

THE MODERNIZATION OF THE RUSSIAN FEDERATION ARMY FORCE IN 2011

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Abstract

Russian Federation Army Forces continue their modernization in 2011. The new program stipulates the upgrade of about 11 percent of military equipment annually and will allow Russia to increase the percentage of modern weaponry to 70 percent by 2020. Russian defense will focus on the development of strategic nuclear forces, construction of over 100 military ships for Russian Navy. All air defense regiments in the Russian Armed Forces will be equipped with more advanced S-400 Triumph and Pantsir-S missile systems by 2020. Moscow's plans to modernize Russian strategic nuclear army do not contravene the newly-signed New START nuclear arms reduction treaty with the United States. The Ground Troops must have 30 percent modern equipment by 2015, and 70 percent by 2020.

Keywords: *Russian Federation army forces, military, weapon procurement, navy, ground force*

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Introduction

Russian Federation Army Forces continue their modernization in 2011. Russian Prime Minister Vladimir Putin stated the Russian Armed Forces will receive over 1,300 types of weaponry in line by a draft arms procurement program until 2020. More than 20 trillion rubles (\$640.7 billion) will be spent for weapons procurement, three times more than is allocated in the existing 2007-2015 program. The new program stipulates the upgrade of about 11 percent of military equipment annually and will allow Russia to increase the share of modern weaponry to 70 percent by 2020. Chief of the Russian General Staff Gen.

Nikolai Makarov said that the Russian state armaments procurement project until 2020 would be adjusted and would total 23 trillion rubles (\$785 billion) or 2 trillion rubles (\$68 billion) more than initially planned¹. Putin said that 4.7 trillion rubles (\$150.7 billion), or almost a quarter of the total budget, would be allocated to the modernization of the Russian Navy Force. According to the draft program, the Russian Armed Forces should receive more than 1,500 combat aircraft and about 200 air defense systems by 2020. Russia also plans to develop a unified air defense/missile defense network, to start the production of a fifth-generation fighter, and to develop a new strategic bomber during the same period² On the military side, the

Russian Ministry of Defense announced the purchase during 2011 of 36 strategic ballistic missiles (apparently including Bulava and Topol-M ICBMs), 20 aircraft-carried cruise missiles and the a total of 21 air-defense missile systems S-300V4, Buk-M2 and Tor-M³.

Russian Navy. Russian defense will focus on the modernization of strategic nuclear weapons, construction of over 100 military ships for Russian Navy, including construction of four originally French-made Mistral-class amphibious assault vessels, and the introduction into the Air Force of about 1,000 helicopters and 600 military planes, including fifth generation PAK-FA fighter [Russian military to receive 1,300 types of weaponry by 2020]. Russia has decided to buy Mistral amphibious assault ships from France because it would have taken at least 10 years to develop a similar Russian model to be built under license in Russia. A consortium which consisted of French DCNS and Russia's United Shipbuilding Corporation (USC) get a tender on the construction of four helicopter carriers for the Russian Navy in December 2010. Russia and France signed an intergovernmental agreement to jointly build the four ships on January 25. Under this agreement, the first Mistral-class ship, with a price tag of 720 million euros, is expected to be finished in late 2013-early 2014 and the second in late 2014-early 2015. Russia will build 20% of the first warship, 40% of the second and 80% of the last two, which will be built on Russian territory. Talks

¹ Russian military justifies purchase of Mistral ships
http://en.rian.ru/military_news/20110210/162543317.html accessed at November 1st, 2011

² Russian military set to upgrade bulk of weaponry by 2020

http://en.rian.ru/military_news/20100407/158469098.html accessed at november first 2011

³ <http://www.russianspaceweb.com/2011.html>

on the actual contract to build Mistral vessels are still underway. A Mistral-class ship is capable of carrying 16 helicopters, four landing ships, 70 armored vehicles, and 450 personnel⁴. Russia is planning to buy others military equipment from NATO member countries, such as samples of armored vehicles from Italy and elements of personal combat systems also from France⁵. Alexander Nevsky is the second of the Borey class nuclear submarines being built at Sevmash shipyard. The Yury Dolgoruky sub has completed sea trials and could be adopted by the Navy in 2011, while the Vladimir Monomakh, and Svyatitel Nikolai (Saint Nicholas) are in different stages of building. Russia is planning to build eight of these submarines by 2015 and equip them with Bulava submarine-launched ballistic missiles⁶.

Russian Ground Force. The Russian Ground Forces will start receiving a number of advanced weapons in 2011, which included modernized S-300V4 air defense missile systems and Tor-M2 short-range air defense systems, Buk-M2 medium-range air defense systems, and portable air defense systems. Information on the advanced S-300V4 system are still classified. According to some sources, it could be based on the S-300VM (SA-23

Gladiator) mobile air defense system⁷. The Almaz-Antey Concern S-300V4 is an more advanced mobile air defense missile system derived from the S-300VM, Western nick-named SA-23 Gladiator. The first missile system was handed over to the Russian Army during 2011. Specifications and other key aspects of the S-300V4 modernized air defense system also remain classified⁸. The Ground Forces will continue to receive Iskander-M (SS-26 Stone) new tactical ballistic missiles, new multiple-launch rocket systems, self-propelled guns, BTR-82A armored personnel carriers, and anti-tank missile systems⁹.

The Russian Defense Ministry is planning to buy about 120 Iskander-M tactical missile systems, Deputy Defense Minister Gen. Dmitry Bulgakov said. The Iskander-M system (NATO nick-named name SS-26 Stone) is a mobile theater missile system equipped with two solid-propellant single-stage 9M723K1 guided missiles with "quasi-ballistic" capability. The missiles have a action range of 400 km (250 miles) and could reportedly carry conventional and nuclear warheads. According to the Moscow Centre for Strategy and Technology Analysis, the Iskander-M system was combat-tested in the brief war against Georgia in August 2008, and it proved highly effective in destroying military targets and infrastructure. Russia also threatened to

⁴ Russian military justifies purchase of Mistral ships
http://en.rian.ru/military_news/20110210/162543317.html accessed at november first 2011]

⁵ Russia's military spending soars
<http://rt.com/news/military-budget-russia-2020/>

⁶ Russian military to receive 1,300 types of weaponry by 2020

⁷ Russian army to receive advanced weaponry in 2011

http://en.rian.ru/military_news/20110228/162790155.html accessed at november first 2011

⁸ http://www.deagel.com/Air-Defense-Systems/S-300V4_a000372006.aspx

⁹ Russian army to receive advanced weaponry in 2011
http://en.rian.ru/military_news/20110228/162790155.html accessed at november first 2011

deploy Iskander-M tactical missiles in its Kaliningrad area, which borders NATO members Poland and Lithuania, if the alliance placed elements of its proposed "missile shield" near the Russian borders¹⁰. In this year, two separate motor-rifle brigades of the Russian Land Forces will be supplied with about 210 new and modernized BTR-82A armoured personnel carriers.

General Bulgakov said, that this year troops will be supplied with almost 9,000 common to all arms motorcars of higher carrying capacity. "In 2011, 795 KamAZ and 2,000 Ural trucks are to be supplied. Besides, Vladimir Putin has adopted a decision on additionally purchasing 2,000 Ural and 4,000 of KamAZ trucks in 2011"¹¹.

Arms-expo.ru, *Lenta.ru*, and other media agencies put out brief items on Ground Troops' procurement. They indicated the Ground Troops will emphasize air defense, command and control, fire support, and BTRs and support vehicles (trucks). Ground Troops CINC General-Colonel Aleksandr Postnikov in Krasnaya zvezda told the Defense Ministry daily that the main feature of GOZ-2011 programme is the transition from the repair and modernization of existing systems to the purchase of new, modern ones to supply Ground Troops formations and units completely. First and foremost, according to the CINC, the

Ground Troops will have new digital communications equipment and tactical-level automated command and control systems (ASU), like Polyana-D4M1 for air defense brigades. He stated Ground Troops' Air Defense will also receive Buk-M2 and Buk-M3, modernized S-300V4 systems, short-range Tor-M2U(M) SAMs, and manportable Verba and Igla-S SAMs. Postnikov says they will continue equipping missile and artillery brigades with new MLRS, the Iskander-M, self-propelled Nona-SVK and Khosta guns, Khrisantema-S antitank missiles and Sprut-SD antitank guns. The Ground Troops CINC told he foresees purchases of a new modification of the BREM-K, BTR-82A armored recovery vehicles built on a BTR-80 base and BREM-L on a BMP-3 base, Tigr, Iveco, and Volk armored vehicles, and new KamAZ trucks from the Mustang series.

NBC defense (RKhBZ) troops will receive the heavy flamethrower system TOS-1A, RPO PDM-A thermobaric missiles with increased range of action and power, and VKR airborne radiological reconnaissance systems. Engineering units will have the newest water purification system on a KamAZ chassis (SKO-10/5). In the more longer term, Postnikov sees rearmament as one of his main issues, and he repeated President Medvedev's statement that the Ground Troops must have 30 percent modern equipment by 2015, and 70 percent by 2020. He laid special stress on having YeSU TZ into the troops. Postnikov's Glavkomat get a Concept for the Development of the Ground Troops Armament System to 2025 emphasizing

¹⁰ Defense News Russia

http://www.armyrecognition.com/august_2011_news_defense_army_military_industry_uk/russia_planning_to_buy_up_to_120_iskander-m_ss-26_stone_tactical_ballistic_missile_systems.html

¹¹ In 2011 two motor-rifle brigades to get 210 new BTR-82A-general.

<http://www.itar-tass.com/c154/196064.pdf>

standardization, modular construction, multi-functionality, and electronic compatibility across several general areas such as: armor and military vehicles, tube artillery and MLRS, SSMs, air defense, antitank systems, reconnaissance-information support, automated command and control, UAVs, communications, and soldier and close combat systems¹².

The Polyana Air Defense Automated Command and Control Post, developed and produced by the Russian company Radiozavod, is a automated system for controlling operations at the air defense brigade level. It is designed to give Automated Command and Control Processing (ACCP) in support of mission planning and operational control in a unique air defense zone. The system gathers target data, creates situational pictures and gives combat control information and commands in standardized format to associated components and firing units. Polyana can track about 500 objects simultaneously, displaying 255 at any given time (for example 120 airplanes/helicopters and 20 ballistic missiles). Automatic real time processing creates the situational display based on inputs as many as 14 separate sources. Connections are available for 3 radars, 6 control units (battery CPs of Air Defense Missile Systems), four cooperating CPs and 1 superior CP. The system is operated from 12 Autonomous, Automated Work Stations (AAWS), which are designed to monitorize six simultaneous targets and about 200 tracks each. The Polyana system itself is

¹² Ground Troops and the GOZ
<http://russiandefpolicy.wordpress.com/2011/03/06/ground-troops-and-the-goz/>

ordinarily made about 2 transport vehicles, 2 trailers and 2 mobile power-generating plants¹³.

Russian Air and spatial force. Russia will use extensively the new Angara class carrier rockets to launch military satellites into orbit. The family of Angara rockets will complement, and eventually replace, the existing class of Rockot and Proton launch vehicles. It will be available in a range of configurations capable of carrying between from 2 to 24.5 metric tons into low-earth orbit, and its developers told it will have a low environment impact. "In the future, light and heavy class Angara carrier rockets will form the heart of the Russian fleet of delivery vehicles together with the medium class Soyuz-2 transport rockets. They will be used extensively to launch military satellites on the orbit.

The Angara is intended mainly for launch from the Plesetsk space center to reduce Russian's dependence on Kazakhstan's Baikonur, the main launch facility for the current generation of Russian transport rockets. The facilities were finished in 2010 and, the first launch had been originally scheduled in 2011. Russia's Khrunichev State Research and Production Space Center has recently request the government to allocate an additional 10 billion rubles (up to \$290 million) over the next three years to finish the development of the rocket¹⁴.

¹³ Polyana D4M1 C4 system Automated C2 System / Radiozavod, Russia <http://defense-update.com/products/p/polyana.htm>

¹⁴ Russian military lays hope on new Angara carrier rockets.

All air defense regiments in the Russian Armed Forces will be equipped with advanced S-400 Triumpf and Pantsir-S missile systems by 2020, President Vladimir Putin stated: "We are planning to revamp our air defense network. All air defense regiments will receive new S-400 Triumpf and Pantsir-S systems." The S-400 system has a maximum range of action of about 400 km at an altitude of 40,000-50,000 meters. The system uses a range of missiles, capable for engaging ballistic and cruise missiles. Pantsir-S is a short-to-medium range combined surface-to-air missile and anti-aircraft artillery system with the aim to protect point and area targets. It carries up to 12 two-stage solid-fuel surface-to-air missiles in sealed ready-to-launch containers and has two dual 30 mm automatic cannons that can attack targets at a range of about 4 km. Russian military officials revealed plans to bring into service the first batch of its new fifth-generation stealth fighters in 2015¹⁵.

According to the State Armament Program (SAP) 2011-2020, about 200 new air defense systems are to be delivered to the Russian army during the next 10 years. As a result, by 2020, the share of up-to-date air defense systems in the Russian Federation Armed Forces will be about 75 percent. Acquisition of air defense systems is a priority of the new State Armament Program. First of all, this is because Russia and the CSTO countries should have a reliable air defense system due to NATO's big

superiority in the number of combat aircraft. In this context it is planned to rapidly reequip the AD Troops with the S-400 SAM systems and a little more later with the S-500s. Russia's long-range SAM systems are far superior to their Western counterparts, first of all US-made ones, in performance. Western experts, recognize too, such superiority and believe that Russian air defense systems have reached this performance level that virtually eliminates the chance of «survival» for USAF aircraft in the event of an armed conflict. Both in-service US fighters (F-16, F-15, F/A-18 and heavy fifth-generation F-22) and advanced F-35 fifth-generation multirole aircraft cannot counter Russian SAM systems.

Russia's S-300 and S-400 long-range SAM systems are now the most capable aids to defend the main national and military installations, force groupings, military bases, missile launch sites and other facilities from attacks of all kind of missiles, including ballistic ones, and other aerospace threats. Russia is currently developing the new S-500 system, which will provide protection from all available air and space attack weapons in service with US Armed Forces, as well as other advanced systems. The S-500 is at about 15 to 20 years ahead of similar systems operational with a potential enemy. Its development will supposedly be finished in 2015. The current production capacities will be enlarged through the construction of two new plants, one of which will produce SAMs, and the other – ground-based air defense equipment. The S-500 will handle air defense/missile defense missions only in the interests of

¹⁵ Russia To Revamp Air Defense With S-400, Pantsir-S Systems
<http://www.defencetalk.com/russia-air-defense-with-s-400-pantsir-s-systems-33022/#ixzz1cbxTnrzv>

Russia's Armed Forces, as Russian Air Force Commander Col. Gen. Alexander Zelin said. According to him, «the S-500 will be the key component of Russia's missile defense system.» By 2020, according to Alexander Zelin, the Russian Air Force will receive a significant number of S-400 SAM regiments. The deliveries of S-500 SAM systems will start after 2015¹⁶.

Russia sold over 450 Su-27/30 and about 180 MiG-29 fighter jets from 2000 to 2010, according to the Center for Analysis of Strategies and Technologies, a Moscow-based think-tank, helping warplane designers Sukhoi and MiG to stay afloat despite the lack of domestic orders. Having survived the difficult years of the 1990's as a disparate collection of design bureaus and manufacturing factories, almost all the main design and production elements of the Russian aircraft industry are now united in the United Aircraft Corporation, a holding company. UAC has benefited from great state subsidies and rescheduling of its debts, and new orders. Now, important orders are once again coming from the Defense Ministry in Moscow. The Russian Air Force is forging ahead with a major re-equipment projects after surviving for two decades with its existing planes and almost no new aircraft. The ultimate aim of the Russian military aircraft industry for the next ten years is to ensure that 70 percent of the Russian Air Force consists of new and modernized multirole planes by 2020, while successfully competing on global

aircraft markets. The success of this great program largely depends on efficient supply of government funds and streamlining of production to ensure a quick transition from prototype development to industrial scale manufacturing. "Any threat to the required funding would impede implementation, while it remains to be monitorize how quickly - and how well - industry will be cable to shift from prototype and pre-production aircraft to full scale production-standard manufacturing," told Douglas Barrie, a military aerospace expert at the International Institute for Strategic Studies in London. The Russian Defense Ministry is seeking to procure about 100 Sukhoi Su-35 fighter jets, 100 Su-34 fighter-bombers, about 70 fifth-generation T-50 fighters, 29 MiG-29K carrier-based fighters, and 30 Su-30MKI multirole fighter jets buit for the Russian Air Force.

Delivery of combat and military transport helicopters, which revealed a steady growth in the past decade on the back of mainly Asian countries exports, will also resume for the Russian forces. The Russian Helicopters company, which was formed in 2006, produced 214 helicopters in 2010 and is expected to deliver between 260 and 300 helicopters in 2011 and 2012, respectively. Russian Helicopters stated in May it had signed the first of three long-term orders for around 1,000 helicopters for the Russian Air Force in the next ten years, include 120 Ka-52 reconnaissance/attack machines, 220 Mi-28N and 40 Mi-35M attack helicopters, 100 Ka-60 training/electronic warfare, 26 Mi-26 heavy transports, and 30 Ka-226 training

¹⁶ Russia's SAM systems: a growing demand
<http://old.nationaldefense.ru/5374/5513/index.shtml?id=7719>

helicopters, about 70 Ansat trainers and 500 Mi-8 transport helicopters (CAST data). The Navy is expected to receive 70 Ka-27M and Ka-29M, up to 30 Ka-52 and 20 Ka-226 helicopters for anti-submarine warfare, transport, training and search and rescue. Acquisition of transport aircraft remains in a weak state. The Russian Air Force has not received a single new transport plane since 1992, and production capacity has been very much neglected and lost. The situation has been aggravated by the loss of the Antonov design bureau to Ukraine after the disintegration of the USSR, and the end of Il-76 production at the TAPO factory in Tashkent.

The existing fleet of up to 300 military transport planes is outdated and need replacing. Russia is expected to start industrial production of a modernized version of its long-serving Ilyushin Il-76 heavy-lift military transport, known as the Il-476 with turbofan engine, in 2013-2014. The new transport aircraft will have PS-90 engines and modernized avionics allowing a smaller flight crew. Moscow had also again decided to take part in the Ukrainian An-70 propfan transport project, after years of no action taken. It is also taking part in production of a modernized variant of the An-124 super-heavy transport in cooperation with Ukraine. Low-rate production will begin in 2015-2016. A joint Russian-Indian medium-haul transport plane, the Medium Transport Aircraft project, is going to replace the Antonov An-12, is still in the early stages of development, while the new Il-112 light transport plane project, which could replace the An-24/26 has been rejected by the Russian

Defense Ministry, which has suspended funding.

Other significant projects for the air force are the production of the Su-35 fighter jet and the Yak-130 combat trainer, now in production at the Sokol factory in Nizhny Novogorod. The air force also wishes for modernization of its small strategic bomber fleet, and has started a program for new precision weapons to arm it.

The MAKS-2011 held at Zhukovsky outside Moscow on August 16-21 reunited over 600 companies, including over 150 foreign. For the first time in the last twenty years, an entirely new Russian multirole aircraft take to the skies in front of the public at the MAKS-2011 air show, the Sukhoi T-50 prototype combat aircraft. Russian aerospace industry has had to survive on what it could earn overseas, primarily in the emerging Asian market, particularly China and India. The new T-50, the jewel in the Russian military aerospace crown, also involves India, which will produce a variant for its own air force¹⁷. In May 2011, the first production model Su-35S was flown for the first time¹⁸. Sukhoi has began flight tests of the first serial multirole fighter Su-35s. The plane took off from an airfield Komsomolsk-on-Amur Aircraft Production Association Yuri Gagarin (KnAAPO). During a half hours were worked out different modes of propulsion

¹⁷ Russia's military aircraft industry stays aloft
http://www.en.rian.ru/mlitary_news/20110811/165710365.html

¹⁸ The flight tests of the first serial Su-35S have been started. *Knaapo.ru*, 5 May 2011.
<http://www.knaapo.ru/eng/news/index.wbp?article-id=17502854-C9B6-4BAC-B0BD-704E98EDE1F7>
Retrieved 11 July 2011.

and integrated management system. After completion of plants tests the aircraft will be transferred to the Ministry of Defense of Russia.

Su-35- is deeply modernized maneuverable multifunctional fighter from the generation "4 + +". It uses a fifth-generation technology, providing superior fighter of the same class of fighters. Distinctive superior features of the aircraft are new avionics based on digital information management system that integrates systems avionics, a new radar station with a phased array with long and medium-range detection of air targets with an increased number of simultaneously tracked and engaged targets, the new engines with increased thrust and turning thrust vector. Able to carry guided air attack (TSA), anti-ship, anti-radar, guided aerial bombs (KAB), general purpose, as well as the unmanaged ASP. Radar visibility fighter planes comparable with the fourth generation is reduced by several times due to an electrically conductive coating canopy, causing radar absorbing coatings and diluting the number of speakers sensors. Life of the aircraft is 6 thousand flight hours, service life is 30 years of operation, the designated life of the engine with controlled nozzle -over 4 thousand hours¹⁹. The Su-35 multirole aircraft, powered by two 117S engines with thrust vectoring, combines highest maneuverability and the capability to effectively engage several air targets simultaneously using both guided and

unguided missiles and weapon systems. The aircraft features the new Irbis-E radar with a phased antenna array, which permitted the pilot to detect and track about 30 air targets, while simultaneously engaging about eight targets. It is equipped with a 30-mm cannon with 150 rounds and can carry about eight tons of combat payload on 12 external mounts.

The company earlier announced it planned to produce the new aircraft, billed as "4++ generation using fifth-generation technology," over a period of 10 years about 2020. The company is expecting to export over 160 Su-35 fighters in the future to a number of countries, including Malaysia, India, and Algeria²⁰. The Komsomolsk-na-Amure Aviation Production Association (KnAAPO) has completed the manufacturing of six Sukhoi Su-35 fighter aircraft in 2011 for test flights and final joint tests, a source in the defence industry said Interfax-AVN."Two Su-35 fighters were manufactured earlier, and the third aircraft take off in May this year. Three more aircraft are manufactured by KnAAPO in the second half of the year," the source said. In 2009, the company signed a Defense Ministry contract for the supply of 48 Su-35S fighters for the Russian Air Force until 2015. "Four of them will be produce this year and will undergo flight tests," the source told. "Whereas the first aircraft were designed for export," the subsequent fighters will be made for the Russian Air

¹⁹ First Production Russian Air Force Su-35S Fighter Jet Begins Flight Test
http://www.deagel.com/news/First-Production-Russian-Air-Force-Su-35S-Fighter-Jet-Begins-Flight-Test_n000008716.aspx

²⁰<http://www.militaryphotos.net/forums/showthread.php?152009-Sukhoi-confirms-Su-35-deliveries-to-Russian-Air-Force-in-2011>

Force, he told²¹. Russia also will procure 6 new Su-34 fighter-bombers this year²².

Russia plans to install new antiship and anti-aircraft missiles on the Kuril Islands, is a move likely to heighten tensions with Japan, which claims those territories as its own. The Interfax news agency claimed that a general staff official said the military plans to install Yakhont antiship cruise missiles, Mi-28H "Night Hunter" attack helicopters, and the Tor-M2 anti-aircraft system on the islands²³.

Gen. Alexander Zelin, the Air Force chief said the Russian military will use new MiG-35D multirole fighters as an equal to the U.S. F-35 fighters. "We have not given up on the MiG-35D light aircraft project, but we will transfer the technology to the T-50 [heavy fighter] in the future". The U.S. Air Force bought the F-22 fifth generation fighter in the 2000s. America is now developing a lighter and less expensive version, the F-35 Lightning II. The MiG-35 is an advanced version of the MiG-29, which uses air-to-air and air-to-surface guided missiles and the Zhuk A radar (Zhuk AE in exports). The first prototype was a modification of the aircraft that previously served as model demonstrator MiG-29M2. 10 prototypes have been produced so far and are currently subject

to extensive field trials. The MiG-35 is now classed as a medium-weight fighter because its maximum take-off weight has increased by 30 percent which exceeds its previous criteria of classification. MiG Company first officially presented the MiG-35 internationally during the Aero India 2007 air show in Bangalore. The MiG-35 was officially unveiled when Sergey Ivanov, the Russian Minister of Defence, visited Likhovitsky Machine Building Factory "MAPO-MIG". The single seat version is designated MiG-35 and the two-seat version is MiG-35D. The fighter has far more improved avionics and weapon systems, notably the new AESA radar and the uniquely produced Optical Locator System (OLS), relieves the aircraft from relying on ground-controlled interception (GCI) systems and permitted it to conduct independent multi-role missions²⁴.

Nuclear forces. Moscow's plans to improve Russian strategic nuclear forces do not contravene the newly-signed New START nuclear arms control treaty with the US, which purpose at the reduction of up to a third of the strategic nuclear weapons in both Russia and the United States²⁵. The USA and Russia released September 2011 New START aggregate numbers in a somewhat unusual (and rather low-key) joint briefing. According to the briefing documents, in September 2011 Russia detained 871 strategic launchers, 516 of which were operationally deployed. These launchers

²¹ Russian plant to produce six Su-35 fighters in 2011

<http://www.thearticleslib.com/military/Russian-plant-to-produce-six-Su-35-fighters-in-2011.html>

²² Russian AF chief: US fighters superior to Su-35S
<http://www.flightglobal.com/blogs/the-dewline/2011/08/su-35s-inferior-to-usaf-jets-s.html>

²³ Russia to Boost Kurils Defenses
<http://online.wsj.com/article/SB1000142405274870450600457617435222235900.html>

²⁴ Russian commander says MiG-35 equal to U.S. F-35 fighter
http://en.rian.ru/military_news/20110816/165828040.html

²⁵ Russia's military spending soars
<http://rt.com/news/military-budget-russia-2020/>

carried 1566 nuclear warheads. (The United States numbers are 1043/822 launchers and 1790 warheads.). Comparison with the February 2011 numbers - 865/521 launchers and 1537 warheads - revealed that while the number of deployed launchers is now smaller, the number of operationally deployed warheads increased - Russia added 29 operationally deployed warheads (and is now about the New START limit of 1550 such warheads). That's a pretty large increase, especially taking into account that some old missiles have been withdrawn from service. Deployment of a three RS-24 missiles in August 2011 would not fully account for the change.

Unfortunately, it's very difficult to reconstruct what happened without detailed information on deployed missiles²⁶. On October 28, 2011 at 7:40 MSK Yuri Dolgorukiy, the new submarine of the Project 955 class, successfully launched a Bulava missile. This launch was performed from a submerged submarine deployed in the White Sea to ward the Kura test site which is in Kamchatka. In addition to the missile that was launched, the submarine has carried a mock up of a missile in order to prepare for a salvo launch that might take place later in 2011. It was expected that the 2011 test program will consist of five launches²⁷. Russian government announced that it will spend \$70 billion over the next decade on its strategic forces.

²⁶ September 2011 New START data released
http://russianforces.org/blog/2011/10/september_2011_new_start_data.shtml

²⁷ http://russianforces.org/blog/2011/10/successful_launch_of_bulava_fr.shtml

Russian military export. High demand for S-300 and S-400 long-range SAM systems on the world arms market is attributed to their superiority over the American systems. By major combat characteristics, the S-300 is far more capable than the famous US Patriot SAM system. In particular, the S-300PMU-2 Favorit, which is now most popular on the market, can intercept aerodynamic targets at ranges of about 200 km; ballistic targets, of about 40 km; low-flying targets, of about 28-38 km. All types of targets are engaged at altitudes between 10 m and 27 km. This SAM system can simultaneously destroy over 36 targets and simultaneously guide 72 missiles onto them. The new-generation of anti-aircraft missiles S-400 Triumph engages aerodynamic targets at ranges of about 400 km, tactical ballistic targets of about 60 km. Target detection is provided at 600 km. Low-flying targets can be intercepted at altitudes as low as 5 m (just 60 m for the US Patriot). Moreover, the targets are destroyed, regardless of their speed, altitude and flight path. The S-400 has the capacity of effectively repelling the massive raids of modern air threats in a heavy ECM environment and in all weather conditions. Several countries are now considering establishing national layered air defense systems using just the Russian-made armaments. This implies a three-layer system consisting of long-, medium- and short-range air defense weapons, which means they must buy the S-300/S-400, Buk and Tor SAM systems in various modifications. At this time, there are two countries on the world market for long-range SAM systems that produce competitive SAM systems, which can also be used also against the missile attack. These are Russia, with the

S-300/S-400 SAM systems, and the United States with its Patriot PAC-3 and THAAD. In the next future competition is expected only between these two countries. At the same time, one should not underestimate the Chinese and European efforts to be competitor on this market. In particular, China with its HQ-9 SAM missile system (export designation of FD-2000) and the European Eurosam Consortium with a SAM missile system based on the Aster-30 SAM, along with the USA and Russia, are currently bidders in Turkey's tender to buy T-LORAMIDS (Turkish Long Range Air and Missile Defense System). Russia's anti-aircraft systems are widely displayed at the biggest international exhibitions. Another two antimissile systems, which are being developed with the US participation, could enter the world market in the medium term. These are the Israeli Arrow system and the European MEADS. However, both these systems are still under development, so it is too early to predict their export prospects. Since the number of launchers in a battalion varies depending on order of one or another country, as well as on the kind of the system purchased, the market analysis below was carried out by the number of launchers delivered or planned for delivery. According to CAWAT, Russia ranks first among suppliers of new long-range SAM launchers in quantitative terms. In 2006-2009, it exported 160 launchers worth 2.48 billion American dollars. In 2010-2013, the deliveries, according to the existing order portfolio, are estimated at 120 units worth 1.85 billion American dollars. It should be noted that Russia's order book for this period hasn't been fully formed yet. Despite the lost contract

with Iran, Russia will remain the market leader by the number of anti-aircraft missile launchers sold out. Among the countries which the missile anti-aircraft system S-300PMU-1s may most likely be offered are Vietnam, Syria, Yemen and Venezuela.

The Brazilian Ministry of Defense, within a planned tender for the supply of short-range SAM systems, started negotiations with Russia on the Tor-M2E SAM system. The estimated cost of purchasing 16 SAM systems could be 300 million dollars. The first stage involves the purchase of three anti-aircraft systems. Russia also has direct negotiations on deliveries of short-range anti-aircraft systems with Cyprus. Venezuela intends to purchase an additional batch of Russian short-range anti-aircraft systems. Russia also has a chance to promote its medium-range SAM systems in Venezuela and Saudi Arabia. There are prospects to sell short- and medium-range SAM systems to Yemen, Syria and Vietnam. Algeria has expressed its willingness to purchase the Buk medium-range SAM systems (information on the requested Buk modification is not available). In general, one can state that Moscow has strong market positions across the whole range of anti-aircraft systems and in the next years this will ensure steady growth of the export indicators in this segment of armament and military equipment²⁸.

Russia and India signed the 1.1 billion American dollars (Rs51.14 billion)

²⁸ Russia's SAM systems: a growing demand
<http://old.nationaldefense.ru/5374/5513/index.shtml?id=7719>

contract for three guided-missile frigates FFGs. It was inked on July 14, 2006, following which construction got underway at the Kaliningrad-based Yantar Shipyard JSC. Each of the three ships follow-on Project 1135.6 FFGs will have a length of 124.8 metres, beamwidth of 15.2 metres, full-load displacement of 4,035 tonnes, and a maximum speed of 30 Knots. The fregate's Crew compliment will be 220, including 28 officers. In another development, Moscow has offered India the export version of its new Project 22350 FFG in response to a Request for Information (RFI), issued by India to 12 European, Russian and American shipyards in December 2006. The model being proposed by Russia's St Petersburg-based Severnoye PKB (Northern Design Bureau) FSUE has a total displacement of about 5,000 tonnes, a length of more than 130 metres, and a beamwidth of 16 metres. To meet the proposal requirement, Russia has also offered to make the Project 22350's hull design scalable, meaning the basic hull design could also be enhanced into a guided-missile destroyer displacing 8,000 tonnes and having two medium-lift helicopters on board²⁹.

But the armament market competition proved to be very hard. So the Russian industry recorded also some fail. So, Russian Mi-28N Night Hunter has lost a tender on the delivery of 22 attack helicopters to the Indian military in big competition with the American AH-64D Apache. Indian Defense Ministry stated

²⁹ <http://www.defence.pk/forums/india-defence/103619-batch-2-three-project-1135-6-frigates-being-readied.html>

“We decided not to choose the Mi-28 for technical reasons. The Mi-28N did not meet the requirements of the tender on 20 positions, while the Apache showed better performance. The future contract, worth at least 600 million American dollars, envisions an optional delivery of additional 22 helicopters. Russia is still taking part in two other Indian helicopter competition: on the delivery of 12 heavy transport helicopters and 197 light general-purpose helicopters. The first tender includes the Russian Mi-26T2 and the American CH-47F Chinook helicopters, and the second involves the Russian Ka-226T and the AS550 Fennec helicopter, developed by Eurocopter. Meanwhile, Russia continues the deliveries of Mi-17-B5 transport helicopters to India under a 2008 contract for the supply of 80 helicopters worth 1.4 billion american dollars. The Indian military helicopter market, with its potential demand for 700 helicopters in the next ten years, fuels fierce competition among foreign manufacturers³⁰.

Another failure was MiG-35 failing to make the shortlist in India's medium multi-role combat aircraft (MMRCA) contest. The MiG-35's radar, the Zhuk-MAE active electronically scanned array (AESA), from Russia's Phazotron, failed to achieve the required procurement and tracking ranges. Also its Klimov RD-33MK engines fell short of the Indian performance criteria. In a press conference on 3 August, Vladimir Barkovsky, chief of MiG's engineering centre, stated: "The Klimov and Chernyshev (engine companies) briefed

³⁰ Russia loses \$600 mln Indian attack helicopter tender
<http://en.rian.ru/world/20111025/168096811.html>

(India) at length about their capabilities and intentions to improve their engines, but unfortunately their arguments were not taken into account." Despite this, the same RD-33MK met Indian navy requirements and powers the newly-built MiG-29K/KUB fighters being sold to the service. Barkovsky also defended the Zhuk-MAE AESA radar, pointing out that the prototype nature of the model fitted to the MiG-35 meant that it did not meet the tender specifications, particularly regarding range. Barkovsky told that the Eurofighter Typhoon is yet to be fitted with working AESA radar. "While the Russians showed their radar fitted to the real fighter and working, (Eurofighter) demonstrated their radar on a helicopter." Barkovsky also added. The Mig Company will continue the MiG-35 project, and look for other export customers³¹.

Conclusions

Russian Federation army forces continue their modernization in 2011 in order to upgrade about 11 percent of military equipment annually. This program will allow Russia to increase the percentage of modern weaponry to 70 percent by 2020. Russian defense will focus on the development of strategic nuclear forces, building of over 100 military ships for Russian Navy. All air defense regiments in the Russian Armed Forces will be equipped with more advanced S-400 Triumpf and Pantsir-S anti-aircraft missile systems by 2020. Russia first of all wants

to secure its influence in the former Soviet space by using military political and economic means, of pressure. There is no doubt that Moscow's plan to modernized its armed force are highly ambitious. But this includes significant challenges. First of all overcoming corruption in Russian Defense Ministry and among defense industry companies can contribute the fail of the program. Reforming the officer corps and the NCOs can prove to be major in this process. At the present Russian share of modern weapons and equipment in its inventory is low (12 percent in 2011) and setting the ambitious target of reaching 70% by 2020 marks an aspiration to reverse the degradations of its conventional combat capacity. Achieving significant progress towards such aims depends on the capacity of the state to adequately reform and invest in the domestic defense industry and, in turn, for those companies to produce the weapons needed by the armed forces. This work concludes with the thought that even though the changes being introduced in the Russian armed forces look dramatic, they cannot be implemented overnight. The road towards fundamental change where Russia's armed forces are concerned will be quite a long one.

³¹ Engines and radar to blame for MiG-35 failure in MMRCA contest
<http://www.flightglobal.com/news/articles/engine-s-and-radar-to-blame-for-mig-35-failure-in-mmrc-360364/>