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Factors Influencing Russian Force Modernization

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Figure 19: Russia military districts. Source: NATO.

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THE military that the Russian Federation inherited in the 1990s had a bloated command structure designed for the command and control of literally thousands of divisions, regiments, and battalions, with the vast majority of these units being ‘skeleton units’ manned by small cadres that would help flesh out the unit with conscripts and reservists in the event of a mass mobilization. This type of structure was ideal for fighting large-scale, state-on-state warfare like the Soviet Union experienced in World War II, but it

became apparent after the Cold War that Russia would most likely face a different type of conflict in the future. Beliefs about the changing nature of future war and the lessons learned from Russia’s post-Soviet military experience drove Russia to reform the military district system and transition from a division/regimental to a brigade structure. These reforms were intended to streamline command and control, in order to give the Russian military a command structure more capable of responding to regional and low-intensity threats.

One of the most high profile command and control changes Russia has made is the reform of the military district system. This reform did not just condense six military districts into four (later five), but also significantly changed command relationships, giving the military district commander operational control of most Ministry of Defense forces in their respective regions, somewhat similar to the Goldwater-Nichols reform in the United States.



Figure 20: Russian SS-26 Iskander missile system. Source: NATO.

The regimental/division structure that Russia inherited from the Soviet Union is a vestige of the Soviet conscript-based Army oriented to large-scale warfare, a structure that is notoriously officer heavy. Russia's civilian leadership, and some elements in the military leadership, believed the Armed Forces structure should emulate the more modular forces that were quelling the insurgency in Chechnya and the North Caucasus during the early 2000s. The Russian leadership was also aware of the United States and other countries transitioning to a brigade structure.

In terms of command and control, and force projection, these reforms are important for a couple of key reasons. The first is that they are responsible for consolidating the division/regimental structure (8,000-10,000 personnel) into modular maneuver brigades of approximately 3,000-4,500 personnel, each capable of conducting

independent action and providing its own organic support. The second is that the transition to the brigade not only reduced a level of management, but was also instrumental in reducing the bloated officer corps. When the Russian Federation converted to the brigade structure, it also designated all units as 'permanent readiness units,' eliminating all cadre units and related cadre (mostly officer) positions.

Perhaps the strongest external factor that is driving Russian force modernization is the fielding of U.S. long-range, precision fires. Leading Russian military thinkers viewed the United States' routing of the Iraqis in Operation Desert Storm (1991) as the first signs of an emerging 'sixth generation warfare.'¹ Sixth generation warfare is characterized by the increasing use of precision guided munitions (PGMs) and the growing importance of the informational aspects of war (information / psychological

¹ Sixth generation warfare follows fifth generation warfare, which focused on the role of nuclear weapons. Slipchenko also believed that since the major powers (United States and Russia) could not be successful with nuclear first use, they would not be used, resulting in a nuclear stalemate.



Figure 21: Yakovlev Pchela-1T Russian drone.
Source: Wikimedia Commons.

operations, C4ISR, Electronic warfare, cyber warfare, etc.). Usually when Russian security professionals are discussing ‘new generation warfare,’ this is the context in which they are thinking.²

Russian military leaders eventually came to believe that sixth generation warfare would be fully manifested with the emergence of ‘non-contact warfare,’ which can be roughly defined as a type of warfare that is conducted by long-range and distant means, such as advanced cruise missiles and long-range drones. Such warfare would require not only advanced new weapons, but also a sophisticated C4ISR system to provide targeting data for these weapons. In the Russian view, the United States’ ‘Prompt Global Strike’ concept is a prime example of ‘non-contact warfare.’³

Meanwhile, Russia has long been at work on the development of twin concepts for the detection and assured destruction

of high-value targets in near-real time. Its current iteration is referred to as the reconnaissance-fire system. This system is being implemented through the Strelets C4ISR system that allows servicemen to task tactical and operational-level fires by linking sensor, C2, and fire assets.⁴

Similarly, U.S. use of Unmanned Aerial Vehicles has been of great interest in the Russian Federation, but Russia is taking a different path in its UAV development. While the United States has pioneered the use of UAVs as mobile firing platforms, Russia has been more interested in the ISR aspects of UAVs. In the Russian view, it is far better to use a UAV to accurately direct cheap artillery for an extended duration, than to have a UAV that just fires a missile or two and then needs to return to base.

Due to U.S./NATO airpower and concerns about sixth generation warfare, air defense and electronic warfare are high priorities for Russian development. Overlapping Russian air defense capabilities, such as the S-500 and A-235, are not only intended to destroy aircraft, but also cruise missiles, ballistic missiles, and even low-earth orbit satellites. Electronic warfare capabilities can disrupt the satellite and terrestrial communications infrastructure and the precision navigation and timing capabilities that sixth generation warfare requires.

In addition to the international factors outlined above, there are a number of domestic developments that have shaped Russian military modernization as well. In 2016, the Russian Federation established the

² Dr. Jacob W. Kipp, “Russian Sixth Generation Warfare and Recent Developments,” *Eurasia Daily Monitor Online*, January 25, 2012, vol. 9, no. 17, jamestown.org/program/russian-sixth-generation-warfare-and-recent-developments. Accessed March 15, 2018.

³ Peter A. Mattsson, “Russian Military Thinking – A New Generation of Warfare,” *Journal on Baltic Security*, vol. 1, no. 1, 2015. See also Charles K. Bartles “Russian Threat Perception and the Ballistic Missile Defense System,” *The Journal of Slavic Military Studies*, vol. 30, no. 2, 2017: 152-169.

⁴ Dr. Lester W. Grau and Charles K. Bartles, “The Russian Reconnaissance Fire Complex Comes of Age,” pending publication.

National Guard of the Russian Federation (*Rosgvardiya*). This new independent agency reports directly to the Russian President. *Rosgvardiya* controls most of Russia's internally oriented militarized intelligence and security services. These include the Ministry of Internal Affairs - Internal Troops (MVD-VV), Special Rapid-Response Detachment (SOBR), the Special-Purpose Mobile Detachment (OMON), the MVD Prompt-Response and Aviation Forces' Special-Purpose Center, and aviation subunits. Estimates of the total personnel have varied between 200,000 and 300,000 uniformed personnel.⁵ This

At the same time, Russia has streamlined its ability to design and field new large end items such as tanks, armored personnel carriers, and infantry fighting vehicles, a process that takes substantially longer in the United States. It apparently takes about 5-10 years from the beginning of the Russian design process until serial production begins for most major Ground Forces/Airborne end items, if the initial prototype is deemed viable. (Air and naval systems take much longer.)

One of the reasons Russia has a much shorter design and production timeline compared

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means that Russia's militarized intelligence and security services are now mostly consolidated under three main government bodies – the Ministry of Defense (MoD), the Federal Security Service (FSB), and *Rosgvardiya* – instead of being spread through a myriad of ministries, services, and agencies.

This change was likely due to shifting attitudes toward the nature of both internal and external sources of threat. Russia's Soviet legacy made stove-piped militarized intelligence and security agencies the norm, as the Soviets were leery of investing all military power in a single organization or ministry, due to fears of a coup. More recently, Moscow has been particularly concerned about foreign sponsored 'color revolutions,' so the formation of a single military command to put down an insurrection may have been an important factor in the creation of *Rosgvardiya*.⁶

to the United States is that Moscow relies on a very different arms development cycle. Capability development questions are settled in the Russian General Staff with inputs from the branch chiefs – this means that relative to the United States, there are far fewer bureaucratic hurdles. There also appears to be no bidding process, since the same manufacturers are consistently used. Russia's primary manufactures of combat vehicles are UralVagonZavod (T-72, T-90, Armata) and KurganMachineZavod (BMP-1, BMP-2, BMP-3). These production lines may be kept 'warm' through the steady production of new combat vehicles and the refurbishment of old combat vehicles. Design teams are continuously employed, and kept together to start on the next system or upgrade as soon as their current project enters production. Manufacturers typically build a few prototypes, and if the prototype is unacceptable the manufacturer returns to the design phase. Innovations are

⁵ Aleksandr Igorev, "A Place in the Formation Has Been Designated for the Russian Guard: The President Has Defined the Missions of the New Service," *Kommersant Online*, April 12, 2016, www.kommersant.ru/doc/2961750. Accessed April 15, 2016.

⁶ Charles K. Bartles, "Getting Gerasimov Right," *Military Review*, vol. 96, no. 1, Jan/Feb 2016: 30-38.

accepted or rejected at the prototype phase, and many designs make it no further than this phase.

If the prototype is acceptable, improvements are made and a test batch (approximately a battalion's worth) of vehicles is produced for field testing.⁷ This field testing takes a year or two, after which the product is further refined and put into full serial production. Rarely does a new system or an upgrade replace all previous systems. In this incremental, evolutionary approach – versus a revolutionary approach – a certain percentage is usually replaced and then the next iteration begins.

Another reason that Russia is able to reach serial production quickly is the emphasis on interoperability and modularity.⁸ Russia's unified design standards make many combinations of turrets and chassis for armored vehicles possible, despite being produced by different manufacturers. It also appears that cost (both production and operation/maintenance) is a key factor that is considered from the very beginning of development. Innovations that are deemed too costly are weeded out early, meaning that from the onset, the design must not only be combat effective, but also feasible in terms of cost.

Russia is pursuing an evolutionary strategy in terms of robotization. Instead of attempting to develop robotic combat vehicles from scratch, Russia is incrementally adding

robotic capabilities – such as autoloaders, unmanned turrets, and computerized steering – to existing systems. This allows the Russian military to reduce crew sizes, with the desired end state of eventually eliminating the entire crew for some combat vehicles. Robotics utilization is not limited to unmanned platforms in the Russian Federation. The Russian Armed Forces is also developing small automated turrets for placement on manned armored personnel carriers, armored cars, support vehicles, and even as secondary weapons on large systems such as self-propelled artillery pieces.

Despite these advantages in Russia's ability to more rapidly design, develop, and produce large weapons systems, President Putin's recent comments at a meeting of the Defense Ministry Board indicate that Russia will instead focus on equipping modestly priced platforms with better munitions. This development is somewhat unsurprising, as Russia has appeared to have had great success in Syria with using technologically advanced munitions on older and/or less technologically advanced platforms. Although Russia is adopting this "lower cost" strategy, Moscow will not stop the development and fielding of technologically advanced platforms, but will instead slow their development and field fewer systems.⁹ Whether Russia is able to field a fully modernized military has yet to be seen, but it appears at very least a framework for modernization has been laid, and is being implemented. 

⁷ Sergey Mikhaylov, "The Armed Forces Are on the Upswing," *Stoletiye Online*, October 7, 2014, www.stoletie.ru/obschestvo/armija_na_podjeme_129.htm. Accessed March 15, 2018.

⁸ Aleksandr Kurennoy and Aleksey Naryshkin, "Vyacheslav Khalitov, Deputy Director of the Uralvagonzavod Science and Production Corporation Open Joint-Stock Company for Specialized Technology," transcript of Arsenal radio program posted on *Ekho Moskv Online*, January 26, 2015, m.echo.msk.ru/interview/detail.php?ID=1480668. Accessed 15 March 2018.

⁹ Charles K. Bartles, "Focus on Munitions, Instead of Platform Development," *OE Watch Online*, February 2018. See also Aleksey Ramm, Sergey Valchenko, and Dmitriy Strugovets, "Banking on Precision and High Efficiency," *Izvestiya Online*, December 25, 2017, iz.ru/687444/aleksei-ramm-sergei-valchenko-dmitrii-strugovets/stavka-na-vysokotochnoe-i-vysokoeffektivnoe. Accessed March 15, 2018. Finally, see "Expanded meeting of the Defence Ministry Board," Kremlin Website Press Release, December 22, 2017, en.special.kremlin.ru/events/president/news/56472. Accessed March 15, 2018.