

# RUSSIA'S EMBRACE OF ATTRITIONAL WARFARE: "WINNING BY NOT LOSING"

*Oliver B. STEWARD; PhD\**

**Abstract:** *This paper argues that once President Putin was no longer able to achieve his initial objectives of regime change in Kyiv in 2022 by using blitzkrieg operations, Russia's grand strategy underwent a reassessment towards narrower strategic objectives. This paper will provide an account of the changing nature of Russia's strategic aims and goals, as well as exploring the 'Russian' way of warfare. The shift in war aims is evident in the partial mobilisation of fresh troops, the annexation of Ukrainian territory and waging of a war of attrition. Russia has increased its military budget, the manufacturing of weaponry, as well as the import of military technology from Iran and North Korea. However, NATO allies, including Romania, have provided military aid to Kyiv to continue fighting. Taking all these factors into account, this paper argues this conflict has become a 'long war' of attrition.*

**Keywords:** *Putin; strategy; positional warfare; war of attrition; Ukraine; Kyiv; Drones.*

## 1. Introduction: the definition of attritional warfare&its application

Firstly, it is prudent to define what military strategy is. The standard definition involves "ways" as well as ends and means (Lykke 1989, 2-8). However, one must include a caveat to this argument. Firstly, this paper puts forward the notion that Russia is winning "by not losing the war of attrition". Therefore, firepower in this operational context truly matters. Additionally, until there is a substantial change on the battlefield, Russia continues to maintain the upper hand. In operational terms, the Russian military in Ukraine has pursued a 'defence-in-depth' strategy that included fortifications and anti-tank mines. Russia's strategic assessment can be described as follows: "If winning the war is defined by one state's attainment of their political-military objectives at the cost of the adversary is political objectives, then Russia appears to possess the upper hand through two years of conflict" (Watling and Reynolds 2023, 8).

A useful account of the nature and scope of attritional warfare is put forward by Alex Vershinin, writing in *RUSI*, who defines this type of approach to war as being "fought with a 'force centric' approach, unlike wars of manoeuvre which are 'terrain focused'" (Vershinin 2024, 1). Furthermore, the author goes onto explain that attritional warfare is "rooted in massive industrial capacity to enable the replacement of losses, geographical depth to absorb a series of defeats and technological conditions that prevent the rapid ground movement" (Vershinin 2024). In terms of a war of attrition, "military operations are shaped by a state's ability to replace losses and generate new formations, not tactical and operational manoeuvres. The side that accepts the attritional nature of warfare and focuses on destroying the enemy rather than gaining terrain is most likely to win" (Vershinin 2024).

However, within the context of Russian Grand Strategy, this embrace of attritional warfare can be seen as fulfilling a wider objective. This hereby denotes the overall Russian Grand Strategy and its relationship to its military course of action, specifically, its pursuit of attritional warfare in Ukraine. As Freedman points out, "Putin has re-doubled his efforts. With the possible exception of March 2022, following the failure to take Kyiv, the means have become more violent and destructive and the disregard for Ukraine's identity and interests more emphatic" (Freedman 2024, 67).

A second aspect of this approach to warfare has an economic dimension to it based upon the need to maintain its superiority in war production, and to outproduce the enemy by replacing the losses incurred on the battlefield. An important qualification to this argument is seen in the following: "Victory in attritional warfare is assured by careful planning, industrial base development and development of mobilisation infrastructure in times of peace, and even more careful management of resources in wartime" (Vershinin 2024). An interesting quote demonstrating how this

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\* Honorary research fellow at the University of East Anglia, Norwich, England and Member of Chatham House, London, England; e-mail: oliver.steward@outlook.com.

is part of a broader strategy is seen as follows: “It does appear, however, that the Kremlin is attempting to elongate the conflict in time and cost” (Fox 2024, 3). The objective behind the ‘surge’ in troops and resources is that “Moscow outlasts both Kyiv’s financial and military support and Ukraine’s military means to continue attempting offensive military activities”, and in doing so will “accelerate Ukraine’s exhaustion and subsequently force Kyiv to broker a peace deal” (Fox 2024, 3). As such, this paper intends to go further into detail about the military means employed and how Putin has, in effect, elongated the conflict for the long-game, by shifting the Russian war economy as well waging an ‘attritional’ destructive war upon the Ukrainian regime. This approach is meant to exhaust Ukrainian manpower, resources, and political resolve.

The core of this paper’s argument is that Russia’s means at achieving its military objectives has fundamentally shifted, following its failure to capture Kyiv. From a tactical and operational perspective, this shift is seen with an emphasis away from its original approach of a war of manoeuvre, and towards a more protracted approach to the conflict. This approach is based upon the notion of ‘defence in-depth’, while also making incremental territorial gains to weaken the Ukrainian military.

One important caveat to consider when discussing ‘attritional warfare’ is “as the conflict drags on, the war is won by economies, not armies”, with the objective of this type of warfare “aimed at exhausting enemy resources on near-term territorial objectives” (Vershinin 2024). While the West’s ‘strategic culture’ is based upon winning a war of manoeuvre with mobility and superior technology, reflected in its common practices and attitudes, Russia’s conception is different. The aim of embracing this attritional approach to warfare is to wear down over time Ukraine’s ability to effectively wage warfare against Russia’s ‘Special Military Operation’.

In reality, the initial failure of the Russian military to capture Kyiv led to a reassessment of its military strategy. The battle of Hostomel and the failure to capture Kyiv meant that Russian strategic aims and goals had to be subject of (re)assessment towards more narrower objectives. Following a successful counteroffensive by the Ukrainian military – by September 2022, “there was a major reappraisal in Moscow. This led to the adoption of a new strategy” (Freedman 2024, 65). Although there was an opportunity to de-escalate, Putin decided instead to double-down on his strategy, and this emerging strategy was based upon a ‘war of attrition’.

In terms of the battle landscape, the character and nature of this conflict quickly changes to one of ‘attrition’ with bloody ground combat seen in the Battle of Mariupol at Azovstal steel plant. An important quote on the nature of attritional warfare is found in the following: “Instead of a decisive battle achieved through rapid manoeuvre, attritional war focuses on destroying enemy forces and their ability to regenerate combat power, while preserving their own” (Vershinin 2024). These bloody battles of mass artillery exchanges and infantry assaults on a hardened Ukrainian defender. Consequently, the scenes at the Battle of Mariupol, as well as more recently the Battles of Bakhmut, and Avdiivka show demonstrate this mode of warfare, and in terms of the military means as well as the objectives sought by Russia. Next this paper, will look at how Russia has implemented a ‘surge’ in both commitments as well as firepower – in order to wage this protracted war of attrition against Ukraine.

## **2. A "surge" in Russia commitments: the "partial mobilisation" of fresh troops, increases in military spending&war production**

A necessary component in this shift towards ‘attritional warfare’ is the emphasis upon surging its overall material and troop commitments, and with it the means in which to wage this type of warfare. After the initial failure to capture Kyiv, the Russian strategy was subject to changes. Also, correlating with this change in strategy, was also a shift of focus on the means to achieve a much narrower military objective. President Putin signed a decree that allowed for the mobilisation of 300,000 troops, in an effort to replace the battlefield losses of the initial operation.

President Putin, “Having resisted for some time, authorized the mass mobilization to address the chronic troop shortages. Some 300,000 were called up initially, of which around 120,000 were moved to the front as a matter of urgency. The effect of this decision was that Russian forces could shore up

their defenses. Manpower shortages would not force the war to end quickly” (Freedman 2024, 65). In effect, the political and military leadership doubled-down on the means in which to achieve this goal. Thereby, one can conclude that the surge of Russian military commitments, and a redefinition of political and military objectives. General Sergi Surovikin was appointed as the new military commander of the ‘Joint Group of Forces in the Special Military Operation Zone’. “This was designed to signal a firmer operational grip” (Freedman 2024, 65). Therefore, “[h]is approach was largely to improve the land defenses, waiting for fresh units before returning to the offensive in the spring, while concentrating the offensive on attacks on infrastructure” (Freedman 2024, 65). In terms of my working terminology, I define this mobilisation in terms of a ‘surge’ in commitments. From a political perspective, this mobilisation demonstrates that President Putin is willing to expend enormous number of military resources in order to secure a more favourable military situation in the longer term.

The "surge" in commitments is also reflected in Russia’s ever-increasing military budget. This also demonstrates that the Russian leadership is hoping to pursue the ‘long game’ and is demonstrative of its shift in approach by embracing attritional warfare. However, “by staking everything on rising military expenditure, the Kremlin is forcing the economy into the snare of perpetual war.” In addition, in terms of defense expenditures, the “record defence spending shows that the Kremlin has no intention of ending its war” (Luzin & Propopenko, 2023). Consequently, an increase in spending is necessary to wage this type of warfare, because the Russian military uses “massive quantities of armored vehicles, drones, electronic products, and other combat equipment.” In addition, its production is geared towards a mixture of different weaponry. Because high-end weaponry is very complex to manufacture and consumes vast resources, a high-low mixture of forces and weapons is imperative in order to win” (Vershinin 2024). Therefore, the emphasis this mixture of technological weaponry, and maximization of production has become the focus of the Kremlin’s war production strategy in order to wage a long protracted war in Ukraine.

It is also important to note, as the war has progressed so to has Kremlin’s military spending. Statistically, Russian military expenditure has also seen a massive increase by “24 per cent to an estimated \$109 billion, in 2023” (Sipri 2024). This military spending is to account for new productions of war munitions, tanks, cruise missiles and other warfighting capabilities, as well continuing cost of equipment and manpower to sustain the war effort.

The next section will discuss the concepts and application of attritional warfare, going into more specific detail about the military operations and tactics related to Russia’s overall approach to the war in Ukraine.

### **3. The military tactics of attritional warfare: human "meatgrinder tactic"&casualties**

This section will go into more specific detail concerning the tactics employed by the Russian military within its embrace of ‘attritional warfare’, with particular reference to ‘human meatgrinder tactics’, but first this paper will visit the Battle of Mariupol, as a first sign of these more destructive means employed against the Ukrainians. It was during the Battle of Mariupol that we see a new chapter in how Russia shifted its operational tactics and waged its way of warfare against the Ukrainian defenders, employing more attritional style tactics to the siege. There were scenes of Ukrainian resistance, with the Azov battalion mounting an ever-desperate defence against the Russian onslaught at the Azovstal Steelworks in Mariupol. This marked a new chapter in Russia’s way of warfare in Ukraine and its shift in operational tactics.

A qualification in terms of the relationship between Russian military tactics and attritional wars is offered by Vershinin (2024), is as follows: “In attritional wars, military operations are shaped by a state’s ability to replace losses and generate new formations, not tactical and operational manoeuvres”. Furthermore, Russia’s inability to achieve its initial objectives meant that it reorganised its forces and focused on the port of Mariupol to achieve a decisive military victory against the besieged Ukrainian forces. However, this time, it was through differing operational tactics, through use of sustained artillery, drone and air strikes, including cruise missiles, against the Ukrainian defenders.

Artillery is a key element of Russian military tactics in this attritional battlespace, and it is used to saturate Ukrainian positions, as well as serve as counter-battery. As seen in the Battle of Mariupol, and ever since, is the proclivity to use ‘artillery’ and superior firepower upon the enemy but, also, the use of mass assaults by Russian infantry, often on fixed – Ukrainian defenses, which produce increasing losses. Another advantage is that Russia has superior numbers of artillery systems. This translates to a superiority on the battlefield as follows: “Russia has a fivefold advantage. Ukrainian batteries fire around 2,000 shells a day. Russian batteries fire 10,000” (Axe 2024). in the and can out-produce its adversaries in terms of the number of shells produced. Thus, making this weapons system incredibly useful for Russian military planners in engaging Ukrainian targets.

The military tactics of Russian infantry troops is based upon the following practice: “lead with fires and move forward incrementally as fire allows. The incremental advances, however, have also come at extreme cost in men and material” (Fox 2024, 4). However, an important fact remains, that Russia’s resilience is seen in its ability to absorb these material losses and replace with fresh troops and weaponry.

Another facet to Russia’s preferred approach to military operations and tactics is found in the concept of what is termed ‘meatgrinder tactics’. Jack Watling and Nick Reynolds (2023) for instance, refer to Russian fighting at the battles of Mariupol and Bakhmut as relying on “meatgrinder tactics” in which human-wave attacks are used to advance Russian military interests (Watling and Reynolds, 2023, also see Fox, 2024).

However, one must first define the concept of ‘disposable infantry’ that are used in ‘meatgrinder tactics’, put forward by Watling and Reynolds (2023):

“Russia’s disposable infantry should be considered fundamentally different and are drawn from three principle sources: conscripts from the Luhansk and Donetsk’s Republics (heavily attrited from early rounds of fighting); prisoners drafted by the Wagner Group, and under-trained Russian civilians” (Watling, and Reynolds, 2023: 3).

One of the means in which Russia augmented its overall fighting capabilities with its standard regular forces as well as elite paratroopers, is through the recruitment of volunteers of members to the paramilitary group Wagner, then under the leadership of Yevgeny Prigozhin. Also, worth noting that the Wagner paramilitary mercenary group began recruiting prisoners in order to gain more numbers of combat available men (Ivshina, Dale & Brewer, 2024). This was useful as a means to increase the numbers of combat infantry available in order to supplement the losses that have already been incurred by Russian Army in its initial wave of operations in Ukraine.

That being said, in terms of military tactics, these former prisoners have been used by the Russian military commanders in increasingly desperate ‘human meatgrinder’ attacks against entrenched Ukrainian positions. During an assault “disposable infantry are the first to be deployed” and will “skirmish with Ukrainian defensive positions on contact, often until killed” (Watling and Reynolds 2023, 4). After gaining a fix, the Russians then target the position using artillery, drones and other means to attack the positions – and afterwards, allow for more well-equipped soldiers to follow up the attack. In this context of "meatgrinder attacks", these "disposable" soldiers are first used to probe Ukrainian positions, and after the initial wave the Russians are then able to gain a fixture on the position of the defenders.

Further, it must be noted that Wagner sustained some of the highest levels of casualties during last years’ Battle for Bakhmut, so much so that it led to protestations given by its leader, Yevgeny Prigozhin, who later mounted a failed coup d’etat against Putin and later was killed in a plane accident. Following the failed mutiny, the remaining Wagner members were placed under the direct control of Moscow itself, further illuminating the increasing centralised control of Moscow under his paramilitary force.

Furthermore, Russia has used other proxy-forces, in its efforts to wage a sustained military effort against Ukraine, with the use of militias from the Donetsk as well as the Luhansk People’s Armies, as well as Kadyrov’s Chechen forces are used as “true cannon fodder, used to the maximum extent possible in Donbas to minimize Russian casualties” in the “meatgrinder” during the Battle of Donbas in the Summer of 2022 (Wasielowski 2022).

Secondly, another means of which Russia went about increasing the number of troops in Ukraine, was through the use of Chechen fighters, who come under the direction of Kadyrov, the Head of the Chechen Republic, while at the same time, being outside the Russian military command. However, this approach, in the use of so called ‘meatgrinder tactics’ does come at a cost. Russia has sustained heavy losses due in part to its tactics and approach to warfare, it is estimated that “Russia has lost 404,950 troops, 6503 tanks, 338 aircraft and 25 ships, among many other combat losses; the losses that they have afflicted on Ukrainian forces remain largely unknown” (Fox 2024, 3). Therefore, the military logic behind this is to augment Russia’s military without incurring official losses.

This was particularly seen in the Battle of Bakhmut, where ‘human meatgrinder’ tactics were employed (Watling and Reynolds, 2023). To conclude, the use of prisoners and Wagner mercenaries, as well as Kadyrov’s Chechen fighters, is a testament of how Russia intended to bring about a ‘force multiplier’ without having to incur more costs to the military. The Wagner Paramilitary groups some of whom consisted of poorly trained troops were used in such ‘human meatgrinder’ attacks suffered from high rate of losses on the battlefield.

Currently, Russia’s military operations are based on incremental territorial gains, while at the same time using relentless firepower and overwhelming Ukrainian positions. The incremental progress has been seen in the recent battles such as Avdiivka that lasted from 24<sup>th</sup> February 2022 until the 17<sup>th</sup> Feb 2024 – resulting in a Russian victory. This battle was waged for nearly two years – demonstrating the ‘attritional aspects’ to this campaign. Military officials have stated that Russia has been firing approximately, “10,000 shells per day, compared to just 2,000 a day from the Ukrainian side” (Lillis, Bertrand, Liebermann, and Britzky 2024) Currently, at the timing of this writing, the Russians have gained momentum, there has only been small geographical gains made by the Russian Army against the Ukrainian defenders. We have also witnessed a surge in production of both artillery munitions and other weaponry in order to wage this attritional conflict. It has been reported by RUSI, that the Russians expect to “increase 152mm production from around 1 million rounds in 2023 to 1.2 million rounds over the course of 2024, and to only produce 800,000 122mm rounds over the same period” (Watling and Reynolds, 2024). Therefore, it is evident that Russia has mobilised its vast industrial base to increase production of artillery munitions. All of which, is a testament to this type of warfare.

#### **4. Weaponry from Iran, North Korea and China: aiding in its attritional warfare approach**

This section will argue that an important and necessary element in Russia’s approach to attritional warfare is its use of imported weaponry from Russian-friendly nations, such as the Islamic Republic of Iran, North Korea and China.

One important facet to Russia’s adoption of a ‘war of attrition’, is the use by Russia of imported weaponry from Iran as well as North Korea. This serves Russia’s wider strategic interests. “Put it another way, Russia’s ability to diversify its means has allowed it to generate a stalemate – which works in Moscow’s favor” (Fox 2024, 6). In addition, this diversification of the means of production through imports from Iran and North Korea has meant that Moscow can in effect “keep the conflict going, with the goal of outlasting the international community’s military support and exhausting Ukraine’s ability to continue fighting” (Fox 2024, 6). Consequently, this strategic logic underpins Russia’s overall approach to waging this war of ‘attrition’ in Ukraine, and also, signalling to the West its military intent in the long-term.

This has given it an added advantage in both diversification in the means of production of munitions and in acquiring technology, as seen in the Kamikaze drone technology from Tehran. These Kamikaze Drones (Shahed-123) as well as artillery and ballistic missile munitions from Pyongyang have all been used on the frontline in Ukraine to increase the firepower of the Russian military, especially as the rate of artillery shells being used is considerably high at the amount of approximately 10,000 per day (Axe, 2024). Consequently, this in turn has allowed Russia’s approach to ‘attritional warfare’ to generate its overall objective of ‘winning by not losing’. An important point to consider is as follows: Iranian-made Kamikaze Drones are cheap to buy and

manufacturer – useful for ‘psychological warfare’ and the targeting of Ukrainian infrastructure, without incurring official losses. Consequently, one can infer that Russia is taking the strategic lessons learned in Aleppo, during its intervention in Syria but also in the context of the Second Chechen War, with the emphasis given to the indiscriminate use of overwhelming firepower against an enemy.

This paper also contents that weaponry from the Islamic Republic of Iran, specifically drones, which have been purchased by Russia, has become an important part of attritional warfare. The Iranian-made Shahed-123 has gained a level of notoriety for its lethality as well as the indiscriminate targeting of population areas. This drone has been used to target population centres across Ukraine itself. One of the reasons for its prolific use is because it can be mass produced, is relatively cheap and unsophisticated, and ideal for ‘attritional warfare’. This weapon system has the added role of being used to wage ‘psychological warfare’ on the Ukrainian population as a whole. In addition, as the conflict has entered its third year, both the Ukrainians and the Russians are using a variety of different drone systems in either a tactical space, by targeting individual troops, tanks and other armoured vehicles, or for its targeting of buildings in towns and cities. Drones have become so prolific that it has become mainstay in the waging of warfare by both sides.

Consequently, we have already seen that Russia has used massive amounts of ballistic, artillery and cruise missiles in its war against Ukraine. The use of ballistic missile and drone strikes has with it an added element of ‘psychological warfare’, in an attempt at waging indiscriminate strikes on energy and infrastructure, the goal of which is as follows: “By creating dire conditions for Ukraine through the winter, by means of deliberate and sustained attacks on critical infrastructure using missiles and ‘kamikaze drones’, the aim was to pose a serious threat to Ukraine’s ability to sustain itself” (Freedman 2024, 66). Therefore, one can conclude that part of its approach to attritional warfare has been the use of missiles to devastate Ukraine’s infrastructure.

Artillery is a weapon system that Russia has a considerable advantage of, in terms of numbers and overall production capabilities. That being said, as Russia’s military effort has shifted towards the degradation of Kyiv’s ability to continue waging war it needs constant resupply, and that has led to Moscow seeking munitions from outside sources. In addition, there has been an “injection of 2 million 122mm rounds from North Korea will help Russia in 2024” (Watling and Reynolds 2024). This has the purpose of alleviating any munition shortages, as well as augmenting Russia’s firepower capabilities, coupled with the increased production of war materials and other munitions. According to the *Royal United Services Institute* (RUSI), the aim of importing North Korean shells is to “alleviate shortages of munitions for what has proven to be an ordinance-hungry conflict” (Byrne, Byrne, and Somerville, 2023). This will no doubt augment Russian firepower and alleviate any munitions and logistical challenges faced by a protracted war, at least, for the short term if not longer. Russia has also signed defence and munitions contracts with other providers such as “Belarus, Iran, North Korea and Syria” (Watling and Reynolds, 2024). All of which will further aid in its continued replacement of munitions for its protracted war in Ukraine.

While the import of weaponry does enable the Russian war machine to continue its war of attrition against Ukraine, this also highlights wider limitations. Firstly, one can conclude that “the appearance of Chinese, North Korean and Iranian weapons and munitions on the Ukrainian battlefield indicate that Russia is facing its own challenges keeping up with the conflict’s attritional character” (Fox 2024, 4). This has a number of implications for Russia’s warfighting, including acting as a ‘force multiplier’, augmenting Russia’s firepower capabilities and replacing artillery munitions that have been used.

From a war economy standpoint, “We do know that external support allows the Russian military to overcome some of its defense industry production and distribution shortfalls” (Fox 2024, 4). It has been reported by the Centre for European Policy Analysis, that Russia will “receive hundreds of surface-to-surface ballistic missiles from Iran for its war on Ukraine” (Borsari 2024). Furthermore, in terms of Russia continuing this approach to warfare, “In turn, Chinese, North Korean and Iranian Support allows the Kremlin to continue elongating the conflict in time, space and resources with the goal of exhausting Ukraine’s military and Kyiv’s capacity to sustain its

resistance to Russia” (Fox 2024, 4). All of which, attests to the logic of attritional warfare, and the overall doctrine used to support Russia’s military efforts. Moreover, Russia has increased its reliance on drones and the ability to strike targets with the use of cruise and ballistic missiles has meant it has increased demand for imports of drones, artillery munitions and also, ballistic weaponry to sustain its efforts on the battlefield.

## CONCLUSION

Russia has resorted towards a protracted war of attrition with Ukraine, with the objectives of outlasting, as well as outproducing and weakening the Ukrainian military resolve to resist. As the Russo-Ukrainian War enters into its third year, Russia has so far made incremental gains, with the most recent seen in the Battle of Avdiivka, which lasted nearly two years.

Not only that, but Russia has increased its artillery and missile production, as well as sought partial mobilisation in order to deploy fresh-troops to the battlefield, augmented by troops from the People’s Republics, Wagner, and Chechen fighter. The attritional nature of conflict has meant there has been a high number of casualties, but, Russia has still be able to absorb these losses and maintain military momentum. There has also been growing reliance upon external actors, such as Iran and North Korea, to provide munitions and other weaponry in order to sustain Russia’s war effort from the short-to-medium term, which has an effect of augmenting its overall firepower capabilities on the Ukrainian battlefield.

On a wider policy-making perspective, Russia’s policy options have become more limited, and Russia has no recourse of action. More resources will be committed, and the result of which may become increasingly marginalised, which leads us to consider this as part of a broader path dependency, with a much narrower recourse of alternative policy choices available to the Kremlin. This is evident in the fact that President Putin has staked his political reputation and that of Russia’s military to continue the fighting in Ukraine. Furthermore, in terms of Moscow’s strategy and policy-making in relation to the ongoing war, if the West and NATO member states continues the supply of technology, ammunition and funding. The Russians will have no choice but to increase their own military footprint, which will place considerably more demands on their economy.

## BIBLIOGRAPHY

- 1) Axe, D., 2024. "Russian Artillery Gunners Are Getting Cocky. As Ukraine Runs Out of Ammo, Russian Guns Gather for Devastating Salvos", Forbes., Feb 2, 2024. <https://www.forbes.com/sites/davidaxe/2024/02/02/russian-artillery-gunners-are-getting-cocky-as-ukraine-runs-out-of-ammo-russian-guns-gather-for-devastating-salvos/?sh=31934add6eb3>.
- 2) Bosari, F., 2024. "Russia’s Swelling Missile Arsenal Threatens to Tip the Scales of War", Center for European Policy Analysis. March 4, 2024. <https://cepa.org/article/russias-swelling-missile-arsenal-threatens-to-tip-the-scales-of-war/>.
- 3) Byrne, J., Bryne, J. and Somerville, G., 2023. "The Orient Express: North Korea’s Clandestine Supply Route to Russia", Royal United Services Institute (RUSI)., October 16, 2023. <https://rusi.org/explore-our-research/publications/commentary/report-orient-express-north-koreas-clandestine-supply-route-russia>.
- 4) Freedman, L., 2024. "Strategic Fanaticism: Vladimir Putin and Ukraine", in Brands, Hal. War in Ukraine: Conflict, Strategy, and the Return of a Fractured World. Johns Hopkins University Press, 2024. Project MUSE [muse.jhu.edu/book/122782](https://muse.jhu.edu/book/122782).
- 5) Freedman, L., 2024. "Strategic Fanaticism: Vladimir Putin and Ukraine", in War in Ukraine: Conflict, Strategy, and the Return of a Fractured World. Edited by Hal Brands, 55-70. Johns Hopkins University Press, 2024. Project MUSE [muse.jhu.edu/book/122782](https://muse.jhu.edu/book/122782).
- 6) Gady, F. S. and Hofman M., 2024. "Making Attrition Work: A Viable Theory of Victory for Ukraine", International Institute for Strategic Studies (IISS)., February 9, 2024.

<https://www.iiss.org/online-analysis/survival-online/2024/01/making-attrition-work-a-viable-theory-of-victory-for-ukraine/>.

- 7) Ivshina O., Becky D. and Brewer K., 2024. "Russia's meat grinder soldiers – 50,000 confirmed dead", BBC News,. April 17, 2024. <https://www.bbc.co.uk/news/world-68819853>.
- 8) Jones, S. G., Palmer, A. and Bermudez J. S., Jr. 2023. "Ukraine's Offensive Operations: Shifting the Offense-Defense Balance", Centre for Strategic and International Studies (CSIS),. June 9, 2023. <https://www.csis.org/analysis/ukraines-offensive-operations-shifting-offense-defense-balance>.
- 9) Kimmitt, M. T. 2024. "How the West is helping Ukraine won't be enough to win' Politico",. May 8, 2024. <https://www.politico.eu/article/how-west-help-ukraine-not-enough-win-war-russia/>.
- 10) Lillis, K. B., Bertrand, N., Lieberman, O. and Haley B., 2024. "Exclusive: Russia producing three times more artillery shells than US and Europe in Ukraine", CNN.com. March 11, 2024, <https://edition.cnn.com/2024/03/10/politics/russia-artillery-shell-production-us-europe-ukraine/index.html>.
- 11) Luzin, P., and Propopenko A., 2023. "Russia's 2024 Budget Shows It's Planning for a Long War in Ukraine", Carnegie Endowment,. October 11, 2023. <https://carnegieendowment.org/politika/90753>.
- 12) Lykke, A., 1989. "Defining Military Strategy", Military Review 69., No. 5, May 1989: 2-8.
- 13) Shamiev, K., 2024. "Brass tacks: Why Russia's military fails to reform", European Council on Foreign Relations (ecfr.eu), May 15, 2024. <https://ecfr.eu/publication/brass-tacks-why-russias-military-fails-to-reform/>.
- 14) Sipri. 2024. "Global military spending surges amid war, rising tensions and insecurity", Stockholm International Peace Research Institute (SIPRI),. April 22, 2024. <https://www.sipri.org/media/press-release/2024/global-military-spending-surges-amid-war-rising-tensions-and-insecurity>.
- 15) Vershinin, A., 2024. "The Attritional Art of War: Lessons from the Russian War in Ukraine", Royal United Services Institute (RUSI). March 18, 2024. <https://www.rusi.org/explore-our-research/publications/commentary/attritional-art-war-lessons-russian-war-ukraine>
- 16) Wasielewski, P., 2022. "The Evolving Political-Military Aims in the War in Ukraine After 100 Days", Foreign Policy Research Institute. June 9, 2022. <https://www.fpri.org/article/2022/06/the-evolving-political-military-aims-in-the-war-in-ukraine-after-100-days/>.
- 17) Watling, J., and Reynolds N., 2023. "Meatgrinder: Russian Tactics in the Second Year of the Ukraine Invasion", Royal United Services Institute (RUSI),. May 19, 2023. <https://www.rusi.org/explore-our-research/publications/special-resources/meatgrinder-russian-tactics-second-year-its-invasion-ukraine>.
- 18) Watling, J., Reynolds N., 2024. "Russian Military Objectives and Capacity in Ukraine Through 2024", Royal United Services Institute (RUSI),. February 13, 2024. <https://www.rusi.org/explore-our-research/publications/commentary/russian-military-objectives-and-capacity-ukraine-through-2024>.
- 19) Wordsworth, R., 2022. "Russia has Turned Eastern Ukraine into a Giant Minefield", Wired,. December 21, 2022. <https://www.wired.com/story/russian-landmines-ukraine-psychological-warfare/>.