs and the U.S. concerns about the Soviet medium-range bombers.

The post-Cold War changes enabled the parties to undertake substantial reduction in their sub-strategic arsenals. These measures were stated in the Bush statement of September 28, 1991 and the Gorbachev statement of October 5, 1991 (later expanded and confirmed by President Yeltsin on January 29, 1992). The commitments took the following form:

Table 3. U.S. commitments on TNW reduction

Elimination of the entire land-based tactical nuclear arsenal, including nuclear warheads for the tactical missiles and nuclear artillery projectiles	1,300 artillery projectiles and 850 warheads attributed to Lance missiles were eliminated.
Removal and storage at the central storage facilities of all TNW, including Tomahawk missiles, attributed to the surface ships (including aircraft carriers), attack submarines and naval aircraft (including gravity bombs). Half of these weapons were subject to elimination	900 B57 nuclear gravity bombs were eliminated.
Halting the development of SRAM-T short range missile designated for tactical attack aircraft	

Source: Public Papers of the President of the United States. Book II – July 1 to December 31, 1991. Washington, US Government Printing Office, 1992, pp. 1220-1224.

Table 4. Soviet/Russian commitments on TNW (October 5, 1991 and January 29, 1992)

Commitments of October 5, 1991	Commitments of January 29, 1992
All nuclear mines will be eliminated.	All nuclear mines will be eliminated and their production will be shut down.
All nuclear artillery projectiles will be eliminated.	All nuclear artillery projectiles will be eliminated and their production will be shut down.
All nuclear warheads attributed to tactical missiles will be eliminated	All nuclear warheads attributed to tactical missiles will be eliminated and their production will be shut down.
Nuclear warheads of interceptor missiles will be de-alerted and stored, and partly destroyed.	
All tactical nuclear weapons will be removed from the surface ships and multipurpose submarines. These weapons and nuclear weapons of the land-based naval aircraft will be stored and partly destroyed	One third of sea-based nuclear weapons will be eliminated.
	Half of nuclear warheads attributed to air defense missiles will be eliminated.
	Half of air-launched tactical nuclear warheads will be destroyed.

Sources: www.sipri.se/SAC/91005.html; "Russia's Policy in the Area of Arms Limitation and Reduction. Statement by President Boris Yeltsin of January 29, 1992" – *Rossiyskaya Gazeta*, January 30, 1992, pp. 1-2.

Thus, the commitments declared by President Yeltsin were far more radical than the measures approved by President Gorbachev. For instance, in January 1992, Russia clearly indicated that it would destroy all stockpiles of nuclear mines, projectiles, and tactical missiles and would stop their production. In addition, Moscow spoke about a 50% reduction of warheads attributed to air defense systems and aircraft, which was not the case in Gorbachev's initiative. Some clearer parameters of reduction in naval tactical nuclear munitions were set.

The form of unilateral political initiatives enabled the parties to avoid long and difficult negotiations, which would require exact identification of the systems subject to reduction, a detailed verification mechanism (including on-site inspections), exchange of information on the weapons subject to the treaty, agreement on the procedures of dismantlement and many other technicalities. The experience of strategic arms talks and negotiations on conventional forces in Europe showed that the solution of such problems required more time and effort than principal issues (the amount of reduction, ceilings, etc.).

At the same time, the 1991-1992 commitments did not create a legally binding international regime for the limitation of sub-strategic nuclear weapons. They did not provide for the exchange of information on the availability of such weapons, did not curtail R&D activities, and did not restrain the production of new generation nuclear munitions for sea-based and air-launched weapons. No geographical conditions of deployment were mentioned. All this limits the effect of the initiatives.

Finally, in March 1997, Presidents Clinton and Yeltsin agreed in Helsinki to discuss the TNW and SLCMs at the future START III negotiations. In their Joint Statement on Parameters on Future Reduction in Nuclear Forces, they maintained, "The Presidents also agreed that in the context of START III negotiations their experts will explore, as separate issues, possible measures relating to nuclear long-range sea-launched cruise missiles and tactical nuclear systems, to include appropriate confidence-building and transparency measures."[7]

This formula was a good example of diplomatic ambiguity and uncertainty. It left open a few questions. Does it mean that the experts will have to achieve some agreements in the course of consideration of such issues? Should the TNW agreements make up an integral part of START III and in what form? Should the negotiations on TNW go in parallel with the negotiations on strategic arms or separately? Should the TNW agreements be intertwined with the agreements on SLCMs? Russian experts and officials believe, according to Alexei Arbatov, that "The negotiations on TNW and long-range SLCMs should go separately from START III, but somehow in parallel and in strategic connection with START III."[8]

This interpretation – "separately, but in parallel and in strategic connection" – only

makes the situation even more confusing. The statement by former Defense Minister Igor Sergeyev does not clarify the situation, "As for the TNW, we have no intention to change our position states in the Joint Statement of the Russian and the U.S. Presidents in Helsinki on March 21, 1997. Within the context of START III negotiations, we are ready to consider – and I would like to emphasize this – the measures pertaining to this kind of weapons as a separate issue."[9]

However, the difficulties impeding talks are not only caused by the format of negotiations, but also by the political positions of the parties.

Nuclear Weapons beyond the National Territories
Even a partial solution of the problems concerning the sub-strategic arms negotiations is impaired by serious differences on the scope of possible agreements. The most important and, probably, the only element of the Russian approach today is that the TNW should be stationed on the national territories. In December 2000, Marshal Igor Sergeyev pointed out, "The priority step in this area would be an agreement on deploying the TNW only within the national territories of the parties."[10]

Russia argues that it does not have such weapons beyond its territory, while the United States preserves its nuclear arsenal in Europe. As a result, according to many Russian officials and experts, there is a serious discrepancy threatening Russia's security. For instance, Vyacheslav Shport, Deputy Chair of the Duma's Committee on Industry, Construction and Science-Intensive Technologies, maintained, "All Russian nuclear weapons are situated on our national territory and Russia has no infrastructure to use these weapons beyond the national territory. The United States has not removed the TNW on its national territory. A significant arsenal is still deployed within the reach of the Russian territory. Moreover, the United States maintains near the Russian borders some infrastructure for its TNW. Naturally, we cannot ignore this fact in the conditions of strategic nuclear arms reduction under START III. Thus, U.S. TNW deployed near Russian frontiers play the role of the strategic component."[11]

Thus, the Russian demand for the consolidation of TNW arsenals on the national territories actually means the withdrawal of U.S. sub-strategic forces from Europe. Some Western experts assume that Moscow's position is so uncompromising, because U.S. air-based nuclear weapons in Europe may depreciate the military-political importance of the Russian sub-strategic arms. For instance, Nikolai Sokov wrote, "The presence of U.S. TNW clearly weakens the equalizing role of Russia's TNW. Moreover, U.S. TNW are capable of something that Soviet TNW could never achieve during the Cold War: reaching the strategic forces of the other side."[12]

The demand for the withdrawal of U.S. sub-strategic weapons from Europe does not correspond with the current vision of NATO and the United States, which consider the sub-strategic arsenals in Europe to be a security link between the USA and its European allies. Western nations, on their part, pay particular attention to a serious discrepancy in the number of TNW between Russia and NATO and regard the Russian claims for withdrawal as Moscow's intention to weaken the Alliance and desire to divert the attention from substantive matters.

However, this problem has another dimension. One cannot rule out that the United States and NATO may one day agree to remove sub-strategic nukes from Europe. This will create a complicated situation for Russia, for the Western nations will immediately call for equal tactical nuclear arsenals on Russia's European territory and in Europe. Then the Russian tactical nuclear stockpiles should be reduced to the French level, i.e. several dozens of warheads (since there will be no more sub-strategic weapons in Europe left). And France may refuse to limit its air-based nuclear force. As we have mentioned above, France considers this component as a part of strategic arsenal and the position of Paris implies that any participation in strategic arms control may take place only if Russia and the United States reduce their arsenals to the level comparable to the French arsenal.

However, if the solution to this problem is found, the parties will have to focus on some other extremely complicated issues.

The Scope and Agreement, Its Parties and the Area of Application

The key element of any agreements on sub-strategic nuclear arms would be their scope. The agreements on strategic arms limit the number of launchers and warheads attributed only to deployed launchers. But sub-strategic launchers are normally dual-use systems, and their reduction or limitation would require serious political decisions, which are hardly possible today. This is why, unlike the INF Treaty, START I and START II, the TNW agreements would cover only warheads or such launchers that cannot be used to deliver non-nuclear weapons.

As a result, the problem of verification emerges. Such verification would be impossible without on-site inspections and control of the entire chain – production, storage, deployment, decommissioning and dismantlement of tactical nuclear warheads. It would be necessary to coordinate the production, storage and deployment of *allowed* warheads for strategic launchers and *prohibited* warheads for sub-strategic launchers. Such verification would imply the disclosure of military secrets of the parties, especially as far as the production and dismantlement are concerned. It would be difficult to verify the implementation with respect to sea-based launchers and warheads. This problem was not resolved at the strategic arms talks and there is no reason to believe that the United States will change its traditionally negative attitude toward on-site inspections on surface ships and submarines.

Another issue is the list of participants and the area of application. So far, it is a matter of U.S.-Russian negotiations and agreements in conjunction with the new strategic agreement. In theory, there are two options.

The first scenario implies the global equalizing of Russian and U.S. sub-strategic nuclear arsenals. Then Russia will have to unilaterally reduce twice or by three times its sub-strategic weapons. This decision will cause some substantial political difficulties, since the left wing and the nationalists will most probably block the ratification and will launch a propagandistic campaign accusing the government of neglecting national security interests. The European nations may also oppose this decision. The equalization of Russian and U.S. sub-strategic arsenals does not preclude that the Russian arsenal may be concentrated, if necessary, near the western borders of the Russian Federation, whereas Europe will possess only some French and UK armaments and, perhaps, the small number of U.S. tactical air bombs.

The second option implies that the parties will introduce additional ceilings with respect to the deployment of sub-strategic weapons in certain geographical zones. These are the European and the Asian parts of the Russian territory and some European regions. This logic would mean the approximate equality between the Russian arsenal deployed in the European parts of Russia and sub-strategic weapons of France and the UK (if the latter deploys them again), and the U.S. weapons deployed in Europe.[13] Therefore, it would be necessary to invent a ceiling for U.S. sub-strategic weapons in Europe. The same situation will occur in the Asian part of Russia with respect to Russian and Chinese weapons. France, the UK, and China will have to make some commitments concerning their nuclear arsenals and this is hardly probable until the U.S.-Russian strategic arsenals diminish to the comparable figures (i.e. to 200-300 warheads). This is not realistic in the foreseeable future.

Prospective Measures

The aforementioned problems close the window of opportunity and impede any *traditional* agreement on sub-strategic nuclear arms, including the reliable and intrusive verification. Meanwhile, the problem of sub-strategic arms control is urgent and its urgency is increasing.

Under these circumstances, the only way to ensure some progress would be to agree upon a number of limited and even unilateral political measures in order to mitigate the problem, if not to solve it completely. Such measures may include the unilateral political commitments on non-buildup of French, UK and U.S. sub-strategic forces in Europe. Russia's response would be to pledge not to build up its TNW in the European provinces. Such steps would demonstrate the willingness of the parties to seek mutually acceptable solutions.

An important step forward would be to initiate the exchange of official, perhaps, even confidential information on the number of sub-strategic weapons and their geography. Such an exchange would involve Russia, the United States, the UK and, probably, China, if the latter is ready for such measures. This would be a political, rather than a military act, but it will help to build confidence and to eradicate the suspicions of secret deployment of sub-strategic weapons in some regions, from which a massive attack may be launched.

The political and military importance of such an information exchange would be enhanced by on-site inspections at the places of agreed non-deployment of sub-strategic nuclear weapons. This would be a fully-fledged military confidence-building measure. Inspections aimed at stating the absence of nuclear munitions at certain sites do not require the visits to the production facilities and dismantlement plants, to the storage sites and other military facilities, do not require the parties to share more sensitive information. Hence, they are much more realistic than inspections to verify the availability of some *allowed* amount of nuclear warheads in certain geographical zone.

Finally, the establishment of a nuclear-weapons-free zone in Central and Eastern Europe may significantly stabilize the military-political situation in the region. This would help to eradicate Russian concerns about NATO's tactical aircraft, which may make strikes against many targets in the European provinces of Russia. The European nations will get some assurances that they will not become a target of sudden nuclear attack on the part of Russia. As we have mentioned above, the inspections of non-deployment are less painful than the verification of ceilings. Nowadays the establishment of such a zone is blocked by Russia and some NATO members. Russia is not ready to have Kaliningrad as a part of the zone, whereas some NATO states, notably new members of the Alliance, are not willing to undertake appropriate commitments. However, according to William Potter, "In fact, the countries of Central Europe probably recognize that a nuclear-weapon-free zone might enhance their long-term security, especially if the alternative to the zone is Russia's forward deployment of nuclear weapons and the targeting of their territories."[14]

Russia's consent to include the Kaliningrad region in the zone would eliminate the suspicions of the Western countries that this zone is regarded as an area of possible deployment of sub-strategic weapons and this raises the concerns of the European states.

The aforementioned and other steps relate mostly to the European continent and are aimed at mitigating the tensions and suspicions in Russia-NATO relations. The situation in the Far East is different. The prospects for sub-strategic arms control there depend on the position of China, which does not give grounds for much optimism so far.

Conclusion

The major conclusion is that Russia's sub-strategic nuclear weapons cannot perform the mission of deterrence against the hypothetical aggression at the regional level. Such aggression on the part of NATO or China is hardly probable in the foreseeable future, whereas the major security challenges to Russia originate from the conflicts in the Caucasus and Central Asia. However, these are political calculations, which are not always convincing in the process of military planning, since the latter normally proceeds from the worst-case scenario. Nonetheless, if in the hypothetical conflict in the West or in the East Russia demonstrates its readiness for the limited use of sub-strategic nuclear weapons, the potential enemy will have all reasons for making a pre-emptive strike. And then the Russian leadership will have to face a difficult dilemma – to agree to a devastating escalation of a nuclear exchange or to recognize the defeat.

In the foreseeable future, Russia will hardly be able to bridge the growing gap between its conventional armed forces and arms and the forces of NATO and the United States. The only realistic option would be to prevent the possible conflicts in the Western direction, to cooperate with the West, when it is possible and necessary, notably to unite the efforts in combating extremist movements and regimes in the Third World. The implementation of confidence-building and transparency measures with respect to sub-strategic nuclear weapons would become an important element

of the new stable and predictable military-political situation on the European continent. The question is how much the military-technical cooperation with China meets Russia's long-term security interests?

At the same time, the unpredictability of global development encourages Russia to keep its nuclear arsenal. And in this context, it would be useful to seek minimal nuclear deterrence with the help of strategic forces.

[1] The third article in the series of three articles on sub-strategic nuclear weapons written by Yuri Fedorov. The first and second articles, entitled *Control of Sub-Strategic Nuclear Weapons: Problems and Prospects* and *Sub-Strategic Nuclear Weapons: Their Role in Military Doctrines Today* were published in the Spring and Summer (2002) issues of *Yaderny Kontrol Digest*.
[2] *Interfax*, April 29, 1999.
[3] William C. Potter, Nikolai Sokov, "Tactical Nuclear Weapons: The Nature of the Problem". Report initially prepared for the Conference "Tactical Nuclear Weapons". United Nations Institute for Disarmament Research, Geneva, March 21-22, 2000, p. 8.
[4] The area of application of the Agreement on Armed Forces Reduction contains the 100-km areas on both sides of the borders of Russia, Kazakhstan, Kyrgyzstan, Tajikistan and China. The agreement covers only the Army, the tactical aviation, and the air defense aviation. The Frontier Guard units are not subject to reduction. The SMF, tactical nuclear weapons, the Navy, strategic aviation, air defense missile units, reconnaissance aircraft and electronic warfare aircraft are not subject to the reduction. The problem is that due to geographical reasons it is difficult for Russia to station the appropriate forces beyond 100 km, whereas China can concentrate large contingents at the distance of 100 km from the border with Russia.
[5] *Nezavisimaya Gazeta*, October 18, 1998.
[6] "Kvashnin Stands for Reductions". *Nezavisimoye Voennoye Obozreniye,* No. 23, June 30-July 6, 2000, p. 1.
[7] *Diplomatichesky vestnik*, No. 4, 1997, p. 7.
[8] Alexei Arbatov, *Security: Russia's Choice*. M., 1999, p. 472.
[9] *Krasnaya Zvezda*, December 15, 2000.
[10] Ibid.
[11] *Krasnaya Zvezda*, May 16, 2000.
[12] Nikolai Sokov, "Tactical Nuclear Weapons Elimination: Next Step for Arms Control". *The Nonproliferation Review*, Winter 1997, p. 20.
[13] In theory, UK sub-strategic weapons are those that are designated for making a sub-strategic demonstration strike.
[14] William C. Potter, "Unsafe at Any Size". *The Bulletin of the Atomic Scientists*, May/June 1997, Vol. 53, No 3, p.13.

Polemics

NATO ENLARGEMENT: HOW TO PASS RUSSIA BY?

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The developments of September 11 have forced the United States and the entire world to look anew at the post-bipolar challenges and revisit the security activities of the recent decade. The September tragedy raised the issue of joint combat against terrorism and cooperation between the United States and its NATO allies and Russia.

NATO-Russian relations have passed through several phases after the demise of the Soviet Union – from a short euphoria to mutual disappointment and distrust. Since 1993, NATO enlargement to the east has been the core of Russia-West differences concerning the future of the Euro-Atlantic security. These are issues of NATO's adequacy to the post-Cold War reality and the role of Russia in the still forming system of European security.

The major reason for NATO enlargement was simple – Europe failed to start formulating a modern system of post-Cold War security adequate to new challenges and tasks. "There was established nothing comparable to the Vienna Congress, the Versailles system or the Yalta-Potsdam system, in order to replace the previous patter of spheres of influence and mutual deterrence. This is the key problem facing Russia and other Great Powers."[1] Moreover, since there was no single opinion on European borders after the collapse of the communism, it was easier to return to the traditional notion of Europe and make the border along the western frontiers of the former Soviet Union. A practical implication of the new division of Europe was the division of labor in the post-Communist

space – the OSCE was charged with dealing with the post-Soviet states; NATO was responsible for Central and Eastern Europe. Such division predetermined the future NATO enlargement to the east.

For Russia the decision on enlargement meant the end of the beginning reform of the Alliance, which was aimed at enhancing its sustainability to the new security environment and formulating its new mission. Russia's disillusions and suspicions of the genuine objectives of the enlargement were aggravated by NATO's contradictory policy. The PFP program was initially offered to Moscow as an alternative to the enlargement and was accepted by Russia. Later the rules changed and this led to the Madrid decisions. The same thing is happening now. In 1994, Lawrence Eagleberger, a founding father of enlargement, noted that only a psychopath could think about admitting the Baltic states, since this would cause serious problems with Russia. Nowadays, their potential membership is explored in practical terms.

Obviously, the Russian policy towards Central and Eastern Europe after the collapse of the USSR was not perfect. Russian leadership ignored the need for establishing new relationship with the former socialist allies, who were frightened by the collapse of Yugoslavia and the prospects for new inter-ethnic conflicts in the neighboring states. Russia's failures of democratic transition caused apprehensions and fears for its neighbors. Russia has nobody to blame for the inability to formulate a new realistic concept of European security. Finally, by starting the first war in Chechnya, Moscow enabled the CEE countries to benefit from Russia's unpredictability and to rush for NATO. At the same time, despite all its mistakes, Russia has not done anything against the CEE that could justify CEE's intention to accede to the Alliance.

For NATO the decisions of the Madrid summit were the victory of the traditional vision of European security, despite all the talks about the indivisibility of security in the post-bipolar world. In fact, Brussels did not believe in the democratic future of Russia, although NATO leadership had always denied the anti-Russian character of the enlargement. Formally, the enlargement was based on the will of CEE countries willing to join the Euro-Atlantic partnership, to overcome the historical injustice and to restore their unity with Europe, which they had lost after World War II. It is noteworthy that the EU and NATO enlargements were regarded as two complementary processes enabling the CEE to return to Europe.

Obviously, NATO enlargement is not the result of foreign policy collisions, mutual distrust, and differences in the security perceptions of NATO and Russia. The enlargement reflected a deep internal crisis within the Alliance, which had to review its mission in the new Europe and set new tasks. It is normally believed that the post-bipolar transformation affected mostly the states and institutions of the former socialist bloc, but in fact, all Cold War institutions were affected (especially those which embodied the bipolar world). The Warsaw Pact vanished during the international revolution in Eastern Europe. NATO survived the end of bipolarity, but could not avoid the identity crisis.

NATO was established as the military defense alliance of the West against the Eastern challenge – the USSR and the Warsaw Treaty Organization. This Eastern threat was the major factor of consolidation of the Atlantic solidarity. The demise of the Warsaw Pact and the USSR, the emergence of an independent Russia with its democratic reforms – all this denied NATO its only enemy. Despite U-turns in Russia's development after the demise of the Soviet Union, and mistakes of the Russian leadership and apprehensions of the West about the unpredictability of Russia, the so-called Russian factor can no longer strengthen the Atlantic solidarity, as the Soviet threat did. Russia's military might has significantly diminished after the dismantlement of the Warsaw Pact and the USSR, unprecedented economic decline, financial crisis, and under the burden of international commitments.[2] In 1988, the Warsaw Pact enjoyed substantial superiority over NATO in five categories of major conventional armaments. Ten years later the situation was different – Russia had fallen behind. The new ratio was 1:1.5 in attack

helicopters and 1:2.5 in battle tanks. The accession of three new members to NATO in 1999 increased this gap (e.g. 3.7:1 in battle tanks). All this was accompanied by nuclear arms reductions in Russia. According to Russian experts, the current level of funding will cause the Russian strategic nuclear forces to diminish to 1,000 warheads.[3]

Another traditional goal of NATO – to control Germany – has already lost its relevance. Germany is a democratic and economically prosperous state, an integral part of the united Europe and one of the engines of European integration. Some questions might emerge after unification – the discrepancy between the German economic potential and its political role in Europe (recognition of French leadership in the EU and U.S. leadership in NATO) – but this issue could not be compared to the initial mission of the Alliance in Germany and was beyond its competence.

NATO's third mission – to ensure a U.S. presence in Europe – seems to be the most topical task. However, the reason for a U.S. presence in Europe was the latter's backwardness in the area of security and its dependence on the U.S. military machine. The elimination of the threat of global conflict weakened this dependence and catalyzed European integration in the area of a common foreign and security policy, as well as a common European defense. A fundamental contradiction emerged between the strategic goals of European integration (implying Europe's independence of the USA in the security sphere) and Atlantic solidarity (based on Europe's dependence of the U.S. military might).

Integration in the area of security and defense remains as the most complicated area of EU activities, but it is not losing momentum. The Cologne summit of the EU in June 1999 decided to charge the organization with the Petersberg tasks (peacekeeping, crisis management, and humanitarian operations). The EU goal is to be capable of implementing such missions independently. The decisions of the Cologne summit do not run counter to the decisions of the NATO's Washington summit, when the allies admitted that in some situations Europe could act on its own and in accordance with its own interests. However, EU integration in the area of European security and defense has traditionally been regarded by Washington as an attempt to limit U.S. and NATO roles in Europe. The European dichotomy (its European and Atlantic dimensions) was neutralized by the existence of the Soviet Union, but nowadays it is one of the urgent problems for Euro-Atlantic partnership.

As for the U.S. presence in Europe, one has to take into account the isolationist sentiments among the U.S. public and some ruling circles, which emerged during the Clinton presidency and implied a reduced U.S. involvement in European affairs. President Clinton was the most pro-European U.S. President, and succeeded in suppressing such trends. However, under President Bush, they may be reinvigorated. President Bush was elected as the proponent of a reduced U.S. presence in the Balkans and as a supporter of greater emphasis on the U.S. Near Abroad. Obviously, the developments of September 11 forced the new administration to modify some of its plans, but the future of U.S. foreign policy will depend on the outcome of the anti-Taliban campaign.

The loss of its only enemy damaged NATO's traditional role as a military-political alliance, so the latter had to face a serious dilemma – to revive the former threat in the form of Russia or to disband. Another way out was to try to adapt to the new Euro-Atlantic reality, to review dramatically the previous tasks and goals and to confront new security challenges, such as ethno-religious strife. NATO would then transform gradually into the pan-European security organization and, unlike the OSCE, would have the military might to prevent and settle conflicts and to conduct humanitarian and relief operations. The major problem would be the position of Russia, without which NATO would remain the same organization that lacked a traditional common threat to mobilize the allies.

NATO enlargement to the east was selected as NATO's new mission, which should have resuscitated the Alliance without any radical changes. Relations with Russia were formally settled (at least, NATO believed they were) by signing the Founding Act and establishing

the Permanent Joint Council. However, the latter failed to survive the first serious test – the Kosovo crisis.

One has to note the psychological effect of NATO enlargement. Russia opposed the process and this created a confrontational climate nourishing NATO in its traditional dimension. The growth of anti-NATO sentiments in Russia (even Boris Yeltsin had to take them into account and to resort to some anti-NATO rhetoric) proved to the West the correctness of its course. At the same time, NATO's neglect of Russia's position only aggravated the mutual suspicions.

The Madrid decisions had a negative impact on the Russian political elite and Russia's foreign and security policy. Firstly, they strengthened Russia's concerns about the goals of NATO enlargement. Russia reached political consensus saying that NATO, as a military alliance, is expanding against Russia. NATO's unclear and unbinding position on the non-deployment of tactical nuclear weapons in Central Europe, on non-deployment of conventional forces, and military infrastructure beyond the territories of 16 old members and the consultative status of the PJC only fueled Russia's fears.

Secondly, the Madrid decisions forced Russia, with its weakening conventional forces, to rely upon nuclear deterrence. The latter seemed the only guarantee against NATO's three-fold superiority in conventional arms and NATO's closeness to the Moscow Military District (which turned from the deep rear into the front defense zone). The lack of funding left Russia no other choice than resisting the Alliance with its nuclear arsenal. Like NATO in the 1960s, Moscow in the 1990s had to count on nuclear weapons as the means to deter nuclear aggression and large-scale conventional aggression.

Thirdly, the Madrid decisions had a negative effect on Russian military reform (whose opponents strengthened their positions) and arms control decisions. NATO enlargement had a direct impact on the negotiations on the adapted CFE Treaty and the ratification of the Open Skies Treaty. Russia believed that the compromises suggested by NATO at the negotiations were half-measures adapting the treaty to NATO enlargement, rather than changing the post-Cold War military balance in Europe. NATO offered not to exceed the collective CFE ceilings after the adoption of three new members; to introduce the notion of territorial and national ceilings for specific armaments; to increase Russia's quota for armored combat vehicles, bearing in mind Russia's domestic conflicts, etc. Moscow was interested in deep reductions in the numerical strength and armaments of both parties.

The political climate in Russia caused by NATO enlargement also hampered the implementation of many arms control commitments. The total costs of such implementation in 1996-2006 would amount to $15 billion. The State Duma had to cut expenditures in this sphere in order to save some money for other commitments. So NATO enlargement was the political pretext for cutting expenditure on arms control.

The Kosovo crisis and the NATO operation in Yugoslavia became a new turning point in Russia-NATO relationship. Air strikes against Yugoslavia were the first action of the enlarged NATO. NATO's air raids were regarded in Russia as a clear manifestation of Alliance's new mission in Europe, the true goals of its enlargement ,and the genuine character of Russian-NATO partnership. "It became clear that the Russian diplomats and experts who had discussed the petty issue of enlargement missed the ideology and strategic plans for far broader and far-going expansion."[4]

NATO's operation in Kosovo created Russian concerns about the accession of the Baltic states to the Alliance. Unlike the first round, the admission of the Baltic states would mean NATO would be approaching Russian borders. Public opinion polls showed that 53% of Russians (of which 61% have a university degree) fear these developments.[5]

The Russian elite was especially concerned about the possibility of applying the Kosovo scenario to Russia or to one of its neighbors. Moscow has reviewed its National Security Concept and the Military Doctrine and placed more emphasis on efficient nuclear deterrence with the help of strategic and tactical nuclear forces.

According to some Russian experts, "NATO's operation has proved the combat effectiveness and the priority of aerospace systems, which help to gain victory without the intervention of ground forces. The employment of ground forces depends on the efficiency of the missile and bomb attacks… The most advanced air defense system will sooner or later be destroyed, if the enemy enjoys superiority and has unlimited reinforcement potential."[6] This was the background for Russia's vision of NATO enlargement in the Baltic region.

NATO's military intervention in Yugoslavia weakened the Founding Act, which (despite the moderate dissatisfaction of the Russian side) at least provided some assurances that additional conventional and nuclear forces would not be deployed on the territories of new NATO member states. The geostrategic situation of Estonia, Latvia, and Lithuania connected with NATO by a narrow corridor – Suvalki (100 km wide) – passing between the Kaliningrad region and Belarus calls into question the feasibility of the Article V commitments, unless NATO forces are permanently stationed on the territory of the Baltic states. This was another reason for Russia's concerns about NATO's intentions in the region. In response, NATO accused Russia of old political thinking and adherence to a besiege mentality. At the same time, at the negotiations on the CFE adaptation, NATO with its military superiority in Europe rejected the idea of radical reduction in arms and materiel subject to the treaty. This position of NATO (incompatible with new political thinking as well) only exacerbated Russia's suspicions. "One can hardly imagine the scenario of any conflict justifying the need for such huge arsenals, unless such a scenario implies Russian involvement in the conflict."[7]

If NATO deploys its units in the Baltic states this will destabilize the situation. A supersonic aircraft with nuclear weapons on board can reach Moscow from a Latvian airstrip in 15 minutes, and St. Petersburg in several minutes. Western experts argued that even the territory of Poland would be enough and it would take nearly the same amount of time. But there is a difference. Russia is separated from Poland with the territory of Belarus and the latter maintains a joint air defense system with Moscow. This comprises the first echelon of air defense beyond the Russian territory, whereas the Baltic states will have a common border with Russia.

In other words, the very threat of NATO deployment in the Baltic countries may force Russia to build up its military potential in the Kaliningrad region if NATO-Russia relations deteriorate. "Such an exclave would be military vulnerable and the sea communications will be unreliable if tensions grow. The vulnerability of the Baltic and Kaliningrad areas may replicate the West Berlin confrontation, when the city counted on pre-emptive actions and escalation in case of conflict."[8] If NATO tactical nukes are deployed in the Baltic region, Russia may take retaliatory measures in Kaliningrad and, perhaps, Belarus. The intensification of military cooperation with Belarus (whose geostrategic situation is beneficial for Russia) would be Moscow's possible response to NATO enlargement. The 1997 Union Treaty between Russia and Belarus was the first Russian step in response to NATO enlargement.

As far as the potential Russian allies in the Far Abroad were concerned, the Russian political elite had to take into account the Yugoslavian experience and prospects for the second wave of enlargement. Under these circumstances, Moscow tended to expand its military ties with China, if not seek a military alliance with Beijing. The tensions between Russia and NATO and the United States and between China and the West were objective incentives for the Russian-Chinese rapprochement (which initially emerged during the NATO bomb attacks against Yugoslavia).

Many Western diplomats considered this to be a bluff, a political game, rather than a serious option. They regard China as a more serious threat to Russia than the West. Nonetheless, such a vision does not take into account the Kosovo crisis and the effect of the enlargement decisions. Obviously, any realistic approach cannot ignore the history of Soviet-Chinese relations, the unprecedented economic growth and military buildup in China, etc. But the

pragmatism of Russian foreign policy requires accomplishing the present-day missions. After the failures in the West, Russia has to gain economic and political benefits and does not take into account the strategic errors of the past or any future problems. Since Russia is not involved in the constructive shaping of the European security architecture, it has to seek new allies and restore the balance of power.

NATO's operation in Yugoslavia was legitimized by the new Strategic Concept of the Alliance approved in April 1999 in Washington. According to Amb. Alexander Vershbow, then permanent representative of the United States to the North Atlantic Council, "NATO's new Strategic Concept emphasizes NATO's role in crisis management and peace building, when the preventive measure turn out to yield no result. This was the leitmotif of NATO activities in Bosnia since 1995 and this is the key mission of the KFOR in Kosovo."[9] The search for a new mission, as well as the expansion of the area of responsibility and the composition of the Alliance made an attempt to overcome the identity crisis without solving the major issue – the Russian issue. However, NATO's new mission will be impossible unless this problem is resolved, if the Alliance wants to prevent and settle conflicts in the post-Communist zone. NATO's military operation in Yugoslavia proved this, since it caused the worst crisis in Russian-U.S. relations and NATO-Russian relations since the Berlin and the Cuban Missile crises of the early 1960s. NATO bombings changed the nature of the conflict. They escalated the local interethnic conflict to the level of international political conflict and hence, it could have spilled over the Balkans.

NATO's experience in the Balkans, including the war against Yugoslavia, its peace support operations in Bosnia and Kosovo, and operations to disarm the Albanian militants, indicate that the Alliance is not ready to accomplish the missions it declares. Peacekeeping as well as peace enforcement are impossible if the military is not ready to risk their lives in ground operations. One of the paradoxes of NATO is that it cannot perform efficient peacekeeping missions in the conflict zones, despite its military might. NATO's operation in Yugoslavia showed that the Air Force was not ready to run the risk of low heights and made bombings at the height of 10,000 m, increasing the civilian casualties. The same was true with respect to the operation *Amber Fox* in Macedonia, when disarmament of the Albanian militants became a serious problem for the NATO military.

This NATO-Russian unresolved contradiction is the hot topic of today. The Kremlin pledged to ensure the continuity of Yeltsin's foreign policy in the West (the resumption of the dialogue with NATO, ratification of START II and the CTBT), but Moscow is also expanding the range of its diplomatic activities. The all-azimuth diplomacy of President Putin made the West believe that Russia had not yet formulated its foreign policy priorities and pursued fn open door course, cooperating with Europe, the United States, Canada, Japan, China, Libya, Gabon, etc. Many political analysts in Russia and in the West interpreted this as a new version of the century-old political dilemma: "East or West?" or "North or South?" However, the West itself was the reason for such a dilemma. Vladimir Putin was supported by the Russian public as a strong-handed alternative to Boris Yeltsin, who was responsible for numerous foreign policy failures in the Western policy of Russia. The United States and its European allies endorsed Russia's intention to cooperate with the West, but made no practical steps to review their positions on key security issues. On the contrary, US-Russian relations were aggravated because of the ABM Treaty. Numerous Putin statements on NATO enlargement and Russia's concerns about being isolated were not taken into account. The Alliance and the United States welcomed the resumption of the dialogue, and spoke a lot about the end of old animosity, but did not go further.

The developments of September 11 forced Russia to make an unequivocal choice. And Russia agreed to support the United States morally, politically, and practically – through the exchange of intelligence information, and participation in rescue and humanitarian operations. Surprisingly to many political analysts, President Putin did more than was

expected from him in Russia and in the West and noted that Russian involvement could be broader under certain circumstances. Such circumstances would be the allied relations between Russia and the United States and its European partners. Such relations would provide for equal participation in military operations against the Taliban and security assurances to Russia on the part of the anti-terrorist coalition.

The strikes against the Taliban meet Russia's security interests, as "if the hotbed of tensions in the Middle East is eradicated, this will secure the southern borders of the Commonwealth and the Russian Federation. The chaotic Afghanistan with its bloody internal wars will stop supplying militants and weapons to Chechnya and other conflict zones in the CIS. This would also be a serious blow to drug trafficking."[10] Meanwhile, the Russian leadership has a broader vision of the anti-Taliban coalition – as the means to change the Russia-NATO/U.S. relationship. During the EU-Russian summit in Brussels in October 2001, President Putin made several important statements concerning NATO enlargement. He emphasized that the threat of international terrorism had already demonstrated the fallacy of NATO's course of enlargement. One can hardly disagree with this statement. In recent years, NATO has been downgrading its relations with Russia and neglecting its position on enlargement. Meanwhile, before the new threat (which neither Washington nor its European allies can confront on their own), Russia has become a key partner, one whose involvement or un-involvement will determine the future of the anti-terrorist operation and the war against terrorism in general. NATO's potential members, who are now the apple of discord between Russia and the Alliance, will give NATO nothing, except tensions in relations with Russia. Another Putin statement spoke about the expansion of enlargement to cover Russia, which would dramatically change Russia's vision of this issue.[11] In theory, even the commencement of negotiations between NATO and Russia on the terms of its membership or other forms of engagement in the Alliance would resolve the problem of admission of the Baltic states in its current form. However, NATO's position remained intact – it decided to set up another body to study the issue of expanding and deepening Russia-NATO relations. Nothing was said about the possibility of Russian involvement in the enlargement process. It is noteworthy that the NATO Secretary General mentioned in his article for the Russian readers (published in *Nezavisimaya Gazeta*) some principles, which indicate the Alliance's true attitude to Russia. Firstly, Russia is not regarded as a full-fledged and equal partner. "We should join the efforts of national governments and other international organizations, and use the mechanism of cooperation established by the Founding Act in order to ensure that we will fight together and will together win this battle. The allies will not forget that in this critical battle Russia was by our side."[12] Secondly, NATO does not regard Russia as a European country (this thesis was borrowed from the Russian nationalists speaking about Russia's special path), "Russia has a special role in the world. The history, politics and geographical situation place this country on the crossroads of several strategic and vitally important regions, which have yet to achieve stability and prosperity…"[13] Thirdly, NATO is not going to review or halt enlargement, as far as the Baltic nations are concerned. "The advancement of a powerful and stable Europe to the west of Russia will only enhance Russia's long-term security. If someone doubts this, he should study the positive development of bilateral relations between Russia and three new members of the Alliance, including their accession to the Washington Treaty."[14] This postulate replaces NATO enlargement with the notion of "the advancement of Europe" and equalizes the EU and NATO enlargements. However, in Russia the perception is different and Moscow differentiates between the two processes. Russia believes that Central and Eastern European states should regain their unity with Europe through European integration. Despite all the difficulties caused by EU enlargement, Russia believes that this process will contribute to the stability and security in Europe and meets Russia's national interests. At the same time, NATO enlargement will enhance the security of some new members, but the continent will be divided into the Russian and Western zones of influence. In

other words, the article by the NATO Secretary General reiterates that the position of the Alliance has not changed much after September 11, despite a superficially favorable attitude to Russia. These changes are formal. Earlier NATO ignored Russia's position on enlargement; nowadays it seeks ways to pass Russia by quietly and safely.

According to Ira Straus, NATO is afraid of Russia's influence on its decisions. If Russia obtains the veto right it may block any decision necessary for NATO. There are some ways to overcome this problem, e.g. to find some intermediary forms of participation between "vote" and "veto" – "consensus minus one", or a 90%, 75%, or 50% threshold for voting, etc. The problem is not the lack of forms of engagement, but the lack of a serious approach on both sides.[15]

One may assume that the lack of a serious approach on the part of NATO is caused by fundamental reasons. Russia's hypothetical participation in NATO would dramatically change the organization and give it new life. But the Alliance cannot get rid of its Cold War roots, despite the deep internal crisis.

Another paradox is that the military might of the Alliance is regarded as a national security threat by those who stay beyond the enlargement, but this power is not enough to carry out new missions, which would allow NATO to be a pan-European security organization.

The third paradox is the U.S. role in NATO. On the one hand, the United States is quite sensitive to any changes in NATO that may affect Washington's leadership in the Alliance (in this sense, Russia's participation would be a direct challenge to the United States). On the other hand, the reorientation of U.S. security priorities after September 11 may force Washington to curb its commitments in Europe and to react selectively to European security needs.

Much will depend on the outcome of the anti-Taliban operation – whether Russia, the USA and Europe will leave this battle as partners or as opponents. On the other hand, a breakthrough in NATO-Russia relations would help to convert the anti-Taliban coalition into the anti-terrorist coalition. However, such a breakthrough should occur before the new enlargement in the Baltic region. The threat of international terrorism obliges the West to make a correct decision.

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[1] A. Arbatov, "Russia's National Idea and Foreign Policy". *Scientific Report* No.53, MPSF, Moscow, 1998, p.51.
[2] See A. Zagorski (ed.), *Russia's Security in the 21st Century*. M., 2000, p. 49.
[3] Ibid., pp.49, 52.
[4] D. Trenin (ed.), *Russia and Key Security Institutions in Europe: Entering the 21st Century*. M., 2000, p.102.
[5] It is noteworthy that after the Kosovo developments proponents of the key democratic party in the State Duma (Yabloko) took a tougher position on NATO and its enlargement to the east than the Communists. The public opinion polls indicate that 82% of Yabloko voters (as opposed to 75% of the Communist followers) answered "yes" to the question "Does NATO enlargement to the east pose a threat to Russia?". 30% of Yabloko voters (28% of Communists) believed that Russia should prevent NATO enlargement by any political and diplomatic means. 26% (23% respectively) argued that Russia should build up its military might in order to confront NATO's threat. 19% (17% of Communists) maintained that Russia should conclude a defense alliance with the non-NATO countries. See A. Arbatov, *Security: Russia's Choice*. M., 1999, p.200.
[6] Y. Morozov, V. Glushkov, A. Sharavin, *Balkans Today and Tomorrow: Military-Political Aspects of Peacemaking*. M., 2001, p.260.
[7] See A. Zagorski, op. cit., p.53.
[8] Ibid., p.71.
[9] Amb. Alexander Vershbow, Permanent Representative of NATO to the North Atlantic Council. Report at the Moscow State Institute of International Relations (MGIMO), October 28, 1999.
[10] M. Khodorenok, "Russia Makes a Strategic Choice". *Nezavisimoye Voennoye Obozreniye*, September 21-27, 2001, p.1
[11] *The Moscow Times*, October 4, 2001, p.1.
[12] G. Robertson, "After September 11: What Russia and NATO Should Expect". *Nezavisimoye Voennoye Obozreniye*, October 26-November 1, 2001, p.1.
[13] Ibid., p.1.
[14] Ibid., p.1.
[15] *The Moscow Times*, October 4, 2001, p.8.

Review

U.S.-RUSSIAN NAVAL SECURITY UPGRADES: LESSONS LEARNED AND FUTURE STEPS

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Since 1994, the U.S. Department of Energy has worked cooperatively with Russia to install modern nuclear security systems to secure weapons-usable material. The cooperation, known as the Material Protection, Control and Accounting (MPC&A) Program,[1] has substantially increased security for large amounts of vulnerable nuclear material.[2] Hardening storage facilities against outsider and especially insider threats is a high priority. Under this program, DOE is installing site-tailored and integrated security systems. The security enhancements include such features as entry/exit barriers and control measures (e.g. traps, gates, locks and portal monitors), personnel access control, intrusion detection, alarm communication, video surveillance, response, and computerized systems for nuclear material accounting.[3]

Despite the successes addressing the threat of nuclear theft, however, the bulk part of the proliferation challenges remains as hundreds of metric tons of nuclear material lack improved security systems. As of February 2001, the U.S. Department of Energy had completed or partially completed assisting the Russians in installing security systems in 115 buildings protecting about 32 percent of the 603 metric tons of weapons-usable material identified as being at risk of theft or diversion from Russia.[4]

From the very beginning, access to Russian nuclear sites has turned out to be a significant stumbling block for much of the U.S.-Russian cooperation on fissile material security upgrades. There has been a lack of clarity on both sides of what kind of access is needed when for whom and most importantly, for what purposes.[5] At most sensitive facilities in the MINATOM nuclear weapon complex, all new contracting has been suspended since fall 1999, pending decisions and agreements for access.

The Russians have been reluctant to grant the U.S. access to buildings in the nuclear weapons complex because of Russian national security concerns and domestic laws and regulations. Substitute arrangements, so called "assurances", where e.g. photos and video supplement substitute physical access to sensitive facilities, are again under investigation.[6] High-level talks between the U.S. Department of Energy (DOE) and the Russian MINATOM have been initiated to negotiate overarching and acceptable agreements for the provision of necessary "assurances". These solutions are intended to be a pragmatic way of avoiding the most profound sensitivity issues. Yet, they stand at risk of not dealing with the underlying problems of distrust and could epitomize the loss of a true cooperative partnership spirit.

In the beginning of 2001, U.S. teams do not have physical access to 41% of the buildings containing nuclear material in Russia, making satisfactory MPC&A-upgrades very hard to accomplish. In the Russian nuclear weapon complex, where the bulk part of the fissile material is, some ¾ of all the buildings are restricted with no US-access. In reality, therefore progress has been limited for much of the most proliferation attractive material. In stark contrast to these figures, however, the U.S. team working on security upgrades for the Russian Navy report back access to *all* sensitive facilities with fresh HEU fuel (see table 1).

The naval MPC&A-team has clearly been better able to overcome distrust and to deal with the sensitivity issues preventing progress in other parts of the MPC&A-program. Access has been given despite the secrecy and classification issues associated with design and composition of the Russian naval reactor fuel. DOE has forged productive working relationships with officials of the Russian Navy, overcome security concerns and negotiated access appropriate to verify installed physical protection systems and accountancy systems.[8] Based on this trust, in 1999 additional access was granted and the teams

Table 1. Percentage of buildings with fissile material where Russia has not granted access to U.S. project team under the f MPC&A-program, as of January 2001.[7]

	Russian civilian sites	Russian naval fuel sites	Russian nuclear weapon laboratories	Total
Percentage of buildings where teams do not have physical access	12%	0%	73%	41%

moved on from the fissile material protection and started upgrading the security for Russian naval nuclear weapons. As of January 2001, security upgrades have been initiated at 41 out of 42 naval weapon sites.[9] All of these nuclear weapon storages are located inside operational Russian naval bases. So far, the U.S. team has been granted physical access to some ten nuclear weapon sites.[10] The other sites have been viewed from a distance, by the site's perimeters. The U.S. predicts to have finished security upgrades for 4000 Russian naval nuclear warheads by 2007.[11]

Assessing the opportunities

The U.S. Department of Energy alone now implements more than a dozen distinct non-proliferation programs in Russia to reduce the risk of nuclear material and expertise falling in the hands of terrorist organizations and "states of concern".[12] But there has been an unfortunate tendency to view the different non-proliferation programs one by one rather than together. According to Leonard S. Spector, former deputy assistant secretary of energy for arms control and non-proliferation, there is a need for an approach that allows cross-program synergies, impacts and investment opportunities to be recognized and addressed.[13]

As evidenced by the progress made, valuable lessons may therefore be learned from the U.S.-Russian naval security upgrades. The lessons could provide helpful contributions for proceeding, beyond the current path of formalizing access substitutes, in other areas of MPC&A and possibly on other nuclear non-proliferation activities. Inherent and legitimate security concerns, however, effectively put limitations on the information made public from the naval MPC&A-program. In fact, a significant part of the progress is likely due to the way the U.S. and Russian sides have been able to effectively share and at the same time protect sensitive information.

This paper attempts to balance justified security concerns with the need for publicity and an examination of the foundations of the extraordinary progress of the naval security upgrades for the fresh naval fuel and nuclear weapons. The assessment is based on interactions with key personnel and on the (limited) open-source information available on the naval MPC&A-upgrades. The paper starts out with a brief historical background of the program and a description of the status of the naval security upgrades. An evaluation of the pros and cons of the naval MPC&A-approach is then given. The final section describes future challenges and steps ahead and presents some recommendations for how the naval MPC&A-lessons learned may be applied elsewhere.

History and Status of the Naval MPC&A

Russia may hold as much as 80 to 85 metric tons of HEU for submarine fuel.[14] The mere enrichment levels associated with the fuel make it a potential proliferation risk and economical and political turmoil has put fissile material management in the former Soviet Union under unprecedented stress. In the post-Soviet period, the Russian Navy has severe problems with providing satisfactory storage and protection for its fresh reactor fuel.[15] Often, decaying fences and simple padlocks provided the only security.[16]

After less than a half-decade of work, however, the DOE MPC&A-program for fresh Russian naval fuel storage facilities has made very good progress in reducing the vulnerability of large amounts of HEU to theft or diversion – all at highly sensitive installations.[17] According to DOE, all the fresh fuel of the Northern Fleet and at the Pacific Fleet has now been consolidated at two modern storage bunkers, after they were expanded and secured with US assistance.[18] In addition, the United States has assisted in developing physical protection upgrades for service ships involved in refueling operations.[19] The first fresh fuel storage security enhancement at the Sevmash submarine production plant in Severodvinsk will be finalized fall 2001. In early 2001, a second facility at the plant was included to receive security upgrades.[20]

The HEU-naval fuel production line at the Machine Building Plant at Elektrostal remains outside the U.S.-Russian cooperative MPC&A-scope, though some work has been done on the facility's LEU-line.[21] From Electrostal, the fuel is transported by rail to naval storage facilities where it is stored until needed. The fuel is shipped by truck between storage areas and the refueling locations. Fuel consolidation made transportation security a more pressing issue and security enhancements for truck shipments of fresh naval fuel have been completed, and armored trucks have been provided.[22] Security for rail shipments, on the other hand, is being considered as part of a separate transportation security project with MINATOM.[23]

The foundations for Russian Navy MPC&A-upgrading were laid in march 1995 with a request from the Commander-in-chief of the Navy of the Russian Federation, Gromov, to the Moscow-based Kurchatov Institute (KI) to cooperate on MPC&A-upgrades for naval fuel storage and handling.[24] The month before, the Commander-in-chief had participated in a MPC&A-demonstration and technical discussions at the Kurchatov Institute. U.S. cooperation through the Laboratory-to-Laboratory (Lab-to-Lab) program was explored over the ensuing months, after Gromov wrote a letter to KI asking for assistance and cooperation between the Navy, the Kurchatov Institute and possibly the United States. The Kurchatov Institute, which provides a wide range of services for the Russian Navy,[25] had by then become a key player in the evolving U.S.-Russian security cooperation. This resulted i.a. in the first security upgrades at building 116 at the institute late 1994.[26] The Kurchatov institute operates independently from MINATOM and was free to initiate cooperation and sign contracts and agreements with external parties.

Since July 1993, five known attempts of theft of nuclear fuel had occurred in the Northern Fleet, see table 2. All of these thefts involved so-called "insiders", with direct or indirect access to and knowledge about the nuclear material. Cooperation with the U.S. Department of Energy (DOE), through the Kurchatov Institute, was a way of dealing with the theft problems for the Russian Navy. In September 1995, the first MPC&A-discussions between U.S. technical experts and the Russian Navy were held at the Kurchatov Institute. By the end of the year, all of the necessary approvals had been obtained to allow the cooperation to go forward.[27] In 1996, this cooperation advanced beyond the talking stage, and began to achieve concrete results.[28]

Through the Kurchatov Institute, in February 1996 a course in U.S. approaches to vulnerability assessment (VA) was conducted with a demonstration of the computerized tool "ASSESS" for the Russian Navy. The next month, representatives from the Russian Navy visited the U.S. In May the same year, representatives from the DOE and U.S. national laboratories, The Kurchatov Institute and the Russian Navy met in Moscow. A protocol on the scope and approach for the MPC&A-work was signed. The U.S. program leader and the Russians insisted on having one small, coherent and experienced U.S. team to handle all the projects. A four-person team to work directly with the Russian Navy was therefore put together on the U.S. side, with highly qualified personnel from four different national laboratories. Following a visit by Admiral Gromov to U.S. in April,[29] U.S. experts were invited to Site 49, a storage site for fresh fuel near Murmansk in May 1994. In cooperation with the Kurchatov Institute, the expert team designed a set of security upgrades for the facility and funded construction and the provision of necessary new technologies.

In parallel, the U.S. team was working at Murmansk Shipping Company (MSCo) to secure the fresh fuel for the nuclear propelled icebreaker fleet. The security upgrades focused on the service ship "Imandra", moored at the Atomflot harbor north of Murmansk, and some port perimeter security enhancement and strengthened access control. The U.S. side saw and managed the entire "naval sector" as one integrated program. There was a need to move fast and efficiently as the Russian Navy was watching the developments closely. The work at MSCo began with a site visit in June 1996, and was followed up by the first U.S.-Russian VA ever jointly conducted in September the same year. By the end of 1996, the U.S. and Russian teams had the conceptual design for the security upgrades ready.

In July 1996, a joint statement between the Russian Navy, the Kurchatov Institute and

Table 2. Overview of registered thefts of highly enriched naval uranium in the Northern region[30]

Location	Date	Theft	Enrichment	Perpetrators	Notes
Andrejeva Bay	July 1993	Two fuel elements (each element weighed 4.5 kilos)	36 percent	Two sailors from the Navy's radiation protection department	Two more officers charged, but the charge was with-drawn on account of insufficient evidence
Sevmorput storage installations, Murmansk	November 1993	Three fuel elements with 4.3 kilos HEU	Approx. 20 percent	Three officers	The material was recovered. The perpetrators sentenced
The shipyard Sevmash, Severodvinsk	July 1994	Uranium dioxide 3.5 kilos	20-40 percent	Four businessmen from the area, in connection with workers on the shipyard	Lawsuit going on
The shipyard Sevmash, Severodvinsk	October 1994	Fuel element(s)	Highly enriched	No information	Arrests in Arkhangelsk, no prosecution
The shipyard Zvezdochka, Severodvinsk	July 1994	Fuel element(s)	No information	Employees hired on contracts from the Northern Fleet	The accused were seized before the uranium was removed from the shipyard. Case under investigation
The shipyard Zvezdochka, Severodvinsk	January 1996	Fuel element(s)	No information	Employees hired on contracts from the Northern Fleet	Uranium removed from the shipyard. Arrests in Severodvinsk. Case under investigation

DOE was issued on the decision to "jointly cooperate to ensure the highest possible standards of control, accounting and physical protection for all storage locations of the Navy of the Russian Federation, containing fresh highly enriched uranium fuels for naval nuclear reactors".[31] The statement solidified the cooperation and protocol from the meeting in Moscow in May the same year.

The conclusion of a comprehensive agreement with the Russian Navy for MPC&A at all naval sites, was formalized in a high-level protocol signed in December 1997, between Commander-in-chief for the Russian Navy, Kuroyedov, and the U.S. Secretary of Energy, Pena. On this occasion the Russians again stressed the importance to maintain a cohesive and highly qualified team, leaving the U.S. side with very little choice but to keep the original team. The Russian Navy deemed the threats to the Northern Fleet the most severe.[32] Two years later the DOE established a similar, but more limited, set of projects for the Pacific fleet, again with the same U.S. team.

January 1999, the current scope of nuclear material protection, control and accounting (MPC&A) cooperation with the Russian Navy was expanded with new and broader initiatives.[33] These initiatives included further upgrading of nuclear fuel storage facilities, a feasibility study of the dismantling of aging submarines, and securing naval spent fuel that represents a proliferation threat. The program was also broadened to include a naval training facility in Obninsk. More importantly, the MPC&A-cooperation went on to cover the mentioned security upgrades at the Russian Navy's nuclear weapon installations.[34]

Then on August 31, 2000, an "umbrella" agreement was signed between the U.S. Department of Energy and the Russian Ministry of Defense that solidified the cooperation and outlined expanded future joint work in the area of nuclear material security. According to this agreement, the Russian Navy has formally become the designated Russian executive agent for the purpose of implementing the cooperation.[35]

Other U.S. agencies are far from reaching the same level of cooperative success with the Russian Ministry of Defense. Working with the Russian Navy through the Russian MOD, the U.S. Department of Defense DOD has so far only been granted access to one of the Navy's nuclear weapon installations. The progress of the U.S. DOD's "Weapons

PC&A-program (WPC&A)", aimed at the 12th Main Directorate of the Russian Ministry of Defense (MOD), has therefore been limited.[36] DOD has hardly been able to move beyond testing of the MPC&A-equipment to be installed.[37] The high level agreement that was signed directly between the DOE and the Russian MOD for nuclear weapons security upgrades was therefore nothing less than a very important breakthrough for the introduction of security enhancements for the Russian Navy's nuclear weapons.

The DOE security improvements on the fuel and weapon facilities have been realized with a total of $85.6 million, or some 15% of the total amount spent by DOE on nuclear material security in Russia though fiscal year 2001.[38] An overview of completed and on-going DOE naval facility security upgrades is given in table 3.

Foundations for the Naval MPC&A

In the following, the foundations for the US-Russian naval security upgrade successes will be examined more closely, based primarily on interviews with key U.S. personnel. The assessment is divided into five main parts that all are likely to play an important role in the implementation and the successful outcome of the program:[39] 1) strategic program goal and approach, 2) organizational structure and working methods, 3) compliance with domestic laws, licensing and certification requirements, 4) the degree of high-level involvement and support, and finally, how the 5) issues of sustainability are addressed.

Strategic program goal and approach

For the fresh fuel security upgrades, both the Russian and U.S. sides shared interests and goals from the very beginning. Several thefts of naval HEU fuel prompted the Russian Navy to make contact with the U.S., standing eager to limit the possible diversion of the proliferation attractive material. The expedient implementation was a direct consequence of the security upgrades at Atomflot and the "Imandra", the service ship of the Murmansk Shipping Company (MSCo) storing fresh fuel for the icebreakers. The work at the MSCo served to demonstrate U.S.' interest and commitment. The Navy appreciated this and for the first time, the U.S. Department of Energy had the opportunity to work directly with the Russian Ministry of Defense.

At the onset of the cooperation with the Russian Navy, a step-by-step approach was chosen, e.g. one facility at the time. The Russian Navy decided which one. Every next project thus depended on the success of the previous, and the progress was closely watched. As stated by one of the U.S. project members, "there was zero tolerance for failure". After the cooperation got going, rapid security upgrades (generally finished within six months) would be pursued in parallel with preliminary designs for comprehensive security upgrades at the same location. A project on comprehensive upgrades would then be negotiated and implemented according to mutually agreed project plans.[40] After the upgrades proceeded, it became more and more apparent to the parties involved that their counterpart was committed to make this work.

Organizational structure and working methods

The initial organization chosen for the naval upgrades was a pragmatic, flat working structure, and thus a highly efficient one. Communication was free amongst all parties involved. U.S. team members could personally contact high-level navy personnel assigned the responsibility of implementing the project on the Russian side. This drastically increased interaction and allowed for quick problem-solving when needed.

The naval MPC&A-program was a thus a true child of the teamwork spirit of early the MPC&A-upgrades and one of four major sectors of the U.S.-Russian cooperation.[41] The new MPC&A-approach included a willingness to use Russian equipment and Russian contractors.[42] The program also offered a more flexible approach to assure that the security measures were indeed put in place. Instead of demanding a strict on-site inspection regime, a more cooperative and less adversarial approach was chosen. U.S. and Russian MPC&A-experts would rather sit down together and jointly assess the situation before and after the security upgrades. What the U.S. team might lose in terms of insight through formal inspections with such an approach, they were likely to

gain through a voluntary flow of informal information from their Russian counterpart.

The cooperation between DOE and The Russian Navy is carried out under confidentiality agreements. Any information shared within the joint working group that has not previously been published in the public domain, can only be released by the consent of all parties involved. In reality, this effectively put a lid on any type of external assessment or supervision, but does probably help increase the information flow within the group significantly.

The naval MPC&A-upgrades are supported by formal documents on all levels and stages of the work. Everything from working plans to protocols and agreements had and has to be approved by all parties involved. This allows for both formalized delegation of responsibilities and a transparent working environment. Some of the overarching agreements have, however, been put in place after the projects are well ahead, either to boost or expand the on-going activities or for remedial or corrective reasons.[43]

The Russian side identifies the facilities in need for upgrading. In the process of designing optimal security solutions for the facilities, however, the two sides work together. A joint vulnerability assessment (VA) is performed with the mentioned computer model "ASSESS", with discussions on the input data. Design consensus is not only sought, but is also essential before proceeding with the implementation of the security upgrades. One example was lack of a sufficient guard force at one of the facilities in need of upgrades. No money or further efforts were put in place before the Russians increased the capacity of the guards. This experience, moreover, made the Russians realize that there was a need to consolidate the fuel at fewer sites, as no further upgrades would be made at other facilities without similar guard force improvements.

The Kurchatov Institute (KI) in Moscow serves as a general contractor and an agent for the Russian Navy, as the Navy its self is not allowed to sign contracts with any of the U.S. laboratories. In addition to acting as the general contractor, Kurchatov Institute often executes work tasks. VA and preliminary designs are typical tasks assigned to KI, as is the establishing of training programs. KI may choose a subcontractor to implement a negotiated task. The Kurchatov Institute is also the parent company of Atomservice (AS), which deals with any type of civil work, construction work, building materials etc. Typical security subcontractors of KI or AS are Eleron and Escort Center. The U.S. team may go directly to these, if there is no role for the KI.

The U.S. pays only for the work completed, without any overhead costs to the Russian participants. Completed security upgrades are certified in writing by the Russian Navy, and generally inspected by U.S. representatives. All work performed must be documented and the results demonstrated prior to payments. Every contract is negotiated separately. The U.S. laboratories now sign contracts directly with their Russian counterparts, after approval by DOE headquarters. However, attempts have been made to centralize these contracts on the U.S. side as part of a process to follow negotiations more closely and to streamlining and expedite contacts.

Compliance with domestic laws and regulations

The security systems will be designed in accordance with the VA and technical specifications jointly agreed upon by the U.S. and Russian teams. The Russian contractor(s) will then build a system based on the agreed design. The systems normally consist of a wide range of different components, including foreign equipment bought in Russia. However, as long as these components are pre-certified, the final design and the final system will be regarded as a Russian one. This ease often complex issues related to certification, taxation and maintenance.

In parallel with the upgrades, a documentation project has been initiated to assess the current MPC&A-regulatory status for the Russian Navy nuclear materials and to determine what regulations and guidelines are required.[44] While the U.S. recognizes the relevance of Russian laws and regulations, any measures not deemed necessary after a VA are not likely to be included or paid for by the U.S even if required by Russian law. Russians are, however, free to include such

Table 3. An overview of concluded and on-going U.S. supported Russian naval MPC&A-upgrades

Site	Location	Type	MPC&A-activity	Dates	Remarks
Site 49	Severomorsk	Central Fuel storage facility for the Northern Fleet. All fresh naval fuel consolidated here, after an annex doubling its storage capacity was built	Construction of a storage facility annex, Physical protection upgrades, computerized material accounting system[45]	Start May 1996 concluded September 1999[46]	Indications that even the extended storages now has reached its capacity
Navy 2nd Site Northern Fleet Storage Site		A large capacity facility able to hold tons of fresh naval fuel			This was a planned project before consolidation at and expansion of Site 49 was deter-mined. No work has thus been done on this facility
Site 34	Near Vladivostok	A land based fresh-fuel storage at Chazhma Ship Repair Facility	A structurally unsound building was replaced with a new storage facility that incorporates the same security upgrades as Site 49, with hardened entrance portal to control access	Started spring 1999 concluded September 2000[47]	Site 32 in the same region stores irradiated and damaged naval fuel
Site 32	Near Vladivostok, co-located with site 34 and site 86	Storage for irradiated and damaged naval fuel	Integrated MPC&A sys-tem upgrades incorporate detection, communications, delay, response, material control and account-ability		
PM-63	At the Belomorsk naval base, by the Northern Machine Building Enterprise (SEVMASH) in Severodvinsk	The ship's storage compartments have capacity for a large number of fresh and spent fuel assemblies and liquid radioactive waste	Ship-based and land-based (where the ship may be docked) MPC&A systems installed	Work started 1998 and was completed in May 2000[48]	Ships also called "Floating platforms". First service ship to be upgraded
PM-12	Operates at the Olenya Bay Naval Base and at Nerpa shipyard north of Murmansk	Service ship	Ship-based and land-based (where the ship may be docked) MPC&A systems installed	Started August 1998, completed September 2000	PM-74 and PM-12 are sister ships
PM-74	Near Vladivostok	Service ship operating out of Chzhma Ship repair facility. Delivers fuel to Gornyak shipyard for submarine refueling[49]	Ship-based and land-based (where the ship may be docked) MPC&A systems installed	Completed September 2000	PM-74 and PM-12 are sister ships

Site	Location	Type	MPC&A-activity	Dates	Remarks
Sevmash shipyard	Severodvinsk	First fresh fuel storage .New and existing MPC&A upgrades are being integrated for detection, delay, response and for material control and accounting		Started: late 1998. First phase completed. A second phase started early 2001	Shipyard for the production of nuclear submarines, e.g. the new Borey-class. Second phase includes upgrades at one of the submarine assembly facilities, Building 438
Murmansk Shipping Company	Atomflot, 20 km north of Murmansk City	Floating service ship, "Imandra", containing fresh fuel batches for the icebreaker fleet, and security upgrades at the port (gates, access control)	Physical protection at ship, including physical barriers. Upgrades of port security (new vehicle and pedestrian gates/access)	Start July 1996, completed in September 1999[50]	In additions, physical protection upgrades for one of the operative icebreakers have been provided by Norway and Sweden
Site 86	Russian Navy Far East[51]	Irradiated Fuel site			Site adjourns Site 32 as part of an integrated damaged/spent fuel complex. Security upgrades will be compatible with MPC&A upgrades at Site 32 and Site 34
Russian Navy Nuclear Weapon Sites[52]	42 sites in Northwest-Russia and the Far-East. Locations are unknown	Storage facilities for the Russian Navy's nuclear Weapons. Storages are all Located inside operational naval bases	In principle, the same type of upgrades and approaches for the fresh naval fuel		Site contains about 260 metric tons of nuclear material Number of nuclear warheads unknown
Kola Technical Center	Kola Peninsula			Still in the planning phase	To support MPC&A upgrades in the region
Sergiev-Posad		A Russian MOD Research facility that includes research reactors operating on HEU fuel	Upgrades include equipment for detection, delay, material control and accounting		

features themselves. One example is radiation monitors, which Russian law calls for. Such instruments may not directly improve security and are therefore normally not included in the security upgrades at U.S. expense.

High-level involvement and support

The Navy's own Inspectorate for Nuclear and Radiation safety and Security plays an essential role in the cooperation. The inspectorate is lead by Admiral Yurasov. The admiral is well regarded within the Navy and his interest in and push for the security upgrades have been instrumental in the success and progress of the program. Russian high-level support extends to Commander-in-Chief Admiral Kuroyedov and this has eased interactions with centrally located bureaucrats and opponents of the cooperation within the military. It has, moreover, created an important platform for the communication with other Russian parties involved, like the forces of the Ministry of Interior, MVD, protecting the facilities owned by the Russian Ministry of Economy, and the FSB.[53]

The fact that the Navy quite early on acknowledged that they had a (internal) security problem, and a genuine interest in fixing it, is important for the support generated from within the organization. MINATOM, for instance, tended to put less emphasis on the insider threat in the past, and may also have a tendency to regard MPC&A-deficiencies as primary an economic problem. The interest in international expertise and cooperation may thus easily become subordinate to the drive for fresh funds for the domestic MPC&A-upgrades. Cultural and organizational differences in the two Russian organizations are also likely to have played a role in how the cooperative efforts were perceived and implemented. A military chain of command seems to have eased communication and implementation of directives from Moscow to the facilities were installations are to take place, thereby limiting any local defiance.

As with the support shown by the Russian Navy, the naval MPC&A-program had top-level support in DOE, yet possibly at the same time a lack of high-level *interest*. In the beginning, the small and limited Russian naval program was not perceived very important and it was more or less "left alone". This may, somewhat paradoxically, have been important in the initial stages of the program, as it in fact gave the U.S. side an opportunity to build the strong foundation its Russian counterpart was looking for. The U.S. team was not afflicted by disturbing personnel replacements, and a set of internal rules for a well-defined process and cooperation was soon established between the two sides. All participants learnt to know each other well, in a well-established working structure. Such a working-group buildup partly contrasts other DOE cooperation with MINATOM. To effectively manage the program and to prevent personal burnouts, over the years there has been a tendency on the U.S. side to change personnel and administrative procedures quite frequently, most likely with detrimental effect on the long-term cooperation.

The role of the U.S. Navy in the early stages of the naval MPC&A-cooperation has been given little or no attention. The initial hope was to get the US Navy on board the naval cooperation, and to initiate reciprocal visits and activities at U.S. naval bases for their Russian counterparts. This, however, has not acceptable to the U.S. Navy and it raised concern in the U.S. MPC&A-community that the cooperation would fail, if the Russians asked for such visits. The Russians did never demand or request any such reciprocity. To limit the risk of loosing sensitive U.S. naval nuclear information, it was, moreover, important to the U.S. Navy that only personnel with very limited knowledge about U.S. naval activities were involved in the cooperation with the Russian Navy. The handpicked U.S. team from the national laboratories had indeed limited knowledge about U.S. naval secrets and after these initial rounds of skepticism, the U.S. Navy backed the program. This endorsement by the U.S. Navy was likely to be of great importance to get the needed domestic political and bureaucratic support for the Russian naval MPC&A-upgrades. Throughout the project, the U.S. Navy has been regularly updated about the progress.

While DOE always has dealt with the overall policy issues of the project, and provided oversight, the laboratory team working on

the naval security upgrades has had a fairly free and open environment for discussion with their Russian counterpart on the technical issues. However, as the naval MPC&A-program has been growing and succeeding, also the interest in and need for oversight and control has increased on both the U.S. and the Russian side. The recent developments, with the expanded cooperation on MPC&A-upgrades at naval nuclear weapons installations, has itself fueled a need for a closer follow-up and tighter reins for the cooperation. Furthermore, increasing interagency and congressional interest has required closer project managing and an increase in the staff at the federal level. The result has been more complicated and lengthy procedural approaches that tend to slow down the processes and prolong negotiations, all with a severe risk of creating frustration amongst the working parties. It has, moreover, limited the level of interaction and communication amongst technical project participants on both sides, restraining opportunities for quick problem solving when needed.

Sustainability

To help ensure the effective long-term operation and maintenance of the MPC&A-systems, training of Russian naval personnel is an integral part of the program. A goal of the training program is to instill in managers a culture of sustainable commitment to MPC&A-activities.[54] A series of two courses, each two-weeks long has been developed and presented at the Kurchatov Institute, first in fall 1998 and then in spring 1999. The MPC&A-fundamentals class consisted of both class lectures and practical training at various facilities. The objective of the second training course is to prepare naval personnel to work independently in their particular area of MPC&A at naval facilities.

Anyhow, as for any security upgrades, there is a need to validate the long-term performance of the systems installed. Under the naval MPC&A-upgrades, a specific program has therefore been initiated to deal with the lifetime management of the systems. The Kurchatov Institute has been given this task under a separate contract. The program provides a structured way of assuring the performance and integrity of all components (including the guard force) in the upgraded system, with regular (annual) testing schemes. The program allows seeing if everything is in place and allows for the identification of special needs like additional training, maintenance or spare parts, and for finding any problems associated with software or hardware or procedures. The lifetime management may be seen as a quantifiable way of addressing long-term risk reduction and sustainability of measures put in place.

Moreover, the structured follow-up may underpin the sense of sincerity and commitment to the joint cooperation. By and large, the U.S. provides full funding for three years of operation of the additional assessment program at each upgraded facility. After this period, the Russians will have to begin providing funds themselves.

Future challenges and steps ahead

Given the successful implementation of the naval MPC&A-program and the remaining challenges in fissile material security upgrades, *expansion* seems to be a key term for the future: The *scope* of the naval MPC&A-cooperation could be extended, and for the U.S.-Russian MPC&A-cooperation in general, the naval MPC&A-*approach* could be aggrandized.

Expanding the *scope* of naval MPC&A-cooperation

Despite the indisputable naval MPC&A-successes, there are both "unfinished business" and room for further improvements in the cooperation with the Russian Navy. As the naval facilities are not subjected to any form of independent supervision or licensing requirements, the long-term quality and sustainability of the measures put in place is hard to evaluate and protect. The introduced system lifetime management program is definitively a step in the right direction, but at the same time there may be a risk that the highly pragmatic U.S. approach is neglecting Russian laws, regulations and supervision and licensing activities and thus possibly undermining the long-term security goals of all parties.

None of the security systems installed are likely to meet U.S. domestic MPC&A-standards, due to the need to keep up the pace and budgetary constraints in the program.

The installed accounting systems for the fresh fuel have been developed without access to any classified Russian fuel information, making its performance uncertain.[55] Moreover, the guard force is an integral, yet novel and still poorly understood component in the MPC&A-system in need of more attention. Thus, an independent review of the overall integrity of the integrated systems put in place may be highly desirable.

Spent naval fuel may contain both plutonium and HEU and may constitute a proliferation risk. In particular, naval fuel with low burn-up and extended cooling periods potentially provide a feasible path for would-be-proliferations, both states and sub-national groups.[56] Currently, the narrow U.S. MPC&A-mandate excludes all of this kind of material from any kind of security upgrades. Irradiated Russian naval nuclear fuel remains highly enriched,[57] and taking into account its actual cooling time, continues to pose a threat from a proliferation standpoint.[58] This threat will only increase with time.

Moreover, while all the fresh fuel in the Northern region owned by the Russian Navy is said to have been consolidated into one building and protected, there have been no independent studies verifying this. Back in 1996, the number of storage facilities to be covered was not known,[59] and anecdotal reports indicate the presence of fresh fuel dumps along the Kola-peninsula as back-up depots for crisis. The new and expanded Site 49 storage for fresh fuel is reportedly already full. Thus, there may be a risk that the Russian Navy has failed to include all sites prone for upgrading. U.S. teams have not visited the old storages, where the fresh fuel was kept prior to the consolidation, to verify that no fresh fuel is left behind. Again, an independent review analysis may therefore be highly desirable to increase confidence in system performances and coverage. Such an overall, independent assessment should also be of interest to the Russian Navy as it is likely to boost security and possibly strengthen the prospects of expanded U.S. funding.

The inclusion of nuclear weapon sites in the naval MPC&A-program is an important and particularly gratifying development. The Russian Navy has indicated that it would like improved security systems installed at other locations for nuclear weapons. As of January 2001, however, the Russian Navy had not identified additional sites.[60] This ought to be done as soon as possible, again to secure future funds and prudent long-term planning.

Finally, the close working relations established and the fuel consolidation at centralized storage facilities creates a sound basis for part of an overall Russian HEU accounting exercise. The naval MPC&A may therefore act as a springboard to increased transparency and possibly future non-intrusive verification measures on the highly sensitive fuel cycles.[61]

Expanding the *approach* of naval MPC&A-cooperation

Russia and the United States have come a long way in their nuclear security cooperation. Yet, as mentioned in the introduction the majority and probably the most challenging parts of the MPC&A-upgrades remain in other parts of the cooperative protection of weapon-usable material in Russia. Several calls have thus been made for the need to revitalize and restore the U.S.-Russian non-proliferation cooperation.[62] In this regard, there seems to be a particular need for a review of the cooperative security programs to assess strengths, weaknesses, successes and failures. The focus should be on identifying lessons learned and determining how to use this knowledge to solve current and future problems.[63]

The pragmatic, coherent and flexible step-wise approach for the initial naval MPC&A-upgrades has provided a highly efficient way of solving access problems and to accomplishing results on sensitive facilities. The naval MPC&A may therefore provide an important "case-study" for fruitful working approaches at other sensitive facilities in the Russian nuclear weapon complex. Currently, however, unusual cooperative nuclear security program approaches are not held up to scrutiny except on a piecemeal or even accidental basis, since there is not a regular discussion of standards of policy implementation.[64]

Ideally, the naval MPC&A-experiences could be shared in a joint overarching U.S.-Russian technical committee overseeing the MPC&A-program, and distributed to other MPC&A-

personnel through seminars and even informal working-guidelines communicating expectations on how to achieve program objectives. Policymakers and bureaucrats could be invited to workshops and given briefings on different MPC&A-working approaches. Not only could this help identifying best practices and prominent differences in safety and security cultures. It may also create a foundation for extended and coordinated threat reduction support from a wider range of contributors, e.g. European actors who also have a self-interest in seeing all the MPC&A-programs sustained and strengthened. The naval MPC&A-experiences could, moreover, be fed into the on-going access discussions and negotiations between the Russian and American parties to better figure out what kind of access is needed for what and to what end.

At the early stages of the U.S.-Russian MPC&A-cooperation, a joint Steering Group dealt with overall planning and discussions, and developed a joint plan for the MPC&A-activities (including a section on the flexible assurances approach). This coordinating group was eliminated in the fall of 1995, i.e. after internal discussions on the Russian side about who should be in charge of the group. One option could be to revive this group, while making sure that its composition meets the desired criteria of all parties involved. A twofold approach could even be considered, with a U.S.-Russian MPC&A Steering Group dealing with the policy aspects and coordination of MPC&A-activities, and an equivalent joint Technical Coordinating MPC&A Group. The latter group could, based on the naval MPC&A-approach, identify and further optimize technical approaches that have been fruitful and that have been considered sufficient and appropriate in the past cooperation.

Conclusion

The results of the naval upgrades confirm that U.S. and Russian experts working together in a spirit of mutual respect and partnership can find their common language and, by combining their best ideas and efforts, can significantly reduce the risks of nuclear proliferation by improving systems of nuclear material protection, control, and accounting.[65] As evidenced by the naval MPC&A-program, a flexible and less adversarial cooperative approach is likely to avoid many of the current problems other parts of the MPC&-program are facing, and will thus be more suitable for providing the long-term goals of sustained nuclear security all parties are looking for.

In recent years, bureaucratic factors have hampered the effective implementation of U.S. non-proliferation policies in Russia.[66] Sustainability is normally coined as a "Russian issue", where long-term nuclear security (only) depends on the cooperative programs' ability to overcome deteriorating effects due to organizational, structural, technological, and cultural factors.[67] As things now stand, however, there seem to be a need to also address the importance of "sustaining" sound MPC&A-policies and approaches. It may be hard to rebuild the cooperation if it is somehow destroyed and the benefits of maintaining the novel U.S.-Russian working relationships seem obvious.

With the expansion to naval nuclear weapon security upgrades and increased U.S. and Russian federal interest in the project, further changes of the "rules of the game" may be deemed necessary on both sides to follow the developments even more closely. If so, much care should be given to avoid any creation of new (procedural) difficulties. The future of U.S.-Russian naval security upgrades, and the MPC&A-program in general, may strongly depend on how well a series of trade-offs related to progress vs. strict oversight and control are balanced.

Acknowledgements

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[1] The mission of the U.S. MPC&A program is to reduce the threat of nuclear proliferation and nuclear terrorism by rapidly improving the security of all weapons-usable nuclear material in forms other than nuclear weapons in Russia, the NIS [Newly Independent States], and the Baltics. See MPC&A Program Guidelines, *www.nap.edu/html/nwm_russia/appendices.html#e.*

[2] Oleg Bukharin, Mattew Bunn and Ken N. Luongo. *Renewing the Partnership. Recommendations for Accelerated Action To Secure Nuclear Material In the Former Soviet Union*. Princeton University: Russian American Nuclear Security Advisory Council, 2000.

[3] Vladimir Sukhoruchkin et al., "United States – Russian Laboratory-To-Laboratory Cooperation on Protection, Control, and Accounting for Naval Nuclear Materials", proceedings of the 37th Annual Meeting of the Institute of Nuclear Material Management, 1996.
[4] GAO 2001, p.3.
[5] Laura Holgate, "From Islands to Continents: Filling the Ocean in U.S.-Russian Cooperative Programs", paper presented at the eleventh annual international arms control Conference, April 20-22, 2001, Albuquerque, New Mexico.
[6] The idea of assurances is not new. It dates back to mid 1994, in the U.S. Russian Lab-to-Lab program.
[7] United States General Accounting Office, Nuclear Nonproliferation: Security of Russia's Nuclear Material Improving; Further Enhancements Needed, GAO-01-312, February 2001, p.8.
[8] It is worth noticing that due to the current Russian economic hardship, the Russian naval nuclear fleets are at an all time low in terms of operation and readiness. Yet to increase security, the Russian Navy has chosen to engage in activities resulting in increased transparency on their nuclear propulsion programs.
[9] United States General Accounting Office, Nuclear Nonproliferation, p.32.
[10] According to the United States General Accounting Office, Nuclear Nonproliferation, p.32, the U.S. team has visited seven naval nuclear weapon sites as of February 2001. However, US team members were visiting additional sites during the spring of 2001.
[11] Robert Kuckuck, Acting Principal Deputy Administrator for NNSA, in his Opening Plenary Address of the 42nd Annual Meeting of the Institute of Nuclear Material Management, Indian Wells, Californua, July 15-19, 2001.
[12] For an overview of the programs, see William Hoehn and Christopher Fieck, "U.S.-Former Soviet Union Cooperative Security Programs", Arms Control Today, January/February 2001. For a discussion about the programs, see Leonard S. Spector, "Strategic Planning for U.S. Nonproliferation Activities in Russia", in Michael Baretta (ed.), *WMD Threats 2001: Critical Choices for the Bush Administration*, Monterey Nonproliferation Strategy Group, Center for Nonproliferation Studies, Monterey Institute of International Affairs, Occasional Paper No.6, p.38.
[13] Leonard S. Spector, "Missing the Forest for the Trees: U.S. Non-Proliferation Programs for Russia", Arms Control Today, June 2001, p.6.
[14] Mark Hibbs, "Czech Find May Be Re-Enriched Repu[???] to Naval Fuel or Research Reactors", Nuclear fuel, Vol.20, No.1, 1995, p.12.
[15] Jill Tatko and Tamara Robinson, "Russia: Northern Fleet Overview", on the web at *cns.miis.edu/cns/projects/nisnp/naval/nucflt/norflt/norflovr.htm*. Created April 1998 and updated: February 1999.
[16] Oleg Bukharin and William Potter, "Potatoes were Guarded Better," The Bulletin of the Atomic Scientists, May-June, 1995, p.50.
[17] Russian American Nuclear Security Advisory Council, "Renewing the Partnership: Recommendations for Accelerated Action to Secure" Nuclear Material in the Former Soviet Union, Ransac Report August 2000, p.60.
[18] Under this program, Russian fresh naval fuel is consolidated into two central facilities, one for the Northern Fleet and one for the Pacific Fleet: Site 49 at Severomorsk for the Northern Fleet and Site 34 Primorye for the Pacific Fleet.
[19] Clay J. Moltz and Tamara C. Robinson, "Dismantling Russia's Nuclear Subs: New Challenges to Non-Proliferation", Arms Control Today, June 1999, *www.armscontrol.org/ACT/jun99/subjun99.htm*.
[20] Gary Tittemore et al. "Cooperative MPC&A Enhancements at Russian Navy Sites", proceedings of the Institute of Nuclear Material Management 42nd Annual Meeting, 2001.
[21] See H. Smith et al., "US-Russian Collaboration in MPC&A Enhancements at the Elekrostal Uranium fuel-fabrication plant", LA-UR-97-2613: CONF-90744, Los Alamos National Laboratory 1997, proceedings of the Institute of Nuclear Material Management 38th Annual Meeting, 1997. *www.osti.gov/servlets/purl/ 548848-5nufMA/webviewable/*.
[22] Transportation systems were to be delivered to the Northern Fleet in October 1998, and to the Pacific Fleet in February/March 1999. David Lambert et al., "Upgrades to the Russian Navy's Consolidated Storage Locations and Fuel Transfer Ships", proceedings of the Institute of Nuclear Material Management 39th Annual Meeting, 1998.
[23] Vladimir Sukhoruchkin et al., "United States – Russian laboratory-to-laboratory cooperation on protection, control, and accounting for naval nuclear materials", proceedings of the 37th Annual Meeting of the Institute of Nuclear Material Management, 1996.
[24] Vladimir M. Shmelev et. al., "Russian Navy Fresh Fuel Training", proceedings of the 39th Annual Meeting of the Institute of Nuclear Materials Management, 1998.
[25] The Russian Navy's nuclear program originated from the Department of Ship Propulsion Reactors at the Kurchatov Institute. The ties to the naval reactor propulsion continue to be strong, through e.g. criticality calculations, naval reactor R&D, and training of sailors in reactor physics.
[26] Building 116, which contains HEU, served both as a test and a demonstration site for the U.S.-Russian cooperative security upgrades.
[27] Department of Energy Nuclear Material Security Task Force, "United States/Former Soviet Union. Program of Cooperation on Nuclear Material Protection, Control and Accounting", December 1996, p.L-L-7.
[28] Vladimir Sukhoruchkin et al., "United States – Russian laboratory-to-laboratory cooperation on protection, control, and accounting for naval nuclear materials", proceedings of the 37th Annual Meeting of the Institute of Nuclear Material Management, 1996.
[29] The Russian Federation Navy's Commander- in-chief, ADM Feliks Nikolaevich Gromov, visited Washington, D.C., April 4 through 8 1995, and had i.a. meetings with Secretary of Defense William Perry, Chairman of the Joint Chiefs of Staff GEN John Shalikashvili, Commandant of the Marine Corps GEN Carl Mundy and other senior U.S. Naval officers and Defense officials. *www.chinfo.navy.mil/navpalib/news/navnews/nns95/nns95017.txt*.
[30] From R. Lee, "Recent Trends in Nuclear Smuggling" in P. Williams, ed., in *Russian Organized Crime: The New Threat?* (London: Frank Cass, 1996), p.118-119, with minor additions.
[31] Vladimir Shmelev et. al., "Russian Navy Fresh Fuel MPC&A Training", proceedings of the 39th Annual Meeting of the Institute of Nuclear Materials Management, 1998.
[32] Clay J. Moltz, "Russian Submarine Dismantlement", p.80.
[33] Kenneth B. Sheely, "New Strategic Directions in the MPC&A Program", proceedings of the 40th Annual Meeting of the Institute of Nuclear Materials Management, 1999. On the web at *www.nn.doe.gov/mpca/text/t-broch/t-ksbpaper.htm*.
[34] Generally, the same set of approaches and tools will be used for the security upgrades at the weapons installations as for the fuel sites, in a somewhat more stringent manner: a vulnerability assessment will be performed and based on this, the system will be designed with the necessary and integrated security components: alarms, detectors, barriers and means o of communication.
[35] Under the agreement, technical assistance may be rendered for "Improving physical protection at nuclear fuel storage facilities of the Russian Navy Pacific and Northern fleets ashore and afloat", and for "creating systems of accounting, control and physical protection of nuclear materials at nuclear submarine bases as well as Russian Federation Navy enterprises. An English version of the agreement may be found at *cns.miis.edu/db/nisprofs/russia/fulltext/doe_mpca/doe2000/mpca00en.htm*.
[36] This program has been initiated under the Cooperative Threat Reduction (CTR) program (which also the DOE

MPC&A program grew out of) and the implementing arm on the U.S. side is the Defense Threat Reduction Agency, DTRA.
[37] With some exceptions, the DOD tests all its equipment on designated testing sites in Russia prior to being applied.
[38] United States General Accounting Office, Nuclear Nonproliferation, p.40.
[39] A somewhat related set of assessment criteria can be found in John M. Shields and William C. Potter, "Cooperative Assistance. Lessons Learned and Directions for the Future," in John M. Shields and William C. Potter, Dismantling the Cold War. U.S. and NIS Perspectives on the Nunn-Lugar Cooperative Threat Reduction Program, CSIA Studies in International Security (Cambridge, MIT Press, 1997), pp.386-405.
[40] Vladimir Sukhoruchkin, oral presentation given at the Institute of Nuclear Material Management 42nd Annual Meeting, July 16, 2001.
[41] According to himself, director of Los Alamos National Laboratory from 1986 to 1997, Siegfried S. Hecker, would always emphasize that much of the success of the initial Lab-to-Lab program was indeed due to the trust and friendship that the U.S. side has been able to develop with the Russian nuclear scientists. Los Alamos Science, "Russian-American Collaborations to Reduce the Nuclear Danger", Los Alamos National Laboratory, Number 24, 1996, p.3.
[42] In the early days of the cooperation, it was all "Buy American" and all working tasks were assigned to the U.S. national laboratories.
[43] One example is the August 2000 agreement should be view upon as an "umbrella-agreement" and the strongest so far, covering past cooperative actions, and the fact that the scope of work has been expanded to include security upgrades at naval nuclear weapon facilities.
[44] Including documents on a federal level (e.g. laws, orders, and different requirements) and on Navy level (including MPC&A-regulatory rules). Department of Energy, "Partnership for Nuclear Security: United States/Former Soviet union Program of Cooperation on Nuclear Material Protection, Control, and Accounting", September 1998.
[45] Russian American Nuclear Security Advisory Council, Renewing the Partnership", p.60 and David Lambert et al., "Upgrades to the Russian Navy's Consolidated Storage Locations and Fuel Transfer Ships, proceedings of the 39th Annual Meeting of the Institute of Nuclear Materials Management, 1998.
[46] United States General Accounting Office, Nuclear Nonproliferation", p.34.
[47] Department of Energy Press Release, "Secretary Richardson hails completed security upgrades at ceremony in Russian Far East", US R-00-226, September 1, 2000, on the web at *energy.gov/HQPress/releases00/seppr/pr00226.htm*.
[48] John Brook Wolfsthal, Cristina-Astrid Chuen, Emily E. Daughty (eds.) "Nuclear Status Report", number 6, June 2001. Monterey Institute of International Affairs and the Carnegie Endowment for International Peace, p.134.
[49] Ibid., p.146.
[50] United States General Accounting Office, Nuclear Nonproliferation", p.34.
[51] Ibid., p.8, n.6.
[52] GAO 2001.
[53] The Ministry owns e.g. Sevmash production facility, where most of the Russian nuclear submarines are produced. The Russian Navy provides it own forces to protect naval bases All the contact with the FSB have gone through the Russian Navy and there has been no direct interaction with the FSB in the program.
[54] Vladimir M. Shmelev et al., "Russian Navy Fresh Fuel MPC&A Training", proceedings of the Institute of Nuclear Material Management 40th Annual Meeting, 1999. The paper include i.a. an overview of the course curriculums.
[55] Russians provided the inputs themselves and the parties only agreed upon the structure of the database. The Kurchatov Institute served as a main contractor for the project.
[56] Ole Reistad and Knut Gussgard, "Russian Spent Marine Fuel as a Global Security Risk", paper presented at the International Conference on Security of Material Measures to Prevent, Intercept and Respond to Illicit Uses of Nuclear Material and Radioactive Sources, International Atomic Energy Agency (IAEA), Stockholm, Sweden, 7-11 May, 2001.
[57] Nikolai Yurasov, Rear Admiral of the Russian Federation Navy, "Modernization of Navy Nuclear Fuel Storage Protection, proceedings of the Institute of Nuclear Material Management 40th Annual Meeting, 1999.
[58] David Lambert et al., "Upgrades to the Russian Navy's Consolidated Storage Locations and Fuel Transfer Ships:", proceedings of the Institute of Nuclear Material Management 39th Annual Meeting, 1998.
[59] Vladimir Sukhoruchkin et al., "United States – Russian laboratory-to-laboratory cooperation on protection, control, and accounting for naval nuclear materials", proceedings of the Institute of Nuclear Material Management 37th Annual Meeting, 1996.
[60] United States General Accounting Office, Nuclear Nonproliferation", p.33.
[61] For example, nuclear material containers equipped with computerized bar codes and tamper-resistant seals that could allow site personnel to perform quick inventories of the material and to raise confidence that non of the containers were tampered with. United States General Accounting Office, Nuclear Nonproliferation", p.12. For other non-intrusive transparency options on naval fuel, see Morten Bremer Maerli, "Transparency Technologies and the Naval Nuclear Fuel Cycle", proceedings of the 42nd Annual Meeting of the Institute of Nuclear Material Management, 2001.
[62] William Potter and Sergui Batsanov, "U.S-Russian Relations: Practical Measures to Restore Nuclear Non-Proliferation Cooperation", in Michael Baretta (ed.), *WMD Threats 2001: Critical Choices for the Bush Administration*, Monterey Nonproliferation Strategy Group, Center for Nonproliferation Studies, Monterey Institute of International Affairs, Occasional Paper No.6, pp.13-16, and Kenneth N. Loungo, "The Uncertain Future of U.S.-Russian Cooperative Security", *Arms Control Today*, January/February 2001.
[63] Kenneth N. Loungo, "The Uncertain Future of U.S.-Russian Cooperative Security", *Arms Control Today*, January/February 2001.
[64] Rose Gottemoeller, "Bureaucratic Balkanization: The Need for a Functioning Interagency Process", in Michael Baretta (ed.), *WMD Threats 2001: Critical Choices for the Bush Administration*, Monterey Nonproliferation Strategy Group, Center for Nonproliferation Studies, Monterey Institute of International Affairs, Occasional Paper No.6, p.32.
[65] Based on the early prospects of the U.S.-Russian cooperation presented in Vladimir Sukhoruchkin et al., "United States – Russian Laboratory-To-Laboratory Cooperation on Protection, Control, and Accounting for Naval Nuclear Materials", proceedings of the 37th Annual Meeting of the Institute of Nuclear Material Management, 1996.
[66] Rose Gottemoeller, "Bureaucratic Balkanization: The Need for a Functioning Interagency Process", in Michael Baretta (ed.), *WMD Threats 2001: Critical Choices for the Bush Administration*, Monterey Nonproliferation Strategy Group, Center for Nonproliferation Studies, Monterey Institute of International Affairs, Occasional Paper No.6, p.31.
[67] See e.g. Galya Balatsky, "Sustainability Issues. Russian Aspects", Los Alamos National Laboratory, Report no. LA-UR-01-1683.

Summary

Yaderny Kontrol (Nuclear Control)
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An international conference **"National and International Norms and Principles and Measures for Controlling Small Arms Proliferation: The View from Russia"** co-hosted by the PIR Center for Policy Studies and "Saferworld" (London) supported by the UK Department for International Development was held in Moscow in December 6-7th, 2001. Representatives of state institutions including the Foreign Ministry, Ministry of Defense, Ministry of Interior, Chief Military Prosecutor's Office, State Committee for Military Technical Cooperation, 'Rosoboronexport' State Company as well as non-governmental organizations and mass media took part in the conference. The participants strived for defining main problems connected to proliferation of Small Arms and articulating interests of Russia as one of major arms manufacturers and exporters.

Yevgeny Karmazin and **Vasily Lata** state in their assessment **"Some Aspects of International Legal Restriction of Anti-submarine Activities of States in the Current Period of Time"**, that "In the changed political situation (the absence of an evident enemy) favorable conditions are being arranged to solve a number of issues concerning the restriction of anti-submarine activities, and to establish generally-recognized rules of relations between ships, including submarines owned by navies of various states. These rules would allow a more precise definition of certain provisions of the International Maritime Law to ensure the safety of navies' activities and navigation.

That's why, taking into account the favorable political situation, Russia should be the initiator of the restriction on anti-submarine activities on a legal basis. Implementation of the restrictions would finally allow the elaboration of an international code of safe actions for military ships and aircraft, which should contain a number of conditions and limitations in anti-submarine activities."

An article by **Victor Yesin "On Military Reform in the Russian Federation"** contains views and appraisals concerning three problems. *First*, the issue, substance and necessity of the military reform being conducted in Russia. *Second*, the 2000-2001 decision to start reforming the military structure of the Russian Federation and their implementation. *Third*, approaches to the future (after 2005) reform of the military structure of the Russian Federation.

The formation of a new character of the state's military structure should be the final result of the military reform being carried out in Russia. Qualitative characteristics of the force component of the structure have to be in line with the armed forces of the foremost foreign states.

Tengiz Borisov and **Svetlana Kovaleva** in their article "The Disposal of Toxic Agents in the Bottom of Baltic and North Seas after World War II" claim that "the USA and Great Britain, as well as France, which joined them later on, were known to dump chemical warfare agents (CWA) in the North and Mediterranean Seas, in the Bay of Biscay and Hebrides areas until 1957-1965.

None of the above-mentioned countries is now considered to be legally liable for the dumping of chemical weapons, as far as there were no international agreements prohibiting such actions at that time (1945-1948). The first international agreement banning CWA sea dumping was signed only in 1972. A half a century ago nobody could foresee what would be the aftermath of the CWA sea dumping, but the scientific progresses in the last decades allow us to comprehend the danger hidden under the sheet of water of many-meters thick."