
Russia's Strategic Forces: Policy, Evolution and Prospects

In collaboration with the Atomic Energy Commission (CEA)

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**Security Studies
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Yury E. Fedorov

Proliferation papers

Though it has long been a concern for security experts, proliferation has truly become an important political issue over the last decade, marked simultaneously by the nuclearization of South Asia, the strengthening of international regimes (TNP, CW, MTCR) and the discovery of fraud and trafficking, the number and gravity of which have surprised observers and analysts alike (Iraq in 1991, North Korea, Libyan and Iranian programs or the A. Q. Khan Networks today).

To further the debate on complex issues that involve technical, regional and strategic aspects, Ifri's Security Department organizes each year, in collaboration with the Atomic Energy Commission (*Commissariat à l'énergie atomique*, CEA), a series of closed seminars dealing with WMD proliferation, disarmament and non proliferation. Generally held in English, these seminars take the form of presentation by an international expert. The *Proliferation Papers* is a collection, in the original version, of selected texts from these presentations.

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Introduction

The well-known 1980's joke, according to which the Soviet Union was nothing else than Upper Volta armed with nuclear missiles, was literally not quite correct. On top of its nuclear missiles, the former Soviet Union had a lot of nuclear and conventional submarines, combat aircrafts, tanks and other deadly weaponry. Yet it was true that the global ambitions of the high military commanders, the captains of the Soviet military-industrial complex, and the CPSU chiefs burdened the weak Soviet economy. In fact, military related expenditures, mounting up to 25 percent of the USSR's GDP, were among the most fundamental causes of the Soviet economic and political collapse. By the 1990s, the 'joke' had become even more credible. Yeltsin's Russia, affected by severe economic and social crises, kept only two attributes of its former superpower status: a seat on the UN Security Council and a substantial yet decreasing nuclear arsenal.

Russia's recent economic revival and political transformation, from the embryonic and chaotic democracy of Yeltsin into an authoritarian regime pillaring itself on the security sector and the post-Soviet bureaucracy, provoke critical questions in regards to the nation's future role in the emerging international system, primarily in the Eurasian region. Two of these questions are whether Russia will be able to maintain the world's second largest strategic nuclear arsenal, and how Russia's ruling class will view the roles and missions of nuclear weapons. To answer these questions it is necessary to assess (a) the governmental policy that determines the development of Russian nuclear force; (b) the structure and quantity of the current nuclear force; and (c) the capacity of missile and submarine-building industries.

Russia's Nuclear Doctrine: Doctrinal Views on Nuclear Weapons

The principal vectors of Russia's current nuclear policy are determined by two official doctrinal documents, both of which were approved by President Putin in 2000 and which illustrate Russia's views on the use of nuclear weapons: The National Security Concept and The Military Doctrine. Since then, Russian foreign policy has changed dramatically. Despite some serious disagreements with the USA and other NATO member-states, the Kremlin's strategy aims to cooperate with the West in the area of security and, particularly, in the fight against international terrorism. At the same time, Russian military doctrine, including its nuclear element, has not evolved since the early days of 2000. This is apparent in the report "Topical Tasks of Development of the Armed Forces of the Russian Federation," which was unveiled by Defense Minister Sergey Ivanov on October 2, 2003, at the meeting of Russia's top military commanders, high-rank officials, and other notables¹. The report provides some essential details to the understanding of Russia's current views on nuclear weapons.

The aforementioned documents all reiterate a few basic principles of nuclear policy that were originally formulated in Russia in the early 1990s. They include the so called "negative nuclear guarantees", saying that Russia will not use its nuclear weapons against non-nuclear weapon states that are parties to the NPT, if they have no allied commitments to nuclear-weapon states and do not act together with nuclear-weapon states against Russia or Russia's allies.

Presently, nuclear weapons are regarded as a deterrent vis-à-vis both nuclear and large-scale conventional aggression against Russia and its allies. Central to this doctrine is the idea that Russia's nuclear arsenal should be sufficient to inflict 'pre-set damage' to any aggressor under any circumstances. For instance, the National Security Concept notes that Russia "should possess nuclear forces capable of inflicting pre-set damage to any aggressor – a state or a coalition of states – under any circumstances"².

¹ Topical Tasks of the Development of the Armed Forces of the Russian Federation (Aktualniye Zadachi Razvitiya Vooruzhennykh Sil Rossiiskoy Federatzii), Ministry of Defense of the Russian Federation, October 2003.

² "National Security Concept of the Russian Federation", approved by the Decree N 24 of the President of the Russian Federation on January 10, 2000, available at <http://www.mid.ru>

Yet despite their perceivable similarities, the documents differ in their articulation of one of the most important elements of nuclear doctrine: “a nuclear threshold,” namely the conditions under which Russia would use nuclear weapons.

2000 National Security Concept	2000 Military Doctrine
Russia may use “all means available to it, including nuclear weapons if necessary, to repel armed aggression if all other crisis management measures have been exhausted or turned out to be inefficient” ³ .	“The Russian Federation maintains the right to use nuclear weapons in response to the use of nuclear weapons or other WMD against Russia or its allies, as well as in response to large-scale conventional aggression in situations critical to Russian national security” ⁴ .

The formula proposed by the 2000 National Security Concept outlines a rather wide set of occasions for the possible use of nuclear weapons. Partly, the ambiguity of the document results from the language used by its authors. The Concept does not define the crucial terms ‘crisis’ and ‘crisis management’ and fails to set any criteria for efficiency or non-efficiency of ‘crisis management measures’. Moreover, the absence of these definitions enables Russia to regard measures as ‘exhausted’ or ‘inefficient’ at almost any stage of a military confrontation.

Conversely, the formula proposed by the 2000 Military Doctrine narrows the spectrum of conditions under which Russia would use nuclear weapons. Yet, while the Military Doctrine establishes clearer boundaries for the employment of nuclear weapons, the text remains largely ambiguous. For example, there is no clear definition of a ‘situation critical for the national security,’ and thus the term remains open to different interpretations. Whether Russia would use its nuclear weapons if one of its allies (for example, Belarus or Armenia) were under attack by WMD or faced with large-scale conventional aggression is also not specified. Moreover, the term WMD includes not only nuclear but also chemical and biological weapons, and the aforementioned formula may imply that Russia would use nukes against a small-scale use of chemical weapons in a local conflict involving one of its allies. Finally, the very fact that two documents approved nearly simultaneously have different provisions concerning the principal component of nuclear strategy seems strange.

Apart from these details, the documents confirm Russia’s willingness to use nuclear weapons against large-scale conventional aggression and are to some extent reminiscent of NATO’s logic of nuclear deterrence typical of the Cold War. One may conclude that the ambiguity surrounding the doctrines

³ Ibid.

⁴ Sergey Sokut, “A Balkan Scenario Has Been Stopped”, *Nazavisimaya gazeta*, June 24, 1999.

derives from the desire to preserve freedom of maneuver (including the freedom to choose particular nuclear weapons) if the military situation deteriorates. Thus, Russian official documents postulate, albeit indirectly, the possibility of a limited nuclear war.

Building upon this analysis, the "Topical Tasks..." postulates two objectives for nuclear weapons: deterrence of an attack against Russia; and de-escalation of a conflict in case deterrence fails.

Unlike the Cold War notion of deterrence, which focused on full-scale strategic nuclear attacks, today's Russian military sees the main threats to national security coming from limited attacks, mainly of the type exemplified by Kosovo in 1999, and also from a so-called "pressure by force"⁵. In both cases Russia may use its nuclear arsenal to deter such threats. The "Topical Tasks..." asserts: "The main goal of the Russian Federation's policy in the area of strategic deterrence is to rule out any type of pressure by force and aggression against Russia or its allies and, in the case that aggression takes place, to guarantee the defense of sovereignty, territorial integrity and other vital national interests of Russia or its allies"⁶.

In the same document, de-escalation and, implicitly, deterrence of limited conflicts is thought to be assured by Russia's ability to inflict a precisely calculated damage – 'a pre-set damage' as it was called - to the attacking party so as to convince it of the futility of attacking Russia. The "Topical Tasks ..." defines "pre-set damage" as "damage, subjectively unacceptable to the enemy, which exceeds the benefits the aggressor expects to gain as a result of the use of military force"⁷.

Thus, the "Topical Tasks..." affirms what the former two documents also suggest : the Russian military acknowledges limited nuclear strikes as a possibility, including first use of nuclear weapons in a way that will not automatically escalate to a large-scale nuclear war. There is some evidence that such limited strikes could be made by strategic arms.

A. Nuclear Exercises

Similar conclusions can be drawn from the analysis of large-scale command and staff exercises that have been performed in Russia since 1999. The exercise "The West-99" took place in June 1999 immediately after NATO's operation in Yugoslavia. The scenario of the exercise reflected the views of the Russian military at the time, views that were predominantly shaped by the results of the war in Kosovo. According to the set-up of the exercise, NATO

⁵ This term presumes using force or threatening of using military force against Russia to compel it to make political concessions.

⁶ Topical Tasks ..., P.42.

⁷ Ibid., P.43.

forces launched a massive air and missile non-nuclear strike against Belarus and Kaliningrad oblast. Russian-Belarusian forces could not stop the escalation or repel the aggression. Under these circumstances, Russia decided to make a demonstrative limited nuclear strike by strategic bombers against targets in the deep rear of the enemy⁸.

Another command and staff exercise that took place in early Autumn 2002, demonstrates comparable intent. Independent experts believe that during these exercises Russian strategic nuclear forces imitated not a demonstrative but rather a massive nuclear strike⁹. A more recent example of this type can be found in the staff-command exercise conducted in January 2004. During the maneuver, Russian strategic forces simultaneously used all three elements of the strategic triad. The scenario of this exercise, as Russian mass-media noted, was to a great extent evocative of Russia's largest nuclear exercise, which took place in 1982, and was called "a seven-hour nuclear war"¹⁰.

Thus, these exercises reflect the views of the military leadership and indicate Russia's readiness to use strategic weapons for demonstrative strikes, also known as a form of limited nuclear war, as well as for massive strikes.

B. Nuclear Weapons as Compensation for Declining Conventional Forces

Russian military and civilian experts mostly agree that Russia's conventional forces are not able and will not be able in the foreseeable future to ensure reliable national security. In consequence, the role of nuclear weapons in Russian strategic thinking increases in importance. Colonel-General Victor Yesin, then the Head of the Military Department in the Security Council of Russia, maintained in early 2000: "In a large-scale war, Russia will never (and this is scientifically forecasted, regardless of economic growth) be able to resist such organizations as NATO with only conventional weapons. It will not be able to repel the massive conventional aggression on the part of this bloc. This accounts for our emphasis on the use of nuclear weapons to ensure Russia's security from external threats"¹¹

By and large, the current Russian views on nuclear weapons presume that Russia needs enough delivery vehicles and warheads; firstly to make limited or large scale nuclear attacks in a first-use mode with the purpose of

⁸ Sergey Sokut, "A Balkan Scenario Has Been Stopped", *Nazavisimoye Gazeta*, June 24, 1999.

⁹ Sergey Sokut, "Through Nuclear Sight", *Nazavisimoye Voennoye Obozreniye*, N37, October 18-24, 2002, P 6

¹⁰ Ivan Safronov, "Russia Plays Nuclear War", *Kommersant*, January 30, 2004, P. 4.

¹¹ See: Colonel-General Victor Yesin's Interview to bimonthly "Yaderny Kontrol", *Yaderny Kontrol*, N 2, Vol. 6, March-April 2000, P. 33.

deescalating an armed conflict; secondly to retain a rather massive nuclear arsenal that will deter (or prevent) a possible retaliation strike from the target of Russia's demonstration strike.

Russia's Nuclear Weapons: From 1991 to 2004

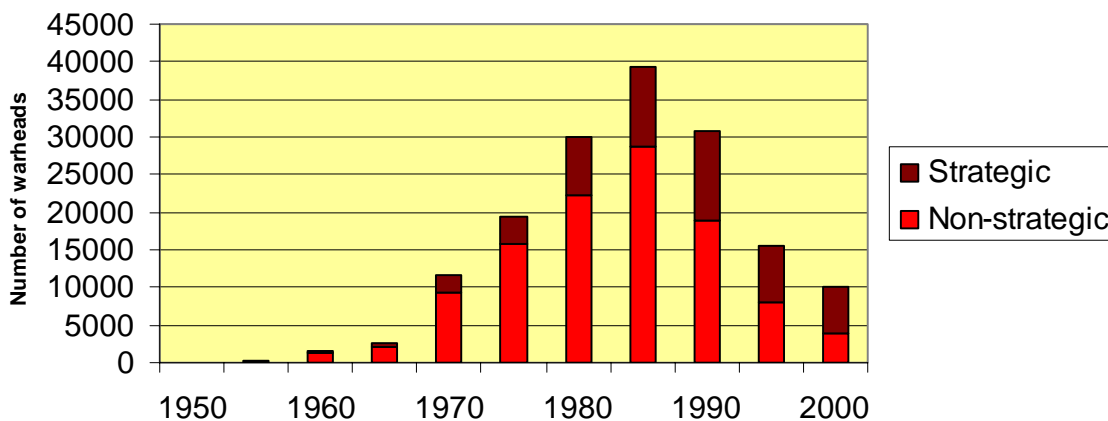
A. Soviet Nuclear Heritage

Soviet nuclear assets reached their peak in the latter part of the 1980s. At that time, the total number of nuclear warheads amounted to about 40 thousand pieces, of which more than 10 thousand were deployed on strategic delivery means: intercontinental ballistic missiles (ICBM), submarine-launched ballistic missiles (SLBM), and strategic bombers. The amount of strategic warheads continued growing until 1989 when it reached its maximum around 12 thousand weapons. Yet, by the early 1990s, due to major reductions in substrategic nuclear weapons, the total volume of the Soviet nuclear arsenal had decreased by about 10 thousand warheads. When the USSR and the USA first exchanged official data on their strategic weapons in the September of 1990, the total size of the Soviet strategic nuclear force accounted for little more than 10 thousand warheads¹².

¹² According to the *START-I* accounting rules

Diagram 1

The Soviet/Russian Nuclear Force, 1950-2000 ¹³



Thus, just before the demise of the Soviet Union, the nation's strategic assets were commensurate to the American strategic nuclear arsenals. Yet, unlike the USA (as well as France and Great Britain), the core of the Soviet strategic nuclear force was comprised of land-based ICBMs.

This particular characteristic of Russia's arsenal was a result of the technological successes of the former Soviet design bureaus and industries. They had been able to create Soviet-built ICBMs with high alertness and battle readiness, relatively high accuracy, warhead yield, reliability and flexibility of management system both in peacetime and in war. Moreover, these ICBMs had relatively low costs of deployment, maintenance and delivery of nuclear warheads on targets. In contrast to the high-level of capability and function of the land-based weapons, the sea-based and air-based elements of the Soviet strategic triad, including most SLBMs, were much weaker and less-advanced than the corresponding American systems. Geopolitical and geographic factors also contributed to the preferred development of naval strategic forces in the USA. All this led to major structural differences between Soviet and American strategic triads.

¹³ Natural Resources Defense Council, Table of Soviet/Russian Nuclear Warheads, <http://www.nrdg.org/nuclear/nudb/datab10.asp>

Table 1

Soviet and American Strategic Triads

Nuclear		The USA	The USSR
ICBMs	Launchers	1000	1398
	Warheads	2450	6612
SLBMs	Launchers	672	940
	Warheads	5760	2804
Bombers	Launchers	574	162
	Warheads	2353	855
Total	Launchers	2246	2500
	Warheads	10563	10271

Source: *START accountable*, as of September 1, 1990¹⁴

Although the size of the Soviet strategic nuclear force was approximately equal to the US strategic arsenal, its structural characteristics were much weaker than those of its rival. The principal defect in the Soviet nuclear assets was that they consisted of too many types of ICBMs, nuclear submarines armed with ballistic missiles (SSBN), and SLBMs. For instance, in 1990, the Soviet Strategic Rocket Force (SRF) was armed with seven types of ICBMs; and the Soviet Navy was armed with seven types of SSBNs, six of which were equipped with their own specific types of SLBM¹⁵. Soviet policy that determined the development of the nuclear force was largely to blame for this structural inefficiency. The policy, which included decisions made by the Politburo, was motivated mainly by the technological factors mentioned above rather than by economic or even military expediencies. In the end, there was a "cost-is-no-object" approach to nuclear assets and a large-scale overspending of material and financial resources as well as substantial difficulties while maintaining and operating the strategic forces. Some of the commissioned systems were unsuccessful, thus dissipating Soviet technological and industrial resources.

After the demise of the USSR, strategic forces became a source of major problems for Russia's military command and political leadership, as the resources allocated for maintaining and developing these forces were drastically cut down.

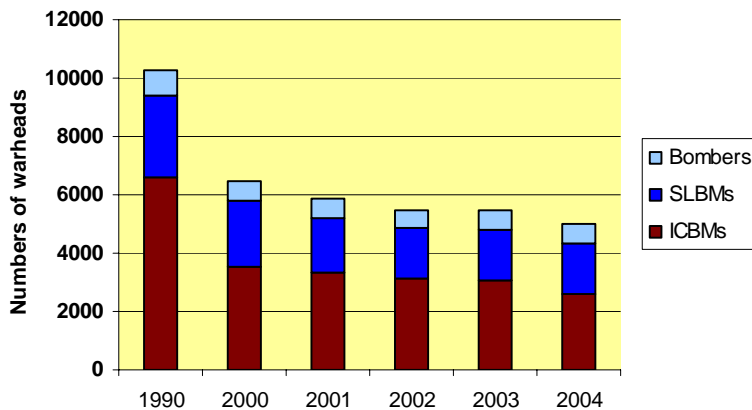
¹⁴ US Department of State, Fact Sheet, *START: data base*, August 1, 1991, <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/strtdata/html>

¹⁵ US Department of State, Fact Sheet, *START: data base*, August 1, 1991, <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/strtdata/html>

B. Decommissioning of out-of-date strategic systems

Since the fall of the USSR and up to the beginning of 2004, the total number of Russian strategic nuclear warheads has decreased by half. While the air and sea components of strategic triad declined, the most impressive reduction is seen in the number of ICBMs, which fell by factor of 2.5. The SLBM only fell by factor of 1.6 and air-based strategic warheads by factor of 1.4¹⁶

Diagram 2
Soviet/Russian Strategic Nuclear Force,
1990-2004¹⁷



During the 1990's, the principal reductions in the former Soviet strategic force were caused by four main reasons.

1) A few dozen SS-25 ICBMs from Byelorussia and some heavy bombers from Ukraine were moved to Russia. At the same time 280 ICBMs SS-18, SS-19 and SS-24 carrying 2280 warheads that were stationed in

¹⁶ Factually, the total number of Russian strategic weapons was substantially lower because about one third of SSBNs were non-operational. Technically, however, they have not met the terms of decommissioned platforms as defined by the START-I Treaty.

¹⁷ US Department of State. Fact Sheets, *START: data base*, August 1, 1991, <http://www.state.gov/www/global/armsfactsheet/wmd/nuclear/start1/strtdata/html>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2004, <http://www.state.gov/t/ac/rfs/fs/2004/30816.html>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2003, <http://www.state.gov/t/ac/rfs/fs/2003/18973.html>
START Aggregate Numbers of Strategic Offensive Arms, October 1, 2002, <http://www.state.gov/t/ac/rfs/fs/9075.htm>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2001, <http://www.state.gov/t/ac/rfs/fs/7394.htm>
START I Aggregate Numbers of Strategic Offensive Arms, October 1, 2000, <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/startagr.htm>

Ukraine and Kazakhstan were decommissioned, deactivated and eliminated (in accordance of START-I rules).

2) 413 outmoded ICBMs SS-11, SS-13, and SS-17 carrying about 550 warheads were decommissioned, deactivated and eliminated in Russia.

3) 37 out of date submarines, Yankee I, Delta I, Delta II, and a few Delta III, altogether equipped with about 620 warheads were decommissioned and eliminated in Russia.

4) About 60 heavy bombers Tu-95 that were not equipped with air-launched cruise missiles (ALCM) were decommissioned and eliminated.

Thus, by the late 1990's, the Russian strategic force had gotten rid of its out-of-date delivery vehicles; and Russia's military command and political leadership were preparing to make crucial decisions about the future profile of the national strategic force. It was a controversial subject within the top echelons of the Russian military and military-industrial complex.

Other Reasons for the Downsizing of Russia's Nuclear Arsenal:

The decommissioning of out-of-date systems was important, but it was only one of the few reasons for downsizing Russia's nuclear assets. From 1990 to 1992, reductions in the Soviet nuclear arsenal coincided with the withdrawal of tactical nuclear weapons from the former Soviet republics and from Central and Eastern Europe to Russia.

The drastic fall of Russian economic and industrial capabilities was also of serious consequence. Since 1991 Russia has not had the necessary resources to maintain the previous nuclear force of 10 thousand warheads on strategic delivery vehicles and the 20 thousand sub-strategic nuclear weapons.

In the 1990s, the size of the Russian Armed Forces was divided by three. This downsizing led to reductions in the tactical nuclear arsenal, as its volume was directly related to the numerical strength and structure of the Armed Forces. Moreover, in light of a quickly changing combat environment, nuclear artillery projectiles and mines posed a threat to one's own troops.

C. Debates over MIRVed ICBMs

Along with general strategic concepts and the parochial interests of a few factions of the military and certain industrialists, political decisions were largely dependent on agreements between Russia and the USA. In particular, the START-II Treaty signed in January 1993 prescribed the elimination of all MIRVed ICBMs. Left-wing political groups and several military commanders have insisted that MIRVed missiles SS-18 and SS-19 were the core foundation of Russia's deterrent, due to their ability to overcome prospective American ABM defense. Yet other knowledgeable experts, including some from the

military, insisted that elimination of MIRVed missiles would be the only rational way to structure strategic forces adequate for Russia's security needs at the beginning of the twenty-first century. Major-General Vladimir Dvorkin summarized their arguments in the following way.¹⁸

The SS-18 were produced in Ukraine; yet Ukraine is not permitted to manufacture these missiles any more due to its non-nuclear weapon status; the economic situation within Russia does not allow manufacturing of these missiles in Russia either.

Russia's MIRVed ICBMs could hardly be used for a retaliation strike because of their low survivability. These missiles are effective either as preemptive attack weapon or if used in a 'launch-on-warning' mode.

Existing Russian MIRVed ICBMs would inevitably be decommissioned because of the completion of their warranty lives; and also because they are not effective enough to penetrate a future American ABM defense (due to their lengthy boost phase and slow separation of warheads).

Because of economic reasons Russia would not be able to keep its strategic nuclear force at the level allowed by the START-I Treaty (that is 6 000 warheads), while the USA would be able to maintain 6 000 strategic warheads quite easily. In actuality, this means that the START-II Treaty restrains not Russian but rather American strategic nuclear capability, and its entering into force would increase the efficiency of Russia's response strike.

D. Decisions of the year 2000

In the early 1990s there was no clear understanding of national economic prospects in Russia, and this lack of understanding could be seen in the weapons program. The plan was to build a strong force of single-warhead missiles able to compensate for the MIRVed ICBMs that were to be decommissioned. Yet, later on, it became clear that this was beyond Russia's economic capacity. After intense debate within the Russian military in 2000, it was decided to reduce the number of strategic warheads to 1 500, of which about 800 were planned to be deployed on ICBMs, by the year 2010¹⁹. Moscow also proposed to conclude a new START-III Treaty that would establish the limit of 1 500 pieces on Russian and American strategic warheads by the year 2008²⁰. Many experts believed, however, that due to the elimination of the MIRVed ICBMs and the low production rate of a new single-

¹⁸ Vladimir Dvorkin, "Russia's Strategic Nuclear Forces After the USSR: Reforming & Prospects", In: Yury Fedorov & Bertil Nygren, *Russian Military Reform and Russia's New security Environment*, Swedish national Defense College, Stockholm, 2003, Pp. 118-119.

¹⁹ Andrey Korbut, "The Security Council Has Approved the Proposals of the General Staff", *Nezavisimaya gazeta*, August 15, 2000, P.3 (in Russian).

²⁰ Mikhail Khodarenok, "Kremlin's New Peace Initiative", *Nezavisimoye Voennoye Obozrenie*, N 43. – November 17-23, 2000, P. 1 (in Russian).

warhead "Topol-M" ICBM, the main share of Russia's strategic nuclear force would be composed of sea-launched ballistic missiles.

E. The Moscow Treaty on Strategic Offensive Reductions

The aforementioned policy was revised in the second half of 2002 as a result of America's withdrawal from the ABM Treaty and the signing of the Treaty on Strategic Offensive Reductions (SOR Treaty or SORT) in Moscow on May 24, 2002. This legally binding agreement requires both Russia and the USA to limit their strategic nuclear warheads to 1,700-2,200 pieces by December 31, 2012. The new Treaty does not abrogate the START-I Treaty's comprehensive verification regime that provides transparency and predictability regarding implementation of the new Treaty. In fact, the SOR Treaty allows Russia to develop its strategic nuclear forces in accordance to its own views on national security and economic conditions. Assessing the Treaty, Major-General Vladimir Dvorkin wrote:

"Despite the exclusion of operationally deployed warheads from the final text of the Moscow Treaty (due to Russia's stand), both Russia and the USA are able to store non-deployed warheads and to put them once again on the previously "unloaded" delivery vehicles. For Russia, however, this is a rather theoretical possibility, as it must eliminate the number of delivery vehicles that have expired their warranty. At the same time, the fact that the Moscow Treaty only establishes the maximum limit of the strategic warheads, and poses no other restrictions on the strategic nuclear forces, is favorable for Russia. Russia can prolong the operational life of its "heavy" ICBMs (according to the START-II Treaty they were to be eliminated by 2007) and Russia can also equip the single-warhead "Topol-M" missiles with MIRVs, which was also prohibited by the START-II Treaty"²¹.

F. Decisions made in 2002

In the year 2002 the principal directives in the development of Russia's strategic nuclear force were revised. The total number of strategic warheads that Russia would have at the beginning of the next decade was designated

²¹ Vladimir Dvorkin, "Russia's Strategic Nuclear Forces After the USSR: Reforming & Prospects", In: Yury Fedorov & Bertil Nygren, *Russian Military Reform and Russia's New security Environment*, Swedish National Defense College, Stockholm, 2003, P.124.

within the limits of the SOR Treaty, i.e. between 1 700 and 2 200 pieces. It was also decided that maintenance of the land-based MIRVed ICBMs would be of high priority for Russian military command and that the warranty lives of these missiles would be prolonged as far as possible. Speaking on December 15, 2002, the Commander in Chief of the SRF, Colonel-General Nikolay Solovtsov described the agenda for the future development of his service in the following way²²:

According to the decision of the Security Council of the Russian Federation, approved by President Putin, no ICBM will be decommissioned until full completion of its warranty life.

An essential task stipulated by the State Armament Program is to prolong the warranty lives of the existent ICBMs up to 25-27, perhaps even 30 years.

A heavy emphasis will be placed on silo-based ICBMs as they have maximal capacity to surmount ABM defense.

Heavy ICBMs SS-18 will be in active service until 2016-2020.

In the more distant future, the majority of prospective ICBMs groupings will be composed of ICBMs "Topol-M" both silo- and mobile based.

A decision on the deployment of mobile based "Topol-M" will be made in 2006.

As some financial resources will be redistributed for the prolongation of old ICBMs, the rate of "Topol-M" commissioning will be lower than previously planned.

The State Armament Program resolved to buy 6 - 10 "Topol-M"s per year.

The Armed Forces development plans to activate one "Topol-M" regiment in 2-2.5 years.

The State Armament Program presumes to study the possibility of equipping "Topol-M" with three warheads.

One of three SRF divisions of rail-based SS-24 ICBMs will remain in active service.

Thus, the decisions made in 2002 meant a radical reformulation of the very concept of development in the SRF. Before, due to a number of serious technical reasons, it was taken for granted that a prolongation of the warranty lives of the existent ICBMs would be either impossible or highly risky.

²² Sergey Sokut, "Nuclear-missile Circling", *Nezavisimoye Voennoye Obozreniye*, N2, January 24, 2003, http://nvo.ng.ru/concepts/2003-01-24/4_defense.html

Prospects of Strategic Triad

A. Russia's Strategic Rocket Forces

By January 31, 2004, the Russian SRF had 2 622 START-I accountable warheads on 639 ICBMs of five different types. The lion's share of strategic warheads have been deployed on rather old MIRVed ICBMs, commissioned before the crash of the Soviet Union. The oldest of them are an earlier modification of SS-18 (known in Russia as R 36 M UTKh) commissioned in 1979-1983, and SS-19 commissioned between 1980 and 1984²³.

²³ See: P.L. Podvig, "Strategic Armaments of Russia" (Strategicheskoye Yadernoye Vooruzheniye Rossii), Moscow, Izdat, 1998, Pp. 190-191; 194.

Table 2
Russian SRF in 2000 and 2004
(as of July 1, 2000 and January 31, 2004) ²⁴

	2000		2004	
	Launchers	Warheads	Launchers	Warheads
SS-18	180	1800	126	1260
SS-19	150	900	144	864
SS-24 (silo-based)	10	100	0	0
S-24 (rail-based)	36	360	15	150
SS-25 (Topol)	360	360	312	312
SS-27 (Topol-M)	20	20	36	36
Total	756	3540	639	2622

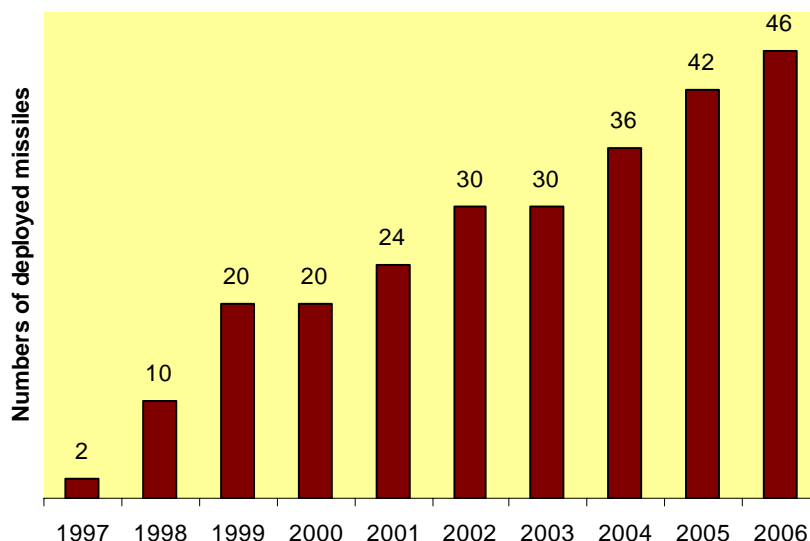
The “Topical Tasks ...” reveals that by 2007-2008 the SRF will consist of 10 divisions (reduced from the current 18). Primarily, these divisions will consist of old types of ICBMs, with extended service lives; gradually ‘prospective missile complexes²⁵’ will replace these ICBMs. Thus, further development of the Russian ICBM force depends on two principal factors: (a) the rate of production and deployment of the new missile “Topol-M”, and (b) the technical ability to keep old ICBMs in active service through the prolongation of their warranty lives.

²⁴ *START I Aggregate Numbers of Strategic Offensive Arms*, October 1, 2000. – <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/startagr.htm>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2004. – <http://www.state.gov/t/ac/rfs/fs/2004/30816.html>

²⁵ *Topical Tasks ...*, P. 44.

Diagram 3

Topol-M Deployment in 1997-2003 and Plans for 2004-2005 ²⁶



Notes:

1) For years 1997-1999 data as given at the end of December; for years 2000-2002 data as given on July 31; for year 2003 – as given on January 31, 2004; for years 2005-2006 as given at the very beginning of the year.

2) In December 2003 it was declared that in 2004 the Ministry of Defense would buy 6 Topol-Ms.

3) In October 2004 it was declared that in 2005 the Ministry of Defense would buy 4 Topol-Ms.

Thus, as Diagram 3 illustrates, deployment rate of “Topol-M”s is quite low; in 1997-2004 it was, on average, 4 – 6 pieces per year; and the same production rate is projected for the next two years. If such a deployment rate continues over the next 10 years, then Russia may have somewhere around

²⁶ US Department of State. Fact Sheets, *START: data base*, August 1, 1991, <http://www.state.gov/www/global/armsfactsheet/wmd/nuclear/start1/strtdata/html>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2004, <http://www.state.gov/t/ac/rfs/fs/2004/30816.html>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2003, <http://www.state.gov/t/ac/rfs/fs/2003/18973.html>
START Aggregate Numbers of Strategic Offensive Arms, October 1, 2002, <http://www.state.gov/t/ac/rfs/fs/9075.htm>
START Aggregate Numbers of Strategic Offensive Arms, April 1, 2001, <http://www.state.gov/t/ac/rfs/fs/7394.htm>
START I Aggregate Numbers of Strategic Offensive Arms, October 1, 2000, <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/startagr.htm>
Ivan Safronov “Russia Has More “Topols””, *Kommersant*, December 27, 2000.
Ivan Safronov, Konstantin Laptev, “The Government Has Modernized the Defense Order”, *Kommersant*, December 26, 2003.

one hundred modern missiles by the middle of the next decade. Of course, it is important to keep in mind that manufacturing costs of Topol-M production tend to grow. For instance, over the last few years the cost has increased by a factor of 3²⁷. According to current plans, after 2012 these missiles may be equipped with a few warheads. Also, at the end of September 2004, President Putin remarked that a new missile named "Bulava", equipped with 10 warheads, was under development for Russian Strategic Naval Force and could also be used for SRF²⁸.

As for the technical possibility of prolonging the service lives of Russian MIRVed ICBMs up to 25-30 years, an idea sometimes criticized by the Russian mass media, neither official advocates nor opponents of this policy provide any concrete data that could allow for independent assessments.

B. Russian Strategic Naval Force

By the beginning of 2004, the Russian sea-based strategic forces had about one thousand operational warheads stationed at 13 SSBNs and about 1,750 START-I accountable warheads at 20 SSBNs. The large gap between operational and accountable warheads was a result of the long-drawn-out time needed for Russians to fulfill all technical adjustments to meet the decommissioning criteria required by the START-I Treaty.

²⁷ Vladimir Mukhin, "The State Defense Order Will Be Approved Till the End of the Year", *Nezavisimoye Voennoye Obozrenie*, N 45, December 25, 2003, January 15, 2004, P.2.

²⁸ "Strengthening Country's a Might", *Krasnaya Zvezda*, September 28, 2004; P. 1.

Table 3
Russia's Strategic Naval Forces,
(as of January 31, 2004) ²⁹

	Operational		START-I accountable	
	Launchers	Warheads	Launchers	Warheads
Delta-II/SS-N-8 a)	0	0	1/12 b)	12
Delta-III/SS-N-18	5/80 b)	240	7/112	336
Delta-IV/SS-N-23	6/96	384	6/96	384
Typhoon/SS-N-20	2/40	400	5/100	1 000
Total	13/216	1 024	19/320	1 744

Notes:

- a) Type of SSBN/Type of SLBM
- b) Number of SSBN/number of SLBM

There are two critical factors determining the future development of Russia's strategic naval force: (a) the regularity of maintenance and repair services, and (b) the development of a new missile to be deployed on new SSBN of "Borey" type as well as on one or two older submarines of "Typhoon" type – if they stay in active service.

Most independent experts believe that all Delta III submarines will be decommissioned in the next few years as only one has passed through a planned session of repair and maintenance, which lasted approximately 10 years. Also, the warranty life of the SS-N-18 SLBM with which these submarines are equipped is currently shrinking may end before 2010³⁰.

"Typhoon" class submarines are in a similar situation. Only one of them, named "Dmitry Donskoy", was repaired and refitted quite recently; yet it was, as Russian mass-media reported, transformed into a testing platform for a new 10-warhead SLBM called "Bulava" that is under development at the Moscow

²⁹ START Aggregate Numbers of Strategic Offensive Arms, April 1, 2004, <http://www.state.gov/t/ac/rfs/fs/2004/30816.html>

The Military Balance, 2003-2004, The International Institute for Strategic Studies, Oxford University Press, 2003, P. 89.

³⁰ Mikhail Barabanov, "Prospects of Nuclear Submarines Building in the XXI Century", *Yaderny Kontrol*, N 2, Vol. 10, P. 143.

Institute of Thermal-equipment³¹. The other submarine of this class is armed with only half the normal quantity of SLBMs.

Thus, most probably by the end of the decade Russian Strategic Naval Force will consist of 6 Delta IV class submarines armed with a new deeply-modified version of the SS-N-23 SLBM called "Sineva"³², few – if any – "Typhoons", and some new SSBNs of "Borey" class. Current plans presume to build 6 of these submarines³³, three of them before 2010³⁴. However the very slow pace of construction of the first of these SSBN, the submarine called "Yury Dolgoruky", (it was laid down in 1996 and is still not in active service) fosters some doubts about the fulfillment of these plans.

C. Strategic Aviation

At the beginning of 2004 Russian strategic aviation consisted of 78 heavy bombers armed with 624 START-I accountable warheads. Today all of them are air-launched cruise missiles.

Table 4
Russia's Strategic Aviation
(as of July 1, 2000 and January 31, 2004)³⁵

	2000		2004	
	Launchers	Warheads	Launchers	Warheads
Bear (ALCM)	66	532	64	512
Bear (Non-ALCM)	4	4	0	0
Blackjack	15	120	14	112
Total	85	652	78	624

³¹ Vladimir Zaborsky, "A Blank Lifting of 'Bulava' Arm", *Nezavisimoye Voennoye Obozreniye*, N 23, June 25, July 1, 2004, P.6.

³² Vladimir Gundarov, "Country's Nuclear Trident", *Krasnaya zvezda*, August 14, 2004.

³³ "Nuclear Fleet is Growing", *Nezavisimoye Voennoye Obozrenie*, N 31, August 20-26, 2004, P.3.

³⁴ Vladimir Gundarov "A Panishing Mace of 'Dmitry Donskoy'", *Krasnaya zvezda*, September 25, 2004.

³⁵ *START Aggregate Numbers of Strategic Offensive Arms*, April 1, 2004, <http://www.state.gov/t/ac/rfs/fs/2004/30816.html>
START I Aggregate Numbers of Strategic Offensive Arms, October 1, 2000, <http://www.state.gov/www/global/arms/factsheet/wmd/nuclear/start1/startagr.htm>

The “Topical Tasks ...” emphasized a need for the modernization of the “Blackjack” (Tu-160) heavy bombers. It was said that these bombers should be able to carry new high-precision cruise missiles for both nuclear and conventional missions, and also gravity bombs to fulfill a variety of battle missions³⁶.

A few assessments have been made about Russia's evolving nuclear posture for the coming 10-15 years. Each of them is based on a particular set of assumptions with regard to the funding of different repair and maintenance works, and the production of new ballistic and cruise missiles and submarines. One of the most recent, detailed outlines of Russia's future strategic nuclear force was presented by Colonel-General Victor Yesin, the former head of the Military Department of the Security Council of Russia, and the present advisor to the Commander of Russia's Strategic Rocket Forces³⁷. Speaking to the Washington-based Carnegie Endowment for the International Peace, he noted that in 2012 Russia's strategic arsenal will consist of around 1900 deployed warheads. Its structure will change significantly from the current one.

Table 5

Russia's Strategic Nuclear Arsenal in 2012

	Launchers	Warheads	% of warheads
ICBM,	180	650-670	35
of which:			
SS-18	50	500	26
SS-25	40	40	2
SS-27 (Topol-M)	90	90	5
SSBN	9	700-720	38
Air-based	70	500-530	27
Total		1850-1920	100

Source: General Victor Assenal

³⁶ Topical Tasks ..., P. 44.

³⁷ Victor Yesin, Presentation at Carnegie Endowment for International Peace, A meeting with experts of the Institute for Applied International Research (IAIR), Moscow, Thursday, February 06, 2003, <http://www.carnegieendowment.org/events/index.cfm?fa=eventDetail&id=583>

As for Russian substrategic nuclear weapons, General Yesin mentioned Russia's plans to decrease its tactical stockpile to no more than 3000 weapons in the future. Of these, 60 percent will be air-based systems; 30 percent will be sea-based; and 10 percent will be surface-based. If this is true, then, in addition to the current 200 short-range SS-21 (Tochka) missiles³⁸, about 100 new Iskander tactical missiles with a range up to 300 kilometers are planned to be produced and deployed³⁹.

This information corresponds with assessments made by General Vladimir Dvorkin, who states that if current plans for repair works needed to maintain Russia's Delta-IV SSBNs are fulfilled, even partially and the new SSBN "Yury Dolgoruky" is commissioned, then Russian Naval Strategic Forces may have between 600 and 700 warheads³⁷.

There are also much more pessimistic assessments of the future of Russian missile assets. For instance, former Vice-Prime-minister in the Primakov's government and also the former head of the Soviet military-industrial complex Yury Maslyukov wrote that by the beginning of the next decade the Russian strategic force will be 8-10 times less numerous than today. According to him Russia will have 100-120 ICBM's "Topol-M", and 2-3 SSBNs carrying about 200-250 warheads, and 100-120 air-launched cruise missiles deployed on heavy bombers "Blackjack" (Tu-160)⁴⁰.

³⁸ *Military Balance 2003-2004*, IISS, 2003, Oxford University Press, P.90.

³⁹ *Nezavisimoe Voennoe Obozrenie*, N 40, November 14-20, 2003, P. 6.

³⁷ Vladimir Dvorkin, "Russia's Strategic Nuclear Forces After the USSR: Reforming & Prospects", In: Yury Fedorov & Bertil Nygren, *Russian Military Reform and Russia's New security Environment*, Swedish national Defense College, Stockholm, 2003, Pp.125-126.

⁴⁰ Yury Maslyukov, "A Right to Retaliate", *Voenna-promishlennii kurier*, N 7, October 22-28, 2003.

Conclusions

During most of the 1990s, it was planned to build the core of Russia's SRF on a new single-warhead ICBM "Topol-M"s; to decommission all old MIRVed ICBMs in accordance with the START-II deadlines; and to increase the share of the sea-based component of the strategic triad. The exact proportions of sea- and land-based strategic delivery vehicles were the focus of intense debates among different groups in the top echelons of the military command and the defense industry.

The recent decisions on the future development of Russia's strategic force were, in fact, a radical reversal from previous plans. Yet there remains a lack of clarity about warranty assurances of old Russian MIRVed ICBMs, and an uncertainty about resource allocation for production of new ICBMs and maintenance of older SSBNs. This prevents independent experts from making any certain conclusions regarding the future prospects of Russian strategic force.

The preservation of a large amount of land-based MIRVed ICBMs in Russia's strategic force poses once again the issue of the effect of silo-based MIRVed ICBM on strategic stability. Many military analysts believe that these missiles constitute a destabilizing factor as their vulnerability leads to the classic dilemma "to use or to loose". In a crisis situation a strong motivation may emerge to use such missiles first in course of preemptive attack or in launch-on-warning strike. At the same time, the bare possibility of a first use of silo-based MIRVed ICBMs in a crisis may produce a stabilizing effect. Increasing danger of a nuclear war may prevent escalation of political confrontation into armed conflict.