

FAILED UKRAINIAN COUNTER-OFFENSIVE AND ROLE PLAYED BY RUSSIAN AEROSPACE FORCES

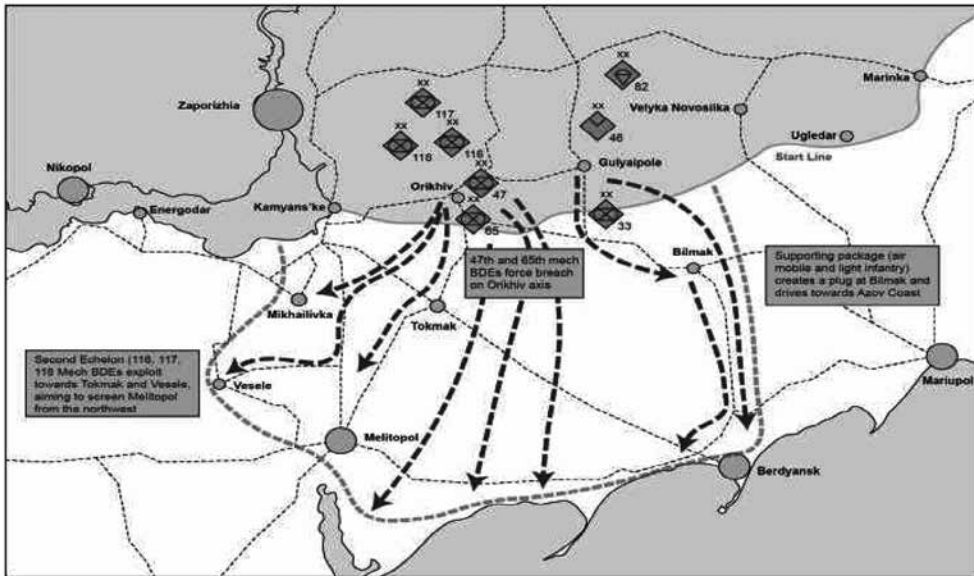
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INTRODUCTION

The Ukrainian Counter-Offensive: The ongoing Ukrainian counter-offensive aims to cut the Russian land corridor to Crimea (see Fig 1). To achieve this, the Ukrainians are employing their 9th and 10th Corps, both of which have been newly constituted by grouping the new equipment supplied generously by the West, including over 500 Armoured Fighting Vehicles (AFVs) and Main Battle Tanks (MBTs), including the Leopard-2, Challenger-2, Marder, Stryker, Bradley, etc. To support this complement in battle, the West has also supplied the Ukrainians with a large number of long range and precision strike artillery and trained thousands of Ukrainian troops in various Western countries on the use of this equipment. The Ukrainians' plan is similar to their plan of 2022 which saw them use mobile elements supported by infantry break the continuity of the Russian defences, followed up by the use of manoeuvre for establishing deep thrusts in the Russian held territory, thereby, creating an all-round criticality which forced the Russians to withdraw.

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Fig 1: Ukrainian Drive to the Sea¹

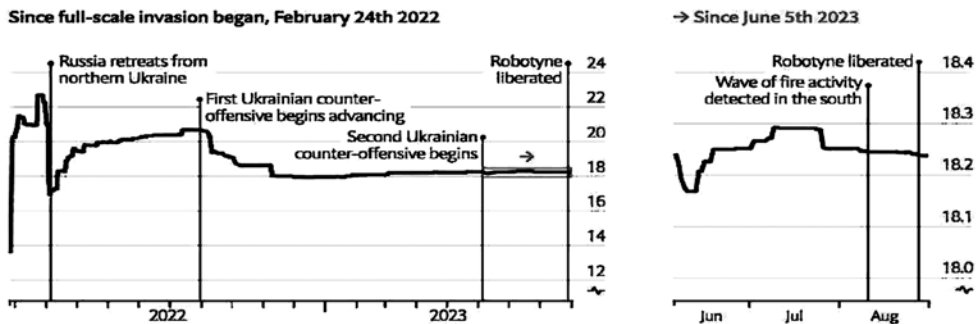


Progress of the Battle: Despite having received a generous donation of the Western ‘*Wunderwaffen*’ the much-awaited Ukrainian Spring Counter-Offensive got delayed and could begin only by the first week of June 2023. However, 120 days later and having suffered significant casualties, in both men and equipment, the Ukrainian advance was limited to only 108 sq km² (Fig 2) which pales in comparison to the 8,000 sq km³ of territory liberated during the summer offensive of 2022. An analysis of the successful Russian defensive battle reveals the key role played by the Russian Aerospace Forces (VKS) in blunting the Ukrainian assault. The near total air superiority, over the battlefield enjoyed by the VKS has forced the Ukrainians to attack the well-entrenched Russian troops without even securing local air superiority which left the Ukrainians vulnerable to the Russian air strikes. However, the

1. “Escaping Attrition: Ukraine Rolls the Dice”, *The Big Serge*, August 29, 2023.
2. “Ukraine’s Counter-Offensive is Speeding up”, *The Economist*, September 1, 2023.
3. Tom Balmforth, “Ukraine Aspires to Free all Russian-Occupied Land After Days of Military Success”, Reuters, September 14, 2022.

moot question is that as the Russians have enjoyed air superiority from the very beginning of the campaign in 2022, has something changed in the VKS?

Fig 2: Ukrainian Territory Controlled by Russia (in % upto August 31, 2023)⁴



WHAT HAS CHANGED

Battle of Attrition: Having learned their lessons from 2022, the Russians, this time around, adopted a classic defence in depth strategy. In order to minimise the Ukrainian advance, the Russians inducted significant numbers of infantry and deployed them over three layers of linear defensive lines, comprising trenches, anti-tank ditches and obstacles such as the Dragons Teeth. Over time, these defences were further strengthened with new field fortifications and minefields along with pre-positioning of reserves and artillery. These defences have proved to be so formidable that the Ukrainians lost over 20 per cent of the Western equipment supplied in the first two weeks of the battle⁵ (see Fig 3), followed by the loss of an additional 10 per cent in the ensuing weeks. These heavy losses forced the Ukrainians to now resort to attacks led by the infantry, duly supported by armour in depth, thus, allowing the Russians to successfully reduce the battle to a positional and attritional battle similar to those of World War I. As a consequence, not only have the Ukrainians failed to reach the Sea of Azov but in attempting to do so, have completely exhausted their 9th Corps and are now forced to

4. Institute of Study of War, AEI's Critical Threats Project.

5. Lara Jakes, Andrew Kramer and Eric Schmitt, "Ukraine Lost up to 20 per cent of Equipment in the Counter-Offensive's First Weeks", *New York Times*, July 15, 2023.

commit the last of their reserves from the 10th Corps, namely the 82nd and 46th Brigades.⁶

Fig 3: Destroyed NATO Equipment in First 48 Hours of Ukrainian Counter-Offensive⁷



Russian Air Dominance over the Tactical Battle Area (TBA): Since the commencement of operations, the VKS has established and maintained a stranglehold over the air space over the TBA, with the Ukrainian Air Force having effectively ceased to be a deterrent, both qualitatively and quantitatively. The threat posed by aircraft of the VKS is acknowledged even by the Ukrainian pilots who admit that the biggest threat to their aircraft comprised the Russian Combat Air Patrols (CAPs) flown by the Su-35 armed with the R-37M missiles having a range of 200 km⁸ which allow the Russians to see and strike at the

6. "Ukraine Sends the Powerhouse 82nd Air Assault Brigade into Battle, as Generals Decide 'to Put all their Chips on the Table', says Defence Analyst, R Rommen", *Business Insider*, August 19, 2023.
7. "The First 48 Hours of Ukrainian Counter-Offensive see Unprecedented Loss of Leopard 2A6 Tanks and Bradley IFVs", IDV, June 10, 2023.
8. A Abdurasulov and Z Bezpiatchuk, "Ukraine War: Jet Pilots Talk About Air War with Russia", BBC, May 9, 2023.

Ukrainian aircraft while the Ukrainians are unable to respond. This advantage has enabled the Russians to enforce a sort of a no-fly zone extending up to 50 km behind the Ukrainian front, allowing the VKS to operate its less sophisticated aircraft like the Su-25 and Su-34 more freely over the TBA. These aircraft are supported by the Ka-52 whose role in the destruction of the Ukrainian enemy armoured elements in the battles of Zaporizhia was noteworthy. This unhindered air superiority also allows the VKS to generate an asymmetry in sortie generation which is currently 20 times higher as compared to the

Ukrainians and yet, at the same time, some may argue that this asymmetry in air strikes has failed to leave a telling impact on the ground operations.

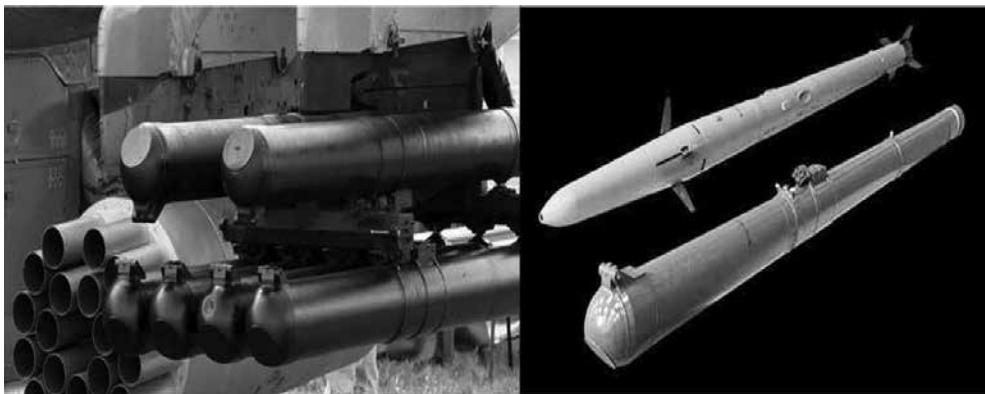
Positional Warfare and Air Support: Under normal conditions, conducting Battlefield Air Support (BAS) missions is challenging. However, this becomes even more challenging when the frontline is fluid and when there is a lack of clarity on the forward line of own troops. This was evident in September 2022 when the VKS, in an effort to provide cover to the retreating Russian ground forces, carried out riskier missions, and, in the process, suffered higher losses. However, with the Russian Army having reduced the Ukrainian advance to a slow crawl, the VKS is aware of the position of its troops and, hence, is able to employ its fighter aircraft in pursuit of dedicated attack missions against specific ground targets, making their missions more effective and with minimal risks.

Use of Standoff Range Weapons: One major change adopted by the VKS is the increased use of standoff weapons, notable being the use of the UMPK satellite guided glide bomb kits for fuel air explosive bombs like the KAB-500 (1,100 lb). Most of these strikes are being launched from a distance of 40-70 km and as the data on the flight trajectory of these bombs has improved, these kits

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are progressively finding their way onto the KAB-1,500 (3,307 lb) bombs also. In addition, the helicopters of the VKS like the Ka-52 and Mi-28 have been using the new Izdeliye 305 LMUR and Vikhr (Whirlwind-1) guided anti-tank missile which has a range of up to 10 km. What is most notable is the risk mitigation as the range of these missiles is twice that of the Stinger/RBS-70/Starstreak Man-Portable Air-Defence Systems (MANPADS) allowing them to hit military depots, ammunition dumps, tanks and troops by both day and night, while flying relatively out of reach of most of the Air Defence (AD) systems of the Ukrainians. This low risk, high payoff method, along with abundance, not only allows VKS to execute its sustained operations with minimal risks but has also had a tremendous psychological effect on the Ukrainians.⁹

Fig 4: Vikhr (Whirlwind-1) Anti-Tank Guided Missiles Used by VKS



Use of Long-Range Precision Munitions vs Air Attacks: Throughout the campaign, the VKS has continued to exercise discretion over the Ukrainian air space, leaving the task of targeting Ukrainian targets in depth such as depots, troop concentration and factories to long range precision munitions and drones. As the aid to the Ukrainians grew and it received more and more AD systems from the West, VKS brought in more and more varied targets such as power grids, communication hubs and

9. "Russia's Improved Weaponry and Tactics Pose Challenges to Ukraine's Counteroffensive", Associated Press, June 12, 2023, <https://www.pbs.org/newshour/world/russias-improved-weaponry-and-tactics-pose-challenges-to-ukraines-counteroffensive>.

ports located in various other cities into its targeting fold, accompanied by an increased frequency and ferocity of attacks. This new tactic has not only prevented the Ukrainians from bringing forward the AD systems received from the West but has also resulted in spreading out of these AD assets. A typical Russian strike currently comprises the Geran-2, along with the Iskander, Kalibr and KH-101/102 cruise missiles (see Fig 5) with an occasional hypersonic missile like the Kinzhal dovetailed for high priority targets. What is unique is that the Geran-2 (a US\$ 20,000 drone) now forms the vanguard of most of these strikes and is used to identify presence and gaps in the Ukrainian AD cover by drawing the attention of the bulk of the Ukrainian AD systems which is then exploited by the Russian cruise missiles like the Iskanders and Kalibrs to hit their designated targets relatively unmolested. If the Ukrainians choose to ignore the Geran-2 and not let their AD assets be overwhelmed, then these drones strike their designated targets with a payload in excess of 50 kg and with relative high levels of accuracy.

Fig 5: Drones and Cruise Missiles Being Used by VKS



Destruction of Enemy Air Defence (DEAD): On June 7, 2023, the Russian kamikaze drone Lancet successfully destroyed the German IRIS-T AD system¹⁰ followed by the destruction of another IRIS-T in Kherson on August 1, 2023.¹¹ Considering that till this stage, the Germans had supplied only 4 x IRIS-T systems, this destruction is significant. Both these cases, however, should not be considered as isolated events as an analysis of the Russian targets in the months of April and May reflects that prior to the launch of the Ukrainian offensive, the Russian ground forces had been systematically identifying medium and long-range Surface-to-Air Missile (SAM) systems for DEAD missions, with the weapon of choice being the Lancet kamikaze drone. For targets in depth like the Patriot missile defence system deployed in Kyiv, the Russians have even gone on to employ the Kinzhal hypersonic missile.¹² This continued targeting and loss of medium and long-range SAMs has forced the Ukrainians to withdraw these systems from the frontline to adequate depth (up to 70 km). However, as these systems moved back, they created an opportunity for the low flying VKS aircraft to operate more freely over the battlefield. This is substantiated by the fact that nearly all Russian fixed and rotary wing platforms losses in the past two to three months have been attributed to the MANPADS. Additionally, for the Ukrainians, the lack of AD cover gets further compounded as they press forward, as it entails operating beyond their own AD umbrella. On August 25, 2023, the Ukrainians used a subsonic Neptune missile and destroyed a Russian S-400 located in Crimea.¹³ It is precisely due to this threat by surface-to-surface cruise missiles that all of the Russian S-400 Battery, less those in Crimea, are currently located on the Russian mainland and Belarus, and not on the territory secured in Ukraine. Hence, one can conclude that given the existing

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10. Sakshi Tiwari, "Ukraine's IRIS-T System 'Blown Away' By Russia's Lancet Suicide Drone; Kyiv's Air Defense Capability 'Paralyzed'," *Eurasian Times*, June 8, 2023.
 11. Sakshi Tiwari, "Major Combat Win? Russia Claims Destruction of German IRIS-T Defense System used by Ukraine in Kherson", *Eurasian Times*, August 2, 2023.
 12. "US Officials Confirm Damage to Patriot Defense System in Kyiv Attack", *The New York Times*, May 16, 2023.
 13. David Axe, "To Blow up Russia's S-400 Battery in Crimea, Ukraine Tweaked its Cruiser Sinking Neptune Missile", *Forbes*, August 25, 2023.

levels of battlefield transparency, the deployment of long-range SAMs in the TBA is not a viable option.

Bayraktar Who?: When the Bayraktar TB-2 drones were deployed by the Ukrainians in 2022, they were hailed as the weapon system that would turn the fortunes of the Ukrainians. However, a year later, the TB-2s are nowhere to be seen on the battlefield as most have been shot down by the Russians. Additionally, the Russian ability to deal with drones of all types, including the TB-2 (less First Person Views [FPVs]) has resulted in the denial of any kind of Close Air Support (CAS) to the Ukrainians during the critical phases of their counter-offensive.

Fig 6: S-300 Through the Eyes of Lancet Drone Before Impact¹⁴



Age of Loitering Munitions: One Russian system that has emerged as a menace to the Ukrainians is the Russian loitering ammunition, the Lancet. The latest version of the electrically powered Lancet-3 has a range of up to 40

14. "Russian Drones Take out S300s; 'Dark Day' for Kiev Air Defences", *Al Mayadeen*, April 28, 2023.

The most notable impact of Russian EW has, however, not been restricted to drones but has expanded onto the accuracy of the Joint Direct Attack Ammunition (JDAM) and High Mobility Rocket Artillery System (HIMARS).

km, endurance of 40 minutes, speed of 80-110 km/hr and an explosive charge of over 3 kg. This allows the Lancet, which costs a few thousand dollars, to destroy/damage millions of dollars' worth of artillery guns, tanks, AD systems, etc. What is most remarkable is that on September 19, 2023, a Ukrainian MiG-29 located in a Ukrainian air base, 70 km from the nearest Russian controlled area, was severely damaged by a Lancet drone, followed by another strike on a Ukrainian Su-25 on October 10, indicating

that the forward positioning of aircraft also may not be a viable option. Further, the Lancet strikes have been supported by strikes by Russian FPVs which in addition to the vehicles, have been used to target troops, radars, surveillance devices and communication hubs, etc. As a consequence, the realm of the loitering munitions, considered as the domain of the Ukrainians in 2022, has gradually slipped away in 2023 in favour of the Russians.

Electronic Warfare (EW): The Russian ground forces have started using EW in a big way to jam or degrade the use of drones by the Ukrainians, a skill they acquired and perfected in Bakhmut. At the start of the war in 2022, the Ukrainians were operating their drones and FPVs from a safe distance of 4-5 km. However, the scale of Russian jamming has resulted in these operators now running the risk of either losing their drones or losing their lives by coming as far forward as 500 m¹⁵, thereby putting them directly within the Russian small arms range. The most notable impact of Russian EW has, however, not been restricted to drones but has expanded onto the accuracy of the Joint Direct Attack Ammunition (JDAM) and High Mobility Rocket Artillery System (HIMARS). The Russians have been using their R-330Zh Zhitel system fairly commonly and over a wide area to throw off

15. Sydney J Freeberg Jr, "Dumb and Cheap: When Facing EW in Ukraine, Small Drones Quantity is Quality", *Breaking Defense*, June 13, 2023.

the Global Positioning System (GPS) targeting system of the JDAM¹⁶ and HIMARS, thereby, reducing their accuracy.

Fig 7: Russian R-330Zh Zhitel EW System



Experience of Pilots: At the time of the commencement of the operations in 2022, the West often highlighted the limited levels of training and experience of VKS pilots as one of the reasons for the limited use and effectiveness of the VKS.¹⁷ However, after having been at war for more than 560 days, the levels of training and combat experience of an average VKS pilot is second to none. Moreover, as the war has progressed, most of the inadequacies and coordination issues observed during the initial phase of battle were also progressively addressed/resolved which has made the VKS even more potent, allowing it to graduate to a more active phase.

WHAT HAS NOT CHANGED

Down but not Out: To say that the Ukrainian Air Force is out of the battle would be incorrect. The transfer of aircraft such as the MiG-29 and

16. Dr Thomas Withington, "Jamming JDAM: The Threat to US Munitions from Russian EW", RUSI, June 6, 2023.

17. Michael Peck, "Prolonged Fighting in Ukraine is Revealing the Russian Air Force's Fragility, Researchers say", January 1, 2023.

Su-25 by the North Atlantic Treaty Organisation (NATO), along with spares, has helped the Ukrainians tide over the losses to some degree. These deliveries have been supported with superior air surveillance and enhanced situational awareness through the E-3 Sentry aircraft of NATO, and deliveries in weapons such as the anti-radiation missiles and other long-range missiles such as the Storm Shadow which allow these aircraft to engage Russian targets in depth such as troop concentrations, bridges and ammunition dumps, without entering the Russian AD zones. Thus, Ukraine retains the capability to create and exploit small windows of opportunity for conducting occasional forays against Russian targets as was evident during the strike by Storm Shadows on the Russian Naval Headquarters located at Sevastopol on September 22, 2022.

The Myth of Russian Air Superiority: Owing to the presence of potent AD weapons like the S-300, Patriot, NASAMs, Iris-T, Gepard, BUK, etc. the VKS has been reluctant in executing missions over Ukraine. Hence, it can be summarised that neither side has been able to secure air superiority over Ukraine as stated by General James B. Hecker, the commander of the US Air Force (USAF) in Europe.¹⁸

- **Counter-Surface Force Operations:** The loss of 82 combat aircraft (mainly Su-25 and Su-34) and 87 helicopters, mostly Kamov Ka-52 (according to Oryx¹⁹) has done nothing to instil confidence in the VKS pilots. Since the VKS does not enjoy total air superiority over territory controlled by Ukraine, NATO has been able to supply various kinds of equipment and ammunition to Ukraine, that too despite having long and tenuous lines of communication, without being harassed. This critical failure by the Russians has allowed the Ukrainians to amass two corps worth of troops and equipment and launch a counter-offensive, leading to the loss of Russian men and equipment.

18. Jim Garamone, "Europe/Africa Air Force Chief Cites Lessons From War in Ukraine", *US DoD News*, August 18, 2023.

19. Cédric Pietralunga, "Can the Russian Air Force Still Change the Course of the War in Ukraine?" *Le Monde*, May 20, 2023.

- **Counter-Air Operations:** Owing to the vastness of Ukraine and the wide dispersal of the small numbers of Ukrainian aircraft, the risk-benefit analysis is not in favour of the VKS that can always target these airfields by employing cruise missiles. However, this continues to allow the Ukrainians to conduct air attacks on vital infrastructure and other Russian military targets such as attacks on ships and naval headquarters located in Sevastopol.

Limited SEAD/DEAD Capability: It is the considered opinion of most pundits in the West that the VKS is incapable of conducting effective Destruction of Enemy Air Defence (DEAD) primarily on account of its inability to find, fix and destroy the Ukrainian ground-based AD assets.²⁰ A more nuanced opinion would be that the VKS has had only limited success in Suppression of Enemy Air Defence (SEAD)/DEAD missions which has prevented it from exploiting its full potential. This factor of the lack of a decisive impact in any battle and on any front by the VKS continues to allow the Ukrainians to consistently build up their ground forces in any/all sectors practically, switch sectors of employment at will and then bring them forward to battle. However, this reliance on AD is also a vulnerability of the Ukrainians and should the Ukrainian AD suffer from any failure (due to non-availability of new equipment, missiles, repair, etc.) the consequences for the Ukrainians would be catastrophic given that the Russian Air Force remains largely intact.

MANPADS: MANPADS are essentially passive AD systems, easy to transport, proliferate and use. This makes MANPADS difficult to detect and, hence, a potent threat on the battlefield. In order to remain out of the reach of MANPADS and to minimise the reaction time available to the operators of these systems, the VKS has adopted a tactic of flying in extremely low, briefly popping up to launch the unguided 80 mm S-8 or 122 mm S-13 rockets in an arcing trajectory for maximum range, fire flares, and turn away. This tactic, though successful in minimising losses, is ineffective and

20. Justin Bronk, "Russian Combat Air Strengths and Limitations: Lessons from Ukraine", CAN, April 2023.

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reduces these platforms to the role of a flying rocket launcher. Additionally, operations of rotary wing aircraft like the KA-52 tend to be restricted to the night when MANPADS are least effective. Any change in this tactic brings with it its own perils as illustrated by the shooting down of two KA-52 by the RBS-70 MANPADS on the same day (in Zaporizhia and Bakhmut). This episode continues to

highlight the vulnerability of aircraft to MANPADS and the effectiveness of MANPADS.²¹

MISCELLANEOUS ISSUES

VKS as a Tool of Deterrence: One of the major factors that the Russians have had to consider is the threat posed by the enforcement of a ‘no fly zone’ by NATO as demanded by the Ukrainians²² or the delivery of Western aircraft to Ukraine or the need to retain a sizable force in case of any escalation of the conflict with NATO. Seized of these issues and given the dense AD environment over Ukraine, the Russians chose to retain the services of their Advanced Systems Format (ASF) and Medium Multi-Role Combat Aircraft (MMRCA) class of aircraft and have, therefore, avoided using these aircraft, including the latest Su-57, for conducting extensive strikes/missions over Ukraine. As a consequence, the bulk of the VKS and the Russian Navy has remained largely intact, thereby acting as a deterrent for the collective West and allowing the Russians to retain their escalatory dominance over the sea and air. NATO, on the other hand, seized of the issue, has not advocated the enforcement of a ‘no fly zone’ as that would have brought NATO into a direct confrontation with the Russians. However, after months of refusal,

21. David Axe, “Ukraine’s Helicopter- Killing RBS-70 Missiles can see Right Through Russian Jamming”, *Forbes*, August 17, 2023.

22. Helen Ray, “What is a No-fly Zone, and Why Won’t the U.S. Enforce one Over Ukraine?”, CBS News, March 28, 2022.

the US finally signalled its willingness to allow other nations to supply their F-16s to Ukraine.²³

Cost-Effectiveness of SAMs: The US\$ 20,000 Geran-2 drone presents a unique cost-effective way to deal with the long and medium range AD systems. This was demonstrated on May 16, 2023, when the Ukrainians fired 30 Patriot missiles, with each costing US\$ 5 million (total of US\$ 150

million) and amounting to 6 per cent of the total annual production of Patriot missiles against Russian drones and missiles, all in a span of 120 seconds.²⁴ What is most interesting is that the Russians were observing the firing of the Patriot missiles and immediately engaged and destroyed this Patriot battery by launching a Kinzhal.²⁵ Not to be outdone, the Ukrainians decided to target Moscow and other targets such as airfields through their drones which are cost-effective solutions. The destruction of an A-50 AWACS in Belarus on February 28, 2023, 1x Tu22M at Soltsy-2 on August 22, 2023, and 4x IL-76 at Pskov on August 30, 2023, and 1x Tu-95 are prime examples. In view of this threat, the Russians, for a long time, relied on the distance from the border and their significant Anti-Access/Area Denial (A2/AD) and EW capability to deal with this threat. Nevertheless, seized of the Ukrainians success, and the failure of their A2/AD assets and similar to the Ukrainian experience of the ineffectiveness of SAMs against drones, the Russians have now put weapons like the Pantsir-S (which has a radar-controlled gun and missile) on top of buildings in Moscow²⁶ and started to

The Russians seem to have weathered the storm of the Ukrainian counter-offensive purely on the strength of their defence in depth, the tenacity of the ground troops and the combat support by the VKS.

23. Natasha Bertrand, Kylie Atwood and Oren Liebermann, "US Signals to Allies it Won't Block Their Export of F-16 Jets to Ukraine", CNN, May 19, 2023.

24. Boykov Nikolov, "Ukraine Fired 6% of PAC-3 Annual Production in 120 Seconds", Bulgarianmilitary.com, May 19, 2023.

25. Vijaiender K Thakur, "Russia Rubs It In With Fierce Kinzhal Attack On Patriot Battery In Kyiv; Aerospace War Heats Up In Ukraine", *Eurasian Times*, May 16, 2023.

26. Andrew Roth, "Defensive Missile Systems Erected on Moscow Rooftops", *The Guardian*, January 19, 2023.

park aircraft behind an anti-drone mesh/net to deal with this threat in a cost-effective manner.

Fig 8: Pantsir Deployed on Top of Russian Ministry of Defence Building in Moscow²⁷



CONCLUSION

The Russians seem to have weathered the storm of the Ukrainian counter-offensive purely on the strength of their defence in depth, the tenacity of the ground troops and the combat support by the VKS. The Ukrainians, on the other hand, have suffered horrendous losses in attempting to execute a plan that has never been attempted on a remotely similar scale of difficulty and opposition since World War II. As the latest news of the loss of 2 x Challenger-2 tanks emerges and the commencement of mobilisation of a new batch of Ukrainian men and women, including old and medically unfit men, it is clear that the Ukrainian supply of men and ammunition is nearing exhaustion as is the supply of the Western *Wunderwaffen* which are not only being lost in significant quantities but also suffering damage

27. Joseph Travethick, "Pantsir Air Defense Systems Appear On Moscow Rooftops", *The Drive*, January 19, 2023.

to reputation and image. As things currently stand, the war is nowhere near conclusion, with the West continuing to supply the Ukrainians with military aid and the Ukrainians willing to be used as a battering ram against the Russians. Similarly, as the Russians continue their demilitarisation of Ukraine through the infliction of severe attrition, the Russians are also suffering severe casualties and as the war approaches close to 600 days, the Russians are yet to seize the initiative. Perhaps the one key factor that can enable Russia to seize the initiative and achieve the stated aims of the special military operation is unlocking of the potential of the VKS. While the VKS may have played a significant role in thwarting the counter-offensive, its ineffectiveness in allowing the counter-offensive to build up and continue for months is its failure. The Russians have to realise that to be dominant on the battlefield, the VKS has to play a dominant role and emerge from the role of a combat support arm to a combat arm.