



Training in the Russian Armed Forces: An Assessment of Recent Reforms and their Impact on Russian Operations in Ukraine

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Abstract

This paper examines how the Russian military trains its armed forces. It begins with an overview of training for conscripts, contract soldiers, and officers, detailing how and where individual and unit training is conducted, and the different mission-essential tasks associated with training. The second part of the paper examines how the Russian military has assessed its training programs, where it has identified problems, and the recent steps taken to address deficiencies. The third section of the paper analyzes Russian operations in Ukraine from the perspective of training. Building on the previous chapters, it examines how specific training initiatives may have impacted Russian operations in Ukraine.

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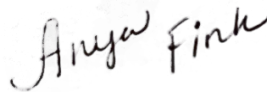
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Executive Summary

Since 2009, the Russian military has taken a number of steps to improve the quality of training for its forces and to address various deficiencies that were evident based on the military's performance in the Russian-Georgian War and subsequent conflicts. The General Staff of the Armed Forces, which is responsible for establishing the standards for operational training, has increased the frequency and tempo of training events (including live-fire exercises), reintroduced the practice of conducting surprise (snap) exercises to assess unit readiness, scheduled more joint exercises between interbranch groupings, and invested in the construction of new training infrastructure, including ranges and training centers such as the much-touted Mulino Complex in the Western Military District. The military has also increased the ratio of better trained contract soldiers to relatively inexperienced conscript soldiers, which has mitigated some of the problems associated with the high turnover rates among enlisted personnel. Perhaps most importantly, Russian troops gained valuable combat experience during operations in the Donbas and Crimea (2014–2015) and in Syria (ongoing).

Although there are signs that these reforms have achieved some of their objectives, for instance by increasing unit readiness levels, Russian leaders have sometimes overstated their success. Training problems have persisted for a variety of reasons, including procedural rigidity, inadequate equipment and ammunition, and lack of standardization because of an emphasis on in-house training within units. Russian tactical training still struggles to emulate real-world combat conditions, with excessively scripted exercises, a lack of dedicated opposing force (OPFOR) in training events, and an emphasis on simulation training as a low-cost substitute for field exercises. Russian forces performed well in Crimea and Syria, but those operations were limited in scope and had clearly defined and achievable objectives. The recent operations in Ukraine were larger in scope and required significant coordination between services across multiple fronts to achieve objectives that, with the benefit of hindsight, were overly ambitious. As such, Russia's special military operation (SVO) has stressed Russian forces in unprecedented ways, revealing training and other deficiencies that were not evident in the previous operations.

This paper examines how the Russian military trains its armed forces. It begins with an overview of training for conscripts, contract soldiers, and officers, detailing how and where individual and unit training is conducted, and the different mission-essential tasks associated with training. The second part of the paper examines how the Russian military has assessed its training programs, where it has identified problems, and the recent steps taken to address

deficiencies. The third section of the paper analyzes Russian operations in Ukraine from the perspective of training. Building on the previous chapters, it examines how specific training initiatives may have impacted Russian operations in Ukraine.

The following is a summary of our key findings:

- There are three primary avenues into the Russian military: as a conscript, a contract soldier, or a military officer. Training for each pathway varies greatly, with conscripts receiving the least training, contract soldiers receiving significantly more training, including both tactical and technical training, and officers receiving the most training (including both higher education and extensive battlefield command and tactical training once they receive their commissions).
- In Russia's mixed manpower system, officers are primarily responsible for training both conscript and contract soldiers. NCOs (noncommissioned officers) play only a limited role in training enlisted personnel.
- Tactical unit-level training focuses primarily on maintaining and improving combat readiness; however, the quality and scope of training varies greatly between units.
- High turnover rates for both conscripts and contractor personnel require Russian combat units to be substantially rebuilt every few years. The need to constantly train new personnel is not only a drain on available training resources, but also leads commanders to focus more on the training of new recruits and less on training long-term contract soldiers.
- The Russian military continues to place high priority on live-fire exercises. Yet, by their very nature, such exercises tend to be heavily scripted because of safety concerns, and hence less effective. This contrasts sharply with US thinking, which prefers force-on-force exercises with a dedicated OPFOR.
- Poor training appears to have contributed to a number of tactical and operational failures during the ongoing war in Ukraine, including the following:
 - During the initial invasion, Russian commanders prioritized speed and deception over force protection and established doctrine, often leaving their formations vulnerable to ambush and attrition by Ukrainian mobile defense units.
 - Officers often failed to maintain proper spacing for units on the march, particularly on major transportation arteries, leading to excessively high loss rates from Ukrainian fires.
 - Lightly armed reconnaissance units frequently advanced beyond the range of supporting artillery units, where they were more susceptible to being isolated and destroyed by Ukrainian combined arms units.

- Russian units often reacted poorly to ambushes because of insufficient coordination and initiative, leading to an ineffective response.
- Russian methods for coordinating long-range fires appear to be overly centralized, leading to long delays in assigning strike missions and failures to prioritize key targets.
- Russian soldiers often rely on unsecure communications, allowing Ukrainian forces to intercept, jam, and geolocate transmissions and target Russian troops, command and control (C2), and logistics nodes.
- Russian commanders appear to have less latitude for independent action, and they can be slow to respond to emerging threats due to the need to seek higher level approval.
- Russian troops have often exhibited poor discipline (e.g., abandoning their equipment and engaging in looting and indiscriminate violence).
- Russian troops have often appeared either unwilling or unable to maintain their equipment, leading to frequent breakdowns and shortages.
- As more inexperienced reservists and conscripts are mobilized and deployed to Ukraine and as attrition continues to take its toll, the training problems noted above are likely to be exacerbated.

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Introduction

When it became evident that Russia was preparing to conduct a major military offensive against Ukraine in early 2022, many observers assumed that Moscow would achieve its objectives quickly. This was not an unreasonable assumption, given that Russia had spent the better part of 13 years restructuring and modernizing its military. By 2022, Russian forces were leaner, better equipped, better trained, and had a higher ratio of contract versus conscript personnel than at any time since the collapse of the Soviet Union in 1991. Russian troops had also performed relatively well in the interventions in Crimea and the Donbas (2014–2015) and Syria (ongoing). When Russia launched its special military operation (SVO) on February 24, 2022, the US intelligence community, having correctly anticipated the timing and nature of the Russian operation, also predicted that the Ukrainian government could collapse within a matter of days.¹

And indeed, Russian troops enjoyed many early successes. Within days, Russian forces were fighting on the outskirts of Kyiv and had pushed more than 100 kilometers beyond Kherson in the south. However, the Ukrainian military, although at a quantitative and qualitative disadvantage, proved to be more resilient and adaptive than many Russian and Western analysts had predicted. As the Russian offensive stalled, particularly in the north, it became evident that Russian forces were hindered by poor planning and logistics as well as insufficient intelligence and air support. Worse still, control over the operation was far from unified, with Russian forces dispersed along multiple axes of advance operating in an unsynchronized fashion. On numerous occasions, Russian troops also exhibited poor tactical acumen, for instance when responding to ambushes or conducting road movements through contested areas.

Although some of the Russian military's tactical failures can be attributed to errors in strategy at the strategic and operational levels—in the war's initial phase, some Russian commanders evidently dispensed with established doctrine and tactics, techniques, and procedures (TTP) in a rush to achieve Moscow's political objectives on the ground—training, or the lack thereof, appears to have contributed. Russian leaders were aware of many of the shortcomings in the

¹ Nomaan Merchant and Matthew Lee, "US Intelligence Agencies Review What They Got Wrong on Russia's Invasion of Ukraine," PBS News Hour, June 4, 2022, <https://www.pbs.org/newshour/nation/u-s-intelligence-agencies-review-what-they-got-wrong-on-russias-invasion-of-ukraine>; James Risen and Ken Klippenstein, "The CIA Thought Putin Would Quickly Conquer Ukraine. Why Did They Get It So Wrong?," The Intercept, Oct. 5, 2022, <https://theintercept.com/2022/10/05/russia-ukraine-putin-cia/>.

military's training regimen before the SVO and, as we shall see, had invested resources in improving training in several areas. But these efforts were insufficient given the scope and scale of the operation in Ukraine. Although it is too early to predict the outcome of the war, training deficiencies will likely continue to plague Russian forces in Ukraine, particularly as large numbers of reservists, volunteers, and conscripts are mobilized and sent to fight.

This paper examines Russian operations in the SVO from February to December 2022 through the lens of training. It begins with an overview of tactical training in the Russian Ground Forces for conscripts, contract soldiers, and officers. This section details how and where training is conducted, the types of training that individuals and units receive, and the different missions associated with training. This sets the stage for the second part of the paper, which examines how the Russian military has assessed its training programs since 2009 and where it has identified problems or deficiencies, particularly in tactical training. This section concludes with an analysis of recent steps that the Russian military has taken to remedy problems where identified and improve the tactical proficiency of enlisted soldiers and officers. The third section of the paper analyzes Russian operations in the SVO from the perspective of training. Building on the previous chapter, it examines how training may or may not have contributed to the success or failure of specific ground-based operations based on the observations of Russian, Ukrainian, and Western military personnel, officials, and journalists. The paper concludes with a series of key observations.

We adopted a sequential approach to conducting research on Russian military training that influenced the structure and format of the paper. We began by mapping out the general contours of training in the Russian military, then conducted a detailed assessment (when possible) of tactical combat training for the Ground Forces. Surprisingly, only limited material exists on this topic in Western-language sources.² Instead, we relied heavily on Russian-language sources, particularly Ministry of Defense (MOD)-affiliated publications (books, journals, and newspapers) and statements by Russian officials, to address gaps in our understanding. From these sources, we were able to conduct a general assessment of Russian military training, which served as a prerequisite to analyzing training successes and failures. Simply put, we needed to understand how Russian forces are trained to assess whether said training efforts have been successful.

The second stage of our analysis examined Russian perspectives on training and the steps taken by the military to address problems in training, beginning with the New Look military reforms that began in 2009. For this section, we relied primarily on official statements and

² Some exceptions exist. See, for instance, Lester Grau and Charles K. Bartles, *The Russian Way of War: Force Structure, Tactics, and Modernization of the Russian Ground Forces* (Fort Leavenworth, KS: Foreign Military Studies Office, 2016), and Johan Norberg, *Training to Fight: Russia's Major Military Exercises 2011–2014* (Stockholm: FOI Total Defense Research Institute, 2015).

military publications. Russian officials have offered surprisingly frank assessments of the relative strengths and weaknesses of the Russian military's training programs and the steps that the military needed to take to better prepare its soldiers for combat. When possible, we augmented our research with the observations of foreign military personnel who have observed Russian training events such as exercises and competitions.

The final section of the paper, in which we assess the performance of Russian units in Ukraine from the perspective of training, relies on a wide variety of sources, including Ukrainian, Russian, and Western news reports; official statements; and accounts by Russian milbloggers who are well informed about Russian operations in Ukraine. Given the difficulties of assessing an ongoing conflict of this nature, significant gaps remain in our understanding of tactical- and operational-level events. In addition, many of the best sources available (i.e., those providing the most detailed information about Russian operations in Ukraine) are either Russian or Ukrainian, each of which has incentives to exaggerate both their own successes and their opponents' failures. For this reason, we have deliberately cast a wide sourcing net to help assess the validity of the source material and to develop as comprehensive a picture as possible of events on the ground.

Overview of Russian Military Training

This section provides an overview of individual and collective training in the Russian military, beginning with basic training for conscript and contract servicemembers. It details training requirements, where and how training is conducted, and the missions and tasks associated with preparing soldiers for combat.

Individual Military Training

To understand the Russian military training system, it is necessary to understand Russia's mixed manpower recruitment system. There are three primary avenues into the military, and preliminary training is contingent on one's method of entry. These three pathways are as an enlisted conscript soldier, an enlisted contract soldier, or a military officer. The individual training associated with these three pathways differs greatly, with varying prerequisites, time commitments, expectations, and foci, each of which are described in the following section. Individual training also varies considerably between the units to which new recruits are assigned.

Conscript soldiers

Conscription occurs twice a year in Russia, in the spring and fall. Fall conscription typically lasts from October 1 until December 31, and spring conscription generally runs from April 1 to July 15.³ Until recently, men between 18 and 27 with no health issues, criminal convictions, or valid alternative commitments, such as civil service or religious beliefs contradicting military service, could be called up for one year of compulsory military service during these time windows.⁴ In December 2022, the Duma passed a bill that raised the upper age limit for conscription from 27 to 30 while increasing the lower limit from 18 to 21.⁵

³ "Signed Decree on Conscription for Military Service" (Подписан Указ о призыве на военную службу), Kremlin.ru, March 30, 2023, <https://kremlin.ru/acts/news/70807>; "Federal Law of March 28, 1998 No. 53-FZ" (Федеральный закон от 28.03.1998 г. № 53-ФЗ), Kremlin.ru, Accessed May 4, 2023, [Kremlin.ru/acts/bank/12128/page/6](https://kremlin.ru/acts/bank/12128/page/6).

⁴ "Conscript History" (история призыва), Russian Ministry of Defense, accessed May 4, 2023, https://recrut.mil.ru/career/conscription/recruiting_history.htm; "Federal Law of March 28, 1998 No. 53-FZ" (Федеральный закон от 28.03.1998 г. № 53-ФЗ).

⁵ Those responsible for the bill claim it is to encourage higher education for conscripts and avoid unnecessary medical examinations for younger conscripts. These changes were first announced in December 2022 (<https://sozd.duma.gov.ru/bill/361804-7>).

New conscripts first report to induction stations and are transferred to their assigned units to go through a one- to two-month basic training course, followed by three to six months of more specialized training to prepare for their assignments in their permanent units.⁶ Basic training consists of fitness training, familiarization with basic drills and fieldcraft, and weapons training on the standard issue AK-74.⁷ Following this process, conscripts receive training in their designated occupational specialty. Because of their limited time in service, conscripts are typically viewed as low-skilled personnel with limited motivation.⁸ Conscript soldiers are usually assigned noncombat roles that require limited training in the Russian military, such as that of drivers and cooks.⁹

Despite their poor reputation, conscripts often join the military with well-developed and militarily useful skills. The Russian Federation, as did the Soviet Union, conducts “patriotic education” of school pupils, and certain rudimentary military skills are included in the primary and secondary education curriculum, including first aid, geography, and map reading.¹⁰ Military-related training also features in various school extracurricular activities.¹¹ A primary example of this is the Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF), a paramilitary sport organization that provides limited training for young people under conscription age to position its members for more competitive and prestigious roles in the military.¹²

Before February 2022, Russian law prevented conscripts with fewer than four months of training from being used in combat, but Russian commanders have frequently ignored this

⁶ “Federal Law of March 28, 1998 No. 53-FZ” (Федеральный закон от 28.03.1998 г. № 53-ФЗ); Sasha Petrova, “Explainer: How Does Conscription Work in Russia?” Aljazeera, May 5, 2022, <https://www.aljazeera.com/news/2022/5/5/are-russian-conscripts-fighting-in-ukraine>.

⁷ “Federal Law of March 28, 1998 No. 53-FZ” (Федеральный закон от 28.03.1998 г. № 53-ФЗ); N. Leventov, “Know Your Maneuver” (Знать свой маневр), *Armeiskii Sbornik* 5 (2017), p. 14; “Curriculum of Military and Political Training in the Armed Forces of the Russian Federation for 2019” (Учебный план военно-политической подготовки в Вооруженных Силах Российской Федерации на 2019 год), *Armeiskii Sbornik*, Nov 01, 2018, <https://army.ric.mil.ru/Stati/item/150488>.

⁸ Petrova, “Explainer: How Does Conscription Work in Russia?”

⁹ Bartles, “Russian Armed Forces Enlisted Professionals.”

¹⁰ Samoscat, D, “The Main Activities of the Ministry of Defense of the Russian Federation for the Military-Patriotic Education of Youth” (Основные направления деятельности Министерства обороны Российской Федерации по военно-патриотическому воспитанию молодежи), *Armeiskii Sbornik*, Mar. 3, 2023, <https://army.ris.mil.ru/Stati/item/472080>.

¹¹ “Information for the Conscript,” Russian Ministry of Defense, accessed Dec. 10, 2022, recrut.mil.ru/career/conscription.html.

¹² Grau and Bartles, *The Russian Way of War*, p. 6.

prohibition during the war.¹³ Additionally, the recent mobilization may supersede this policy to legally allow the immediate employment of new conscripts and mobilized reservists.¹⁴

Reserve training

After conscripts serve in the military, they leave active duty and enter the reserves. In 2009, as a result of reforms introduced by Russian defense minister Anatoly Serdyukov, the Russian military established a reserve force to create a skilled pool of recruits to augment the active force in wartime and other national emergencies. In 2019, the National Combat Army Reserve (BARS) was created for fresh reservists to serve as a “mobilization ready” force. BARS first functioned as a pilot program out of the Southern Military District.¹⁵ Those qualified to enter BARS must pass a series of tests and sign contracts with the MOD. BARS members participate in two-week annual training events for which they receive monthly stipends. Participation in BARS is completely voluntary.¹⁶ The objective of the combat reserve is to motivate Russian veterans to retain their skills while allowing them to enjoy the benefits of civilian life.¹⁷ However, reports on the state of this “improved” reserve force qualify this goal, stating, “a functional reserve [still resides] firmly in the category of ‘nice to have.’”¹⁸

Contract soldiers and noncommissioned officers

Contract soldiers (*Kontraktniki*) elect to serve longer than the one-year term required for conscripts, typically to earn better pay, better benefits, and more prestigious assignments than conscripts do. There are different pathways for contract soldiers, all of which generally require a minimum of two years’ service. Most contract soldiers serve three-year terms beyond their professional military training, and contract service is highly encouraged by the Russian government.¹⁹

¹³ “Russian Conscript Captured in Ukraine Faces Uncertain Future Back Home,” RFE/RL, July 6, 2022, <https://www.rferl.org/a/russia-conscript-captured-ukraine-return/31931488.html>.

¹⁴ Grau and Bartles, *The Russian Way of War*, p. 6.

¹⁵ “BARS: Part-Time Military Service” (БАРС: военная служба по совместительству), *Zvezda Weekly*, Sep 7, 2021, <https://zvezdaweekly.ru/news/202196111-LmRRi.html>.

¹⁶ “This Is Not Preparation for War”: The Tomsk Military Commissar Explained Why the Army Is Increasing the Manpower Reserve,” *vtomske.ru*, Oct. 22, 2021, <https://news.vtomske.ru/news/187931-eto-ne-podgotovka-k-voine-tomskii-voenkom-poyasnil-zachem-armiya-uvelichivaet-lyudskoi-rezerv>

¹⁷ Grau and Bartles, *The Russian Way of War*.

¹⁸ Gil Barndollar, “The Best or Worst of Both Worlds?,” Center for Strategic & International Studies (blog), Sept. 23, 2020, <https://www.csis.org/blogs/post-soviet-post/best-or-worst-both-worlds>.

¹⁹ “Contract Service Is the Real Deal” (СЛУЖБА ПО КОНТРАКТУ -НАСТОЯЩЕЕ ДЕЛО), Russian Ministry of Defense, Accessed May 8, 2023, <https://xn--80aabtwwbbuhbiqdxddn.xn--p1ai/>.

Both conscript soldiers with at least three months' experience on active duty and reservists can change their status to contract soldiers, but they must begin at the start of the enlisted training period for contract servicemen in either October or April.²⁰ In contrast to conscript soldiers, *Kontraktniki* often fill "trigger puller positions" and spend their time in the military becoming trained warfighters. Contract soldiers undergo significantly more training at a higher skill level than conscript soldiers and form a higher percentage of the personnel in elite units such as the Airborne and Naval Infantry, but they can also be found throughout the general-purpose forces. The primary focus of contract soldier education is to develop skilled professionals who will then spend their entire time in the military learning, practicing, and teaching their skill in a system that focuses on inculcating technical expertise rather than fostering leadership among enlisted soldiers.²¹

The Russian MOD has laid out standardized guidelines for the training of all contract soldiers. After completing the numerous steps and tests required to enlist, each new contract soldier completes intensive "combined arms training," the equivalent of US basic training, regardless of their previous experience.²² This training includes a "survival" course that is broadly designed to prepare soldiers for combat missions against different threats in challenging environments. The intensive combined arms training lasts 4 weeks (192 training hours), followed by a 4-day field training event. After graduating from the course, soldiers are usually assigned to their permanent units where they receive additional training, or in some cases, continue to receive additional training in their area of specialty before transferring to their units.

Figure 1 outlines the skill sets stressed in the intensive combined arms training program for contract soldiers. It highlights three broad priorities for training: decision-making, conceptual knowledge, and physical requirements.²³

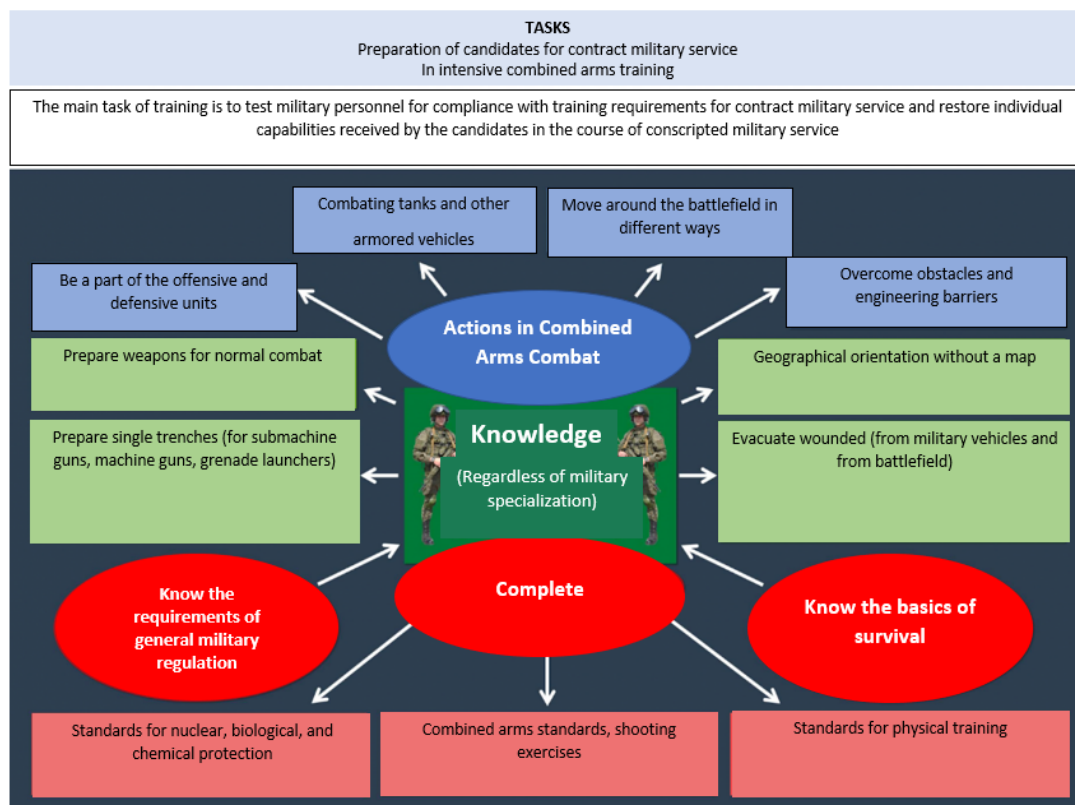
²⁰ "Information for the Candidate," Ministry of Defense of the Russian Federation Online, accessed Dec. 12, 2022, <http://contract.mil.ru>.

²¹ Bartles, "Russian Armed Forces Enlisted Professionals"; "Curriculum of Military and Political Training in the Armed Forces of the Russian Federation for 2019" (Учебный план военно-политической подготовки в Вооруженных Силах Российской Федерации на 2019 год).

²² In this context, the Russian use of the term "combined arms" (общевойсковой) refers to the different skill sets soldiers require to fulfil their missions.

²³ "Training of Military Personnel Under Contract" (Подготовка военнослужащих по контракту), Russian Ministry of Defense, accessed Dec. 14, 2022, <https://recrut.mil.ru/career/soldiering/qualification/soldier.htm>.

Figure 1. Tasks for the preparation of candidates for contract military service in intensive combined arms training (translated)



Source: "Tasks for the Preparation of Candidates for Military Service Under a Contract in the Program of Intensive Combined Arms Training," <https://recrut.mil.ru/career/soldiering/qualification/soldier.htm>.

After graduating intensive combined arms training, contract soldiers remain in a probationary state for three months for evaluation and approval while they start the professional education required of contract servicemen.²⁴

Some contract soldiers are selected to attend a noncommissioned officer (NCO) academy for a program that is 2 years and 10 months long. This program is typically completed at the beginning of an NCO's contract. NCOs who graduate from this program are paid higher salaries and receive more benefits than conscript or junior enlisted contract soldiers and must commit to three years of service following completion of schooling in their specialty.²⁵ NCOs rarely

²⁴ Bartles, "Russian Armed Forces Enlisted Professionals."

²⁵ "Promotion from an Enlisted to a Non-Commissioned Officer," Russian Federation Ministry of Defense, accessed Dec. 14, 2022, <https://eng.mil.ru/en/career/soldiering/qualification.htm>.

occupy leadership positions.²⁶ Instead, they are assigned to billets based on their technical expertise and training. As the NCO program has become more popular among contract soldiers, the Russian MOD has increased the professional military educational opportunities for contract NCOs.²⁷

Officers

In Russia's mixed manpower system, officers, not NCOs, are primarily responsible for training soldiers. To prepare for this role, officer cadets usually attend four- or five-year military academies or institutes whose functions are similar to that of a combination of the US Military Academy and the officer basic course, with a strong emphasis on battlefield tactics.²⁸ There is a range of professional military educational facilities for individuals on the officer track:

military academies, higher military schools, military training centers at civilian universities, military institutes, military training centers at some civilian universities (medical, financial), retraining and improvement courses for officers, cadet schools and corps, and the Suvorov and Nakhimov schools.²⁹

There are a few general-purpose military academies, but most are tied to specific services (i.e., Ground, Naval, Aerospace, or Strategic Rocket). Within each service there are also specialized training academies, such as the Khrulyov Military Logistics Academy and the Vasilevsky Anti-Aircraft Defense Academy, both of which are Ground Forces academies.³⁰ Cadets can also attend military training centers at civilian universities. These training centers also serve the broader function of training reserve commissioned officers as well as new commissioned officers for active duty.³¹

²⁶ Grau and Bartles, *The Russian Way of War*.

²⁷ "Training of Military Personnel Under Contract."

²⁸ Grau and Bartles, *The Russian Way of War*; Aleksandr Kolotilo, "VDV: The Valor of the Highest Order," *Krasnaya Zvezda Online*, Dec. 26, 2012.

²⁹ "Tactical Training of Cadets of Military Training Centers" (тактическая подготовка курсантов учебных военных икс центров), Siberian Federal University, accessed Dec. 15, 2022, https://vii.sfu-kras.ru/images/libs/Takticheskaya_podgotovka_kursantov_uchebnyh_voennyh_centrov.pdf. The Suvorov and Nakhimov schools are secondary education boarding schools in Russia for young boys where the curriculum focuses on military education of future officers. These schools first were developed in the Soviet Union and were accessible throughout the country's satellite states. See Harriet F. Scott and William F. Scott, *Russian Military Directory 2004*, pp. 207–208.

³⁰ "Information About Educational Organizations" (Сведения об образовательной организации), Russian Ministry of Defense, accessed Dec. 20, 2022, <https://vagsh.mil.ru/edumap>.

³¹ "On Amendments to Certain Legislative Acts of the Russian Federation in Terms of Improving the Military Training of Students of Federal State Educational Organizations of Higher Education" (О внесении изменений в отдельные законодательные акты Российской Федерации в части совершенствования военной

The first few years of an officer cadet’s professional military education include preliminary and basic military training featuring the specifics of a student’s chosen area of study (language, engineering, mathematics, science). Simulators are often used in the classroom to enhance battlefield readiness.³² As their education progresses, cadets will usually participate in field training exercises to apply their skills in practical settings. Figure 2 is one of a series of photos depicting a recent training excursion by fifth-year cadets of the Faculty of Foreign Languages of the Alexander Nevsky Military University. The field excursion was intended to “instill skills in organizing combat training and life in the field.”³³ The cadets practiced marching, tactical drills, situation response, the use of engineering weapons and wireless communications, and medical care. It can be expected that these “field trips” are commonplace in the final years before the graduated officers assume leadership in the field.³⁴

Figure 2. Fifth-year cadets work in the field on tactical drills and situational response



Source: “Cadets of the Faculty of Foreign Languages Made a Field Trip,” Russian Ministry of Defense, Nov. 3, 2022, <http://vumo.mil.ru/more/Novosti/item/443270/>.

подготовки студентов федеральных государственных образовательных организаций высшего образования), State Duma, Federal Law No. 309-FZ of Aug. 3, 2018; “Map of Civilian Universities on the Basis of Which Military Training Centers Operate” (Карта гражданских вузов, на базе которых функционируют военные учебные центры), Russian Ministry of Defense, accessed May 8, 2023, <https://vuz.mil.ru/civilian>.

³² “Introduction of Modern Teaching Aids.”

³³ “Cadets of the Faculty of Foreign Languages Made a Field Trip,” Russian Ministry of Defense, Nov. 3, 2022, <http://vumo.mil.ru/more/Novosti/item/443270/>.

³⁴ The MOD also hosts large competitions, or “Olympiads,” among cadets at these military institutions. The Olympiads include competitions to test their skills, knowledge, and ability in categories such as math, informatics, foreign language, and military history. They are held to “improve the quality of training of military personnel [and] their professional motivation,” with the added benefit that hosting these competitions improves the quality of the teaching staff. Those who succeed at the Olympiad advance to prestigious nationally and internationally held competitions that create pride and excitement around training.

Newly minted officers in the Russian military typically become platoon leaders, and their education is designed to prioritize leadership and responsibility. According to one source, the “most important qualifying characteristic of a university graduate is ability to manage subordinate units in various combat conditions,” including their ability to train their soldiers with the necessary specific capabilities.³⁵ Officers have the opportunity for a more dynamic career path within the military, and their training is generally less specialized than that of contract NCOs.³⁶ For example, in the early years of their career, a Ground Forces maneuver officer will command (successively) platoons, companies, and battalions. Upon mastering their assigned specific arms branch, officers will be sent to a year-long training course, such as the Combined Arms Academy, to learn the skills needed to command a combined arms unit at the regiment or brigade level.³⁷

High-performing senior field grade officers and newly appointed general officers are sometimes selected to attend the Military Academy of the General Staff. The Academy is the senior staff college for the Russian armed forces, offering advanced degrees in topics ranging from military strategy and operational art to logistics and public administration.³⁸ The Academy emphasizes the importance of combat experience in all their professors and instructors, and especially values previous experience in Syria.³⁹ Military graduates begin a separate career track within the General Staff and do not return to their specific branch or service. The Academy is considered prestigious, and many of Russia’s senior military leadership have attended its programs.⁴⁰

Training responsibilities for officers vary depending on rank and position. But as Table 1 below illustrates, commanders at every echelon have a role in training their subordinates.

³⁵ “Introduction of Modern Teaching Aids” (Внедрение современных средств обучения), *Armeiskii Sbornik*, Feb. 15, 2022, <https://army.ric.mil.ru/Stati/item/379323>.

³⁶ “Training of Military Personnel Under Contract.”

³⁷ Grau and Bartles, *The Russian Way of War*.

³⁸ “Military Academy of the General Staff of the Military Forces of the Russian Federation” (военная академия генерального штаба вооруженных сил российской федерации), Russian Ministry of Defense, accessed Dec. 20, 2022, https://vagsh.mil.ru/O_VUZe/Struktura.

³⁹ “Military Academy of the General Staff of the Military Forces of the Russian Federation” (военная академия генерального штаба вооруженных сил российской федерации), Russian Ministry of Defense, accessed Dec. 20, 2022, <https://vagsh.mil.ru/>.

⁴⁰ “Higher Education” (высшее образование), Russian Ministry of Defense, accessed Dec. 14, 2022, <https://eng.mil.ru/en/education/higher/academy/more.htm?id=8654@morfOrgEduc>.

Table 1. Training responsibilities at different echelons of command

No	Position	Combat Training Program, 2014	Draft Combat Training Program, 2016
1	Commander of the military district	Specify the number of study days per month and the content of the program with a change in the amount of study time	Specify the number of study days per month and the content of the program with a change in the amount of study time
2	Army commander (corps commander)	Not provided	Determine list of modules for testing during the year by each formation (military unit), in accordance with the combat mission
3	Division commander (brigade, regiment)	Refine the calendar plan, the calendar of main events for the month, the number of hours on topics; change individual topics and the content of classes; determine the forms and methods of training units	Clarify the plan-calendar of the main events for the month, the number of hours on topics; change individual topics and the content of classes; determine the forms and methods of training units. In addition, determine the sequence and duration of the training of modules by each battalion, in each training period; clarify (add) exercises, standards required for training, and evaluation of military personnel and units.
4	Battalion commander	Specify the number of hours for classes, the content of classes, the topics of job training for sergeants	Specify the number of hours for classes, the content of classes, the subject of the job training of sergeants In addition, determine the duration of the KTZ (submodules): squad, platoon, company, battalion, depending on the results obtained, without exceeding the time frame for the module
5	Company commander	Specify the number of hours for classes, the content of classes, the topics of job training for sergeants	Specify the number of hours for classes, the content of classes, the topics of job training for sergeants
6	Platoon leader	Set the duration of training drills	Set the duration of training drills

Source: N. Leventov, "Know Your Maneuver" (Знать свой маневр), *Armeiskii Sbornik* 5 (2017), p. 14.

Collective Training

Once enlisted soldiers and officers complete their preliminary training and educational requirements, they are transferred to their assigned units. Most of the collective training in the Russian military is managed in-house, within units. Units conduct a variety of training throughout the year, ranging from live-fire exercises and night combat drills to larger combined arms military exercises.⁴¹ Most of the collective training focuses on maintaining or improving the combat readiness of forces through drills in a series of nine collective complex tactical tasks (KTZs):

- Prepare for combat
- Move in precombat formation
- Move in combat formation
- Attack against a defending enemy
- Attack a retreating enemy
- Conduct a meeting engagement
- Conduct a maneuver defense
- Conduct a positional defense
- Special tasks (including raids, special operations, and peacekeeping operations)⁴²

The yearly training calendar consists of two six-month training cycles (winter and summer), and December 1 is considered the beginning of the training year. Figure 3 shows a hypothetical training schedule for both the winter and summer training periods for a notional brigade. The colored boxes at the top show training priorities as previously described, but the specific delegation of time allotted to each is hypothetical to show the general structure and methods of brigade and unit training.

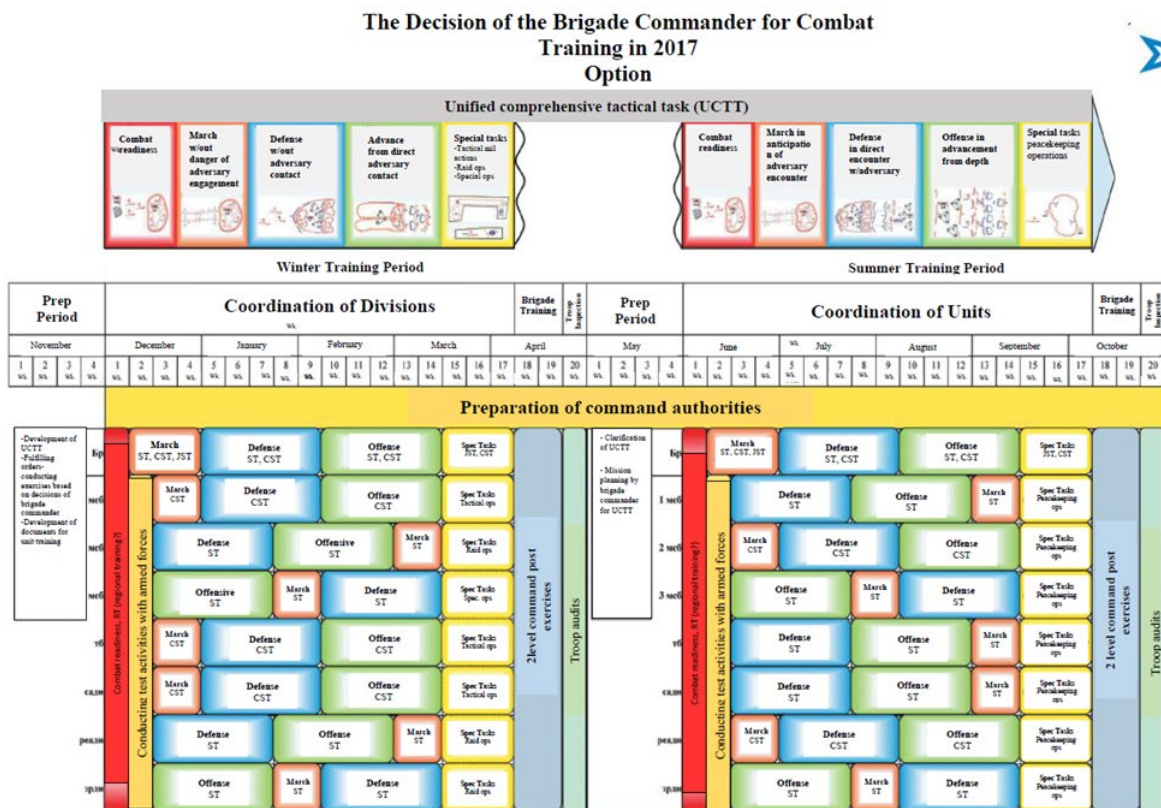
In November and May there is a month of individual training followed by unit training over the next four to five months in designated offensive, defensive, maneuver, and readiness drills, as well as “special tasks.” Time periods are color coded by task (labeled “unified comprehensive tactical task” in this chart). The final weeks of the biannual training periods are used to participate in command post exercises and to practice and evaluate joint cohesion and readiness. In reality, units do not always adhere to training schedules, so soldiers do not always

⁴¹ Grau and Bartles, *The Russian Way of War*.

⁴² N. Leventov, “Know Your Maneuver” (Знать свой маневр), *Armeiskii Sbornik* 5 (2017), p. 14.

make it through all the required KTZs, with potential implications for real-world operations, as we will see.⁴³

Figure 3. Hypothetical brigade training schedule



Source: Leventov, "Know Your Maneuver," p. 14.

The Russian military uses a variety of mechanisms to drill units on their collective tasks. These include basic tactical drills, live-fire exercises, mobilization drills, combined arms and large-scale exercises, and inspections.

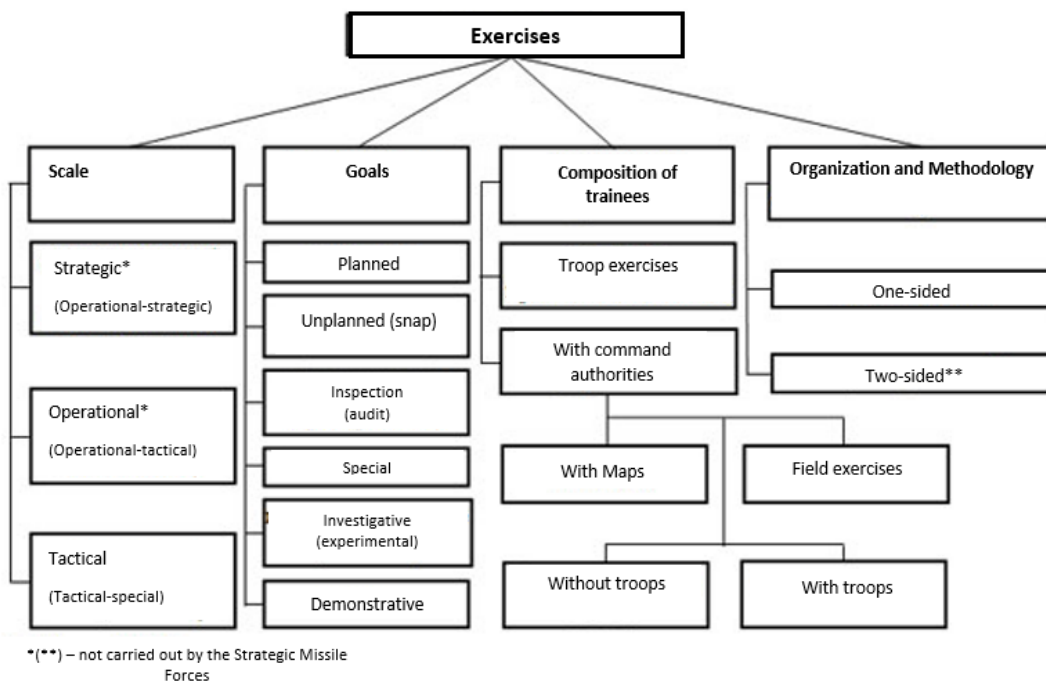
- Basic tactical drills:** Russian Ground Forces participate in an array of tactical drills that are designed to be embedded into memory by repetition. Drills are designed to be simple: the example cited in a military journal is that of exiting a vehicle and forming an assault line. Continuous practice of these drills makes them second nature and relieves mental stress from the soldier "in the midst of the noise, confusion and terror

⁴³ Leventov, "Know Your Maneuver."

of the battlefield. The drills replace thought when the soldier is cold, tired, hungry, and frightened, and perhaps is a reservist mobilized 15 years after his initial service.”⁴⁴

- **Exercises:** The Russian military consistently executes training exercises that vary in scale and purpose. Figure 4 is a Russian MOD schematic (translated) showing how military exercises are scoped and organized. At the operational and tactical levels, most of the training is conducted in-house, within the brigades, regiments, and battalions, in accordance with directives that prioritize combat readiness and force mobility. Some of the smaller unit exercises include live-fire unit drills and battlefield evacuation practice. One training guide, the *Combat Training Program and the Manual on Organizing and Conducting Tactical Exercises*, prescribes that at least 30 percent of tactical exercises be dedicated to organizing and conducting active combat operations at night.⁴⁵

Figure 4. Russian Federation Ministry of Defense exercise organization chart



Source: “Trainings” (Учения), Russian Ministry of Defense, accessed Dec. 15, 2022, <https://encyclopedia.mil.ru/encyclopedia/dictionary/details.htm?id=14075@morfDictionary>.

⁴⁴ D. Mishin, “Understand the Basics,” *Armeiskii Sbornik* (July 15, 2021).

⁴⁵ Yu. Shlyk and I. Popodko, “Features of the Preparation and Conduct of Tactical Exercises with Live Firing at Night,” *Armeiskii Sobeiskii* (Nov. 2022).

- **Combined exercises:** Larger scale exercises are important for the Russian Ground Forces because they provide an opportunity for different types of units to train together and integrate combined arms capabilities.⁴⁶ In these combined exercises, senior officers have the chance to assess the field training and task management of the smaller units and subunits that are internally managed by junior officers.⁴⁷
- **Large-scale exercises:** Strategic command staff exercises are an opportunity to test the combat readiness and large-scale operations capability of each military district. They are rotated every year and are titled as such (e.g., Kavkaz 2016, Zapad 2017, Vostok 2018, Tsentr 2019).⁴⁸
- **Live-fire training:** “Army Tactical Shooting” includes moving, shooting from different weapons on the move, using shelters, and practicing high-speed reloading of weapons.⁴⁹ The live-fire training structure has recently undergone significant reform and now includes training with small arms in addition to heavy weapons, as well as engagement at a closer range (the previous standard was 25 meters or more from the target). Depending on the unit and its function, there are annual testing requirements and standards regarding live-fire training.⁵⁰
- **Transportation/mobilization drills:** Russian military forces typically conduct annual large-scale Emergency Readiness Deployment Exercises that require long-distance movement by ship or rail to test units’ ability to deploy.⁵¹
- **Inspections:** Training and readiness are occasionally assessed with inspections of troops and commands in different military districts.⁵² In 2013, the Russian military

⁴⁶ Timurov, “Bilateral Brigade Tactical Exercise,” *Armeiskii Sbornik* (Oct. 6, 2020), <https://army.ric.mil.ru/Stati/item/272193>.

⁴⁷ Timurov, “Bilateral Brigade Tactical Exercise.”

⁴⁸ Andrew S. Bowen, *Russian Military Exercises*, Congressional Research Service, Oct. 4, 2021, <https://sgp.fas.org/crs/row/IF11938.pdf>.

⁴⁹ “Applied to Combat Training,” *Armeiskii Sbornik* (Apr. 26, 2022), <https://army.ric.mil.ru/Stati/item/394051>.

⁵⁰ Applied to Combat Training.”

⁵¹ Grau and Bartles, *The Russian Way of War*.

⁵² “Sudden Inspection of the Troops of the Southern Military District, Western Military District, Central Military District, Northern Fleet, the High Command of the Aerospace Forces and the Command of the Airborne Forces, August 2016” (Внезапная проверка войск ЮВО, ЗВО, ЦВО, СФ, Главного командования ВКС и командования ВДВ), Ministry of Defense of Russian Federation, accessed Dec. 15, 2022, <https://structure.mil.ru/mission/practice/all/more.htm?id=12116570@egNews>; “Sudden Check of the Combat Readiness of the Northern Fleet, Individual Formations of the Western Military District and the Airborne Forces, March 2015” (Внезапная проверка боевой готовности Северного флота, отдельных соединений Западного военного округа и Воздушно-десантных войск), Ministry of Defense of Russian Federation, accessed Dec. 15,

revived the practice of conducting surprise combat readiness inspections at varied time intervals and operational levels. Reporting on these inspections is sporadic but suggests that they focus on the ability of units to self-deploy sufficient troop groupings, fulfill the tasks of territorial defense, deploy air defense systems in wartime, and ensure military security in different critical regions.⁵³

2022, <https://structure.mil.ru/mission/practice/all/more.htm?id=12116566@egNews>; “Strategic Command and Staff Training for the Management of the Armed Forces of the Russian Federation” (Стратегическая командно-штабная тренировка по управлению Вооруженными Силами Российской Федерации), Ministry of Defense of Russian Federation, accessed Dec. 15, 2022, <https://structure.mil.ru/mission/practice/all/more.htm?id=12081308@egNews>; Sudden Check of the Combat Readiness of the Troops of the Southern Military District February 2016” (Внезапная проверка боеготовности войск Южного военного округа), Ministry of Defense of Russian Federation, accessed Dec. 15, 2022, <https://structure.mil.ru/mission/practice/all/more.htm?id=12116568@egNews>.

⁵³ Bowen, *Russian Military Exercises*.

Military Training: Key Issues and Reforms

Ever since Russia's launch of the New Look military reforms in 2009, Russian political and military leaders have prioritized the improvement of military training for the Russian armed forces. President Putin himself has stressed the point on several occasions while setting the tone for Russia's military leadership.⁵⁴ This emphasis on military training is based on clear recognition by Russian leaders of the crucial importance of training for an effective national defense. As former Deputy Chief Main Operational Directorate of the Russian General Staff Lieutenant General Valery Zaparenko noted in 2021,

The key to success in [armed conflicts] is combat training. It should be the focus of attention of...commanders at all levels in peacetime and [should] continue in combat zones in wartime. With the outbreak of hostilities, the personnel of a unit, subunit, formation, and association will fight just as well or badly as they were trained in the previous period. There can be no miracles in this regard.⁵⁵

Russia's leaders have also been proactively setting the agenda for military exercises in recent years. In 2015, President Putin presented the military's training goals for that year, which included conducting multiple surprise (snap) military exercises, transporting troops over great distances to conduct exercises outside of their traditional bases, and holding more joint exercises between interbranch force groupings (e.g., Russian Ground and Aerospace Forces).⁵⁶

Consistent with this agenda, the MOD has been steadily increasing the budgets for military training and exercises.⁵⁷ For example, expenditures for navy training and exercises were increased significantly between 2012 and 2018, and the intensity (i.e., frequency and tempo) of combat training almost doubled over this period.⁵⁸ This increase in turn has helped fuel a steady increase in the scope, scale, and intensity of Russian military training and exercises since 2009. For example, from 2012 to 2018, the total number of days naval ships spent at sea

⁵⁴ During a 2015 meeting with top Defense Ministry officials, for example, Putin emphasized that the improvement of operational and combat training for the military was one of the key goals for the Russian armed forces that year (Vadim Koval, "Advanced Training Ranges—Trained Army," *Nezavisimoe Voennoe Obozrenie* no. 46, Dec. 18–24, 2015, p. 3, <https://dlib.eastview.com/search/udb/doc?pager.offset=308&id=45903704&hl=training>).

⁵⁵ Mikhail Khodarenok, "The Key to Success in Battle: What Exercises Is the Russian Army Preparing for," *gazeta.ru*, June 6, 2021, <https://www.gazeta.ru/army/2021/06/06/13622438.shtml>.

⁵⁶ Koval, "Advanced Training Ranges—Trained Army."

⁵⁷ Anton Lavrov, *Russian Military Reforms from Georgia to Syria*, Center for Strategic & International Studies, Nov. 2018, p. 22.

⁵⁸ *Ibid.*

nearly doubled, while the average number of days for each deployment increased by one-third.⁵⁹

Along the way, Russian military leaders have introduced several reforms and innovations designed to provide enhanced training for the Russian armed forces and address long-standing issues.⁶⁰ As Russian defense minister Sergei Shoigu noted in 2018,

The quality of personnel has increased not only through professionalism, but also thanks to an improved training system for officers and soldiers [including] large-scale surprise inspections, complex two-sided tactical exercises, and major sports-like army competitions...such as the “Tank Biathlons” and “Aviadarts,” which have collectively made the Russian Armed Forces better prepared for real deployment.⁶¹

Although there are clear signs that training and exercises have led to marked improvements in combat readiness, Russian leaders have often overstated the effects of training reforms. As further discussed below, serious problems with the quality of training have persisted, including deficiencies in individual combat training for officers, conscripts, and contract personnel; problems with unit training because of excessive scripting; procedural rigidity; inadequate equipment, ammunition, and facilities; and the Russian preference for combat simulators over field training. According to one Russian officer who has studied the problem in detail, Russian training also falls short in perhaps the most important area of all: its ability to emulate the actual conditions of the battlefield.⁶²

Individual Training

Russian military leaders have faced various challenges in delivering enhanced training for officers and enlisted personnel in recent years. The current staffing model, which relies on a mixed force comprising one-year conscripts and longer-term contract personnel, complicates the provision of training for enlisted personnel. Likewise, officer training has undergone a series of ill-fated reforms that have resulted in a reduction in training opportunities concurrent with a self-induced officer shortage. On the other hand, Russian military personnel have

⁵⁹ Ibid.

⁶⁰ See generally Charles K. Bartles, “Dvornikov’s Reforms: Tactical Training in the Southern Military District,” Royal United Services Institute, June 9, 2022, <https://rusi.org/explore-our-research/publications/commentary/dvornikovs-reforms-tactical-training-southern-military-district>.

⁶¹ Lavrov, *Russian Military Reforms from Georgia to Syria*, p. 4. It should be noted, however, that time spent by military personnel on competitions such as the Army Games detracted from the time devoted to actual combat training.

⁶² A. Kabachenko, “Боевая Подготовка,” *Armeiskii Sbornik* 3 (2017), <https://dlib.eastview.com/search/udb/doc?pager.offset=25&id=48384307&hl=%D0%B2%D0%BE%D0%B5%D0%BD%D0%BD%D1%8B%D1%85>.

benefited significantly from recent increases in the scope and tempo of individual combat training and from their participation in previous military campaigns in Ukraine (2014–2015) and Syria (2015–2019), which provided real-world combat experience. Some individuals have also benefited, albeit more modestly, from preparing for and participating in the International Army Games and similar annual military competitions held by the Russian military.⁶³

Training for enlisted military personnel

Russian military leaders have struggled for more than two decades to provide adequate training for enlisted personnel comprising both contract soldiers and conscripts. Whereas contract personnel typically serve two- or three-year terms, conscripts currently serve just one-year terms, and most of them opt to be discharged after completing their term. Similarly, although a substantial percentage of contractor personnel choose to reenlist, many elect to leave after their contract term is completed.

Training a mixed force of this kind has generated several challenges for the Russian military. For one, training for enlisted personnel is highly uneven—conscripts receive far less training than contractors because the former serve for just one year. For the same reason, conscript training tends to be heavily focused on lower-level functions that require less time to develop, such as driving a truck or performing rear service jobs. As a result, conscript training has been wholly inadequate to prepare conscripts for armed conflict.⁶⁴ By contrast, contract soldiers receive more extensive training for both combat operations and more complex technical functions.

Another challenge is that the high turnover rates for both conscripts and contractor personnel have essentially required Russian combat and combat support units to be periodically rebuilt as their staffing turns over. This turnover entails undergoing another full training cycle for replacement personnel. The need to constantly train new personnel not only is a drain on available training resources, but also has hindered efforts to provide advanced combat training for contractor personnel who have committed to long-term service careers because commanders must focus on training new conscripts and recruits.

Yet another major problem is that conscript training is highly decentralized in the Russian military—each unit is responsible for training its own personnel. This practice contrasts with the US system, in which recruits receive their basic and initial technical training at specialized training centers before being assigned to specific units. As a result, there can be significant

⁶³ “Preparation has Begun” (Подготовка Началась), *Boevaia Vakhra* no. 48, Dec. 11, 2020.

⁶⁴ Although conscripts are technically not supposed to participate in combat, they have done so in Ukraine both because their participation was deemed essential by Russian leadership and because it could be justified by the Kremlin’s characterization of the campaign as a “special military operation” versus an actual conflict.

variation in the quality of training from one combat unit to the next. This lack of standardization allows more room for unit commanders to cheat the system by claiming that personnel have received more training than they actually have. In 2016, for example, several high-ranking naval officers from Russia's Baltic Fleet were dismissed for, among other things, "serious omissions in the organization of combat preparation" and "distortions of the real state of affairs in reports...to the defense minister."⁶⁵ Ultimately, variation in training standards and practices among different combat units have contributed to uneven force development and low performance levels in several units.

To address these issues, Russian military leaders have concentrated on retaining contractor personnel and converting willing conscripts to long-term contracts after their initial terms are completed. However, such measures have only partially addressed the persistent high turnover rates for enlisted personnel. The General Staff also introduced reforms allowing unit commanders to concentrate more of their time and resources on providing individual support for incoming contract soldiers, as well as more advanced training for contractors who are committed to a long-term service career.⁶⁶ Although sound in principle, these reforms have contributed only marginally to resolving the problem. One complicating factor is that their application has been spotty because each unit commander is left to carry out the reforms as they deem best. In addition, the continuing high turnover of enlisted personnel has detracted from commanders' abilities to deliver enhanced training for contractors.

Training for enlisted personnel has also faced other challenges since the introduction of the New Look reforms in 2009. To give one example, NCOs play a different role in the Russian military compared to their Western counterparts. In most Western militaries NCOs oversee much of the training for junior enlisted personnel, whereas in Russia, NCOs play a more limited role. One reason for this is that Russian contractor personnel, from which the vast majority of NCOs are drawn, often serve as weapons specialists, and as such, their personal training and service time tends to be focused on mastering the ins and outs of their assigned weapon systems. As their careers progress, and they reach higher rank, they are expected to assist in training more junior contractor personnel, but mainly by passing on their specialized knowledge and expertise.⁶⁷ This carries over onto the battlefield, where Russian officers,

⁶⁵ Igor Zarembo, "Commanders of Russia's Baltic Fleet Fired," *Russia Beyond the Headlines*, June 30, 2016, https://www.rbth.com/defence/2016/06/30/commanders-of-russias-baltic-fleet-fired_607579.

⁶⁶ S. Петров, "Боевая Подготовка Воинов-Контрактников," *Armeiskii Sbornik* 10 (2017).

⁶⁷ See for example Yury Shevchenko, "Although Junior, Also the Commander" (Хоть И Младший, Но Командир), *Krasnaia Zvezda* 125, November 10, 2017, <https://dlib.eastview.com/browse/doc/49846442>. This article describes how a newly minted contractor in the Naval Infantry became proficient in various artillery platforms under the mentoring and tutelage of a more seasoned "Guards Sergeant."

rather than NCOs, direct tactical formations down to the squad level on the front line and make most of the command decisions.⁶⁸

In recent years, however, Russian NCOs have sometimes served as junior commanders, at least in certain military units. In this capacity, they sometimes play a greater role in training, educating, and maintaining military discipline and morale of subordinates, as well as managing the overall performance of their subordinate units.⁶⁹ In some cases, such NCOs receive informal training from their local officers on how to train and develop enlisted personnel within their assigned units.⁷⁰ Russian military commanders have also recently engaged in other experiments, aiming to involve more NCOs in training and mentoring of enlisted personnel. In 2019, for example, the Russian military reintroduced the rank of sergeant major, a position that serves as the first assistant to a unit commander and is responsible for helping enlisted personnel maintain discipline and achieve success in professional training and combat.⁷¹

Notwithstanding such recent developments, the armed forces continue to rely primarily on Russian officers for the training of enlisted personnel.⁷² However, because Russian officers have so many other responsibilities, their availability to provide adequate training for enlisted personnel is limited.

Moreover, newly minted Russian platoon leaders often lack the experience to provide adequate combat training for their units. In addition, officers do not receive sufficient instruction on how to effectively execute training for Russian units and personnel. As noted by General Staff Chief Valery Gerasimov during a conference on Russian military training, “Increasing the effectiveness of combat training is impossible without improving the system for training leadership personnel.”⁷³

Enlisted training also suffers to some extent because Russian training can be notoriously brutal. All too often, new recruits still undergo an especially harsh form of military hazing known as *Dedovshchina*, although the practice has diminished in recent years. Russian military officials have taken steps to address this issue by assigning contract personnel to help oversee conscript training units to add a degree of professionalism and adding military police to crack down on excessive hazing. But hazing remains a hallmark of Russian military training,

⁶⁸ Olga Ivshina and Olga Prosvirova, “Every Fifth Is an Officer. What Do the Confirmed Losses of Russia in the War with Ukraine Say?,” BBC Russian Service, Apr. 6, 2022, <https://www.bbc.com/russian/features-61003964>.

⁶⁹ Viktor Maksimenko, “Reliance on Junior Commanders” (Опора На Младших Командиров), *Strazh Baltiki*, January 24, 2020.

⁷⁰ Ibid.

⁷¹ “Sergeant Major Rank Introduced in Russia's Armed Forces,” RIA Novosti, May 24, 2019, <https://dlib.eastview.com/browse/doc/53645176>.

⁷² Barndollar, “The Best or Worst of Both Worlds?”; Grau and Bartles, *The Russian Way of War*, p. 3.

⁷³ Alexander Tikhonov, “Новые Подходы К Подготовке Войск И Сил,” *Krasnaia Zvezda* 140 (2020).

contributing to low morale and poor unit cohesion, conditions that undermine effective combat training and actual performance.⁷⁴

Training for Russian military officers

Russian officers receive extensive military training and education consistent with the central role that they are expected to play in combat operations. In addition to training enlisted personnel, Russian officers are responsible for planning, conducting, and overseeing combat operations, often without sufficient NCO support.

Until recently, however, the quality of officer training had declined significantly, in part because of the deep cuts made to the officer corps by former defense minister Anatoly Serdyukov under the New Look reforms. Excessive cuts in the number of officers led to critical shortages in key personnel, leading Russian military leaders to implement an accelerated officer training program to secure the necessary replacements. The traditional officer training program was not fully restored until 2019.⁷⁵

Officer training was also affected by Serdyukov's decision to radically downsize and consolidate the two principal sources of officer education: Russian military academies and military departments at Russian universities. According to reports, this decision resulted in a 66 percent reduction in capacity among Russian military departments and a corresponding reduction in the capacity to educate new officers.⁷⁶ Although incoming defense minister Sergei Shoigu promised to restore military departments in 2013, actual capacity for officer training at Russian universities has only partially improved.⁷⁷

To offer an alternative option to those interested in pursuing a military career while attending universities without a military department, Shoigu implemented a new program allowing such students to participate in local training programs for NCOs or enlisted reservists. Although the new program did not contribute directly to addressing officer shortages, it did offer a means to shore up the NCO staff, thereby indirectly easing the burden on lower ranking officers. Yet as one Russian observer has noted, NCO training is less attractive than attending a military academy and becoming an officer for university students interested in a military career. As a

⁷⁴ Alexey Zhabin, "More Than a Decade After Military Reform, Hazing Still Plagues the Russian Army," *Moscow Times*, Feb. 18, 2020, <https://www.themoscowtimes.com/2020/02/17/decade-after-military-reform-hazing-plagues-russian-army-a69309>; Barndollar, "The Best or Worst of Both Worlds?"

⁷⁵ "Шойгу сообщил о возвращении к плановой подготовке российских офицеров," *Izvestiya*, Dec. 25, 2019, <https://iz.ru/958409/2019-12-25/shoigu-soobshchil-o-vozvrashchenii-k-planovoi-podgotovke-rossiiskikh-ofitcerov>.

⁷⁶ Alexander Stepanov, "Training Alarm," *Versiya* no. 27 (July 18–24, 2016), p. 10.

⁷⁷ *Ibid.*

result, competition for admission to universities with a true military department has stiffened significantly, while the shortage of highly trained and qualified officers has continued.⁷⁸

Since 2009, the Russian military leadership has implemented several additional reforms to enhance officer training. In 2018, for example, the Russian military launched an experimental program to provide officer training for enlisted personnel deemed sufficiently well-qualified to receive a commission.⁷⁹ Initial emphasis was placed on producing infantry and tank officers for the army, which were in especially short supply.⁸⁰ In 2019, Russian leaders also strengthened platoon leader combat training by incorporating lessons learned in Syria.⁸¹

Still, officer training suffers from certain issues related to Russia's strategic culture. For example, Russian officers are trained to adhere rigidly to a set of predetermined tactics. As a result, when formulating plans to accomplish specific tasks, they are given limited options, often selecting from a menu of approved tactics. Although this practice simplifies the planning process, it discourages officers from deviating from these preplanned scripts to adapt plans to specific circumstances.⁸² To counter this problem, Russian military leaders have made greater efforts in the past decade to present officers with novel problems during exercises and allow them to resolve those problems in an unscripted manner, as further discussed below.

Additional training opportunities

To help compensate for these shortcomings, Russian military leaders made a concerted effort to provide Russian military personnel the chance to gain real-world combat experience by rotating Russian ground, air, and air defense units from across Russia through Ukraine (2014–2015) and Syria (2015–2019). This effort enabled Russian officers, service personnel, and pilots to acquire valuable combat experience in modern conflicts.⁸³ In the process, they gained significant experience with the more than 231 new and modernized weapons tested in Syria.⁸⁴ Although Russian military leaders often tout the combat experience acquired by Russian military personnel in Syria, the benefits were limited by the permissive environment in which Russian forces operated in Syria—they held what was tantamount to total air supremacy over

⁷⁸ Ibid.

⁷⁹ The US military has long offered programs such as this, including US Army Officer Candidate School and the US Marine Corps' Marine Enlisted Commissioning Education Program.

⁸⁰ Alexander Kruglov and Bogdan Stepovoy, "Lieutenants Will Be Trained Fast," *Defense & Security* 1243 (Oct. 15, 2018).

⁸¹ "The Ministry of Defense Recognized the Experiment on Additional Training of Young Officers as Successful," *Izvestiya*, Nov. 28, 2019, <https://iz.ru/948496/2019-11-28/minoborony-priznalo-eksperiment-po-dopodgotovke-molodykh-ofitcerov-uspeshnym>.

⁸² Grau and Bartles, *The Russian Way of War*, p. 38.

⁸³ Pavel Aptkar, "Training in the Desert," *Vedomosti*, Aug. 23, 2018, p. 4.

⁸⁴ Ibid.

rebel forces and were able to conduct standoff strikes using Russian artillery and fixed- and rotary-wing aircraft.⁸⁵ Moreover, the limited scope of Russian operations in Syria also reduced the benefits of combat experience because Russia did not have a large troop presence in the country, with the Ground Forces playing a more limited role than the Aerospace Forces.

Russian leaders have also taken measures to provide other training opportunities for Russian officers and enlisted personnel. Since 2015, Russia has held regular military competitions, including the International Army Games (for ground force specialists) and Aviadarts (for fighter pilots), both of which are held annually. These competitions are also attended by military personnel from other countries. For example, crews from more than 42 countries participated in Army Games 2021, which took place over a two-week period in multiple venues, to test their skills in various disciplines while using a range of weapon systems.⁸⁶ According to one report, the quality of personnel is enhanced by participation in competitions of this kind.⁸⁷ Yet given the scripted nature of these competitions, their actual combat training benefits are questionable.

Collective Training

The Russian military has previously faced persistent problems with unit-level training of Russian joint and combined arms forces. As a result, Russian leaders have implemented several important reforms to address these problems. These include expanded training ranges and facilities; an increase in the scope, scale, and frequency of unit-level training; an increase in the scale of military exercises; the resumption of snap exercises; and an emphasis on joint exercises. Such efforts have resulted in a marked improvement in performance, especially in elite and permanently ready combat units staffed primarily by contract soldiers. Yet serious problems persist with unit-level training in many areas.

Training infrastructure

Before the Georgia War, Russian military training was hamstrung by aging and obsolescent infrastructure after years of low levels of training activity. After the Cold War, the Russian military abandoned numerous training ranges while allowing others to fall into disrepair. To address this problem, during the New Look reforms, Russian military leaders commenced efforts to upgrade existing training facilities and restore former training facilities to enhance training for Russian military personnel. In 2015, Defense Minister Shoigu unveiled additional

⁸⁵ Ibid.

⁸⁶ Jenna Duong, "International Army Games 2021 Officially Opened," *Hanoi Times*, Aug. 24, 2021, <https://m.hanoitimes.vn/international-army-games-2021-officially-opened-318474.html>.

⁸⁷ Lavrov, *Russian Military Reforms from Georgia to Syria*, p. 4.

plans to establish more than 100 new training ranges and centers equipped with the latest technical training aids by 2020. Each military district was also tasked to create modern training ranges for mountain warfare, ground combat, and maritime aviation.⁸⁸ Yet efforts to modernize existing training ranges and add new capacity have proceeded slowly. In 2020, for example, Defense Minister Shoigu admitted that just five new training ranges would be built during the five-year period ending in 2025, although several additional training ranges were being modernized.⁸⁹

Each military district was also slated to create one special interbranch training center to provide advanced combat training for battalion tactical groups (BTGs) and other large force groupings. The first such center was established at Mulino in the Western Military District (see Figure 5). Modeled to some extent after the US National Training Center, Mulino offers a variety of training opportunities for Russian airborne, naval infantry, and ground force units. These include force-on-force exercises for combined arms units.⁹⁰

Figure 5. Military exercise at Mulino training range



Source: Russian Ministry of Defense, <https://www.themoscowtimes.com/2021/09/23/zapad-2021-what-we-learned-from-russias-massive-military-drills-a75127>.

⁸⁸ Koval, “Advanced Training Ranges—Trained Army.”

⁸⁹ “The Russian Federation Is Increasing the Intensity of Training Troops and Is Building New Ranges,” *Defense & Security* 1655 (June 29, 2020), <https://dlib.eastview.com/search/udb/doc?pager.offset=64&id=60247923&hl=increase>.

⁹⁰ Alexander Tikhonov, “Готовность К Учебным Сражениям,” *Krasnaya Zvezda* (Nov. 30, 2016), p. 2.

Mulino also hosts a variety of simulators that personnel can use to hone their combat skills with assigned weapon systems. Mulino was originally designed to train up to six combined arms formations with a total of 15,000 servicemembers each year while reducing the training cycle of combat units by 50 percent.⁹¹ Still, questions remain about Mulino's actual effectiveness in providing a venue for more advanced training. Although Mulino has been lauded by high-ranking commanders, plans to develop similar training centers in the other military districts had yet to be carried out as of June 2022.⁹²

Tactical training reforms

Following the launch of the New Look reforms in 2009, Russian leaders recognized that the scale and frequency of combat training for Russian military units were insufficient to achieve desired improvements in military performance and increases in combat readiness. Increasing the size and tempo of combat training was deemed essential to address the many problems linked to poor training that had emerged during the Georgia War. On multiple occasions, for example, the Russian air force had to send flight instructors on combat missions because of a shortage of trained pilots.⁹³

As a result, the Russian military made a concerted effort to increase the scope, scale, and frequency of unit-level training. Since taking over from Serdyukov, Russian Defense Minister Sergei Shoigu in particular has championed such efforts. Under his watch, the size, scale, and frequency of Russian military exercises have increased continuously across all service branches, as evidenced by numerous reports. This increase is also reflected by the increasing number of live-fire exercises conducted by Russian combat units. According to Anton Lavrov, a close observer of the Russian military, the consumption of ammunition in military exercises increased 5 to 7 times between 2012 and 2017.

Fuel consumption likewise tripled in the same period.⁹⁴ Moreover, before 2014, tank crews were limited to just two live-fire exercises during a typical training period, firing one shot per exercise from their main guns. By 2014, tank gunners were allowed to take five shots with regular projectiles, including two in night conditions, during each live-fire exercise.⁹⁵ The scale of Russian military exercises has also increased significantly since 2009. Each year, Russia has held at least one large-scale military exercise involving 50,000 troops or more (see Figure 6).

⁹¹ Koval, "Advanced Training Ranges—Trained Army"; Tikhonov, "Готовность К Учебным Сражениям," p. 2.

⁹² Charles Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

⁹³ Lavrov, *Russian Military Reforms from Georgia to Syria*, p. 15.

⁹⁴ *Ibid.*, p. 4.

⁹⁵ "The Quantity of Ammunition Allocated for Training of Tank Crew in the District Training Center of the Western Military District Is Increased by 150%," *Defense & Security* 615 (Apr. 2, 2014).

For example, more than 80,000 Russian service personnel reportedly participated in Russia's Kavkaz 2020 command and staff exercise.⁹⁶

Figure 6. Vostok 2018 command and staff exercise



Source: Russian Ministry of Defense, <https://www.theguardian.com/world/2018/sep/11/russia-largest-ever-military-exercise-300000-soldiers-china>.

Large-scale military exercises have become commonplace in recent years, with the Russian military holding annual command and staff exercises every year supplemented by large-scale snap exercises.⁹⁷ Large-scale exercises were held in part out of concern that conducting tactical unit-level exercises without higher levels of command and control (C2) did not adequately test the military's ability to carry out strategic-level operations. Large-scale exercises were also viewed as a way to send messages to adversaries regarding the ambitions Russia had for its armed forces.⁹⁸

Another major reform introduced by Defense Minister Shoigu was the revival of snap military exercises, an old Soviet practice, in 2013. Snap exercises were reintroduced with the aim of assessing combat readiness of various formations. Surprise exercises require combat units to

⁹⁶ Alexey Zakvasin, "«Поступательная модернизация»: как совершенствовалась боевая подготовка российской армии в 2020 году," *Russia Today*, Dec. 26, 2020, <https://russian.rt.com/russia/article/816250-rossiya-armiya-ucheniya-podgotovka-2020-itogi>.

⁹⁷ See for example Johan Norberg, *Training for War*, Swedish Defence Research Agency, 2018, p. 42.

⁹⁸ *Ibid.*, p. 14.

switch promptly to a wartime footing to conduct military operations and to deploy to a designated assembly area. Such exercises have varied from snap inspections involving small combat or combat support units to large-scale exercises involving multiple military districts and dozens of combat units of various kinds.⁹⁹ According to Russian sources, snap exercises are not a complete surprise because unit commanders usually receive some advance notice.¹⁰⁰ Moreover, doubts remain about how well snap exercises emulate real-world combat conditions. Still, snap exercises have clearly contributed to an increase in combat readiness. For example, Russian officials assessed that military logistics units performed significantly better in 2015 than in previous years after undergoing surprise inspections, as demonstrated by the efficient deployment and resupply of Russian combat units in Syria.¹⁰¹ By contrast, snap exercises do not seem to have been very effective in preparing logistics units for operations in Ukraine, a campaign with logistical requirements and a scale of operations vastly different than those that took place in Syria.

The Russian military has also made efforts to increase the number of joint training exercises involving units from different service branches. At the same time, joint exercises have focused more on testing new battlespace networks designed to integrate functions across service branches. According to Russian reports, the intensity of joint training across service branches has increased steadily in recent years. For example, in 2017, Colonel General Alexander Dvornikov reported a 50 percent increase in the intensity of joint combat training in the Southern Military District over the previous year.¹⁰² Such reports have been common in recent years. Despite this trend, joint operations remain a work in progress in the Russian military. Although recent joint exercises often include an “interspecific” (i.e., joint interservice) component, such activities often tend to be experimental in nature as the Russians continue to test joint capabilities and concepts.

For example, in 2016, Russian forces in the Southern Military District held a joint exercise involving ground, naval, and aerospace forces to test integrated C2 of distributed air defense forces targeting enemy aircraft over the Black Sea.¹⁰³

⁹⁹ Johan Norberg, *Training to Fight: Russia's Major Military Exercises (2011–2014)*, Swedish Defence Research Agency, 2015, p. 24.

¹⁰⁰ Yaroslav Vyatkin, “Учения «Кавказ-2016» напугали Украину, Грузию, Прибалтику и Польшу,” *Argumenty Nedeli*, Sept. 8, 2016, <http://argumenti.ru/army/2016/09/466550>.

¹⁰¹ Lavrov, *Russian Military Reforms from Georgia to Syria*, p. 4.

¹⁰² Yury Borodin, “Combat Training Is Priority,” *Krasnaya Zvezda*, Mar. 13, 2017, <https://dlib.eastview.com/search/simple/doc?pager.offset=0&id=48456831&hl=Combat+training>.

¹⁰³ Vladimir Semenihih, “Отвечая вызовам времени,” *Suvorovskiy Natisk*, Feb. 5, 2016.

Combined arms training

The Russian military has continued to struggle with training for combined arms operations in recent years. They have grappled, for example, with the need to continuously update tactics and training to account for the changing conditions of combined arms operation warfare, which relies increasingly on high-precision weapons, unmanned aerial vehicles, and other recent innovations. To address this challenge, in 2016, Russian military officials extensively revised their existing combat manuals to focus on BTGs, the lowest level unit capable of combined arms operations.

Maneuver

For maneuver units, military training was extensively revised to more effectively integrate tanks, artillery, engineering, and reconnaissance units attached to motorized rifle battalions during BTG force generation. At the same time, officials made efforts to increase training for divisions, brigades, and lower level units on combined arms tactics and on operating in unfamiliar terrain. Russian officer training was likewise revised to emphasize leadership skills for subunit commanders under modern combined arms conditions, out of recognition that loss of control leads to inevitable defeat.¹⁰⁴

However, the failure of Russian maneuver units to operate in accordance with accepted doctrine in the SVO is evidence of enduring training deficiencies. For example, Russian doctrine specifies the use of infantry fighting vehicles (BMPs), such as the B-19, for fording rivers and other water obstacles because of their extensive waterproofing. Russian maneuver forces are trained therefore to use BMPs to cross rivers and establish bridgeheads, thereby reducing the concentration of forces at designated crossing points and their vulnerability to interdiction.¹⁰⁵ As we shall see, however, during operations in Ukraine, Russian forces did not always follow such protocols.

Russian military commanders have also struggled to provide adequate training on integrated maneuvers involving armored vehicles and infantry, a growing challenge given the proliferation of highly capable anti-tank guided missiles (ATGMs) on the battlefield. Russian officials are aware of the problem and have called for improved training and tactics aimed at reducing the effects of enemy fire through adroit use of camouflage, air defense, rocket and artillery, aviation, electronic warfare (EW), and engineering support, combined with skillful

¹⁰⁴ Andrey Petrochinin, "Главкомандующий Сухопутными Войсками Генерал-Полковник Олег Салюков: "Общевойсковой Бой Предъявляет Высокие Требования... (Commander-In-Chief of the Ground Forces, Colonel-General Oleg Salyukov: Combined Arms Battle Makes High Requirements...)," *Orientir* 10, Oct. 31, 2017.

¹⁰⁵ Alexey Ramm and Bogdan Stepovoy, "The Field of Armor: Why Does the Russian Army Need New Infantry Fighting Vehicles," *Izvestia*, Jan. 7, 2022.

tactics by equipment operators to evade detection and attacks.¹⁰⁶ However, poor marching practices demonstrated in Ukraine and inadequate interval discipline are both indicative of continuing deficiencies in maneuver training.

Supporting fires

After transitioning to a new brigade structure in 2009, the Russian Ground Forces have also taken measures to integrate Russian artillery and rocket units more effectively into combined arms operations. As noted in one recent report, Russian artillery and rocket troops exist in a complex relationship with other branches of the armed forces. Therefore, the development of Russian artillery units must be carefully coordinated with those of other combat arms (armor, infantry, close air support, etc.).¹⁰⁷

At the tactical level, Russian military officials have reported several challenges with artillery training. These include problems coordinating and prioritizing multiple fire support missions during large-scale military deployments. To address this, Russian military officials have recently taken measures to improve the order and sequencing of fire missions.¹⁰⁸ Likewise, Russian officials have focused intensively in recent years on improving the timeliness and accuracy of fire support missions. For example, Russian training of reconnaissance crews has been improved to achieve greater accuracy for artillery fires.¹⁰⁹

Nonetheless, problems with tactical artillery training have endured. For example, Russian officials commented recently on the need for enhanced training for artillery units to address the growing challenge of striking fleeting targets.¹¹⁰ To that end, Russian Ground Force units have been devoting more of their training time on use of reconnaissance strike/fire complexes linking sensors to shooters to dramatically reduce the time taken to bring artillery to bear on fleeting targets once spotted.¹¹¹ Such efforts were still very much a work in progress at the time of the 2022 Ukraine invasion.¹¹²

¹⁰⁶ G.I. Golovachev, A.L. Panteleev, and V.G. Shirobokov, "Пути Реализации Приоритетных Направлений Развития Свойств Бронетанкового Вооружения С Использованием Военных Технологий (Ways to Implement Priority Areas for the Development of the Properties of Armored Weapons Using Military Technologies)," *Voennaia Mysl* 3, Mar. 31, 2017.

¹⁰⁷ D. Pervukhin, G. Mitrofanov, V. Delros, I. Kruglov, "Совершенствование Артиллерии (Improving Artillery)," *Armeiskii Sbornik* 2, Feb. 28, 2021, <https://dlib.eastview.com/browse/doc/65020436>.

¹⁰⁸ Ibid.

¹⁰⁹ See for example "Стрелец Задействован При Проведении Учебных Стрельб В Дагестане (Strelets Involved in Fires Training in Dagestan)," *Kaspiets* , 33, Oct. 8, 2020.

¹¹⁰ Pervukhin et al., "Совершенствование Артиллерии (Improving Artillery)."

¹¹¹ Igor Melnikov, "Стрелец Не Подведёт (Sagittarius Will Not Let You Down)," *Krasnaia Zvezda*, Aug. 18, 2017; Yuri Belousov, "Учебный Год Был Продуктивным (The School Year Was Productive)," *Krasnaia Zvezda*, 130, Nov. 20, 2019.

¹¹² Pervukhin et al., "Совершенствование Артиллерии (Improving Artillery)."

Likewise, maintaining fire discipline to conserve artillery does not seem to have been a high priority for Russian artillery training. As one recent article noted, Russian military leaders have been influenced by the global trend to limit troop losses on the battlefield and have therefore been prepared to employ mass firepower to avoid excessive casualties.¹¹³ This has contributed to Russia's heavy use of artillery fires in Ukraine. Lack of fire discipline can likely be attributed as well to Russian expectations that a future war (with NATO, for example) would necessarily be of short duration, given escalation risks. As a result, the need to conserve artillery ammunition has not been a high priority.

Enduring problems in Russian military training

Despite the notable progress achieved through the aforementioned reforms, Russian military training continues to be hampered by shortcomings. For one, Russian exercises still tend to be heavily scripted with no doubt as to their outcomes, which undermines their value in preparing Russian combat units for actual combat conditions.¹¹⁴ During Vostok 2018, for example, despite an increased emphasis on mission command in Russian discourse before the exercise, there was little evidence that commanders were given discretion to deviate from requirements in testing C2 systems. Instead, as one observer put it, the emphasis was on "mission control" as opposed to "mission command."¹¹⁵ Likewise, in discussing the Vostok 2022 exercises held in the Russian Far East, British MOD officials noted that the drills were "heavily scripted" and "failed to sustain the military's ability to conduct large-scale, complex operations."¹¹⁶

Second, Russian leaders continue to place high priority on live-fire exercises, which are viewed by Russian military traditionalists as the pinnacle of combat training. Many still believe that gunnery and live-fire exercises should play a leading role in preparing forces for armed conflict.¹¹⁷ According to one set of Russian military experts, fire training is the most important component of the system of combat training of military personnel across all types and branches of the armed forces.¹¹⁸ Yet as noted by Bartles, live-fire exercises by their very nature must be

¹¹³ К. А. Троцесенко, "Ударная И Огневая Тактика - От Безыдейности К Развитым Огневым Основам Боя И Операции (Shock and Fire Tactics—From Lack of Ideas to Developed Fire Bases of Combat and Operations)," *Voennaiia Mysl*, Feb. 28, 2019.

¹¹⁴ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

¹¹⁵ Mathieu Boulègue, "Did the Russian General Staff Experiment with Free Play During VOSTOK-2018?" *Defense & Security Analysis* 35, no. 1 (2019).

¹¹⁶ Brendan Cole, "Russia's Scripted War Games Failing to Prepare Troops, Aim to Impress: UK," *Newsweek*, Sept. 2, 2022, <https://www.newsweek.com/russia-exercises-defense-ministry-china-scripted-1739242>.

¹¹⁷ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

¹¹⁸ Y. Astapenko, B. Eremin, and A. Nazarov, "Применительно К Боевой Подготовке," *Armeiskii Sbornik* 4 (Apr. 30, 2022).

tightly constrained and heavily scripted because of safety concerns.¹¹⁹ Such thinking is in sharp contrast to US thinking, which emphasizes force-on-force exercises as the *sine qua non* of military training.

Third, the Russian military continues to rely much more heavily on combat simulators than the US does (see Figure 7). As Bartles has noted, Russians definitely see value in training against a thinking adversary, but such training usually takes place in a simulator rather than in the field. Simulators are used widely in the Russian military for training personnel on a broad range of systems and activities, including air defense systems, communications, fire control, military transport vehicles, parachute drops, and even strategic weapon systems.¹²⁰ Further evidence can be found in Russian reporting on Mulino, in which the extensive use of combat simulators received far more commentary from Russian leaders than did the conduct of force-on-force exercises against the resident opposing force (OPFOR).¹²¹

Figure 7. Mi-8 attack helicopter combat training simulator



Source: Russian Helicopters, <http://rus-helicopters.com>.

¹¹⁹ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

¹²⁰ "UIC Prepares Simulator for Training of Communication and Fire Interaction for Series Production," *Defense & Security* 982 (2016); "RF AF Training Centers Received Kamaz and BTR Simulators," *Defense & Security* 1777 (2020); "By 2015 Military Academy of the Strategic Missile Forces Will Receive Simulators for Training of Servicemen to Use Yars Systems," *Defense & Security* 599 (2014); "Simulator Is a Step to Parachute," *Krasnaya Zvezda*, July 24, 2017, p. 1; "Centers for Training of Specialists of the Airspace Defense Forces Will Be Equipped with New Simulators," *Defense & Security* 772 (2015).

¹²¹ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

Russian commanders tend to view simulators as a means to supplement live-fire exercises.¹²² Simulators can allow Russian personnel at both the individual and unit levels to practice tactics and operations that simply cannot be replicated in a field exercise, such as downing an enemy aircraft with a surface-to-air missile. Simulators also allow Russian weapons specialists to gain additional practice while conserving ordnance and supplies. Simulators are also employed at the tactical-operational level to practice larger-scale activities, such as mass fires or complex maneuvers.¹²³ However, these activities are often missing the need to react against an agile, thinking adversary, which is a critical advantage of holding force-on-force exercises.¹²⁴

Targeted efforts to enhance military training

In response to the many challenges cited in previous sections, Russia recently introduced additional reforms to address the enduring shortcomings in its traditional approach to military training. To give one example, the Russian military leadership has been updating Russian training programs and exercises to account for advances in modern warfare. According to former Chief of the General Staff Valery Makarov, beginning in 2011, the Russian military took major steps to rework existing guidance documents, instructions, regulations, and teaching aids, which were still geared to past wars, although he admitted that such efforts were not wholly satisfactory and would therefore necessarily be continued.¹²⁵

Training manuals and doctrine were later adapted to include new TTPs, reflecting lessons learned during the Syrian campaign.¹²⁶ For example, Russian maneuver forces have been practicing the carousel method used in Syria. This tactic involves each tank in a column taking turns to fire on the enemy as the column advances to maintain continuous suppressing fires on the enemy's position.¹²⁷ Russian combat units have also adopted other tactics derived from the Syria campaign, including new measures for close quarter combat, single-tank combat employment, and ATGM countermeasures, which were integrated into army field manuals at the end of 2017.¹²⁸

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Ibid.

¹²⁵ Jim Nichol, *Russian Military Reforms and Defense Policy*, Congressional Research Service, Aug. 24, 2011, p. 16.

¹²⁶ Timothy L. Thomas, *Russian Military Thought: Concepts and Elements*, Mitre, 2019, pp. 2–13.

¹²⁷ Yuri Gavrilov, "Carousel at the Training Ground: In the Exercises, Our Military Use the Experience Gained in Syria," *Rossiyskaya Gazeta*, Oct. 2, 2020, p. 4.

¹²⁸ Timothy L. Thomas, *Russian Lessons Learned in Syria: An Assessment*, Mitre, 2020.

In an effort to defeat home-range bias, Russian combat units are often required to exercise at different training ranges. This practice not only forces combat units to carry out their missions while adapting to new conditions, but also allows them to practice out-of-area deployments.

Furthermore, some Russian units have been experimenting with new forms and methods for conducting military training and exercises. During his tenure as commander of the Southern Military District, Lieutenant General Alexander Dvornikov introduced several training innovations. First and foremost, and contrary to standard practice, Dvornikov began holding force-on-force exercises starting in 2018. Early on, such exercises were focused at the brigade and division levels during large-scale command staff exercises. Dvornikov later claimed that this was the first time that force-on-force exercises were conducted at the operational level. Subsequently, Dvornikov has held two-sided battalion- and company-level exercises.¹²⁹ For example, in April 2018, opposing units from a motorized rifle brigade in the Volgograd Region held a series of tank duels and ambushes to improve their professional skills.¹³⁰

Consistent with these efforts, military exercises have also become less scripted in recent years, as Russian military leaders have attempted to instill greater creativity and initiative in unit-level commanders and their subordinates. As an offshoot of Russia's experience in Syria, Russian officers have been asked to think outside the box, react to surprise, formulate a response, and take the initiative. Such actions require the creative use of equipment and forces in novel ways under novel conditions. For example, in an attempt to inject a degree of unpredictability and fluidity in exercises, maneuvers force commanders have been tasked to confront "enemy forces" along an inverted front or when the front is everywhere.¹³¹

As Defense Minister Shoigu has noted,

The use of the Armed Forces in modern conditions requires high professionalism, constant tension, nonstandard thinking from the command staff, the ability to find and implement new forms and methods of using groupings of troops and forces in the most difficult conditions. Such conditions...will take place at the training grounds of the Western and Southern military districts....Military leaders, in particular, will have to make decisions, regardless of the cybernetic and electronic attacks of a mock enemy.¹³²

¹²⁹ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

¹³⁰ Yuri Borodin, "Танки выходят к барьеру," *Krasnaya Zvezda*, Apr. 24, 2018, <http://archive.redstar.ru/index.php/component/k2/item/37038-tanki-vykhodyat-k-bareru>.

¹³¹ Thomas, *Russian Lessons Learned in Syria: An Assessment*, p. 14.

¹³² Yuri Gavrilov, "Шойгу начал оперативный сбор командований Вооруженных сил," *Rossiyskaya Gazeta*, July 18, 2017, <https://rg.ru/2017/07/18/shoigu-nachal-operativnyj-sbor-komandovanij-vooruzhennyh-sil.html>.

At the same time, battalion commanders have been given more leeway to customize training for units composed mainly of contract soldiers as a means of advancing their development.¹³³

However, the practice of holding force-on-force exercises with officers exercising mission command (i.e., the US concept of decentralized initiative and decision-making) has not been uniformly adopted across the Russian military. And when it has been adopted, holding such exercises has not provided as many benefits as it might have with a dedicated OPFOR able to effectively emulate an actual opponent. In short, Russian force-on-force exercises remain a work in progress and as a result have contributed only marginally to improving combat readiness.

In sum, persistent problems with both individual and unit-level training had yet to be fully addressed on the eve of Russia's 2022 invasion of Ukraine. Such problems would manifest themselves in various ways throughout this campaign, as described in the following section.

¹³³ Bartles, "Dvornikov's Reforms: Tactical Training in the Southern Military District."

The Special Military Operation: Progress Tested

In the years since the 2008 Russian-Georgian War and the New Look reforms, the Russian military has taken various steps to address many of the previously noted training deficiencies. The MOD has made a concerted effort to increase the ratio of contract to conscript soldiers, for instance. The number of training ranges and facilities available to district units has also increased, as have the scope, scale, and frequency of unit-level training. Snap exercises and inspections have resumed, and a greater emphasis has been placed on joint training between the services. Although assessing the effect of these changes independent of other factors (structural reforms, investments in new equipment, etc.) is difficult, at least some progress seems evident based on the success of Russian operations in Crimea, the Donbas (2014–2015), and Syria. However, with the launch of the SVO in Ukraine, and the poor performance of Russian ground, airborne, and naval infantry forces, particularly in the early phases of the conflict, many questions about the efficacy of Russian training reforms have come to the fore.¹³⁴

Although it is evident that Russian military leaders had overstated and/or overestimated the effect of the reforms, progress has been achieved in several areas, most notably force readiness and the retention of well-trained contract soldiers. But it is equally evident that problems have persisted, most notably in training new conscripts, inculcating initiative among junior officers, conducting joint and combined arms training, and, above all, replicating realistic combat conditions in exercises and simulations. Russian forces performed well in Crimea and Syria, but those operations were limited in scope and had clearly defined and achievable objectives. The SVO is combat on an entirely different scale, requiring significant coordination between services across multiple fronts to achieve objectives that, with the benefit of hindsight, were overly ambitious. Despite efforts to increase the scale of exercises in recent years, as noted above, the SVO stressed the Russian military in unprecedented ways, revealing training and other deficiencies that were not evident in the previous operations.

Assessing the effect of training on the performance of individuals and units in combat can be problematic, and disentangling the various factors that contribute to an operation's success or failure is often difficult. For example, if a unit exhibits poor movement in precombat formation, as many Russian units did during their dash to Kyiv in the first week of the conflict, is it due to a lack of intelligence on the threat? Political pressure that is detached from operational

¹³⁴ Robert Dalsjö, Michael Jonsson, and Johan Norberg, "A Brutal Examination: Russian Military Capability in Light of the Ukraine War," *Survival* 64, no. 3 (2022); Seth Jones, *Lessons in Modern Warfare: Russia's Ill-Fated Invasion of Ukraine*, Center for Strategic & International Studies, June 2022.

constraints? Poor logistics or planning? Insufficient unit training in the requisite KTZs? Or, as is likely in the SVO example, some combination of all the above? Sufficient source material on the Russia-Ukraine War now exists that we can at least identify some instances—particularly at the tactical level—in which Russian training was clearly either insufficient or poorly suited to the task at hand. We have binned these examples into six general categories: maneuver, supporting fires, communications security (COMSEC), initiative, discipline, and mobilization.

Maneuver

Soon after Russia's invasion of Ukraine, it became evident that Russia's Ground Forces were not adhering to their training and doctrine. Nowhere was this more apparent than in maneuver. High-intensity maneuver warfare with large, mechanized formations is central to Russian military doctrine and is frequently practiced during large-scale strategic exercises, such as Vostok and Zapad. Russian doctrine calls for offensives to be conducted in a staggered fashion, with mechanized units in the vanguard (supported by engineers and artillery), reconnaissance units on the flanks, and armored units situated to exploit any breakthroughs. But in the initial advance on the Ukrainian capital, the Russian commanders dispensed with doctrine, instead opting for a strategy of "thunder runs" down main Ukrainian arteries without screening or protection for the flanks of columns of vehicles. Speed and deception were evidently prioritized over doctrine, which would have called for a methodical campaign of maneuver, breakthrough, and exploitation.¹³⁵ However, Russian forces and their political and military leadership underestimated the resistance that they would face, and as the Russian advance stalled, formations were left vulnerable to ambush and attrition by Ukrainian artillery, unmanned combat aerial vehicles (UCAVs), and small mobile teams armed with ATGMs.

Part of the problem lies in the initial strategy and planning for the operation, especially the decision to conceal the operation's objectives from all but senior commanders until just before the invasion. Even so, tactical maneuver officers made poor decisions about how they positioned their units on the march, particularly when moving in columns on major transportation arteries. Bridging assets were often located far to the rear, which led to significant delays when Ukrainian forces—predictably—destroyed most of the major bridges

¹³⁵ According to a report by the Royal United Services Institute, Russian planners had assumed that the offensive would transition to stabilization operations by D+10. See Mykhaylo Zabrodskyi, Jack Watling, Oleksandr V. Danylyuk, and Nick Reynolds, *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine: February–July 2022*, Royal United Services Institute, Nov. 30, 2022, <https://rusi.org/explore-our-research/publications/special-resources/preliminary-lessons-conventional-warfighting-russias-invasion-ukraine-february-july-2022>.

on the northern and eastern approaches to Kyiv.¹³⁶ Rosgvardia units, which are trained and equipped to provide rear area security for the invading force, often outpaced heavier combat units, meaning that they were the first to encounter Ukrainian resistance, often with disastrous results.¹³⁷ Of equal significance, air defense and artillery units often advanced out of sequence and were therefore unable to protect the units to which they were assigned.¹³⁸ All this occurred despite the fact that moving in march and combat formations are two of the nine principal KTZ tasks identified for collective training by Russian Ground Forces.¹³⁹

As the Russian advance on Kyiv stalled, units became bogged down in urban areas or canalized along narrow roadways. With little in the way of reconnaissance or protection on their flanks, they were vulnerable to interdiction by Ukrainian mobile teams armed with ATGMs and drones, such as the Bayraktar TB2 UCAV. Ukrainian civilians reported their movements while spotters guided artillery and drone strikes on the columns.¹⁴⁰

The reaction of Russian units to ambushes has often been poor. For instance, when an armored column of the 6th Tank Regiment (Chebarkul) of the 90th Tank Division attempted to drive through Brovary, an eastern suburb of Kyiv, it was badly mauled by Ukrainian tank and artillery fire, according to footage released by the Ukrainian Main Directorate of Intelligence. Despite entering an urban area in a contested zone, the column had no infantry screen and did not react to the first signs of contact, causing more than 30 vehicles (tanks, infantry fighting vehicles (IFVs), and a TOS-1 multiple rocket launcher (MRL)) to cluster in a small area until they were eventually able to retreat from the village. Several Russian vehicles were destroyed, and the regimental commander was killed (Figure 8).¹⁴¹

¹³⁶ "A Serious Failure: The Scale of Russia's Military Blunders Becomes Clear," *Financial Times*, Mar. 11, 2022, <https://www.ft.com/content/90421972-2f1e-4871-a4c6-0a9e9257e9b0>.

¹³⁷ Jack Watling and Nick Reynolds, *Operation Z: The Death Throes of an Imperial Delusion*, Royal United Services Institute, Apr. 22, 2022, <https://www.rusi.org/explore-our-research/publications/special-resources/operation-z-death-throes-imperial-delusion>.

¹³⁸ Justin Bronk, Nick Reynolds, and Jack Watling, *The Russian Air War and Ukrainian Requirements for Air Defence*, Royal United Services Institute, Nov. 7, 2022, <https://rusi.org/explore-our-research/publications/special-resources/russian-air-war-and-ukrainian-requirements-air-defence>.

¹³⁹ N. Leventov, "Know Your Maneuver" (Знать свой маневр), *Armeiskii Sbornik* 5 (2017), p. 14.

¹⁴⁰ "A Serious Failure: The Scale of Russia's Military Blunders Becomes Clear."

¹⁴¹ Defence intelligence of Ukraine (@DI_Ukraine), "Ліквідовано командира полку окупанта полковника Захарова," Twitter, Mar. 10, 2022, https://twitter.com/DI_Ukraine/status/1501849922206937090; Dan Sabbagh, "Drone Footage Shows Ukrainian Ambush on Russian Tanks," *The Guardian*, Mar. 10, 2022, <https://www.theguardian.com/world/2022/mar/10/drone-footage-russia-tanks-ambushed-ukraine-forces-kyiv-war>; Sky News, "Ukraine War: Dramatic Drone Footage Shows Russian Convoy 'Ambush,'" YouTube, <https://www.youtube.com/watch?v=dcYOjbyttvM>; "Colonel Zakharov, Regimental Commander of Occupiers, Liquidated in Brovary District," Charter 97, Mar. 10, 2022, <https://charter97.org/en/news/2022/3/10/458418/>.

Figure 8. Ambush in Brovary



Source: Defense of Ukraine (@DefenceU), "Ministry of Defence of Ukraine Oscars 2022 Best Production Design: Ambush. From UA Army With NLAW #Oscars2022 #UAArmy," Twitter, Mar. 28, 2022, <https://twitter.com/DefenceU/status/1508492476348346375>.

Another video (see Figure 9), reportedly from a helmet cam posted by a Russian soldier, shows a column of IFVs, tanks, and trucks reacting poorly to contact while being ambushed at an undisclosed location in February 2022. Upon receiving fire, the column halts and soldiers dismount from their IFVs. However, their movement does not appear to be coordinated: some soldiers hide behind their vehicles while others move to a nearby embankment. Again, the vehicles are not spaced properly. There also appears to be no coordinated attempt to identify the source of the ambush and maneuver to return fire.¹⁴²

¹⁴² Vladimir Romanov, @Romanov_92, May 15, 2022.

Figure 9. Russian troops dismount during Ukrainian ambush



Source: Vladimir Romanov, @Romanov_92, May 15, 2022.

Russian troops appear to have been at a particular disadvantage in urban settings, where the Ukrainians have been able to partially negate Russian advantages in armor and artillery and the built-up terrain favors the defender. Urban warfare training programs, such as the one at Mulino, do not appear to have had an appreciable effect on the performance of Russian troops operating in urban environments, such as Severodonetsk and Mariupol, where the Russians have lost large numbers of troops in block-to-block fighting. In the case of the latter, approximately 3,000 Ukrainian troops were able to tie down 12,000 Russian and Russian-proxy forces at the Azovstal industrial plant for more than 80 days, tying up critical resources that would otherwise have been available for the Russian offensive in the Southeast.¹⁴³ A key contributing factor to the Russian military's disadvantage in urban terrain was its structure—undermanned in such a way as to lack the dismounted infantry that are key to fighting in urban areas.¹⁴⁴

¹⁴³ Michael Schwartz, "Last Stand at Azovstal: Inside the Siege That Shaped the Ukraine War," *New York Times*, July 24, 2022, <https://www.nytimes.com/2022/07/24/world/europe/ukraine-war-mariupol-azovstal.html>.

¹⁴⁴ Michael Kofman and Rob Lee, "Not Built for Purpose: The Russian Military's Ill-Fated Force Design," *War on the Rocks*, June 2, 2022, <https://warontherocks.com/2022/06/not-built-for-purpose-the-russian-militarys-ill-fated-force-design>.

Supporting fires

The Russian military has historically focused and invested heavily in artillery in terms of both training and equipping its forces. It is therefore somewhat surprising that the performance of the Russian army's vaunted reconnaissance-strike and reconnaissance-fire complexes has also been subpar in Ukraine, particularly in terms of dynamic targeting. These complexes—operational and tactical, respectively—constitute the process by which the Russian military employs different combinations of sensors and shooters to increase the speed and accuracy of targeting.¹⁴⁵ Again, part of the reason for the failure appears to be structural, but training also has a role to play. The process for coordinating long-range fires appears to be highly centralized and not particularly responsive to the needs of maneuver units. Russian fire support is based on inflicting massive casualties on the enemy while minimizing risk to Russian forces and materiel. Commanders do not have direct control over fire support functions that are not subordinate to their command. Delays—and missed opportunities—have been particularly acute in terms of long-range strikes. In Ukraine, when Russian line units have had to submit targeting requests through higher units to the military district command-center level, where the requests for fire support are adjudicated and strike missions are assigned, delays of 48 hours or longer have been reported.¹⁴⁶

Extensive delays mean that long-range strike missions with land-attack cruise missiles (LACMs), ballistic missiles, or long-range rocket artillery are often ineffective against mobile Ukrainian units that regularly disperse and employ “shoot-and-scoot” tactics. Russian BTGs (theoretically) and brigades possess their own organic artillery assets in the form of brigade artillery groups. However, even at this level, delays of 40 minutes to 4 hours for indirect fires routinely occur, according to Russian observers.¹⁴⁷ In practical terms, such delays have meant that strike missions often hit their intended locations with precision accuracy long after their intended targets have moved on or dispersed. According to the commander of the Vostok Battalion, the situation would be partially remedied if authority over brigade artillery units was delegated directly to lower echelons: to each subunit responsible for a given sector. Whether this change would alleviate the existing inefficiencies in targeting or simply introduce new ones is open to speculation.

¹⁴⁵ Lester W. Grau and Charles K. Bartles, *The Russian Reconnaissance Fire Complex Comes of Age*, University of Oxford, Changing Character of War Center, May 2018, <https://www.ccw.ox.ac.uk/blog/2018/5/30/the-russian-reconnaissance-fire-complex-comes-of-age>.

¹⁴⁶ Zabrodskiy, *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine*.

¹⁴⁷ Pavel Shishkin, “Названа серьезная проблема российских войск на Украине,” Oct. 26, 2022, <https://voennoedelo.com/posts/id33025-h5uaid1mayivqppq2gpb>.

Part of the problem appears to be that the officers in charge of adjudicating and assigning strike missions are not trained to prioritize the missions. All requests for fires appear to be treated equally once they are approved. At that point, they are assessed based on the desired effect and simply added to a targeting queue, regardless of the time-sensitive nature of the request or the value associated with the target. Compounding this problem, at the tactical level at least, is the fact that many Russian artillery crews are not equipped or trained to use modern techniques or tools, including specialized software, for targeting. They still employ paper maps, artillery tables, and calculators, which are prone to user error and response delays.¹⁴⁸ As a recent Royal United Services Institute report notes, “Among line units...map-reading and other basic soldiering skills are not well understood, leading to disorientation and therefore a propensity to misidentify sources of fire.”¹⁴⁹

Targeting issues have contributed to a high rate of fratricide among Russian troops as operations become desynchronized and adjacent units fail to coordinate their movements. Former Donetsk People's Republic (DNR) military commander Aleksandr Khodakovsky has asserted that friendly fire may have accounted for as many as 60 percent of Russian casualties between mid-May (the end of the siege of Mariupol) and early November 2022.¹⁵⁰ Although this figure may be an exaggeration, as a recent Institute for the Study of War report notes, the fact that a senior commander on the Russian side is publicly calling attention to the issue of fratricide suggests that it is a significant problem.¹⁵¹ The high level of fratricide also highlights coordination and cross-training problems between adjacent line units.¹⁵²

Close air support (CAS) also appears to be an issue. Outside of the Donbas, CAS has been relatively unresponsive and ineffective. Admittedly, some of the problems can be tied to

¹⁴⁸ Some Russian observers have pointed to a lack of targeting intelligence—from drones and other sources—as further complicating the problem because artillery units are forced to rely on dated information about Ukrainian positions or on forward observers who may not be trained to guide artillery strikes or conduct post-strike battle damage assessment (BDA). See “Странная военная операция,” Topwar, Oct. 6, 2022, <https://topwar.ru/202758-strannaja-voennaja-operacija.html>.

¹⁴⁹ Zabrodskyi, *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine*.

¹⁵⁰ Alexander Khodakovsky, Telegram, Nov. 5, 2022, https://t.me/aleksandr_skif/2472.

¹⁵¹ Karolina Hird, Kateryna Stepanenko, Riley Bailey, Angela Howard, and Mason Clark, *Russian Offensive Campaign Assessment, November 5*, Institute for the Study of War, Nov. 5, 2022, <https://www.understandingwar.org/backgrounders/russian-offensive-campaign-assessment-november-5>.

¹⁵² Khodakovsky cites the example of a Russian unit returning from a rotation to the front, lights off, and driving suddenly into a ditch constructed by engineering subcontractors who had destroyed the local road network without coordinating with nearby friendly units and in the process created an inverted version of the “Ural mountains,” making the roads impassable. He also cites the example of army engineers mining the approaches to Pavlivka without coordinating, causing casualties for a rotating Russian unit and causing Khodakovsky to lament, “With such geniuses, we don’t even need enemies” (Khodakovsky, Telegram, Nov. 5, 2022).

structural and logistical issues, but training must also be factored in.¹⁵³ For instance, the average annual flight time for a Russian Aerospace Forces (VKS) pilot, according to one source, was between 100 and 120 hours.¹⁵⁴ By comparison, US Air Force fighter pilots typically average around 160 hours of flight time a year, a number US observers still judge to be insufficient to maintain combat readiness.¹⁵⁵ In addition, US and NATO pilots train to conduct complex operations against live and simulated threats in a variety of environments and weather conditions. By contrast, VKS training and exercises tend to be heavily scripted.¹⁵⁶

COMSEC

Russian forces have also had problems with COMSEC in Ukraine. Russian soldiers have relied with surprising frequency on unsecure communications devices, such as mobile phones and commercial push-to-talk phones, to communicate in the field.¹⁵⁷ Ukrainian forces have been able to use the information that they intercept from Russian soldiers transmitting in the open to jam, geolocate, and in some cases, target Russian troops as well as C2 and logistics nodes.¹⁵⁸ Theoretically, Russian soldiers are not supposed to be using unencrypted communications in the field. This problem was identified in previous conflicts, most notably in Georgia (2008) and the Donbas (2014–2015), when Russian commanders would confiscate individual smartphones as a matter of course and would sometimes nail the phones of offending users to

¹⁵³ Poor coordination between the VKS and the Russian Ground Forces, most of which appears to occur at the Ground Forces component of the district commands rather than at a combined air operations center, as would be the case with North Atlantic Treaty Organization (NATO) forces, appears to be a factor. The lack of precision-guided munitions, the lack of tactical UCAVs, and the ineffective means of conducting BDA also appear to play a role. See Justin Bronk, Nick Reynolds, and Jack Watling, *Is the Russian Air Force Actually Incapable of Complex Air Operations?* Royal United Services Institute, Mar. 4, 2022, <https://rusi.org/explore-our-research/publications/rusi-defence-systems/russian-air-force-actually-incapable-complex-air-operations>.

¹⁵⁴ “В командовании Военно-воздушных сил ВКС подвели итоги за 2018 год,” Russian MOD Press Release, Apr. 12, 2018, https://function.mil.ru/news_page/country/more.htm?id=12206756@egNews.

¹⁵⁵ John Venable, *An Assessment of US Military Power: US Air Force*, Heritage Foundation, Oct. 18, 2022, <https://www.heritage.org/military-strength/assessment-us-military-power/us-air-force>.

¹⁵⁶ Ministry of Defence (@DefenceHQ), “Latest Defence Intelligence update on the situation in Ukraine - 20 June 2022,” Twitter, June 20, 2022, <https://twitter.com/DefenceHQ/status/1538761939370795008>. The scale of operations in Ukraine is also probably a factor in explaining Russian CAS deficiencies. VKS pilots gained valuable experience in Syria conducting strikes in support of ground operations. However, the VKS sorties in Syria were never large, with aircraft operating singly or in pairs. Syria, unlike Ukraine, was also a generally permissive environment, at least for fixed-wing aircraft.

¹⁵⁷ Russian troops are not alone in this regard. Ukrainian forces have also been using their personal mobile phones to communicate in the field. See Sam Cranny-Evans and Thomas Withington, “Russian Comms in Ukraine: A World of Hertz,” Royal United Services Institute, Mar. 9, 2022, <https://rusi.org/explore-our-research/publications/commentary/russian-comms-ukraine-world-hertz>.

¹⁵⁸ Eric Schmitt, “As Russian Troop Deaths Climb, Morale Becomes an Issue, Officials Say,” *New York Times*, March 16, 2022, <https://www.nytimes.com/2022/03/16/us/politics/russia-troop-deaths.html>.

walls of shame along with the owners' names. But the problem has evidently persisted for a variety of reasons, including equipment shortages, poor technology, and poor coordination between units, but also deficient training in COMSEC.¹⁵⁹

Tactical encrypted radios are evidently in short supply, and when they have been used, they often do not work as they were designed to.¹⁶⁰ The Russian MOD has supposedly been issuing modern sixth- and fifth-generation tactical software-defined radios, including the R-187-P1 Azart, R-168 Akveduk, and R-168-5UN-2, to combat units. These high frequency, very high frequency, and ultra-high frequency radios with built-in encryption were designed to provide Russian forces with secure and jam-resistant communications at ranges of up to 350 kilometers.¹⁶¹ However, their release has been plagued by corruption issues and design flaws. Range has been a particular problem for Russian units operating in Ukraine. Although mobile radio relay stations could be used to extend the effective range of Azart and Akveduk radios, in many cases, the troops invading Ukraine moved too quickly for the relay stations to keep up. Moreover, as some observers have noted, Russian signal units have a shortage of trained operators capable of erecting the repeater stations and installing encryption keys for the radios.¹⁶²

As a result, Russian units have been using cheap commercial-grade handheld radios to communicate, such as the Chinese BaoFeng UV-82HP, which lack encryption and are vulnerable to Ukrainian EW attacks.¹⁶³ Some units have been issued Era cryptophones, which the MOD began issuing in 2021. However, these military-grade encrypted smartphones rely on local cell networks (3G and 4G) to function, many of which have been targeted by Russian artillery or EW troops.¹⁶⁴ This fact, coupled with selective jamming on the Ukrainian side, has forced Era users to revert to unencrypted communication.¹⁶⁵ Faced with a lack of effective alternatives, Russian troops have been using their own personal phones, with Ukrainian SIM cards, to communicate not only with their families back home but also with higher

¹⁵⁹ Vladlen Tatarsky, Telegram, June 27, 2022, <https://t.me/vladlentatarsky>.

¹⁶⁰ Cranny-Evans and Withington, "Russian Comms in Ukraine: A World of Hertz."

¹⁶¹ Thomas Kucharik, "How the World Keeps Listening In on Russia's Military Communications," Silentel, <https://www.silentel.com/blog/how-the-world-keeps-listening-in-on-russias-military-communications-29>.

¹⁶² Sergey Dobrynin and Mark Krutov, "Без связи на чужой земле Почему захлебнулось наступление России," RFE/RL, Mar. 18, 2022, <https://www.svoboda.org/a/bez-svyazi-na-chuzhoj-zemle-pochemu-zahlebnulos-nastuplenie-rossii/31759748.html>.

¹⁶³ CIT (en) (@CITeam_en), "More and More Evidence Is Emerging That the Russian Forces Rely on Civilian Radios and Mobile Phones for Their Communications," Twitter, Feb. 28, 2022, https://twitter.com/CITeam_en/status/1498233574834716674; Cranny-Evans and Withington, "Russian Comms in Ukraine: A World of Hertz"; Tatarsky, Telegram, June 27, 2022.

¹⁶⁴ Dobrynin and Krutov, "Без связи на чужой земле Почему захлебнулось наступление России."

¹⁶⁵ Stephen Bryen, "The Fatal Failure of Russia's ERA Cryptophone System," *Asia Times*, May 26, 2022, <https://asiatimes.com/2022/05/the-fatal-failure-of-russias-era-cryptophone-system/>.

headquarters and adjacent units.¹⁶⁶ They have also been uploading photos on social media sites with embedded geolocation data in strict contravention of military regulations.¹⁶⁷ As a result, Ukraine's intelligence services, and even third-party nongovernmental organizations such as Bellingcat, have been able to map Russian units with great precision. The Russian MOD admitted that mobile phone use was a factor that enabled Ukraine's HIMARS MRL strike on a facility that was used to house recently mobilized troops in the city of Makiivka on January 1, 2023, resulting in at least 89 casualties.¹⁶⁸

Initiative

Russian military decision-making tends to be very centralized, with less latitude for independent action for tactical commanders than is the case in NATO militaries. As a result, when Russian units encounter problems on the battlefield, they can be slow to react because they must seek and be granted permission from higher-echelon units before diverging from prearranged plans.¹⁶⁹ As noted above, the Russian military has recognized this deficiency and has been taking steps to render training and exercises less scripted and more dynamic to encourage greater creativity and initiative in unit-level commanders and their subordinates. However, Russian operations in Ukraine suggest that progress in this regard remains limited, particularly at the brigade and division level, where commanders have demonstrated a propensity to pursue high-cost objectives for minimal returns and to reinforce failed efforts.

During the battle of Siverskyi Donets, which took place on the Lyman–Sievierodonetsk front in early May 2022, units from the Russian 74th Separate Guards Motor Rifle Brigade (MRB) (41st Combined Arms Army) attempted a series of crossings over the Donets River at Dronivka, Bilohorivka, and Serebryanka using pontoon bridges. All three crossings, which were intended to enable Russian plans to encircle the city of Lysychansk, ultimately failed, with Russian units

¹⁶⁶ Ibid.

¹⁶⁷ Sean Gallagher, "After Many Opsec Fails, Russia Seeks to Ban Soldier Social Media Spoilers," *Ars Technica*, Sept. 12, 2022, <https://arstechnica.com/tech-policy/2018/09/after-many-opsec-fails-russia-seeks-to-ban-soldier-social-media-spoilers/>.

¹⁶⁸ Ann M. Simmons and Jared Malsin, "Russia Blames Troops' Cellphone Use for Deadly Ukrainian Strike," *Wall Street Journal*, Jan. 4, 2023, <https://www.wsj.com/articles/russia-blames-cellphone-use-for-deadly-ukrainian-strike-11672814476>.

¹⁶⁹ Gabriel Ouimet, "La Guerre en Ukraine, un Désastre Tactique pour L'armée Russe," *24 Heures*, June 1, 2022, <https://www.24heures.ca/2022/06/01/la-guerre-en-ukraine-un-desastre-tactique-pour-larmee-russe>.

sustaining heavy casualties. At Bilohorivka alone, the Russians lost an entire BTG, including almost 500 soldiers and more than 70 vehicles.¹⁷⁰

River crossings under fire are notoriously difficult to conduct and typically require extensive planning, rehearsals, and a reconnaissance/security screen on the far side of the river to secure a beachhead. Ideally, they are performed at night, under the cover of darkness and smoke, to achieve maximum surprise. However, the crossing at Bilohorivka, which received a lot of attention in Western media, was a textbook example of how not to conduct a river crossing (and incidentally did not follow Russian training and TTP for river crossings).

Following preparatory artillery fire, the BTG appears to have simply moved up the river during daytime and, without reconnaissance, started laying pontoon bridges. Ukrainian units operating on the near side of the Donets River spotted the Russian BTG. Although the latter used smoke to camouflage its movements, the Ukrainians were able to successfully target the Russian pontoon bridges with artillery using drone spotters. Although the Russian BTG sustained significant casualties, rather than regroup and ascertain whether another location might be more feasible for conducting a crossing, the BTG commander ordered his troops to lay another pontoon bridge in the same location and then another, with the same result each time (Figure 10). The poor performance of the 74th MRB at Bilohorivka elicited a storm of criticism among pro-Russian milbloggers, including “Reverse Side of the Medal,” a Telegram channel affiliated with Wagner PMC, whose author claimed that the Russian commanders were “guided by the principle that the shell doesn’t fall into the same place twice and that if you don’t see the enemy, he cannot see you.”¹⁷¹

¹⁷⁰ Yaroslav Trofimov and Mauro Orru, “Ukraine Launches Counteroffensive to Disrupt Russian Supply Lines,” *Wall Street Journal*, May 15, 2022, <https://www.wsj.com/articles/ukraine-launches-counteroffensive-to-disrupt-russian-supply-lines-11652531731>; Kateryna Stepanenko and Frederick W. Kagan, “Russian Offensive Campaign Assessment, May 14,” Institute for the Study of War, May 14, 2022, <https://www.understandingwar.org/backgroundunder/russian-offensive-campaign-assessment-may-14>.

¹⁷¹ Quoted in Trofimov and Orru, “Ukraine Launches Counteroffensive to Disrupt Russian Supply Lines.”

Figure 10. Russian river crossing at Bilohorivka



Source: Defense of Ukraine (@DefenceU), "Artillerymen of the 17th tank brigade of the #UAarmy have opened the holiday season for ruscists. Some bathed in the Siverskyi Donets River, and some were burned by the May sun," Twitter, May 11, 2022, <https://twitter.com/DefenceU/status/1524438980191731717>.

A similar instance of stubborn adherence to plans without accounting for changes on the battlefield occurred five months later when, on October 28, Russian forces conducted a frontal assault on the village of Pavlivka in Zaporizhzhia Oblast. According to Russian milblogger Aleksandr Khodakovsky, Russian forces had initially planned to launch an offensive in the Vuhledar area, but because of poor coordination and training of reinforcements, brigade commanders decided to conduct a frontal assault along a narrow front against Ukrainian units in Pavlivka instead.¹⁷² The operation was initially successful, with the 155th Naval Infantry Brigade (Pacific Fleet) establishing a toehold in the southeastern portion of the village. The assault stalled, however, and although Pavlivka was of limited tactical importance, Russian commanders continued to commit forces to the fight, including an additional brigade (the 40th Naval Infantry Brigade), until finally, two weeks later, Russian forces claimed that they had secured the village. The 155th Brigade sustained heavy losses—300 casualties and approximately half of the unit's equipment in just the first 4 days—to take a village that was

¹⁷² Alexander Khodakovsky, Telegram, Nov. 15, 2022, https://t.me/aleksandr_skif/2484.

regarded as of little tactical importance.¹⁷³ Russian losses were so heavy that some of the 155th Brigade's marines complained directly to Oleg Kozhemyako, governor of the far eastern Primorye region where the unit is homebased, and were rewarded for their troubles by not being rotated off the line.¹⁷⁴

Discipline

Discipline and morale issues—a function of training as well as leadership—have also plagued Russian troops since the start of the war. For instance, there have been numerous documented examples of Russian troops abandoning their equipment and engaging in looting and indiscriminate violence. War crimes, such as those carried out against civilians in the Bucha massacre, could be attributed to Russian higher war aims, as some analysts have alleged.¹⁷⁵ But their ferocity and random nature suggests that breakdowns in unit discipline could also be a contributing factor.

Problems with discipline also extend to corruption. Russian military correspondent and blogger Maksim Fomin (alias Vladlen Tatarsky), referring to the contrast between the conduct of DNR militia and Russian troops, noted,

It would never occur to any of the militia commanders to falsify the number of personnel, but this is the first thing we encountered [referring to Russian forces]. The norm was decided from above—their readiness was at least ninety-five percent. In reality, their readiness did not reach an average of sixty [percent], but the reports stubbornly testified to the norm. They also testified to the norm in matters of ensuring the level of combat training, but in fact the practice of photo reports became widespread, when the crews at the tank training ground were concerned not with training, but with photographing. The same thing occurred on the front line, when the state of the defense was assessed by photographs sent to the headquarters....The current system of circular self-and-mutual deception is the herpes of the Russian army. Where immunity is stronger—there it sits quieter, and where it weakens—there it manifests. Unfortunately, immunity has rarely been strong anywhere.¹⁷⁶

In some cases, Russian officers have been willing to tolerate minor infractions by their subordinates (looting, siphoning fuel tanks from civilian vehicles, etc.) while reserving the

¹⁷³ Isabel Van Brugen, "Russian Marine Says 'Deserting' Ukraine Front Line Only Way to Stay Alive," *Newsweek*, Nov. 23, 2022, <https://www.newsweek.com/russian-marine-soldier-deserting-ukraine-front-line-1761851>.

¹⁷⁴ *Ibid.*

¹⁷⁵ Denys Davydenko, Margaryta Khvostova, Dmytro Kryvosheiev, and Olga Lymar, "Lessons for the West: Russia's Military Failures in Ukraine," European Council on Foreign Relations, Aug. 11, 2022, <https://ecfr.eu/article/lessons-for-the-west-russias-military-failures-in-ukraine/#>.

¹⁷⁶ Vladlen Tatarsky, Telegram, June 6, 2022, <https://t.me/vladlentatarsky/>.

option to intervene in more serious crimes against civilians, such as rape and murder. In other cases, commanders have focused on keeping their troops safe by finding excuses to deflect or delay implementing orders from higher headquarters that they consider excessively risky or dangerous, such as conducting night patrols in enemy-held territory.¹⁷⁷ Although these examples are by no means unique to the Russian military, the preponderance of reporting on the topic suggests that Russian forces operating in Ukraine are experiencing periodic breakdowns in the chain of command in that officers cannot trust their subordinates to follow orders without making concessions on issues that are regarded as less than vital.¹⁷⁸ Some observers have speculated that this may account for the relatively high number of casualties among field grade officers, whose presence is often required at the front to ensure discipline among forward-deployed units.¹⁷⁹

As noted in the previous section, problems with corruption and poor discipline existed in the Russian military before the latest Russia-Ukraine war, and Russian officials were taking steps to address these problems.¹⁸⁰ However, the stresses associated with combat have evidently exacerbated these issues, as troops have had to grapple with high numbers of casualties, breakdowns in supply chains, and an influx of poorly trained reservists. According to the UK MOD, individual Russian soldiers have often failed to receive proper uniforms, equipment, and pay (e.g., combat bonuses and allowances).¹⁸¹ Pro-Russian milbloggers such as Alexander Zhychkovskiy have complained about senior officers' disregard for the lives of their subordinates and the lack of support that frontline units receive from their brigade or division

¹⁷⁷ Galeotti, "Echoes of Afghanistan in Russian Soldiers' Poor Discipline in Ukraine"; Rebecca Cohen, "Some Russian Troops Are Refusing to Follow Orders in Eastern Ukraine as Invasion Setbacks Continue, US Defense Official Says," *Business Insider*, May 9, 2022, <https://www.businessinsider.com/russian-troops-refusing-orders-eastern-ukraine-us-official-says-2022-5>.

¹⁷⁸ To a certain extent, the structure of the Russian BTG may share some of the responsibility for the breakdown in C2. The BTG is a composite formation, drawing from multiple tactical units that do not routinely train or operate together in peacetime. As Mykhaylo Zabrodskiy and other Royal United Service Institute authors note, "There is a lack of familiarity among the personnel in different arms of the BTG. The commander does not know their people. Thus, a small team of sufficiently trained personnel is unable to provide detailed instructions to each of its subordinate elements, but also does not know its subordinates well enough to be able to predict how they will handle brief and incomplete instructions" (Zabrodskiy, *Preliminary Lessons in Conventional Warfighting from Russia's Invasion of Ukraine*).

¹⁷⁹ William Booth and Robin Dixon, "Russian Generals Are Getting Killed at an Extraordinary Rate," *Washington Post*, Mar. 26, 2022, <https://www.washingtonpost.com/world/2022/03/26/ukraine-russian-generals-dead/>.

¹⁸⁰ According to Transparency International, "Russia's defence sector is at high risk of corruption, owing to extremely limited external oversight of the policies, budgets, activities and acquisitions of defence institutions. Transparency is also restricted, particularly in procurement and safeguards to corruption for military operations are weak." See Transparency International, "Russia Defence Assessment," June 2019–May 2020, <https://ti-defence.org/gdi/countries/russia/>.

¹⁸¹ Ministry of Defence (@DefenceHQ), "In the Russian military, troops' income consists of a modest core salary, augmented by a complex variety of bonuses and allowances," Twitter, Sept. 4, 2022, <https://twitter.com/DefenceHQ/status/1566285406542471168>.

headquarters: “Our artillery is simply not there now, only occasionally for short periods of time. That is, there is almost no counter-battery fight at all, and enemy mortars and MRLS [multiple rocket launcher systems] have complete impunity.”¹⁸²

Poor morale and discipline have led some troops to surrender without fighting, as the author of “Veteran’s Notes,” a popular pro-Russian Telegram channel, laments:

The tragedy with the operation in Makiivka, which all bloggers are now writing so pitifully about and discussing in all the world's media, is a direct consequence of the fact that the mobilized units are simply weak in spirit, extremely unstable in battle. I will say in plain text—they just run at the first noise. On the video from Makiivka, we see dressed, shod, equipped (body armor, everyone has a helmet), armed soldiers who stupidly surrender to FOUR NAZIS! Twelve dressed, equipped fighters surrender to FOUR enemy soldiers without a fight!¹⁸³

In at least one case, an entire battalion appeared to have mutinied. The Russian independent antiwar Telegram channel “Astra” reported that the rank-and-file soldiers of a battalion of the 127th Separate Reconnaissance Brigade (subordinate to the 22nd Army Corps—Sevastopol) refused to follow orders because of heavy losses and that its commander was severely reprimanded for mismanaging his troops.¹⁸⁴

Mobilization

On September 21, 2022, as Russian forces continued to experience high levels of attrition, President Putin announced a partial mobilization of Russian reservists.¹⁸⁵ The mobilization was evidently intended to reinforce severely degraded Russian units in Ukraine and stabilize the front line. Reservists—both active and inactive—were hastily identified and drafted by regional governors in response to Putin’s summons.¹⁸⁶ By September 26, tens of thousands of notices had been issued, and the initial tranches of activated reservists had started arriving at bases for induction and training.¹⁸⁷ Most of the reservists were former conscripts and had not

¹⁸² “In Makeevka” (В Макеевке), *vkontakte*, https://vk.com/wall-5158073_25718.

¹⁸³ Veterans Notes, Telegram, Nov. 21, 2022, https://t.me/notes_veterans/6718.

¹⁸⁴ Astra Press, Telegram, Dec. 20, 2022, <https://t.me/astrapress/17849>.

¹⁸⁵ “Путин объявил частичную мобилизацию в России,” *Meduza*, Sept. 21, 2022, <https://meduza.io/news/2022/09/21/putin-ob-yavil-o-chastichnoy-mobilizatsii-v-rossii>.

¹⁸⁶ The mobilization drive reportedly targeted the following reservists: infantry; military intelligence personnel; special forces; armor; specialists in IFVs, tracked armored personnel carriers (APCs), and airborne APCs; artillery specialists; engineers and sappers; specialists in airborne EW; medical orderlies; and doctors (Rybar, Telegram, Sept. 9, 2022, <https://t.me/rybar>).

¹⁸⁷ Ministry of Defence (@DefenceHQ), “Latest Defence Intelligence update on the situation in Ukraine—26 September 2022,” Twitter, Sept. 26, 2022, <https://twitter.com/DefenceHQ/status/1574265869097738241>.

had any military training for years, although soldiers in the BARS, a very small proportion of those mobilized, had allegedly received routine (monthly) training.

As noted above, individual tactical training in the Russian military usually occurs in-house, in the units to which soldiers are permanently assigned. The lack of available combat units, most of which had already been deployed to Ukraine, and the haste with which the mobilization was prepared, meant that many of those mobilized in the first tranche of draftees received minimal, if any, tactical training.¹⁸⁸ Indeed, anecdotal reporting from Russian milbloggers suggests that many of the mobilized reservists had received only a week of training, most of which consisted of parade ground drills, before they were deployed to Ukraine.¹⁸⁹

As of December 2022, the initial objective associated with the mass mobilization of reservists appears to have been achieved: the front line has been stabilized. Even as the move has temporarily mitigated one problem, though, it has created another. The Russian military is generally good at incorporating lessons learned from previous conflicts in its training regimen. However, sufficient experienced personnel must be available to train new recruits. As more inexperienced reservists and conscripts are mobilized and deployed to Ukraine, and assuming attrition rates continue at their current trajectory, the training problems noted above will likely be exacerbated, especially because the cadre of experienced officers and contractor personnel (who take years to train) who would have been available to train incoming personnel has already been significantly attrited.

According to a BBC report, as early as April 2022, Russia had already lost some of its best and most experienced troops in Ukraine, including hundreds of mid-level officers and contractor personnel serving in elite Russian Airborne, Naval Infantry, and Spetznaz units.¹⁹⁰ Since then, Russian losses of experienced personnel have only continued to mount. The loss of so many mid-level officers and veteran contractor personnel has likewise reduced the number of experienced officers and soldiers available to provide incoming personnel with sufficient schooling in basic tactics. Moreover, the pipeline of contract enlisted soldiers graduating from specialized military training units and higher educational institutes will probably be too narrow to compensate for the loss of experienced combat troops due to attrition in Ukraine.¹⁹¹

¹⁸⁸ Ibid.

¹⁸⁹ Vladlen Tatarsky, Telegram, Oct. 4, 2022, <https://t.me/vladlentatarsky/>.

¹⁹⁰ Mia Jankowicz, "Russia's Losses in Ukraine Include Many Elite Troops That Take Years and Millions of Dollars to Train, BBC Investigation Finds," *Business Insider*, Apr. 12, 2022, <https://www.businessinsider.com/russia-has-lost-expensive-time-consuming-soldiers-to-train-bbc-2022-4?op=1>; Olga Ivshina and Olga Prosvirova, "Every Fifth Is an Officer. What Do the Confirmed Losses of Russia in the War with Ukraine Say?," BBC Russian Service, Apr. 6, 2022, <https://www.bbc.com/russian/features-61003964>.

¹⁹¹ PMC Wagner has also initiated its own recruitment drive, advertising three weeks of training. Although this is more than the average mobilized reservist receives, it is still woefully insufficient to prepare a soldier for the rigors of combat. See Soloviev, Telegram, Nov. 28, 2022, <https://t.me/SolovievLive/142233>.

It will likely take Russia many years to overcome these problems completely, since the lost knowledge and experience of veteran Russian troops lost in Ukraine cannot be replicated overnight.

Russia is attempting to compensate for these problems in part by assigning what remains of its most experienced combat personnel (especially those with combat experience in Ukraine) to assist in the training of incoming recruits and reservists. In one recent case, a long-time army veteran who fought in Chechnya, Georgia, Syria, Donbas 2014, and most recently in the SVO had been providing supplemental training for incoming volunteers and reservists on basic tactics and combat skills.¹⁹² According to a similar report, incoming reservists at one training center received instruction on tank tactics from an experienced tank commander who shared details on new tactics developed during the SVO to counter Ukrainian antitank weapons and to maintain fire superiority when engaging enemy armor.¹⁹³ Even so, given the magnitude of Russian losses in Ukraine, there simply are not enough experienced personnel or available resources (equipment, etc.) to train all of the newly mobilized soldiers.

This void is likely to be filled in part by recently mobilized reservists and new recruits who have managed to survive their initial baptism by fire in Ukraine and acquire critical combat skills over the last several months. This growing cadre of “veteran” Russian troops is also benefitting from recent tactical improvements achieved on the battlefields in Ukraine. As noted in one recent report, Russian combat personnel are performing “much better than [they did] during the Kharkiv breakthrough, in terms of...the resilience of troops under fire and the stability of combat control” based on their “accumulating combat experience.”¹⁹⁴ Over time, these increasingly experienced combat personnel will be able to contribute to the training of new recruits while sharing these new tactics.

¹⁹² I. Ilyinskaya, “Russian Soldier” (Русский Солдат), *Armeiskii Sbornik*, 4, Apr. 30, 2023, <https://dlib.eastview.com/browse/doc/84833857>.

¹⁹³ Kristina Ukolova, “Under the Supervision of Experienced Mentors” (Под Контролем Опытных Наставников), *Krasnaia Zvezda* 134, Nov. 20, 2022, <https://dlib.eastview.com/browse/doc/81927850>.

¹⁹⁴ Pavel Aksenov, “The Failure of ‘American Tactics’ or Lack of Time and Effort? Why the Armed Forces of Ukraine Have Not Yet Broken Through the Russian Defense,” *BBC Russian Service*, Aug. 15, 2023, <https://www.bbc.com/russian/articles/cp979ew14glo>.

Figure 11. Training mobilized reservists



Source: "Russian Defence Minister Inspects Mobilised Citizens' Training Progress and Accommodation in Moscow Region," <https://eng.mil.ru/en/multimedia/photo/gallery.htm?id=117809@cmsPhotoGallery>.

Thus far, Moscow appears to have made the best of a bad situation by adopting a two-tiered approach to training new recruits, including mobilized reservists (see Figure 11) and smaller numbers of volunteers. Some recruits are being rushed to the front and integrated into existing units with only a week's worth of training, whereas others are held back for several weeks of preparation, in some cases receiving supplemental training from experienced Russian combat veterans of the SVO—still insufficient, but at least enough to allow for basic tactical drills and knowledge transfer. Some of this better trained second tranche may even deploy in newly formed units.¹⁹⁵ Whether Russia can maintain a pipeline of sufficiently trained and equipped

¹⁹⁵ For instance, the Western Military District appears to have established a new unit—the 3rd Corps—that will be composed in large part of volunteers and that has been training at Mulino. See Karolina Hird, Grace Mappes, George Barros, and Frederick W. Kagan, *Russian Offensive Campaign Assessment, August 27*, Institute for the Study of War, Aug. 27, 2022, <https://www.understandingwar.org/backgrounders/russian-offensive-campaign-assessment-august-27>; Tom (@tom_bullock_), "At this point I'd say it's fairly clear that Russia's leadership intends for the 3rd Army Corps (3AC) to be used offensively," Twitter, Aug. 27, 2022, https://twitter.com/tom_bullock_/status/1563469549852172288.

recruits will depend on several factors, including how much risk military leaders are willing to incur by pulling experienced personnel off the front lines to train replacements.¹⁹⁶

Over the mid-term horizon, Russia still faces the challenge of reconstituting its ground forces and rebuilding a core cadre of seasoned combat personnel. Although the mass influx of poorly trained personnel helped Russia stem the tide of Ukrainian counteroffensive in late 2022, the loss of thousands of such troops has deprived Russia of a pool of military personnel that might have made a substantial difference in helping to replenish the ranks. Over the longer term, however, the Russian military should eventually be able to rebuild its forces, drawing upon the growing pool of experienced combat veterans now serving in Ukraine. It will take additional time, however, to fully restore the collective knowledge capital lost since the start of the Russia-Ukraine War. Because of this, it could very well take Russia longer to fully restore both its military personnel and its knowledge base than it will to recapitalize the military equipment it lost in Ukraine.

¹⁹⁶ Of course, the Ukrainian military has also experienced a high rate of attrition and is confronted with similar trade-offs regarding the training of new recruits. But Ukraine has been able to rely on NATO countries to shoulder the costs and provide experienced instructors to train its troops in countries such as the UK and Germany. For more details, see “Joint Multinational Training Group-Ukraine,” 7th Army Training Command, <https://www.7atc.army.mil/JMTGU/>.

Conclusion and Key Findings

Since 2009, the Russian military has attempted to improve its methods for preparing troops for combat. The General Staff of the Armed Forces, which is responsible for establishing the standards for operational training, has increased the frequency and tempo of training events (including live-fire exercises), reintroduced the practice of conducting snap exercises, scheduled more joint exercises between interbranch groupings, and invested in the construction of new training infrastructure, including ranges and training centers such as Mulino. As a result of the New Look reforms, the Russian MOD has also increased the ratio of contract to conscript soldiers, which has mitigated some of the problems associated with the high turnover rates among enlisted personnel. Perhaps most importantly, Russian troops gained valuable combat experience during operations in Syria and Ukraine (before the SVO).

Although there are signs that these training reforms have had an effect, for instance by increasing unit readiness levels, Russian leaders have often overstated their effect. Training problems have persisted because of procedural rigidity; inadequate equipment, ammunition, and facilities; and lack of standardization because of excessive in-house training within units. Russian tactical training still struggles to emulate real-world combat conditions, with excessively scripted exercises, a lack of dedicated OPFOR in training events, and an emphasis on simulation training as a substitute for field training.

Russian troops performed well in Ukraine in 2014–2015 and more recently in Syria. However, these conflicts were smaller in scope than the current operation in Ukraine, and the adversaries that Russia faced were less prepared (and trained) than the current armed forces of Ukraine. The SVO has stressed the Russian military in ways unprecedented since the collapse of the Soviet Union because of a combination of factors, including the scale of the conflict, the political machinations of Moscow's leadership, and poor planning during the conflict's initial phases. In the Ukrainian crucible, training issues that had hitherto been managed have now contributed to the Russian military's failures and setbacks. As of December 2022, Russia's mass mobilization of reservists appears to have stalled the Ukrainian military's offensive in the Donbas. Russian forces could (conceivably) regain the initiative in the future. However, the training issues identified in our assessment are unlikely to diminish as newly mobilized troops are rushed to the front and cadres of experienced trainers are attrited.

The following list details our key findings:

Training overview

Russia's mixed manpower system facilitates three primary avenues into the military, and preliminary (basic) training is contingent on one's method of entry. These three pathways are as an enlisted conscript soldier, an enlisted contract soldier, or a military officer. The training associated with each pathway varies greatly, with different prerequisites, time commitments, and areas of focus:

- New conscripts attend a one- to two-month basic training course, followed by three to six months of more specialized training. Conscripts receive little in the way of tactical combat training and are not normally expected to fill combat roles. Despite their poor reputation, some conscripts join the military with military skills acquired either from school training programs or military-patriotic clubs such as DOSAAF.
- Contract soldiers undergo significantly more training at a higher skill level than conscript soldiers and form a higher percentage of the personnel in elite units such as the Airborne and Naval Infantry. All contract soldiers are required to complete an intensive combined arms training course, which lasts four weeks, followed by a four-day field survival course. After this training, contract soldiers typically receive additional training in their occupational specialty.
- Contract soldiers who are selected to become NCOs typically go to NCO academies for multi-year professional military education programs. Graduates of these programs are paid higher salaries and receive more benefits than conscript or junior enlisted contract soldiers and must commit to three years of service following completion of schooling in their specialty.
- Officer cadets usually attend four- or five-year military academies or institutes, whose function is similar to that of a combination of the US Military Academy and the officer basic course, with a strong emphasis on battlefield tactics. Officer training programs also exist at civilian universities, separate cadet programs, and the Suvorov and Nakhimov schools.

In Russia's mixed manpower system, officers, not NCOs, are primarily responsible for training both conscript and contract soldiers. Although NCOs also help train enlisted personnel, they play a more minor role in this effort than NCOs typically do in most Western militaries.

Most collective training occurs in-house within units at the brigade level and below. Tactical unit-level training focuses on maintaining and improving combat readiness through drills in a series of nine KTZs and is bifurcated into two six-month training cycles (summer and winter).

KTZs include the following:

- Prepare for combat

- Move in precombat formation
- Move in combat formation
- Attack against a defending enemy
- Attack a retreating enemy
- Conduct a meeting engagement
- Conduct a maneuver defense
- Conduct a positional defense
- Special tasks (raids, special operations, peacekeeping operations, etc.)

The quality and scope of training varies greatly between units. Many units do not complete training in all the required KTZs.

Training issues and reforms

Russian military leaders have introduced several reforms and innovations designed to provide enhanced training for the Russian armed forces and address long-standing issues. These include the following:

- Increasing the scope, scale, and frequency of unit-level training, as reflected by the increasing number of live-fire exercises conducted by Russian combat units and the multifold increase in the consumption of ammunition and fuel for such training events in recent years
- Increasing the number of joint training exercises involving units from different service branches
- Investing in training infrastructure, including combat simulators, new training ranges, and district interbranch training centers, such as the one at Mulino in the Western Military District

Although these reforms have led to improvements in combat readiness, problems with the quality of training have persisted, including deficiencies in individual combat training for officers, conscripts, and contract personnel; excessively scripted exercises; procedural rigidity; inadequate equipment, ammunition, and facilities; and the Russian preference for combat simulators over field training.

High turnover rates for both conscripts and contractor personnel have essentially required Russian units to be partially rebuilt every few years as their staffing turns over, which in turn entails undergoing another full training cycle for replacement personnel. The need to constantly train new personnel drains available training resources and hinders efforts to

provide advanced combat training to contractor personnel committed to long-term service careers because commanders must focus on training new conscripts and recruits.

The Russian military continues to prioritize live-fire exercises, which are viewed as the pinnacle of combat training. However, live-fire exercises by nature must be tightly constrained and heavily scripted because of safety concerns. Such thinking is in sharp contrast to US thinking, which emphasizes force-on-force exercises with a dedicated OPFOR as the *sine qua non* of military training.

Training and the SVO

The 2022 Russian invasion of Ukraine required significant coordination between services across multiple fronts to achieve objectives that, with the benefit of hindsight, were overly ambitious. As such, it stressed the Russian military in unprecedented ways, revealing training and other deficiencies that were not evident in previous operations in Ukraine and Syria.

Maneuver

During the initial phase of the operation, Russian commanders frequently dispensed with doctrine, instead opting for a strategy of “thunder runs” down main Ukrainian arteries without screening or protection for the flanks of columns of vehicles. Russian commanders prioritized speed and deception over doctrine, which would have called for a more methodical campaign of maneuver, breakthrough, and exploitation. As a result, Russian formations were left vulnerable to ambush and attrition by Ukrainian mobile defense teams.

Officers made poor decisions about how they positioned and spaced their units on the march, particularly when moving in columns on major transportation arteries. For example, bridging units were frequently positioned in the rear of columns, leading to long delays at water obstacles. This left them more vulnerable to Ukrainian fires than they would have been had they maintained proper interval discipline. Also, lightly armed reconnaissance units frequently advanced beyond the range of supporting artillery units, limiting their ability to call for supporting fires when they encountered Ukrainian resistance. However, some of this can be attributed to political decisions, the need to make tight deadlines in condensed columns, and the belief that Ukrainian resistance would be minimal.

The reaction of Russian units to ambushes has often been poor, demonstrating insufficient coordination and initiative.

Supporting fires

Russian methods for coordinating long-range fires appear to be highly centralized and not particularly responsive to the needs of supported units. Extensive delays mean that long-range strike missions with LACMs, ballistic missiles, or long-range rocket artillery are often ineffective against mobile Ukrainian units that regularly disperse and employ shoot-and-scoot tactics.

Part of the problem at the tactical and operational levels appears to be that the officers in charge of adjudicating and assigning strike missions are not trained to prioritize the missions. Russian forces also struggled with target identification and execution in a dynamic environment.

COMSEC

Russian soldiers have relied with surprising frequency on unsecure communications devices, such as mobile phones and commercial push-to-talk phones, to communicate in the field. Ukrainian forces have been able to use the information that they intercept from Russian soldiers transmitting in the open to jam, geolocate, and, in some cases, target Russian troops as well as C2 and logistics nodes.

Initiative

Russian operations in Ukraine suggest that Russian commanders have less latitude for independent action than commanders in NATO militaries. As a result, when Russian units encounter problems on the battlefield, they can be slow to react because they must seek and be granted permission from higher-echelon units before diverging from prearranged plans.

Discipline

Discipline and morale issues—a function of training as well as leadership—have plagued Russian troops since the start of the SVO. There have been numerous documented examples of Russian troops abandoning their equipment and engaging in looting and indiscriminate violence. Russian troops have often been either unwilling or unable to maintain their equipment, leading to breakdowns and shortages.

Mobilization

As more inexperienced reservists and conscripts are mobilized and deployed to Ukraine and attrition takes its toll, the training problems noted above are likely to be exacerbated. There simply will not be enough experienced personnel or available resources to train all the newly mobilized soldiers to appropriate standards.

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Abbreviations

ATGM	anti-tank guided missile
BARS	National Combat Army Reserve
BDA	battle damage assessment
BTG	battalion tactical group
C2	command and control
CAS	close air support
COMSEC	communications security
DOSAAF	Volunteer Society for Cooperation with the Army, Aviation, and Navy
EW	electronic warfare
IFV	infantry fighting vehicle
KTZ	complex tactical task
LACM	land-attack cruise missile
MOD	Ministry of Defense
MRB	Motor Rifle Brigade
MRL	multiple rocket launcher
NATO	North Atlantic Treaty Organization
NCO	noncommissioned officer
OPFOR	opposing force
SVO	special military operation
TTP	tactics, techniques, and procedures
UCAV	unmanned combat aerial vehicle
UK	United Kingdom
VKS	Russian Aerospace Forces

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