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Russia's Military Modernization Plans: 2018-2027

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By the end of 2017, Russian President Vladimir Putin will approve Russia's State Armament Program for 2018-2027. This memo summarizes publicly available information regarding the types of armaments that will be procured for the Russian military in the next eight years and assesses the likelihood that the Russian government will be able to meet these commitments. Based on these plans, Russia seems primed to stay ahead of its competitors in some capabilities (anti-ship missiles, electronic warfare, air defenses), narrow the gap in areas such as drones and precision-guided munitions, and continue to lag well behind in a few areas such as surface ships and automated control systems.

The Scope of the Program

The Russian State Armament Program (SAP) for 2018-2027, which is set to be approved toward the end of this year, will set out Russia's rearmament priorities for the next ten years. The previous program, which runs through 2020, was the blueprint according to which the Russian military has been modernizing its equipment since 2011. That program had a total budget of 19.3 trillion rubles. SAP-2027 was initially regarded as a kind of lifeline for SAP-2020, whose expensive, long-term programs were to be transferred to the next ten-year plan. The cost of the successor program is expected to total 19 trillion. This suggests that military procurement spending is actually being kept fairly constant because the ruble amount remains about the same and almost all of the purchases are from domestic suppliers, meaning the sales are not impacted by changes in the ruble's exchange rate.

The size of the program was the subject of an extended tug-of-war between the Defense Ministry and the Finance Ministry. As early as 2014, the military asked for funding in the range of 30-55 trillion rubles over a ten-year period, while the finance ministry set a target of 14 trillion. As the country's financial situation began to deteriorate in 2015 and

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the adoption of the SAP was postponed until 2017, both sides lowered their targets. In 2016, the Defense Ministry asked for 22-24 trillion rubles for eight years, while the finance ministry suggested no more than 12 trillion. After an extended and sometimes tense negotiation, a figure of 17 trillion rubles was agreed last winter. This has now been increased to 19 trillion rubles, with the duration extending to the normal ten years. As a result, a number of the most ambitious and expensive projects, including new designs for aircraft carriers, destroyers, strategic bombers, and fighter-interceptor combat aircraft will all be postponed.

This was not the end of tensions over defense financing, however. Although the total amount has been decided, there is now an internal conflict within the defense ministry over how much procurement financing will go to each branch of the military. The various branches have produced documents defending the importance of what they do. As highlighted by the recently approved naval doctrine, such documents often have little connection to any real assessment of either Russian military needs or the capabilities of the defense industry for producing the requested weapons and platforms. Although the final version of the program will not be adopted until the end of the year, it has become increasingly clear that the Russian Navy is in the process of losing the battle for financing. The highest priority for procurement funding will go to the ground forces and to the modernization of nuclear weapons, while the navy, which had the highest level of funding in SAP-2020, will fall to the bottom of the pecking order.

Nuclear Forces

The development priorities of Russian nuclear forces through 2027 are largely clear. After 2021, the naval component of the nuclear triad will consist of six *Delta IV*-class and eight *Borei*-class strategic ballistic missile submarines (SSBNs), evenly divided between the Northern and Pacific Fleets. This will allow for 12 submarines to be in service at all times, while two undergo overhauls and modernization. The air component is being upgraded, with modernized versions of both Tupolev *Tu-95MS* (*Bear H*) bombers and 11 *Tu-160* (*Blackjack*) bombers receiving new engines and avionics, as well as weapons upgrades. The new long-range cruise missile, labeled *Kh-101*, is replacing the *Kh*-55, with a range of up to 4,500 km in the nuclear variant. In addition, the Russian military has announced that it will resume building new *Tu-160s*, with serial production expected to resume no earlier than 2021. This is a more cost-effective and technologically feasible alternative to bringing a completely new design (known as *PAK DA*) to the point of serial production in a reasonable time frame.

The future development of the land component of the Russian triad presents the least certainty. There are three projects under way, the *Rubezh* road-mobile intercontinental ballistic missile (ICBM), the *Barguzin* rail-mobile ICBM, and the *Sarmat* heavy silo-based ICBM. The *Rubezh* project is closest to fruition, with testing completed in 2015 and deployment expected later in 2017. The *RS-26 Rubezh* is a further development of the *RS-*

24 Yars, with independently guided warheads designed to break through missile defense shields. The *Barguzin* is expected to be ready for flight testing in 2019, even though there was a period of several months in 2016 when it appeared that the program was going to be suspended due to budget cuts. The *Barguzin* is expected to be superior in range and accuracy as compared to the Soviet rail-based system that was decommissioned in 2005. The *RS-28 Sarmat* is the next-generation silo-based ICBM. It was originally expected to be ready for deployment in 2018, but unspecified snags in its development have pushed ejection testing from the original target date of 2015 to no earlier than June 2017. As a result, the *Sarmat* is unlikely to be deployed any earlier than 2020, assuming the difficulties have been overcome and the tests proceed as scheduled.

Ground Forces

After being largely starved of funding in SAP-2020, the ground forces are expected to get the largest share of funding in SAP-2027. Some sources indicate that over a quarter of the total program budget will go to equipping the Ground Forces and Airborne Forces. This is in part due to Russia's experience in Ukraine leading to an increased perception that ground forces may be needed in future conflicts, but mostly the result of new armored vehicle and tank designs being ready for serial production. T-90 and T-14 *Armata* tanks, *Kurganets-25* infantry fighting vehicles and *Boomerang* armored personnel carriers are all expected to enter the force over the next eight years, though numbers of some items such as *Armata* tanks may be limited due to their high cost of production.

The production of artillery and ground based missiles has been a bright spot for the ground forces. Deployment of medium-range *Iskander* missiles is proceeding on schedule, with all units set to be in place by 2019. New *Uragan* and *Tornado-S* multiple launch rocket systems (MLRS) are also being deployed beginning in 2017, with purchases expected to continue throughout the duration of SAP-2027. Procurement of the *Koalitsiya* self-propelled gun started in 2016. It is eventually expected to fully replace the Soviet-era *Msta* system. New short range air defense systems will also be procured.

There are more problems with tactical automated control systems for the ground forces. Originally expected to be deployed to 40 brigades by 2020, these remain in field testing in a single division. Reports indicate that the military has mixed feelings about the system and may decide that it needs improvement before it can be widely adopted. In that case, the development of network-centric warfare capabilities may be delayed beyond 2027. In the meantime, the ground forces will continue to receive intelligence, surveillance and reconnaissance (ISR) and electronic warfare systems that have been used to good effect in Syria.

Naval Forces

The Russian Navy stands to be the big loser in SAP-2027. After being allocated 4.7 trillion rubles in SAP-2020 and finding itself unable to spend all of that money due to a combination of problems with Russia's shipbuilding industry and the impact of Western and Ukrainian sanctions, the Russian Navy's allocation is expected to be cut to 2.6 trillion rubles in SAP-2027. Despite grandiose plans being mooted in documents such as the recently approved naval doctrine, Russia is planning to focus its naval construction on submarines and small ships. In surface ships, the focus will be on new corvettes of several different types that will have greater displacement and better armament than existing classes, as well as the start of serial production of the long-delayed *Admiral Gorshkov*-class of frigates. Until the problems with the *Admiral Gorshkov* are resolved, the Navy will continue to build the less advanced *Admiral Grigorovich*-class frigates.

The only new class of surface ships expected to be built in the next eight years are the so-called *Super Gorshkov*-class, an 8,000-ton frigate that is increasingly seen as a cheaper and more practical alternative to the 14,000-ton *Lider*-class destroyers. The key takeaway is that the Russian Navy is looking to increase the size of its smaller ships in order to increase their armament and endurance, while reducing costs by indefinitely postponing the procurement of larger ships such as destroyers, amphibious assault ships, and aircraft carriers.

As for submarines, SAP-2027 will undoubtedly include financing for the completion of six *Yasen-M* nuclear attack submarines and possibly for a seventh, as well as for the modernization of four to six each of the Soviet-era *Oscar*- and *Akula*-class nuclear attack submarines. Construction of fifth-generation nuclear attack submarines (tentatively named the *Husky*-class) will begin in the mid-2020s. In diesel submarines, the focus will be on developing air independent propulsion systems for the forthcoming *Kalina*-class, while *Lada*- and improved *Kilo*-class boats are built in the meantime.

More important than new ships and submarines, the coming eight years will see the Russian Navy concentrate on developing new weapons systems and improving existing ones. The introduction of *Kalibr* missiles has provided the Russian Navy with a standoff anti-ship and land-attack cruise missile capability that can be used to make even small ships that have to stay near home ports a potential threat to adversaries, included NATO member states. The Russian military recognizes the advantages that these missiles provide and has put them on a wide range of ship and submarine classes. Over the next eight years, Russia will continue to deploy these missiles on most new surface ships and submarines, retrofit some existing vessels to carry the missiles, and work to improve the accuracy and reliability of the missiles themselves. It is also working to develop a new hypersonic missile that could pose an even greater threat to Russia's adversaries in the medium to long term.

Air Forces

In the last seven years, the Russian Air Force has begun to receive modern aircraft in significant numbers and has continued to pay for the development of new designs such as the recently christened Sukhoi *Su-57* fifth generation fighter jet (formerly known as the *T-50* or *PAK FA*). The *Su-57* is not expected to enter into serial production until upgraded engines are ready, which is unlikely to happen until 2027. Over the next eight years, Russia will continue to purchase small numbers of these planes for testing. It will also continue to purchase *Su-35S* fighter jets, with a new contract for 50 additional aircraft signed in late 2016. Purchases of *Su-30SM* fighter jets and *Su-34* strike aircraft will also continue, most likely at rates of 12-18 aircraft per year of each type. Mikoyan *MiG-35* fighter aircraft may also be procured, but probably not in large numbers. Overall, with many modern fighter aircraft now in place, rates of procurement will slow in order to allow for the purchase of other types of aircraft. The same goes for military helicopters, since the Russian military has received what it needs in new helicopters during the last seven years. Development of a new high-speed helicopter will not start until after 2027.

Transport and refueling aircraft, long an area of weakness for the Russian Air Force, will be one area of focus. Serial production of the long-troubled Ilyushin *Il-76-MD90A* is expected to start in 2019, and the Russian military is expecting to receive 10-12 such aircraft per year thereafter. A light transport aircraft is under development, with prototypes expected to be completed in 2024. The *A-100* airborne warning system (AWACS) aircraft, based on the *Il-76MD90A*, was expected to be delivered starting in 2016 but has been repeatedly delayed. Nevertheless, procurement of this aircraft will be included in SAP-2027. Finally, Russia is experiencing a boom in domestic production of unmanned aerial vehicles (UAVs). By 2020, it will have a strike UAV in production, as well as a new generation of reconnaissance UAVs.

For air defense, Russia will continue to deploy *S-400* long-range missiles and *Pantsir-S* short-range missiles. However, it seems increasingly unlikely that the next generation *S-500* air defense system will be ready for serial production any time soon, though official plans still indicate that a prototype will be built by 2020. Original plans called for serial production of the *S-500* to start in 2015. The new standard short-range air defense system has just started development and is not expected to be ready for production until 2030.

Impact on Capabilities and Regional Security

SAP-2020 has been widely described as the first successful armament program of Russia's post-Soviet history. It was designed to help the Russian military catch up from the extended procurement holiday caused by Russia's economic collapse in the 1990s. During the last seven years, the Russian military has made great strides in modernizing

its weapons and equipment. By and large, these new armaments have been based on updated versions of late Soviet designs. The Russian defense industry now faces the far more formidable challenge of bringing new designs into serial production. It has been successful in this regard in some areas, such as nuclear submarines, missile systems, and UAVs. It has been less successful with combat ships and air defense systems. The verdict is still out on combat aircraft and tanks and armored vehicles.

With the most significant gaps largely filled, SAP-2027 is designed to transition the Russian military to a more regular procurement schedule. Funding will remain relatively constant, though it may be adjusted depending on the economic situation. The previous program has shown that this level of funding is more or less achievable for the government budget and for the Russian defense industry to sustain. The biggest challenge will be in bringing new designs successfully to serial production.

In terms of impact on military capabilities, Russia is already strong enough to defend itself in a conventional war against any adversary and to defeat any neighboring state other than China. It also has a more than sufficient nuclear deterrent capability. New procurement will thus be targeted at keeping pace with technological improvements made by its peer competitors (NATO member states and China). In some areas, such as air defenses, anti-ship missiles, and electronic warfare, Russia will continue to maintain capabilities superior to those of its peers. In other areas, such as UAVs, precision-guided munitions, and tanks and armored vehicles, it appears poised to narrow the gap. Finally, in a few areas, such as surface ships, transport aircraft, and automated control systems, it will remain well behind the United States and may start to lag behind China as well.

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