The structure and composition of Russia’s nuclear forces largely reflect the evolution of the force that was created by the Soviet Union during the cold war. Russia continues to maintain the strategic triad of land-based intercontinental missiles, submarines with sea-launched ballistic missiles, and long-range bombers. In addition, Russia has kept its arsenal of tactical nuclear weapons, which is believed to include weapons that could be deployed on submarines, short- and intermediate-range aircraft, and air-defence missiles.

Russia also maintains the infrastructure that was built to support operations of nuclear forces – an early-warning system that includes satellites and radars, and a command and control system that could allow the strategic forces to operate in the extreme conditions of a nuclear attack.

**Status of Russia’s nuclear forces**

According to the most recent New START data exchange, in September 2014 Russia had 528 operationally deployed strategic launchers that carried 1,643 nuclear warheads.1 The actual number of delivery systems and warheads in the strategic arsenal is somewhat higher, mostly because New START does not accurately account for warheads associated with strategic bombers. Overall, as of January 2015, Russia was estimated to have about 1,900 deployed warheads in its strategic arsenal. The total number of warheads associated with strategic launchers is estimated to be 2,300.2

The number of warheads associated with non-strategic delivery systems is somewhat harder to estimate, for Russia never disclosed information about its tactical nuclear forces. It is believed to have about 2,000 non-strategic warheads that could be considered operational.3 According to Russia’s official statements, all these warheads are consolidated at centralised storage facilities.4

In addition to warheads that are associated with operationally deployed strategic and non-strategic systems, Russia has a substantial number of warheads that are awaiting dismantlement. This category is estimated to include about 3,500 tactical warheads.5

These estimates suggest that Russia has a total arsenal of about 8,000 nuclear warheads. Non-deployed nuclear warheads and the warheads that are awaiting dismantlement are stored at centralized facilities managed by the 12th Main Directorate of the Ministry of Defence.6

Russia does not maintain a large stock of reserve inactive warheads that could be operationally deployed at a relatively short notice. Instead, it has traditionally relied on its capability to remanufacture warheads as necessary. It is estimated that Russia remanufactures about 200 warheads each year.7

The number of warheads associated with operationally deployed strategic and non-strategic systems is unlikely to change significantly, since the deployment of new systems in the course of strategic modernisation will be balanced by withdrawal of old warheads. The total number of warheads will probably decline in the coming years as Russia will continue its warhead dismantlement programme. The current dismantlement rate is believed to be about 400-500 warheads a year (this number includes warheads that are being remanufactured).8

Russia’s warhead manufacturing capacity is sometimes quoted as giving it a capability to quickly increase the number of deployed nuclear warheads. While theoretically some of this capability does exist, in practice the number of warheads that Russia could deploy is determined by the availability of delivery vehicles rather than warheads. This is particularly true for strategic weapons – the number of warheads that Russia declared as operationally deployed (1,643 in September 2014) – which is very close to the maximum number of warheads that Russia’s deployed missiles can carry, so any “surge capacity” that Russia may have is quite insignificant.

**Delivery systems**

Russia maintains the strategic nuclear triad that that was build during the Soviet years – land-based intercontinental ballistic missiles (ICBMs), strategic nuclear submarines with submarine-launched ballistic missiles (SLBMs), and long-range bombers.

**Land-based intercontinental missiles**

The Strategic Rocket Forces that operate the ICBM leg of the strategic triad historically has been the largest component of the Soviet and Russian strategic forces. It currently includes 305 operationally deployed ballistic missiles of five different types that carry about 1166 warheads.9

The oldest ICBMs in the force are liquid-fuel silo based missiles that carry multiple independently-targeted reentry vehicles (MIRV) – R-36M2 (Western designation SS-19) with ten warheads and UR-100NUTTH (SS-19) with six warheads. As of the early 2015, the Strategic Rocket Forces were estimated to have 46 R-36M2 missiles and about 60 missiles of the UR-100NUTTH type. These missiles carry about 820 warheads, about a half of all Russia’s operationally deployed strategic nuclear warheads. In addition, Russia has two types of single-warhead
Russia announced that it will begin development of the new "heavy" ICBM, which is known as Sarmat. This project is still on the early development stage, although the flight tests of the missile are expected to take place in 2017. Provided the development work is successful, the missile should be ready for deployment after 2020. Like the ICBM it is intended to replace, SS-18, Sarmat will probably carry ten warheads and will be deployed in the same silos.

As a result of this process, by 2020 Russia’s ICBM force will consist of about 46 R-36M2/SS-18 MIRVed silo-based missiles (which will be gradually replaced by Sarmat) and some 180 Topol-M and RS-24 Yars ICBM, deployed in silos and on road-mobile launchers. Some of the RS-24 missiles might be deployed on rail-mobile launchers – in 2014 Russia announced that it will begin development of the rail-mobile system, Barguzin. This composition of the force will allow Russia to maintain the size of the ICBM leg of the strategic triad at the level of about 1000 warheads through at least the mid-2020s. The Rocket Forces would therefore preserve their status as the key component of the strategic triad.

**Strategic submarines**

As of the beginning of 2015, Russia’s strategic submarine force included six Project 667BDRM (Delta IV) submarines, two submarines of the older Project 667BDR (Delta III) class, and three new Project 955 Borey submarines. Each submarine carries 16 SLBMs. Delta IV carries R-29RM missiles with four warheads each and Delta III carries R-29R missiles with three warheads. Borey submarines are built to carry new Bulava solid-propellant SLBMs with six warheads per missile. As of 2015, of the three new boats of this class, only one had a full complement of the missiles – because of the problems encountered by the Bulava missile in test flights the production schedule has slipped.

Overall, in the early 2015, Russia had an estimated 128 deployed SLBMs that were capable of carrying 512 nuclear warheads.

Submarines of the Delta III/Project 667BDR class are currently based at the Pacific fleet base Vilyuchinsk at the Kamchatka peninsula. In 2015 they will be joined by two new Project 955 Borey submarines.

Most of the Delta IV/Project 667BDRM submarines underwent an overhaul in the last decade or so and would probably be able to stay in service for additional 10-15 years. As part of the overhaul the submarines are receiving newly manufactured missiles of the R-29RM/SS-N-23 type. These missiles, known as Sineva, are essentially a moderate modification of the original liquid-fuel R-29RM missiles that submarines of this class were carrying before the overhaul. Russia has also tested a modification of the R-29RM Sineva SLBM that can carry up to ten warheads. This version of the missile, known as Liner, could be deployed on submarines alongside with the regular R-29RM Sineva missiles, increasing the number of SLBM warheads if necessary.

By 2015, Russia has accepted for service three Project 955 Borey submarines that will be equipped with the new Bulava SLBM. This is a significant milestone for the programme, which has experienced serious delays from the very beginning. The lead submarine of this class, Yuri Dolgorukiy, has joined the Northern Fleet. Two submarines that followed, Alexander Nevskiy and Vladimir Monomakh, will be based in the Pacific. Three more Borey submarines are currently under construction – Knyaz Vladimir (laid down in July 2012), Knyaz Oleg (July 2014), and Generalissimus Suvorov (December 2014). According to the original plan, the total of eight submarines of this class will be built by 2020. Each submarine will be equipped with 16 Bulava missiles that are projected to carry up to six warheads each.

Development of the Bulava missile encountered some technical problems – it failed in eight out of 12 flight tests conducted in 2005–2009. After a series of successful tests carried out in 2010–2011, the missile was being prepared for deployment when it failed again in a test conducted in September 2013, raising questions about the reliability of the missile. Despite these problems, the missile was eventually accepted for service and by the end of 2014 enough missiles had been produced to equip one submarine. Two submarines are expected to receive missiles in 2015.

The strategic fleet rearmament programme is unlikely to significantly increase the size of the SLBM leg of the
Strategic bombers

Strategic bombers traditionally played a secondary role in Soviet and then Russian nuclear postures. That role is unlikely to change in the future – there are no plans to do so. The modernisation programme that is currently underway is aimed primarily at maintaining the strategic bomber force in its current configuration and giving the bombers the capability to carry out conventional missions.

In 2015, Russia is estimated to have 66 heavy bombers – 11 Tu-160 aircraft and 55 turboprop Tu-95MS. Together, these bombers are capable of carrying more than 800 air-launched cruise missiles, although the actual number of cruise missiles that are available for deployment is probably somewhat smaller. Most open estimates assume that Russia allocates about 200 nuclear warheads to its bombers.15

Most of the currently operational bombers were built in the late 1980s, so they are currently undergoing overhaul to extend their service life. As part of this process, which is expected to take up to 15 years, Tu-160 aircraft receive an upgrade of their avionics, which is supposed to equip them for missions with conventional high-precision munitions. Tu-95MS bombers also receive a moderate upgrade, but it appears that they will continue to be assigned nuclear missions.16

Early warning and command and control

In addition to maintaining the full strategic triad, Russia has preserved key elements of the infrastructure that supports operations of strategic nuclear forces – the early-warning command and control systems. It also operates a “defence” system deployed around Moscow that is supposed to protect the capital from a limited missile attack.

The early-warning system is designed to include two tiers – a network of radars that could detect incoming missiles and a constellation of satellites that could provide early detection of missile launches.

In the last decade Russia has initiated an extensive programme to build a network of new early-warning radars. The new radars are replacing old ones that were built during the Soviet time. Most of them were located outside of Russia, complicating the operations of the early-warning system. By 2015, Russia discontinued the use of all but two early-warning radars that are not located in Russia. The last two radars – in Belarus and Kazakhstan – will eventually be replaced as well.

There are two types of new early warning radars that Russia has been deploying since the mid-2000s – Voronezh-M and Voronezh-DM. The first Voronezh-M radar was deployed in Lekhtusi (near St.-Petersburg) in 2006. Two radars of this type have been built in Mishelevka and three more are under construction – in Orsk, Vorkuta, and Olenevorsk.17 Two Voronezh-DM radars have been built in Armavir at the south of Russia and three more in Barnaul, Yeniseysk, and Kaliningrad.

While the modernisation of the radar network has been a largely successful programme, replacement of old early-warning satellites has encountered significant delay. The US-KS system had a capability to detect missile launches form the territory of the United States, US-KMO also provided some capability to see launches originated elsewhere.18 However, by 2015 Russia was left with no operational satellites in orbit.19

Russia has been working on a new space-based system, known as EKS, which will provide more reliable coverage of all areas of possible missile launches. The new system is expected to enter the flight test stage in 2015.20

The command and control system that provides communication between the central command authority and individual launchers has been undergoing almost continuous modernisation. The currently deployed system has been described as a “fifth-generation” system. According to the Russian military, this system provides the Strategic Rocket Forces not only with the capability to control individual launchers, but also with the flexible targeting capability.21

The missile “defence” system deployed around Moscow, known as A-135, includes the Don-2N battle-management radar in Pushkino and 68 short-range interceptors of the 53T6 (Gazelle) type, deployed in silos at five sites near Moscow. In the past, the system also included 32 long-range interceptors, but they have been withdrawn from the system. The interceptors are believed to be equipped with nuclear warheads. The system has only a limited capability against a ballistic missile attack. According to Soviet estimates made at the time the system was being built, A-135 is able to intercept one or two “modern ICBMs”.22

Fissile materials

Russia’s stock of weapon-grade materials is far larger than it would be necessary to support the current nuclear force. At the end of 2014 Russia was estimated to have about 128±8 tonnes of weapon-grade plutonium, of which 88 tonnes is either in weapons or available for military purposes. Russia’s stock of highly enriched uranium (HEU) was estimated to include about 670±120 tonnes of HEU. Of this amount, about 655 tonnes are available for weapons and for fueling naval, research, and civilian reactors.23
The total amount of weapon-grade plutonium produced in Russia is estimated to be 145±8 tonnes. About 17 tonnes have been used in nuclear tests or lost in waste or lost nuclear warheads.\textsuperscript{24} Russia shut down most of its plutonium production reactors in the early 1990s. Three reactors, however, continued to operate until 2008-2010, since they provided heat for nearby cities. About 15 tonnes of plutonium that have been produced by these reactors after September 1994 are covered by Russia’s pledge not to use it for military purposes. Also, Russia declared 25 tonnes of plutonium from its pre-1994 stock as excess to national security needs. This material is not available for military purposes as well, leaving the potential military stock of 88 tonnes.

The 25 tonnes of excess military plutonium and 9 tonnes of the plutonium produced after 1994 will be eliminated as part of Russia’s obligations under the US-Russian Plutonium Management and Disposition Agreement that was finalized in April 2010.\textsuperscript{25} The plutonium disposition programme in Russia will include elimination of the weapon-grade plutonium in fast reactors. Only one of these reactors, BN-600, is currently operational. The second one, BN-800, began initial operations in 2014. In order to begin the plutonium elimination activities, Russia is developing the technology to produce plutonium-containing fuel assemblies for the BN reactors and to build a facility that will manufacture the fuel.

In addition to the weapon-grade plutonium, as of the end of 2013 Russia had 51.9 tonnes of unirradiated separated civilian plutonium.\textsuperscript{26} Virtually all this material is stored at a dedicated storage facility at the RT-1 reprocessing plant at the Mayak Combine.

The Soviet Union stopped production of highly enriched uranium (HEU) in 1988. Before that it had produced about 1470±120 tonnes of 90% HEU equivalent. About 287 tonnes of HEU have been used in various applications, military as well as civilian.\textsuperscript{27} In addition to the weapons complex, among the largest users of HEU in Russia are the submarine fleet, civilian nuclear-powered ships, and the two tritium production reactors. Also, Russia operates more than 80 research reactors, critical and subcritical assemblies that use highly-enriched uranium.\textsuperscript{28} There were two major HEU elimination programmes in Russia – the US-Russian HEU-LEU deal, also known as the Megatons to Megawatts programme, and the Material Conversion and Consolidation project. The HEU-LEU programme blended down military-origin HEU to produce low-enriched uranium that is then used to fuel US nuclear reactors. The programme, which began in 1996, eliminated 500 tonnes of HEU by the end of 2013, when it was successfully completed. The Material Conversion and Consolidation project is also a joint US-Russian effort. It provides Russian research facilities with US financial assistance in order to eliminate their stocks of HEU by blending it down. It is estimated that as of 2015 the programme eliminated about 17 tonnes of HEU.

Most of the military nuclear material that is not in use is stored at one of the large storage facilities managed by the Rosatom State Corporation. These facilities are located in so-called closed cities – Ozersk, Seversk, Zheleznogorsk, Sarov, and Snezhinsk.\textsuperscript{29} The weapon-origin plutonium that Russia declared excess to its national security needs has been moved to the Fissile Material Storage Facility at Mayak, which Russia built with US assistance.

**Infrastructure**

The work on nuclear weapons development is the responsibility of nuclear weapon laboratories that are subordinated to the State Corporation Rosatom – the All-Russian Scientific Research Institute of Experimental Physics (VNIIEF) in Sarov (formerly Arzamas-16) and the All-Russian Institute of Technical Physics (VNIITF) in Snezhinsk (Chelyabinsk-70). The third laboratory, the All-Russian Institute of Automatics (VNIIA) in Moscow, is involved in weapon research that does not deal with fissile material components. The laboratories also take part in civilian research programs.

The weapon laboratories conduct research that allows them to maintain the current nuclear arsenal and develop new nuclear warheads. In particular, they developed warheads for new ballistic missiles that are introduced to active service – Sineva, Bulava, RS-24, and Liner. The new warheads are reportedly based on the designs that were tested before the end of nuclear testing in Russia. To support the weapon development process Russia conducts subcritical experiments at the nuclear test site at Novaya Zemlya and relies on computer models.

In addition to weapon development, Rosatom is responsible for all aspects of fissile material production and for storage of military-related nuclear material that is not used in weapons or in other military applications (e.g. fuel of naval reactors).

In the past, Rosatom operated plutonium production reactors at the Mayak Plant in Ózersk (Chelyabinsk-65), Siberian Chemical Combine in Seversk (Tomsk-7), and the Mining and Chemical Combine in Zheleznogorsk (Krasnoyarsk-26). All these reactors have been shut down. The chemical reprocessing plants that were extracting weapon-grade plutonium from spent fuel of production reactors have been either shut down or converted for non-military applications.

The Mayak Plant continues to operate two production reactors, Ruslan and Lyudmila, that were built to provide tritium for the weapon program. Since Russia has plenty of tritium from dismantled weapons, these reactors have been converted to the production of isotopes for civilian purposes. However, they maintain the capability to produce tritium if necessary.\textsuperscript{30}
Russia’s uranium enrichment complex includes the Urals Electrochemical Plant in Novouralsk (Sverdlovsk-44), Siberian Chemical Combine in Seversk (Tomsk-7), Electrochemical Plant in Zelenogorsk (Krasnoyarsk-45), and Electrolyzing Chemical Combine in Angarsk. All these facilities operate gaseous centrifuges to enrich uranium. With the exception of Angarsk, all of them were involved in production of HEU for the military programme, which was discontinued in 1988. Today, these enrichment plants produce low-enriched uranium for civilian purposes. The plant in Zelenogorsk is also producing some highly-enriched uranium for non-military applications.

Russia operates two major warhead assembly and dismantlement facilities – the Electrochemical Instrument Combine in Lesnoy (Sverdlovsk-45) and the Instrument Building Plant in Trekhgorny (Zlatoust-36). The plant in Lesnoy has the capability to produce and handle HEU components for nuclear weapons. Plutonium components of nuclear charges are handled at the metallurgical facilities of the Mayak Plant, which can also produce HEU components. The weapon laboratories, VNIIEF and VNITF, also have small-scale material handling and warhead assembly and disassembly facilities. All these facilities provide Russia with the capability to maintain its current active nuclear arsenal by providing the necessary remanufacturing capability.

Development of land-based and sea-based ballistic missiles is mostly concentrated in two design bureaus that act as primary contractors for a strategic system. The Moscow Institute of Thermal Technology (MIT) is the lead design organization for solid-propellant ballistic missiles. It has developed Topol (SS-25), Topol-M (SS-27), and RS-24 Yars ICBMs and the Bulava SLBM. It is also working on a range of other projects. The second design bureau, the Makeyev State Missile Center in Miass, is the lead developer of submarine-launched ballistic missiles. The Center designed the R-29R and R-29RM SLBMs that are currently deployed on Project 667BDR and Project 667BDRM submarines. It also designed the new modifications of the R-29RM missile– Sineva and Liner. In 2011, the Makeyev design bureau was awarded a contract to develop a new liquid-fuel silo-based ICBM, known as Sarmat.

All solid-propellant ballistic missiles are produced at the Votkinsk Plant. There are three types of strategic missiles that are currently in production – Topol-M and its RS-24 Yars modification, and Bulava. Liquid-fuel missiles are produced at the Krasnoyarsk Machine-Building Plant. Today, the plant is manufacturing Sineva and Liner modifications of the R-29RM missile. It will be producing the Sarmat ICBM as well.

The lead design organisation responsible for development of strategic submarines is the Central Design Bureau for Marine Engineering “Rubin” in St.-Petersburg. This design bureau developed all ballistic missile submarines of the Russian Navy – Project 667BD, Project 667BDRM, and Project 955. The only class of ballistic missile submarines that is currently in production is Project 995 Borey (and its modifications). These submarines are built at the Sevmash ship-building plant in Severodvinsk.

Strategic bombers that are currently in service – Tu-95MS and Tu-160 – were developed by the Tupolev design bureau, which remains the leading developer of long-range bomber aircraft. As of 2011, no new aircraft are being produced. However, some planes are undergoing modernisation at the Kazan Aviation Plant (Tu-160) or at the Taganrog Aviation Plant (Tu-95MS).

**Modernisation**

The Russian government has not published a full account of specific strategic weapons modernisation programmes or their cost. Nevertheless, the publicly available information allows one to outline the key elements of the strategic modernisation effort.

Rearmament of the ICBM leg of the strategic triad concentrates on deployment of multiple-warhead RS-24 Yars missiles. These ICBMs will replace the currently deployed Topol (SS-25) and, to some extent, UR-100NUTTH (SS-19) missiles. Being a multiple-warhead missile, RS-24 allows Russia to keep the number of deployed warheads at the relatively high level without the need to produce a large number of missiles. At the same time, if future arms control agreements would require it, Russia could quickly reduce the number of deployed warheads without decommissioning its ICBMs.

In addition to the RS-24 deployment, Russia is working on a number of other ICBM projects. In 2011 the government made a decision to begin development of a new multiple-warhead liquid-fuel ICBM, Sarmat. The new missile is likely to be ready for deployment in 2018, although the scale of deployment will be limited – 46 missiles. Another new ICBM, RS-26, is developed by the Moscow Institute of Thermal Technology. While this missile is an ICBM for the purposes of New START, it is believed to be an intermediate-range missile based on RS-24 Yars. Another project related to the RS-24 Yars missile is the plan to build a rail-mobile system, Barguzin. This system is expected to include an RS-24 ICBM.

At this point, there are no plans to extend modernisation of the strategic fleet beyond the planned construction of eight Project 955 submarines. Depending on the progress with construction of new submarines the six older ships of the Project 667BDRM class might stay in service longer than previously planned, probably until 2020. If so, they will likely receive the Liner modification of the R-29RM SLBM, which could carry up to ten warheads, allowing the navy to maintain the number of warheads in the sea-based leg of the strategic triad at the level of 400–500 warheads in the event of delay with the construction of Project 955 submarines.
As far as the strategic aviation is concerned, in the next few years Russia will continue an overhaul of its current strategic bomber fleet. At the same time, it started development of a new-generation strategic bomber, known as a PAK DA (Advanced Aviation System for the Long-Range Aviation). It is expected that the new aircraft will conduct its first flight in 2013 and enter service in 2023.36

Russia’s strategic modernisation plans demonstrate that it is determined to maintain its strategic nuclear forces and to preserve the parity with the United States in the number of warheads and delivery systems. Arms control and disarmament efforts could change these plans and result in a smaller force, but it is likely that most of the reductions would be done by reducing the number of deployed warheads rather than by eliminating strategic launchers.

**Economics**

Modernisation of the strategic forces is part of the broader rearmament programme that was expected to spend 19 trillion rubles (about $600 billion at the exchange rate at the time) on various military systems in 2011–2020. About 10 percent of the total funds allocated for rearmament, or 1.9 trillion rubles, is being spent on the modernisation of the strategic forces.

Military spending is one of the largest spending categories in Russia’s federal budget. It has been largely protected from 10 percent across the board cuts that have affected other budget expenditures as a result of economic sanctions imposed on Russia in 2014 and the economic crisis caused by the fall of the oil price in 2014. Nevertheless, the military modernisation budget has come under pressure as well. In 2015 Russia was supposed to approve a new long-term rearmament programme. This programme, initially estimated to cost about 56 trillion rubles, was scaled down in 30 billion rubles. Then, as it was increasingly clear the budget may not support a program of this size, its approval was postponed until 2018.37

Financial constraints could affect the scale of strategic modernisation. Although Russia has managed to minimize the effects of the economic crisis of the 2008, its economy is heavily dependent on export of natural resources, so a fall in oil and gas prices has already forced the government to reconsider its spending priorities. The sanctions imposed on Russia in 2014 after the annexation of Crimea also have strong effect on the economic outlook. However, the rearmament effort appears to have strong support of the political leadership and the public, so significant cuts of the modernisation programme are unlikely. This situation may change if the political environment in Russia would allow an open discussion of government spending priorities and the role of nuclear weapons in the national security policy, but so far this discussion has been very limited.

**International law and doctrine**

The issues related to the legitimacy of nuclear weapons under international law are rarely discussed in Russia. The official National Security Doctrine, approved in 2009, calls for maintaining “strategic stability” and lists strengthening Russia’s strategic nuclear forces as one of the priorities of the national defence policy. The military doctrine adopted in 2010 also emphasizes the role of Russia’s nuclear forces in maintaining “strategic stability” in the world.38 In 2014, Russia adopted a revised version of the doctrine, which left the key elements of the 2010 document in place.

Although the official documents do not question Russia’s right to possess nuclear weapons, they also recognise its responsibilities as a nuclear-armed state party to the nuclear Non-Proliferation Treaty (NPT). The national security doctrine recognises the goal of building a world free of nuclear weapons as part of overall progress toward “strategic stability” with equal security for all. High priority is also given to nuclear disarmament and to nuclear non-proliferation.

In its military doctrine, Russia reserves the right to use nuclear weapons “in response to a use of nuclear or other weapons of mass destruction against her and (or) her allies, and in a case of an aggression against her with conventional weapons that would put in danger the very existence of the state.” While this policy assumes the right to a first use of nuclear weapons, the range of scenarios in which Russia would consider using nuclear weapons is somewhat limited. It should be noted that early versions of the military doctrine apparently included an option of preventive use of nuclear weapons, which was later removed from the document.39

As part of the bilateral US-Russian nuclear arms reduction process, Russia has substantially reduced its strategic nuclear arsenal. Both countries consider these reductions to be their contribution toward the goals of article VI of the NPT. In addition, Russia periodically reiterates its commitment to the US-Russian Presidential Initiatives of 1992, in which the two countries declared their intent to substantially reduce their arsenals of non-strategic nuclear weapons. Russia concentrated all its non-strategic nuclear weapons at centralised storage facilities on its national territory.40 However, Russia has been reluctant to discuss legally-binding measures related to its tactical nuclear weapons before the United States removes its nuclear weapons from Europe.

**Public discourse**

Public opinion in Russia tends to support the nuclear status of the country – according to a poll conducted in 2006, 76 percent of all the respondents believed that Russia “needs nuclear weapons.” More than half of the population consider nuclear weapons to be the main guarantee of the security of the country and about 30 percent of respondents believe that nuclear weapons play
an important, although not a decisive, role. No similar research of public attitudes toward nuclear weapons has been conducted recently, but it is unlikely that they changed in a significant way.

The public discussion of issues related to nuclear weapons reflects these attitudes – their role in providing for the security of the country is almost never questioned. To a large extent, the lack of critical assessment of the role of nuclear weapons is a result of the lack of an open and informed discussion of national security priorities and policies that would involve independent voices. While there are non-governmental research organisations that are involved in the discussion of defence policies, there are no independent public organisations that have nuclear weapons related issues on the agenda. Accordingly, the public discussion is focused largely on technical issues of US-Russian arms control negotiations and nuclear non-proliferation.

The strategic modernisation programme described above is also rarely criticized, despite its very substantial cost. The government has presented the programme as an essential element of the strategy that would allow Russia to maintain its nuclear arsenal and to preserve approximate parity with the United States. This strategy, in turn, has been described as the only way to preserve the sovereignty of the country and its status in international affairs. In general, public opinion in Russia tends to view favourably the efforts to support the military industry and introduce modern equipment to the armed forces. Government policy and public attitudes combine to ensure that the strategic modernization efforts undertaken by the Russian government will continue as one of the high-priority programmes that are unlikely to be affected by budgetary pressures.
Notes:


4. "[All Russian non-strategic nuclear weapons have been withdrawn from the territory of the former USSR to Russia and concentrated in the central storage facilities."


8. Ibid.

9. Russia has not made public its part of the New START data exchange, so these numbers are estimates based on the publicly available information. This estimate assumes that the composition of the Strategic Rocket Forces is as follows: R-36M2 - 46 missiles, UR-100NUTTH - 60, Topol - 72, Topol-M (silo and road-mobile) - 78, RS-24 - 49. "Strategic Rocket Forces - Russian Strategic Nuclear Forces," accessed 25 February 2015, http://russianforces.org/missiles/sarmat_tests.html.


12. This assumes that 50 R-36M2 or Sarmat missiles will carry 500 warheads, 78 Topol-Ms - 78 warheads, and about 100 RS-24 - 400 warheads.


20. Ibid.


