

RUSSIAN CAPABILITIES IN CONVENTIONAL HIGH INTENSITY WARFARE. LESSONS FROM THE 2022 INVASION OF UKRAINE

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Abstract. The Russian Federation is today one of the world's major military powers. The most important component of the Russian military machine is the nuclear Strategic Forces, but conventional forces are also key actors in Russia's defense and strategic policy. The present article will briefly describe the post-Soviet evolution of Russian conventional forces and their proficiency and effectiveness in the light of the 2022 Russo-Ukrainian War. The armed forces inherited from the Soviet Union in the 1990s faced a struggle to maintain even modest capabilities. After Boris Yeltsin handed power to Vladimir Putin in 1999, sustained attempts were made to increase their capabilities. Extensive reforms were made to improve personnel conditions and proficiency, organization and equipment. The Russian military involvement in the Syrian Civil War and in the 2014–2022 Donbas conflict seemed to indicate that substantial progress had been achieved. When Russia launched its invasion of Ukraine in February 2022, military experts expected that the reformed Russian military machine would overwhelm their outmanned and outgunned foes. Contrary to expectations, the Russians suffered decisive setbacks, and despite partial successes in Southern and Eastern Ukraine they are presently embroiled in slow, costly attritional warfare. The operations in the current conflict have evidenced serious shortcomings in organization and in combined arms tactics, suggesting that the reforms have only been partially successful. They also suggest the persistence of problems that the modern Russian armed forces inherited from their predecessors, and this may be rooted in their historical military heritage and in aspects of Russian society that go back a long way in the past. The present conflict offers an opportunity for the military organizations of the Western world to learn important lessons and readdress their defense policies.

Keywords: Russian military reforms, command philosophy, military proficiency and sociocultural heritage, Russian invasion of Ukraine

1. Introduction

Over the last two decades, Russian armed forces have seen an apparent renaissance under the political leadership of Vladimir Putin. Extensive and well publicized reforms have, on paper at least, achieved significant modernization

of the Russian military machine, particularly in its capability to conduct conventional warfare, which has generated considerable alarm among members of the NATO alliance. The invasion of Ukraine in February 2022 has however revealed unexpected weaknesses and flaws in Russian conventional forces. Based on an analysis of secondary sources, this article argues that these weaknesses do not originate only from specific technological or doctrinal issues, but also from old patterns inherited from Soviet and even Tsarist predecessors. These patterns are grounded in sociocultural aspects of Russian society, like the authoritarian tendencies that are still evident in 21st century Russia.

The Russian Federation was born in 1991 upon the collapse of the Soviet Union. At that time the conventional forces inherited by the new Russian state were in a state of disarray. The conditions of near bankruptcy of the Russian Federation prevented attempts to address the deficiencies of its military apparatus for many years. Due to the political turmoil and economic crises of the 1990s, it was only a shadow of its Soviet ancestor both in size and effectiveness. Some tentative steps towards reforms had already been proposed before the collapse of the USSR to address perceived weaknesses in the army (Mobile Force Concept).¹ The dismal Russian military performance during the first Chechen War (1994–1996) evidenced serious flaws in training, equipment and organization. The forces initially fielded in that conflict were an improvised patchwork of different formations deployed with their peacetime TOE and unused to operating together. Furthermore, the decision to decrease the number of conscripts, taken in 1993, also led to a shortage of NCOs, the backbone of every army, who in the old Soviet system were promoted from the ranks and generally lacked the professionalism of their Western counterparts. The war also evidenced deficiencies in equipment, for instance the vulnerability of the T-80 MBT to light AT weapons in urban combat. The Air Force was powerful on paper, with a number of advanced fourth-generation fighters, but was handicapped by a scarcity of pilots and fuel shortages that reduced the amount of flying hours for training. After this conflict, the humiliation experienced by the Russian military led to more active steps to improve the situation. The defence minister, Pavel Grachev, was replaced by Igor Rodionov in 1996. The Air Force and the Air Defence Force were merged in 1997, a step towards the implementation of the Aerospace Force. A new tactical formation, the Battalion Tactical Group, was created. The BTG is a modular tactical formation created with the

¹ **Barrie, D.; Hackett, J.** (eds.) 2020. *Russia's Military Modernization*. IISS. London: Arundel House, p.16.

combat-ready elements of an Army brigade principally intended to quickly deploy well-equipped and trained forces in limited conflicts.²

2. Reforms under Vladimir Putin

After Vladimir Putin became acting president (1999) and then president (2000) of the Russian Federation, efforts to address the weaknesses of the armed forces were intensified with the aim of regaining, at least partially, the status of Russia as a pre-eminent military power. Progress was slow. The Russian victory in the Second Chechen War (1999–2002), which saw the first employment of BTGs, was achieved more by the use of overwhelming force than by tactical finesse, resorting to traditional “steamroller” tactics and leveling built-up areas in enemy hands with massive firepower.³ The reforms continued to be hampered by a shortage of funds and by the conservative attitude of the military leadership. Starting from 2001, under the direction of the new defense minister Ivanov, the proportion of volunteers in the Army was increased and the length of the draft shortened, being progressively reduced to 12 months. However, it was only after the brief conflict with Georgia in August 2008, which again evidenced shortcomings in Russian military performance, that the political leaders of the country (at that time Putin was prime minister and Dmitry Medvedev president) were able to start a process of real modernization under the guidance of Defense Minister Serdyukov and Chief of General Staff Makarov. One of the solutions adopted to improve effectiveness and readiness was a switch to an all-brigade structure (New Look army).⁴ It was planned that every brigade would provide two BTGs ready for immediate employment. After Sergei Shoigu became defense minister in 2012, a number of divisions were reformed⁵, but most with only two or three manoeuvre regiments. This may reflect a reorientation towards high intensity warfare, however other aspects of the Serdyukov-Makarov reforms were

² **Fiore, N. J.** 2017. Defeating the Russian Battalion Tactical Group. – *Armor Magazine*. <https://www.benning.army.mil/armor/eARMOR/content/issues/2017/Spring/2Fiore17.pdf> (30.03.2022). [**Barrie, Hackett** 2020]

³ **Galeotti, M.** 2017. *The Modern Russian Army 1992–2016*. New York-Oxford: Osprey Publishing, pp. 16–18. [**Galeotti** 2017]

⁴ **Barrie, Hackett** 2020, pp. 23–26.

⁵ *Ibid.*, p. 33; **Galeotti** 2017, p. 28.

maintained, particularly the progressive increase of contract personnel (*kont-raktniki*)—paid volunteers who sign to serve for a few years.⁶

Excluding independent units, the typical organizational structure of the ground Forces is: Army => Brigade/ Division (2–5 regt.) => Battalion/ BTG. On the eve of the Ukrainian invasion, the Russian ground Forces on all theatres comprised at least 100 brigades (incl. combat support and service support) and 10–11 divisions, capable of fielding a total of almost 150 BTGs.⁷ As mentioned above, the BTG answered the need to have available combat-ready tactical formations, but it could also have been an adaptation to personnel shortage.⁸ In fact, it is the basic tactical formation employed in Ukraine during the first phase of the war. Most BTGs comprise two or three MR and one tank company, plus support and combat support elements. They are semi-permanent units, in contrast to the US Army Combined Arms Battalion (CAB).⁹ On paper, at least, they are only manned by contract soldiers. In theory, each brigade should man and equip two BTGs (and each regiment one) drawn from their organic battalions and support units. Even if brigades and regiments are not at full strength, they should thus be able to speedily form one or two effective tactical formations. One drawback of these formations, however, is that they leave the rest of their parent formations without follow-on, combat-ready and proficient elements. Another problem faced by the modern Russian Army is that the reduction of draft service to one year has left the army with conscripts who, after basic training, have only a few months left to serve in active formations. Moreover, despite attempts to improve recruits' living conditions and to fight the old practice of "dedovshchina" (abuse of new recruits by their older comrades), military service remains rather unpopular and draft evasion is still quite widespread, compounding the problem of personnel shortage.¹⁰ Other objectives of the New Look reforms included the reduction of military districts to four, and their transformation into Joint Strategic Commands, the merging of military

⁶ *Ibid.*, pp. 40–41.

⁷ **Harris, C.; Kagan, F. W.** 2018. *Russia's Military Posture: Ground Forces Order of Battle*. Washington, DC: ISW and CTP. https://www.criticalthreats.org/wp-content/uploads/2018/03/Russian-Ground-Forces-OOB_ISW-CTP.pdf (02.06.2022). **Hackett, J.** (ed.) 2022. *The Military Balance 2022*. IISS. London: Arundel House, p. 194

⁸ **Barrie, Hackett** 2020, p. 70.

⁹ **U.S. Army Combined Arms Battalion** 2016. – *Battle Order*. <https://www.battleorder.org/usa-cab-2016> (15.04.2022).

¹⁰ **Galeotti** 2017, pp. 37–38.

higher institutions into ten combined universities, and the outsourcing of rear support functions to civilian organizations.¹¹ Airborne Forces and Special Forces have retained the prominent role that they played in the old Soviet Army, and efforts have been made to increase the number of contract personnel in these units too.

The reforms tried to revitalize the air forces as well. Besides equipment modernization, there has been reorganization around the “Air Base” or “Air Station” concept, merging air regiments or squadrons with auxiliary and support elements at the same site where they are based. While this decision was partly reversed under Defense Minister Shoigu, the main logistical aspects of this reform were maintained. In 2015, the Air Force and the Aerospace Defence Force were merged into the Aerospace Force (VKS).¹²

The Navy was not ignored in the Russian rearmament program but economic constraints have limited the growth of naval strength. The attempt to create a powerful carrier force has been for the moment set aside, and the only vessel of that type in the Russian inventory is the *Admiral Kuznetsov*, presently undergoing repairs. The submarine force is one of the most important components of the Navy, and a new class of nuclear, fifth generation multi-purpose submarines (Project 545, *Husky Class*)¹³ is currently planned. The naval forces have always been the junior branch of the Soviet military and, despite efforts to build a true oceanic Navy with global capabilities, this lower status persists even today. Russia is a continental power, and geographical constraints—requiring the division of the fleet between the Baltic, the Arctic, the Black Sea, and the Pacific—have always been an obstacle to the oceanic ambitions of the Kremlin.

As mentioned above, equipment modernization has been a key part of the reforms. Innovative AFV designs have been developed and some are now in service. The new T-14 *Armata* MBT, first displayed in public during the 2015 Victory Day (fig. 1), is the first vehicle of that type with an unmanned turret. The BMPT *Terminator* is a new type of AFV designed for support roles, particularly in urban scenarios. New drones and UAVs, whose importance in modern warfare is growing, have also been designed. Advanced UAVs, like an

¹¹ **Barrie, Hackett** 2020, p. 26.

¹² **Myers, N.** 2018. The Russian Aerospace Force. – Security Forum, Vol. 2(1), pp. 91–103.

¹³ **Russia is currently designing Husky-class fifth generation of submarines** 2020. – Navy Recognition, Naval Technology, March 23. <https://www.navyrecognition.com/index.php/focus-analysis/naval-technology/8194-russia-is-currently-designing-husky-class-fifth-generation-of-submarines.html> (31.07.2022).



Figure 1. T-14 Armata MBT, Victory Parade, Moscow, 9 May 2015 [author's collection].

upgraded version of the S-70 *Okhotnik*, are in an advanced phase of development.¹⁴ Russia has also entered the “stealth race” with the SU-57 fighter which is undergoing the flight-test program but is not yet fully operational, even if Russia claims it has been used in combat in Ukraine.¹⁵

Hypersonic technology is another field in which Russia has made substantial progress, with the Kh-47 ASM *Kinzhal* already in service and the ASHM *Tsirkon* performing advanced tests with the Navy.¹⁶

Problems with costs, production and maintenance have, however, greatly hampered equipment modernization efforts. Some of the new weapon systems have only been produced in small numbers or are still affected by teething problems. For instance, the T-14 is still in pre-production phase and delays have hampered SU-57 development. There are also doubts among the Western intelligence community about the technical soundness of some of the

¹⁴ **Larson, C.** 2021. Russia's Upgraded Okhotnik Unmanned Aerial Vehicle Just got a lot Stealthier. – The National Interest, December 15. <https://nationalinterest.org/blog/buzz/russia%E2%80%99s-upgraded-okhotnik-unmanned-aerial-vehicle-just-got-lot-stealthier-198028> (01.06.2022). **Hackett** 2022, p. 169.

¹⁵ **Kadam, T.** 2022. 4 Russian Su-57 Jets, Operating In Stealth Mode, Identified & Destroyed Ukrainian Air Defense Systems – Decoding Claims. – The Eurasian Times, July 3. <https://eurasiatimes.com/4-russian-su-57-jets-operating-in-stealth-mode-ukrainian/> (15.07.2022).

¹⁶ **Hackett**, 2022, p. 171.



Figure 2. Mil Mi-28 *Havoc* attack helicopters, Victory Parade, Moscow, 9 May 2015 [author's collection].

new designs. For instance, the effectiveness of the stealth suite of the SU-57 has been questioned.¹⁷ The backbone of the Russian arsenal is still made up of improved models of older weapon systems like the SU-27/35 fighter family, the 2S19 SP howitzer, the BMP2/3 IFV, and the Ka-50, Ka-52 and Mi-28 attack helicopters (fig. 2). Tanks have always played a central role in the Soviet and Russian ground forces, but today the most advanced MBT in active service is still the T-90, an evolutionary upgrade of the venerable T-72. The T-80, once considered the best tank in the Soviet army, suffered serious losses in the 1994 Chechen conflict, and its turbine engine is plagued by unreliability issues. Even if diesel-powered versions, T-80 U and UD, were subsequently developed, it was decided that an improved T-72, designated T-90 in 1992, was more reliable and cost effective. In 1996, after the experience in Chechnya, the T-90 was selected as the new Russian standard MBT.¹⁸ Despite being based on the

¹⁷ **Su-57: A Worse Fighter Russia Ever Produced.** 2021. – GDC, October 9. <https://www.globaldefensecorp.com/2021/10/09/su-57-a-worse-fighter-russia-ever-produced/> (01.07.2022). **Hollings, A.** 2021. Why Russia's Su-57 Fighter Jet Is Ranked Last for Stealth. – The National Interest, June 6. <https://nationalinterest.org/blog/reboot/why-russia%E2%80%99s-su-57-fighter-jet-ranked-last-stealth-186900> (01.07.2022).

¹⁸ **Bishop, C.** (ed.) 2006. *The Encyclopedia of Tanks*. Hoo: Grange Books, p. 339.

T-72, a tank that performed poorly in the Middle East in 1982 and 1991, the T-90 should not however be easily dismissed in comparison to Western tanks.

The T-72 apparently was no match for the Israeli *Merkava* in Lebanon in 1982 or the US M1A1 *Abrams* and the British *Challenger* during Desert Storm. However, it should not be forgotten that those vehicles were “downgraded” export versions in the hands of ill-trained crews, facing the very best equipment that the West could field. Former Warsaw Pact tanks tested after the end of the Cold War revealed much better protection levels than expected. Further improvements in passive and active defenses and in ammunition quality on the T-90 have probably made this vehicle close to its Western counterparts in protection and firepower. The real advantages of Western tanks, and other weapon systems as well, generally lie in superior electronics and fire control, and better crew training. The losses that Russian AFVs have suffered in Ukraine so far appear to be due more to a failure in employing combined arms tactics than to technological inferiority. The same lesson seems to apply to the losses suffered by Saudi M1A2s and Turkish *Leopard 2* A4s in the Middle East.¹⁹

Apart from the technical reforms, in the last decade the regime has also tried to improve the image of the military among the public, and to foster patriotism and national pride in Russian society. One example is the massive celebrations for the 70th anniversary of the victory in 2015 with a public display of military hardware, including historical vehicles from the “Great Patriotic War”. (fig. 3, 4)

Russia’s efforts to improve its military machinery have been paralleled by a weakening of the conventional capabilities of several Western countries. After the end of the Cold War, the European members of NATO made substantial cuts to their military budgets and the size and readiness of their armed forces. After the start of the so-called “War on Terror”, Western militaries focused on counter-insurgency and “peace keeping operations” at the expense of conventional, high-intensity warfare. In the early 2000s, some pundits claimed

¹⁹ **Roblin, S.** 2019. Turkey’s Leopard 2 Tanks are Getting Crushed in Syria. – The National Interest, November 9. <https://nationalinterest.org/blog/buzz/turkeys-leopard-2-tanks-are-getting-crushed-syria-95396> (30.07.2022). It must be pointed out that the most sensitive details about modern weapon systems, like tank armour, are classified. Much of the information available on the Internet simply comes from speculation and is not reliable. It is, however, generally agreed by military experts that the electronics in most Western weapon systems are more advanced than in their Russian counterparts.



Figure 3. The iconic T-34 tank displayed during a military parade in Petrozhavodsk, 2019 [author's collection].



Figure 4. Russian children dressed in WW2 military outfit, Moscow, May 2015 [author's collection].

that the age of traditional warfare between nation states was over.²⁰ Improvements in the conventional forces of China and Russia and increasing tension between these powers and the Western alliance show the folly of such an assumption.

The performance of Russian forces employed in the Syrian civil war and in the Donbas after the “Maidan Revolution” seemed to confirm that a real improvement in Russian military capabilities had taken place, and in recent years gloomy predictions have been made in the West about NATO’s odds in facing a hypothetical invasion of the Baltic countries.²¹

3. The 2022 Russian invasion of Ukraine

Contrary to previous assessments, the performance of the Russian military in the initial phase of the Ukrainian war suggests that their program of rearmament and modernisation has not been very successful. The initial drive against Kyiv was a complete failure. Operations in the south and the east were more successful but, despite the apparent disparity of forces, the invaders have become enmeshed in slow, grinding attritional warfare. While at the beginning of Putin’s “special military operation” it was feared that the apparently much weaker Ukrainian military machine would be overwhelmed, the successes of the Ukrainian defenders and the high losses inflicted on Russian AFVs following the invasion have surprised many experts.²²

²⁰ The following essay is just one example of the opinion expressed by some commentators after the proliferation of non-conventional and anti-insurgency warfare in the early 21st Century, especially in Iraq and Afghanistan: **Dharfizi, A. D.** 2011. Conventional Warfare is Obsolete in the 21st Century – An Assessment with Empirical Evidence and with Reference to Recent and/or Contemporary Conflicts (Grad. Thesis). University of Malaya.

²¹ **BNS/TBT Staff** 2016. Report: NATO would lose against Russia in invasion of Baltic States. – The Baltic Times, February 4. https://www.baltictimes.com/report__nato_would_lose_against_russia_in_invasion_of_baltic_states/ (01.08.2022). **Episkopos, M.** 2021. World War III: If Russia Invaded the Baltics NATO Couldn’t Stop Them. – The National Interest, March 15. <https://nationalinterest.org/blog/buzz/world-war-iii-if-russia-invaded-baltics-nato-couldnt-stop-them-180303> (01.08.2022).

²² **Copp T.; Tucker, P.** 2022. Five Reasons Why Russian Forces Are Struggling in Ukraine. – Defense One, Threats, March 1. <https://www.defenseone.com/threats/2022/03/five-reasons-why-russia-struggling-ukraine/362636/> (15.05.2022). **Feng, J.** 2022. China Surprised by Russia’s Military Failures in Ukraine: CIA Director. – Newsweek, May 10. <https://www.newsweek.com/china-taiwan-russia-ukraine-cia-director-william-burns-1705087> (02.08.2022).

Russia launched the invasion on February 24th following almost one year of military build-up near the Ukrainian border, but without an extensive mobilization of reservists. According to the Ukrainian journalist and military commentator Yuri Butusov, one week before the invasion the Russians had assembled forces drawn from eight Combined Armies and one Tank Army divided into nine groupings, including 64–70 BTGs, about 15 of which were deployed in Belarus.²³ The Donbas secessionist territories contributed one Army Corps each.

The invasion was launched on several axes along the Ukrainian border from Belarus in the north to the Donbas in the east and Crimea in the south. The push against Kyiv was accompanied by “special operations” carried out by infiltrators, mercenaries and special forces, likely intended to decapitate the Ukrainian political leadership. These attempts were thwarted by Ukrainian security forces, assisted by local militia. The advance on Kyiv soon stalled on the northern and eastern outskirts of the capital. The most successful advances were achieved in the south where Russian units from Crimea steadily pushed back the enemy in the Kherson and Zaporizhia Oblasts. By the end of March, the Russians had apparently conceded their failure against Kyiv and started redeploying their forces to the East. A renewed offensive in the Donbas in April soon degenerated into a slow attrition match, with the Russians achieving only modest gains against a dogged Ukrainian defence.

It has been evidenced by military analysts and commenters that the Russians were often unable to make effective use of combined arms tactics. Tanks, if inadequately supported by infantry, are vulnerable to ambush by enemy infantry equipped with ATGMs and LAWs, and this has been shown in many instances during the invasion. The use of inexperienced and unmotivated conscripts in Northern Ukraine could have been a contributing factor to the failure of the Russian offensive on that front. In theory, by law, conscripts cannot be fielded in theatres of war outside national borders unless they volunteer, and even then they are not supposed to be employed in BTGs. In

²³ **Butisov, Y.** 2022. Отвода войск РФ от границ Украины нет, а замечена новая активность врага – Бутусов. КАРТА (There is no withdrawal of Russian troops from the borders of Ukraine, but a new activity of the enemy has been noticed – Butusov. MAP). – Censor.net, February 18. https://censor.net/ru/news/3317188/otvoda_voyisk_rf_ot_granits_ukrainy_net_a_zamechena_novaya_aktivnost_vraga_butusov_karta (01.05.2022). The exact Russian order of battle is difficult to establish and sources differ in their estimates. Elements from many divisions, brigades and regiments have been identified (but many of them are logistic and support units with no combat role). Ukrainian land forces at the onset of the war consisted of about 21 Army field brigades, 3 territorial defence brigades, and 4 National Guard brigades.

war, however, reality often diverges from theory, and there exists the suspicion that officers may coerce recruits to “volunteer” themselves.²⁴ The presence of unwilling Russian conscripts in Ukraine has been highlighted by the media. Optimistic assumptions about a quick collapse and lack of willingness to resist on the part of the Ukrainians may have played an important role in the apparent lack of adequate planning and preparation for an offensive against a determined and well-trained opponent, at least on the Kyiv and northern axis of the advance. According to some military commentators, Russia has been “shaping the battlefield”, setting the conditions for a decision in the east, and have even speculated that the offensive against Kyiv was just a diversion.²⁵

While this hypothesis may be too far off, the Russians have shifted their main effort to Eastern Ukraine with the apparent intent to encircle the best Ukrainian units deployed in the Donbas. They have also continued to feed units to the front, but their efforts so far have not been very successful and a sort of stalemate has ensued. By early June the number of Russian BTGs had increased to about 100. More have joined the battle since then, but some of those deployed earlier have been withdrawn due to losses. The BTGs remain the basic tactical units, assigned as needed to the front. This *ad hoc* organization enhances flexibility but lacks the mass and power of the old Soviet army doctrinal Ground Forces units. In this war we are not seeing huge Russian mechanized formations “barrelling” to the Dnepr as their Soviet ancestors were expected to do in Germany (some Cold War analysts thought that a massive Soviet mechanized onslaught could reach the Rhine in less than a week). It is relevant that the BTGs constitute, as said, the basic tactical units in the invasion force. Before the invasion it was thought likely that in a major war Russia would employ its combat forces along traditional lines (divisions, brigades, regiments, battalions) instead of relying on the BTGs as the primary tactical organization.²⁶ This, of course, would presume a major mobilization. The fact that Russia has launched the offensive without a general mobilization, mainly relying on BTGs formed from the peace army, suggests that it did not expect a major, protracted conflict. The conclusion is that the Russian leadership made a major miscalculation. Being now embroiled in a

²⁴ Galeotti 2017, p. 38.

²⁵ **The Silksworth Post** 2022. The West Misled the Public on Russia’s War Strategy, and the Results are Starting to show in Donbass. – Indian Defence Review, April 30. <http://www.indian-defencereview.com/the-west-misled-the-public-on-russias-war-strategy-and-the-results-are-starting-to-show-in-donbass/> (03.07.2022).

²⁶ **Barrie, Hackett** 2020, p. 70.

major war of attrition, and unable for political reasons to declare a full mobilization, it seems that Russia is trying to continue operations by improvised, makeshift means. According to the Institute for the Study of War, Russia launched in July a vast recruiting campaign for volunteer battalions with men aged between 18 and 60, even without previous military experience.²⁷ This initiative indicates the struggle that Russia is facing to pursue a costly war of attrition without general compulsory mobilization.

According to the monitoring site “Oryx”, during the first month of operations Russia lost over 80 MBTs, over 130 IFVs and APCs, and scores of other AFVs were destroyed, not counting damaged and captured vehicles.²⁸ While that source is probably not completely accurate, it gives an idea of the rate of material attrition of the Russian ground forces in the initial phase of the war. Material and personnel attrition has continued at a high rate, and so far there is no evidence of major changes in Russian tactical performance and in their ability to use combined arms tactics. In order to reduce the vulnerability of their vehicles against anti-tank weapons, especially the top-attack *Javelin* ATGW, makeshift add-on armour is being used but its effectiveness is doubtful.²⁹ There has been an increased reliance on the use of artillery, which is a traditional Russian strength and has been used in past conflicts to compensate for tactical shortcomings. Are Russians aware of their weakness in combined arms warfare? It is possible that the Russian leadership was aware of the tactical flaws of its military organization and tried to compensate for it with technological solutions. For instance, the BMPT *Terminator* has been developed as a unique type of AFV specialized for supporting tanks, particularly in urban warfare. But can this really compensate for weak combined arms tactics and insufficient infantry training?

The Russian Aerospace Force has deployed at least 300 of its combat aircraft (out of a total inventory of about 1500 aircraft, of which 1172 combat capable)³⁰ within the range of the Ukrainian theatre of operations but has not

²⁷ **Stepanenko, K.; Barros, G.; Kagan, F. W.** 2022. Russian Volunteer Units and Battalions. – ISW, July 16. <https://www.understandingwar.org/backgrounder/russian-volunteer-units-and-battalions> (02.08.2022).

²⁸ **Mitzer, S.; Janovsky, J.** 2022. Attack On Europe: Documenting Russian Equipment Losses During The 2022 Russian Invasion Of Ukraine. – Oryx, February 24 (updated). <https://www.oryxspioenkop.com/2022/02/attack-on-europe-documenting-equipment.html> (30.03.2022).

²⁹ **Desperate Russian army is attaching wooden logs as armor with trucks and tanks** 2022. – GDC, April 10. <https://www.globaldefensecorp.com/2022/04/10/desperate-russian-army-is-attaching-wooden-logs-as-armor-with-trucks-and-tanks/> (05.07.2022).

³⁰ **Hackett**, 2022, p. 200.

employed them as intensively as many military analysts expected.³¹ The scarcity of air support for Russian ground formations has been one of the factors that have allowed successful Ukrainian resistance on the ground. However, Russia still seems to hold the advantage in the air. The small Ukrainian air force fielded about 100 combat aircraft at the beginning of the invasion, with Soviet-era vintage fighters (Mig-29 and Su-27) lacking modern stand-off AA missiles. Ukrainian fighters are equipped with medium range semi-active radar homing missiles and short-range IR missiles. The former require that the fighter keep illuminating the target after the weapon is launched, thus exposing the aircraft to retaliation. The latter require a fighter to close the distance to dogfight range. Modern Russian fighters, like the Su-30 and Su-35, are equipped with fire-and-forget missiles that allow the airplane to disengage after launching its weapons. This gives Russia a considerable advantage in air combat and, together with the presence of advanced Russian anti-aircraft missiles, has resulted in significant Ukrainian losses in fixed-wing combat aircraft.³²

Ukrainian interdiction and ground support aircraft (Su-24 and Su-25) are also older models compared to those fielded by the enemy. Russia fields newer, more capable versions of the Su-25, and the Su-34 is vastly superior to any strike aircraft in the Ukrainian inventory. Stand-off missiles in certain circumstances can also allow Russian aircraft to fire their weapons without leaving friendly air space, thus decreasing their exposure to hostile threats. Some claims made by the Ukrainian authorities about enemy losses remain unsubstantiated and some are just myths spread by the media (“Ghost of Kyiv”). A scarcity of smart weapons in their inventory³³, and probably an unwillingness to expose precious air assets, have however been a limiting factor in the intensity of Russian air operations. There has also been insufficient coordination between air and ground forces, contributing to the lower than expected air support for the Russian offensive.

³¹ **Roza, D.** 2022. Where is the Russian Air Force? Experts break down why they might be hiding. – Task & Purpose, March 3. <https://taskandpurpose.com/news/how-big-is-the-russian-air-force/> (02.06.2022). [Roza 2022]

³² **Axe, A.** 2022. Ukraine’s Pilots Are Flying Into Battle With Old, Dumb Missiles. It’s One Reason They Get Shot Down. – Forbes, April 30. <https://www.forbes.com/sites/davidaxe/2022/04/30/ukraines-pilots-are-flying-into-battle-with-poor-missiles-its-one-reason-they-get-shot-down/> (01.06.2022).

³³ **Plopsky, G.** 2022. Analysis of Russian airpower deployment in Ukraine by Guy Plopsky. – Hush-Kit, March 22. <https://hushkit.net/2022/03/22/analysis-of-russian-airpower-deployment-in-ukraine-by-guy-plopsky/> (01.08.2022).

On the other hand, despite considerable Western military aid, Ukrainian prospects of improving the balance in the air are in doubt. Deliveries of spare parts, ordnance and aircraft are certainly useful for keeping the Ukrainian air force in the fight. However, the delivery of advanced missiles and fighters, even if politically feasible on the part of NATO members, would create considerable problems with training and logistics. Russia, of course, also has the option to send reinforcements of uncommitted air assets, but this capability depends on the grade of readiness of their air force and on logistical issues, as well as on political will. These factors are at present difficult to assess. Russian pilot training has improved compared to the 1990s. Today, Russian combat aircraft pilots average around 100 flying hours per year.³⁴ The decline of flying hours spent by NATO pilots in the past decades has narrowed the training gap that existed in the late 20th century and should be a reminder to avoid over-optimistic assumptions about Western qualitative superiority. In any case, in the first months of war, Russia managed to achieve a slightly favourable loss ratio in fixed-wing aircraft: as of early July 2022, it had lost a little over 30 fighters and fighter-bombers against roughly 40 lost by Ukraine, according to independent analysts³⁵. In general, however, it can be said that the Russian air forces have not performed as well as military experts expected on the eve of the invasion.

4. Issues about Russian military performance in Ukraine

One of the reasons for the problems facing the Russian military in their “Ukrainian special operation” is that the military reforms were principally aimed at improving the readiness of the standing Army for limited operations, while the Ukrainian invasion has turned into a high-intensity conflict of attrition. This kind of war requires extensive mobilization which the Moscow regime cannot afford for political and economic reasons. Another possible factor is that the military reforms were in part aimed at improving the image of Russian military might rather than addressing its weaknesses. Some of the Russian improvements may have been “cosmetic”, i.e., more for propaganda purposes than for real effectiveness. History offers examples of military organizations that paid more attention to their image than to true

³⁴ Roza 2022.

³⁵ *Ibid.* See also: Mitzer, S. 2022. List Of Aircraft Losses During The 2022 Russian Invasion Of Ukraine. – Oryx, March 20 (updated). <https://www.oryxspioenkop.com/2022/03/list-of-aircraft-losses-during-2022.html> (05.06.2022).

military effectiveness. One classic example is the armed forces of Fascist Italy, ineffective despite the bellicose rhetoric of the regime.³⁶

Furthermore, the setbacks suffered by the Russian armed forces may indicate that these weaknesses depend in part not on contingent factors but on historical patterns inherited from the military system of the Soviet Union, or even of the old Tsarist Army. They may be even a reflection of Russian society as a whole. The relationship between the performance of military systems and the societies to which they belong is an important topic³⁷ which deserves more attention. As USMC Major Henric G. Hansen wrote: “*One cannot divorce the soldier from origins. The soldier is, in fact, a reflection of his society and he therefore mirrors its mores and spirit.*”³⁸ Since at least the 19th century it has become clear that modern armies need soldiers who are well educated and motivated, rather than “automatons” inured to blind obedience through brutal discipline. The latter system, which had certain advantages for the armies of the absolute monarchies of the 18th century, creates serious problems in modern military organizations where individual initiative and skills in the use of complex weapon systems are paramount.

Historically, Russian soldiers have always been praised for their steadfastness, their sometimes suicidal bravery and their ability to operate with minimal comforts and logistical support. These qualities, while still relevant, have become less decisive in modern times, especially in the highly sophisticated military organizations of the 20th century, and particularly of the post-WW2 era. In the late 19th century, Germany led the world towards a new philosophy of warfare that stressed mission-oriented tactics, initiative and professional leadership.³⁹ Tsarist Russia and its successor the Soviet Union remained strongly committed to a system based on directive command.

The Soviet Union, partly due to its ideological background, tended to consider warfare as a science. Organization and planning were based on deterministic principles. According to this doctrine the unknown elements of warfare were to be minimized by meticulous planning and adherence to

³⁶ Hansen, E. G. 1998. *The Italian Military Enigma*. Quantico, VA: Command and Staff College Education Center, Marine Corps Combat Development Command. [Hansen 1998]

³⁷ See the interesting analysis of Eric Quellet, particularly about the concepts of “power distance” and “uncertainty avoidance” in the Russian society: Ouellet, E. 2020. *Russian command dynamics – A sociological primer*. – Contract Report. Defence Research and Development Canada. North York, Ontario: Royal Military College of Canada. [Quellet 2020]

³⁸ Hansen 1998.

³⁹ Brouwer, J. J. 2021. *The German Way of War. A Lesson in Tactical Management*. Barnsley: Pen & Sword Books. Creveld, M. van. 1982. *Fighting Power*. Westport, CT: Greenwood Press.

pre-set rules, leaving little space for the initiative of subordinate leaders. This system had some advantages, especially in armies made by relatively low-educated conscripts raised in a society based on authoritarian principles, and it allowed the commander to bring in its assets with precise timing without the need to guess what subordinates might do at any given time.⁴⁰ It created, however, a rigid system ill-suited to respond to the rapid changes and uncertainties of the modern battlefield. Since the 1970s there has been a debate among Western militaries, particularly in the US Army, about the advantages of mission-oriented command—a term which is generally used as a synonym of the German word *Auftragstaktik*. The US army officially adopted this command philosophy in the 1980s⁴¹, with mixed results.⁴² The aftermath of the Gulf War of 1991 led to debate on the ability of the US armed forces to really implement this concept. Some analysts claimed that Operation Desert Storm reflected the “military revolution” of the 1970s and 1980s, while others judged that the US Army had failed to really understand and implement the principles of mission command.⁴³ Some experts claimed that *Auftragstaktik* is a German philosophy that can only be fully understood and implemented in the frame of the German military culture as it existed in the 19th and 20th centuries.⁴⁴ It has also been argued that the concept of mission command has become a dogma in the West and is not the panacea claimed by some proponents.⁴⁵ For instance, some past failures of the German armies—like the German offensives in 1918—may be due to a tendency to emphasize and prioritize tactics at the expense of operational planning⁴⁶. Sometimes independent decisions taken by commanders led to negative outcomes, like Gen. von Kluck’s decision to change the axis of First Army advance in September 1914.

⁴⁰ **Ouellet** 2020, pp. 13–15. **Hooker, R. D.** 1993. *Maneuver Warfare: An Anthology*. Presidio Press, p. 44. [**Hooker** 1993]

⁴¹ **Antal, J.** 1987. *Mission Tactics*. – *Armor Magazine*, May–June, pp. 9–11.

⁴² **Eisel, G. W.** 1992. *Befehlstaktik and the Red Army Experience: Are there Lessons for Us?* Fort Leavenworth, KS: School of Advanced Military Studies.

⁴³ **Leonhard, R. R.** 1991. *The Art of Maneuver*. Novato, CA: Presidio Press.

⁴⁴ **Gunther, M. J.** 2012. *Auftragstaktik: The Basis for Modern Military Command?* Fort Leavenworth, KS: School of Advanced Military Studies. **Cedergren A.; Mattsson P. A.** (eds.) 2003. *Uppdragstaktik* (Swedish). Forsvarshogskolan, Stockholm, Vallingby: Elanders Gotab AB, pp. 157–174.

⁴⁵ **Hendrix, S. N.** 2014. *Toujours Auftragstaktik*. Cuyahoga Community College. https://www.academia.edu/9334028/Toujours_Auftragstaktik (03.11.2021).

⁴⁶ **Paier, A.** 2019. *The German Offensives, 1918. An Analysis of Operations and Leadership* (I, II). – *Security Forum*, Vol. 3(2), pp. 131–159.

In any case, while modern Western armies have been increasingly praising initiative and flexibility, at least in words, the Soviet Union followed a different approach. The scientific approach to warfare led Soviet military theoreticians to focus on the operational art of war, which can be considered as the domain of warfare between tactics and strategy, even if there are differences between Western and Russian armies regarding the definition of this concept.⁴⁷ Unfortunately, meticulous operational planning and rigid adherence to orders become less effective the more one proceeds down to the tactical levels of warfare. The tempo of combat operations and the uncertainty due to contingent local factors increase where small units are concerned, requiring junior leadership—and even rank and file—to be able to take prompt independent decisions that may involve disregarding orders when they are deemed to be inadequate for the changing conditions of the battlefield.⁴⁸ Is it to be noted that today's Russian army is aware of the criticality of this time factor and has tried to reduce the tempo of decision making,⁴⁹ but other factors like over centralization and excessive restrictions to the freedom of decision-making given to subordinates limit the effectiveness of such attempts?

The necessity on the part of authoritarian regimes to hold firm control over the armed forces further exacerbates a climate of fear. The pervasive fear of authority and retribution by superiors have a paralyzing effect. Officers who act under this psychological strain may tend to follow instructions to the letter even when it is evident that the ever-changing conditions on the battlefield make them no longer appropriate. Also, a system where subordinates must be “kept in their place” which regards them as merely tools in the hands of their superiors does not reinforce trust—an essential factor for effective command⁵⁰—and may result in vital information and intelligence not being shared to the lower echelons of command. Officers and soldiers who have not been trained to use their own initiative and have not been made fully aware of their superiors' intent may find themselves paralyzed when unexpected situations arise on the battlefield. It seems that this kind of problem exists, to an even greater degree than in Russia, in the armies of most Arab countries,

⁴⁷ **Grau, L. W.; Bartles, C. K.** 2017. *The Russian Way of War. Force Structure, Tactics, and Modernization of the Russian Ground Forces.* Fort Leavenworth, KS: Foreign Military Studies Office (FMSO), p. 39. [**Grau, Bartles** 2017]

⁴⁸ **Leonhard, R. R.** 1994. *Fighting by Minutes.* Westport, CT: Praeger, pp. 107–124. See also: **Hooker** 1993.

⁴⁹ **Grau, Bartles** 2017, pp. 51–58.

⁵⁰ **Cedergren, Mattsson** 2003, p.13.

as has been evidenced by the analysis of Kenneth Pollack.⁵¹ One effect of this attitude is also that subordinates may lie to their superiors in their reports for fear of being punished or of “losing face”, as often happened in the Iraqi Army of Saddam Hussein. It may be argued that modern real-time communications can make the directive command style still prevalent in the Russian military easier to apply. However, in reality there are many situations where initiative and quick thinking are still necessary. For example, the commander of an ambushed platoon or company needs to react instantly and independently. Pollack described, for instance, how in the Iraqi Army senior generals and the General Staff often had to micromanage lower echelons and provide them with detailed scripts of the operations because of the lack of initiative and the incompetence of their subordinates.⁵² This kind of micromanagement and inflexibility is not very conducive to efficiency and effectiveness, yet it has often been a feature in Russian military history.⁵³ In general, the Russian military in this war is still showing a lack of flexibility and difficulty to adapt. And, as RAF Air Marshal Ed Stringer recently said: “*He who adapts quickest wins*”.⁵⁴

The drawbacks coming from these historical roots, and in particular from Soviet heritage, without the material and numerical might possessed by the Red Army resulted in the poor performance in the early wars of the Russian Federation, as described above. The Serdyukov-Makarov reforms initiated in 2008 seemed to herald real change, but so far they appear to have failed to pass the test of battle in Ukraine.

The qualitative and organizational flaws of the Russian military, however, should not lead to excessive optimism about the Ukrainian chances to win the war, if their victory goal is the recapture of all Ukrainian territory lost after 2014 or even after February 2022. As described above, after the failed attempt on Kyiv, the Russians have concentrated their attention on the East and the South. As of early September they control the Kherson and Luhansk Oblasts, much of Zaporizhia and Donetsk Oblasts, and part of the Kharkiv Oblast. They failed to trap significant parts of the Ukrainian army in the

⁵¹ Pollack, K. M. 2004. *Arabs at War*. Lincoln, NE: University of Nebraska Press.

⁵² *Ibid.*, pp. 212–213, 220–221.

⁵³ According to an American analysis of the Cold War-era Soviet Army “*The Soviet perception of initiative involves finding a correct solution following normative patterns*.” Soviet tactical flexibility increased with the rank of the commander and the size of its forces, and there was little flexibility under regiment level: **The Soviet Army: Operations and Tactics** 1984. FM 100-2-1. Washington: Headquarters Department of the Army, 2-12.

⁵⁴ Allison, G. 2022. Russian Air Force ‘desperate’ says RAF Air Marshal. – UKDJ, July 18. <https://ukdefencejournal.org.uk/russian-air-force-desperate-says-raf-air-marshall/> (15.08.2022).

Sevierodonetsk-Lysychansk pocket and the front has not seen any dramatic changes in the last couple of months. Of course, we cannot know the exact intents of Putin and the Russian leadership; however, if their army managed to occupy the rest of Donetsk Oblast they could perhaps claim with some credibility to have achieved the goals of their “special operation”, namely the “liberation” of the two Donbas oblasts and the land bridge with Crimea. This could be presented at home as a reasonable victory, and we cannot exclude the possibility that Russia has the capability to achieve these limited objectives. The quote “quantity has a quality all its own” holds some truth. Even without total mobilization, Russian resources vastly outweigh those of Ukraine. Russia is now deeply committed and has paid a high price so far, which means it will probably try to achieve at least these limited objectives. Western sources have revealed that Russia is moving reinforcements to the Donbas front, sending even older equipment held in storage to make up for losses.⁵⁵

If the only acceptable goal for Ukraine is the total liberation of their country and the re-establishment of borders as they existed before 2014, it is not certain that such an outcome would be achievable. Even if the Russians decided to stop any further advances and switched to the defensive, the Ukrainian military may still find itself in an awkward situation. It is an old principle of war that, unless the attacker has a huge qualitative superiority, they require numerical and material superiority over the defender. While the Ukrainian army has so far been relatively successful on the defensive and even in local counterattacks, how good are their chances to expel Russian forces from all of their lost territory?⁵⁶

⁵⁵ **Nardelli, A.** 2022. Russia Turns to Old Tanks as It Burns through Weapons in Ukraine. – Bloomberg, June 14. <https://www.bloomberg.com/news/articles/2022-06-14/russia-turns-to-old-tanks-as-it-burns-through-weapons-in-ukraine> (02.08.2022).

⁵⁶ According to Col. M. Grosberg, head of the Estonian Defense Forces’ Intelligence center, in a recent interview on ERR, Ukraine has only a short eight- to ten-week window to launch a major counteroffensive before the onset of winter, and it is “*unlikely that Ukraine will be able fulfill President Zelenskyy’s wish of liberating its entire territory from Russian troops in such a short timeframe*”. ERR, September 02. <https://news.err.ee/1608703642/estonian-colonel-not-convinced-ukraine-can-liberate-territories-by-year-end>.

In a previous article from the same broadcasting channel, security expert Rainer Saks warned that Russia may be planning a long war of attrition, and that “*There is speculation that Russia might want to stage a major offensive in various parts of Ukraine to retake the initiative*”. **Luts, J; Libe T.** 2022. – ERR, August 8. <https://news.err.ee/1608693877/rainer-saks-russia-might-switch-to-longer-war-of-attrition> (01.09.2022). On September 6th Ukraine launched a counter-offensive in the Kharkiv Oblast. This operation has made initial gains and is still ongoing.

We do not know how a long, drawn-out war, which seems likely right now, might affect the Russian home front and internal support for the regime. But on purely military grounds, despite all its flaws, the Russian military is still a formidable opponent against a medium-sized country with limited economic resources like Ukraine.

5. Conclusion

The picture of the Russian military machine that emerges from the present war in Ukraine is a mixed one. Undoubtedly, there has been some progress after the 2008–2009 reforms. The relatively few Russian units employed in the Donbas in support of the separatists between 2014 and 2021, and in Syria in support of the Assad regime have been at least moderately successful. Old patterns and weaknesses remain, however, as clearly evidenced by the 2022 operations in Ukraine. The Ukrainian Army, on the other hand, has also made significant improvements in the past years thanks to Western assistance. As mentioned above, it appears that Russia has underestimated the capability and resolve of their enemies, which may be one explanation for the inadequate planning and preparation before the invasion. Whether this depends on faulty intelligence or self-deception on the part of the Russian political and/or military leadership is difficult to assess. C3 failures are also evident, with weaknesses in communications and coordination in the command chain.⁵⁷

It is likely that the persistent problems apparent in Russian performance during the present conflict are very deeply rooted and go beyond military doctrine and organization. Complex problems can seldom be traced back to a single simple cause. Military performance and effectiveness depend on many factors, some of them, like all issues involving human activities and enterprises, being riddled by confounding factors that make analysis difficult. It is, however, reasonable to assume that the military of a country in part reflects the society it belongs to, which in turn is affected by socioeconomic, cultural, and historical factors that can go back a long way into the past. Russian society has always been authoritarian. While before the 19th century, and often long after, all European societies were authoritarian compared to the present, this was particularly true for Tsarist Russia. The despotism and brutal discipline in

⁵⁷ Jones, S. G. 2022. Russia's Ill-Fated Invasion of Ukraine: Lessons in Modern Warfare. – CSIS, June 1. <https://www.csis.org/analysis/russias-ill-fated-invasion-ukraine-lessons-modern-warfare> (07.07.2022).

the Russian Imperial Army, particularly before 1874, was legendary, and well-known to historians.⁵⁸ The Soviet Union that emerged from the 1917 revolution was probably even more authoritarian than its predecessor. Control by the authorities and the party was strict, and this extended to the military too. In fact, the very power of the armed forces in the Soviet Union made them a potential threat to the political elites. Thus, strict control was necessary, as proved by the presence of political officers at all levels of command. This also led to a tendency to prioritize qualities of dedication and loyalty over competence among officers and military personnel,⁵⁹ while military effectiveness depends to a high degree on the initiative and proficiency of subordinate leaders and even of simple privates. It seems that fear of authority is deeply rooted in Russian society, and the present authoritarian regime, albeit milder than its Soviet predecessor, likely has not ameliorated this tendency. Russian leaders have been aware of the problems plaguing their armed forces, hence the several attempts at reforms. However, it seems that the fundamental problems coming from the Russian concept of authority and other socio-cultural patterns have remained. To introduce a new doctrine emphasizing the need for initiative is not the same as being able to apply it in the real world within a system that is still pervaded by old values and mentality—which the authoritarian developments in Putin's Russia have probably contributed to keeping alive.

Seeing the problems described above, it appears unlikely that the Russian military would be able to dramatically improve its proficiency in the immediate future. Furthermore, Russia's prospects of victory are hindered by the fact that it is trying to fight a major war "with one hand tied behind its back" because political constraints prevent a full mobilization.

The present war is undoubtedly providing invaluable lessons to the Western alliance. The problems of NATO unreadiness are largely self-inflicted. The war in Ukraine suggests that the new Russian army is not the juggernaut that was previously believed. But decades of dramatic cuts in military budgets have left the conventional forces of NATO's European countries in a seriously weakened state. Even the German Army, the backbone of NATO in Central Europe during the Cold War, has fallen to a low level of readiness,

⁵⁸ **Pintner, W. M.** 1987. *The Imperial Russian Army: Society, Politics, Economics, and Revolution*. – *The Russian Review*, Vol. 46, No. 4, October, pp. 439–446.

⁵⁹ **Ouellet** 2020, p. 15.

as evidenced by the media in the past years.⁶⁰ Only some Eastern European countries have been an exception to this trend. It appears that the Russian invasion of Ukraine has marked a reversal of this tendency, with several European countries announcing increases in their military budgets. It is, however, too early to predict the outcome of these efforts.

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⁶⁰ **Germany’s lack of military readiness ‘dramatic,’ says Bundeswehr commissioner** 2018. – Deutsche Welle (DW), February 20. <https://www.dw.com/en/germanys-lack-of-military-readiness-dramatic-says-bundeswehr-commissioner/a-42663215> (01.09.2022).

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