



Historical Armor Losses: Shifting Tactics and Strategic Paralysis

by Bryan Powers

For almost three years the Ukraine War has raged across the eastern and southern oblasts of the country as the Russian Federation continues its invasion. The invasion by Russian Federations Armed Forces (RFAF) began by assaulting Ukraine along five major axes with strikes at major city centers, including the capital in Kyiv.¹ However, when the invasion stalled by the end of Spring 2022, RFAF had to transition from large-scale combat operations (LSCO) involving divisions and brigades to company and below assault forces predominantly in eastern and southern Ukraine, fully withdrawing from its northern axis along the Kyiv, Chernihiv, and Sumy oblasts. Simply put the Russian forces had failed to accurately assess the level of resistance, public support of Ukrainian resistance, and the strength of the Ukrainian Armed Forces (UAF) in relation not only to their own forces, but a more capable force than the army Russia had fought in the first Donbas War in 2013 through 2014.²

Today the RFAF continues to use small scale rifle actions between dismounted infantry forces assaulting adversarial fighting positions.³ Despite this reality, the forward line of own troops (FLOT) is anything but static as UAF and RFAF trade fighting positions weekly, if not daily, with Russia being primarily on the offensive.^{4,5} The exception

being the UAFs incursion into Kursk which began in August 2024 and has seen the UAF transition primarily to the defensive as the RFAF have retaken more than half of the territory that was originally seized.⁶⁻⁸ This is in addition to North Korea deploying thousands of its soldiers to the Kursk region and fighting alongside the RFAF.⁹

Russia's transition to smaller, predominantly dismounted infantry offensive actions, was a result of many factors in the Ukraine conflict. Perhaps the largest factor is the inundation of both commercial off the shelf (COTS) and military-grade unmanned aerial systems (UAS) across the battlefield utilized down to the squad and fire team levels of both RFAF and UAF. The obvious benefits of these UAS are the ability to provide both intelligence, surveillance, and reconnaissance (ISR) and kinetic strike weapons down to the lowest level. More importantly however is that these UAS have removed the ability of either Ukraine or Russia to effectively mass forces near the FLOT to plan and execute battalion and above offensive operations, accounting to 60-80% of all combat casualties in the Ukraine conflict in 2025.¹⁰⁻¹⁴

A critical factor of Russia's inability to mass, specifically the ability to mass armored formations, is its critical main battle tank (MBT) and armored fighting vehicle (AFV) losses in the conflict. As of 1 June 2025, Russia is said to have lost 4,030 MBTs and 8,833 AFVs,

based upon the credible open-source database tracker Oryx which monitors and analyzes damaged and destroyed combat vehicles in conflict.¹⁵ According to the International Institute for Strategic Studies' (IISS) 2021 Military Balance, Russian ground forces (or SV) had between 2,800 and 3,330 operational tanks at the start of the full-scale invasion, which would mean that Russia has suffered between 121-143% losses of its operational tank force.¹⁶ The same report claimed Russia had between 13,000 and 14,000 AFVs at the start of the war, which would account for between 63-67% of its pre-war inventory. These losses account for the largest armored vehicle losses that Russia has suffered since World War II, and a higher total number of losses than compared to all armored vehicles losses incurred in conflicts from 1946-2022, in which Russia, or its predecessor the Soviet Union participated.

Ukrainian Math = Army Math

It is worth noting that the Ukrainian General Staff has repeatedly reported a significantly higher number of Russian armored vehicles losses than what is usually cited by national defense ministries or independent think tanks.^{53,54} There are certainly some political and informational operation aspects that play into the General Staff's considerations. Analysis should consider that a fraction, albeit an unknown quantity, of the vehicles the General

Historic Russian Tank Losses									
Losses	Conflict Years								
	1945 - 1979*	Soviet Union Afghanistan War 1979 - 1989	Russia - Moldova War 1992	First Chechen War 1994-1996	Second Chechen War 1999-2000	Russo- Georgia War 2008	Donbas War 2013- 2022**	Combined Casualti- ties 1945-2022	Ukraine War 2022 - Current
MBT	*100	340	6	192	23	4	*100	~765	4,030
AFV	*100	655	4	503	201	30	*100	~1,593	8,883

*The Soviet Union supported partners in several conflicts outside of Europe from 1945-1979,¹⁷ including support to allies in the First Indochina War 1946-1954,¹⁸⁻²⁰ Korean War 1950-1953,²¹⁻²³ Vietnam 1955-1975,^{24,25} Israeli- Egypt 1969-1970,^{26,27} Angolan Civil War 1975-1991,²⁸ and the Ethio-Somali War 1978-1979.²⁹ During these conflicts, the Soviet Union was not a primary combatant and as a result combat losses are not attributed to the Soviet Union despite the fact in most cases it provided lethal aid in the form of financial assistance, small arms, combat advisors, and armored equipment such as MBTs, AFVs, armored cars, trucks, and both fixed and rotary wing aircraft.

*However, during the same period, the Soviet Union was a direct combatant in several Eastern European uprisings, and external conflicts such as the East German uprising in 1953,^{30,31} the Hungarian Revolution 1956,³²⁻³⁴ Vlora Incident in Albania 1961,^{35,36} the invasion of Czechoslovakia 1968,^{37,38} and the Sino-Soviet border conflict 1969.³⁹⁻⁴² While accounts vary significantly in these conflicts, the Soviet Union's combat casualties were relatively insignificant. A summation is provided for these conflicts.

**Donbas War (First War in Ukraine) 2014-2022 (Pre-2022 invasion) - There is little doubt amid a mountain of evidence concerning Russia's involvement in the first Ukraine war from 2013-2022. However, determining Russian losses in the first invasion both in personnel, and in lost armored vehicles proves to be challenging. Conservative estimates place Russian armored vehicles losses somewhere between 200 and 500.^{43,44} However, it should be noted that many, but not all the armored vehicles lost during this period by Russian forces, or its Russian-led Separatist forces (RLSF) were vehicle seized by separatists and repurposed.⁴⁵⁻⁴⁷ Russia did employ several modernized tanks, such as the T-90A and T-72B3, as cited by research conducted by the Bellingcat group in 2016.⁴⁸⁻⁵² A conservative summation is provided for this conflict.

Figure 1. Table provides an estimate of Soviet/Russian main battle tanks and armored fighting vehicles that have been destroyed since the end of World War II indicating a substantial increase in losses during the War in Ukraine.

Staff records are likely only damaged and either self-evacuate from the field or are extracted by Russian forces themselves to be repaired and fight again. This could account for dozens, if not, hundreds of armored vehicles which are counted as “lost” or destroyed and are in fact double counted.⁵⁵ This explanation is plausible considering Russia is well known for its subordinate repair-refit battalions and defense factories, including its tank repair factories, or *BroneTankovyy Remontny Zavod* (BTRZ), that are established during combat operations for the reconstitution of combat capability.^{56,57}

Why Are Russian Armor Forces Suffering?

Despite these significant losses, and the questions remaining of Russia's capability to reconstitute it's forces amid the ongoing conflict, there is little doubt that the Kremlin will continue to

push forward regardless of their personnel and armored vehicle casualties. The de-evolution of tactics undertaken by the SV troops serving in Ukraine has seen Russia deploy its armor forces in near suicidal front assaults. These armored vehicle assaults are often as small as two lone vehicles or up to company sized assaults, featuring MBTs and AFVs with anti-drone or “cope cages”, ad-hoc armor and metal slapped onto the sides or top of the vehicle to protect against first person view (FPV) drone attacks and drone dropped munitions. Although these tactics more closely resemble what one would expect of a Mad Max movie, the tactics are nothing new as Russia utilized similar tactics in its wars in Chechnya, as did the Islamic State of Iraq and Syria (ISIS), with some Russian forces even using the armored vehicles as modified vehicle-borne improvised explosive devices (VBIEDs).⁵⁸

Noticeably absent almost from the start of the invasion from Russian armored vehicles assaults are

coordinated movements indicating trained vehicle crews and unit formations.^{61,62} Instead, these assaults rely heavily on advancing as quickly as possible in column formations and almost always in front assaults on Ukrainian positions.⁶³ Once forces are engaged, and armored vehicles begin to be targeted chaos ensues as vehicle drivers have, in more than purely anecdotal incidents, driven over their own dismounted infantry forces, to withdraw from the battlefield.⁶⁴ One could argue that there is logic in such tactics, with the battlefield being inundated with attack drones and anti-tank guided missile systems; especially if the Russians used it as a diversionary attack with older model Soviet armored vehicles, while keeping modernized systems such as T-90M, T-72B3M or T-80BVM MBTs in reserve.⁶⁵ However, in the Ukraine conflict Russian forces are as likely to use a 1960s era vehicle in the same suicidal attacks as they are a vehicle produced the previous month.⁶⁶

Ukraine is not immune to some of

these same failed tactics as demonstrated during the summer 2023 counteroffensive, where Ukrainian armored columns became mired in Russian minefields.⁶⁷ Unfortunately, the 2023 counteroffensive failed to present Ukraine with an operational breakthrough and came at great cost to both personnel and much of its armaments of Western supplied vehicles.⁶⁸ Despite the obvious futility of such tactics, surmounting losses amid a war of attrition, one most also judge the fact that Russia is not risk adverse to high casualties. So, in terms of personnel the Kremlin will almost certainly continue to push forward with mobilization, contract personnel, and prisoners, but can the defense industry meet the needs of the Army?

Draining Strategic Reserves and Shades of Revitalization of Defense Industry

Given that the Ukraine conflict is predominantly a large-scale combat operation based on ground forces supported by air, naval, and strategic rocket forces, estimation of ground force capabilities are often reserved the highest analysis. The Russian Ministry of Defense and Kremlin officials have claimed since 2023, that the defense industry is capable of building more than 1,500 MBTs annually, with Russia's former President and current deputy chairman of the Security Council of Russia, Dmitry Medvedev, claiming the vast majority of these tanks are T-90Ms.^{69,70} Despite the high number of vehicle losses, Russia maintains one of, if not the largest stockpiles of strategic reserve in the world with anywhere between 3,000 and 4,000 MBTs and more than 7,000 AFVs and personnel carriers.⁷¹ The strategic depots are under the control of Russia's Main Automotive-Armored Directorate of the Ministry of Defense, or *Glavnoye Avtobronetankovoye Upravleniye MO RF* (GABTU).

Throughout the conflict, intelligence assessments released by defense think tanks, and NATO public releases have cautioned on Russia's strategic reserve and defense industry capabilities.⁷²⁻⁷⁵ Ironically, many of the most accurate assessments of Russia's capability to



Figure 2. Russian MODs Zvezda Television Channel showcasing Russia' Center Grouping of Forces utilizing rebar spiked turrets in tanks referred to as "HedgeHogs", 30 May 2025.⁵⁹

withdraw from strategic depots have come from and often cited for in-depth but independent users on social media and other outlets using commercial imagery and open-source research. In 2024, special attention was given to open-source researchers Covert Cabal, @HighMarsed, @Jonpy99, and Vishun (Military Prophet) and the release of dozens of social media threads, open-source assessments, and videos which detailed the depletion of Russia strategic reserves.⁷⁶

Conservative estimates made by the culmination of these assessments, both think tanks and open-source researchers, put Russia's strategic reach through 2025, and likely culminating sometime in 2026.^{77,78} Additionally, the output from Russia's defense industry is reliant almost entirely on the refurbishment of Soviet-era MBTs and AFVs, including archaic T-55/54 MBTs, BMP-1 IFVs, BTR-Ms, and BTR-60/70 series APCs.^{79,80} That's not to say that Russia is not capable of producing new production vehicles such as the BMD-4 and BMP-3 IFV, and T-90M MBTs; however, estimates place production levels for new hull production at only a few hundred of each vehicle system with the more modernized production still reliant on modernization of Soviet-era systems into T-72B3 and T-80BVMs.^{81,82}

Historically, tank counting is one of the

most challenging aspects of modern warfare, with roots to the second World War when the Western Allies attempted to better understand the output of Nazi Germany's tank factories, specifically for the Panther (Panzerkampfwagen V) and Tiger (Panzerkampfwagen VI) model tanks. The Western Allies ingeniously created a mathematical equation which examined the tanks captured and studied the serial numbers of parts to determine the number of factories and possible outputs. The challenge would become known as the "German Tank Problem".⁸³⁻⁸⁵ Russia has likely increased production rates at several of its primary tank and armored vehicle factories such as Omsk, Nizhny Tagil, Kurgan, and Arzamas.⁸⁶⁻⁸⁹ Despite economic sanctions placed on Russia by mostly Western nations, it has not prevented Russia's defense industry from mobilization to at least partially meet the demands of the current conflict.

Assessments, however, should shy away from comparing the defense industry's mobilization to that of the Soviet Red Army of World War II. Simply put the Red Army had the benefit of additional personnel manning, labor forces, and most importantly factories which today are local in sovereign Ukraine, such as the Kyiv and Kharkiv tank factories, or the 140th repair plant in Belarus, among others.^{90,91} Russia has re-opened and increased its

DJI FPV(First Person Video) Racing Drone. Configured to deliver anti-armor shaped charges

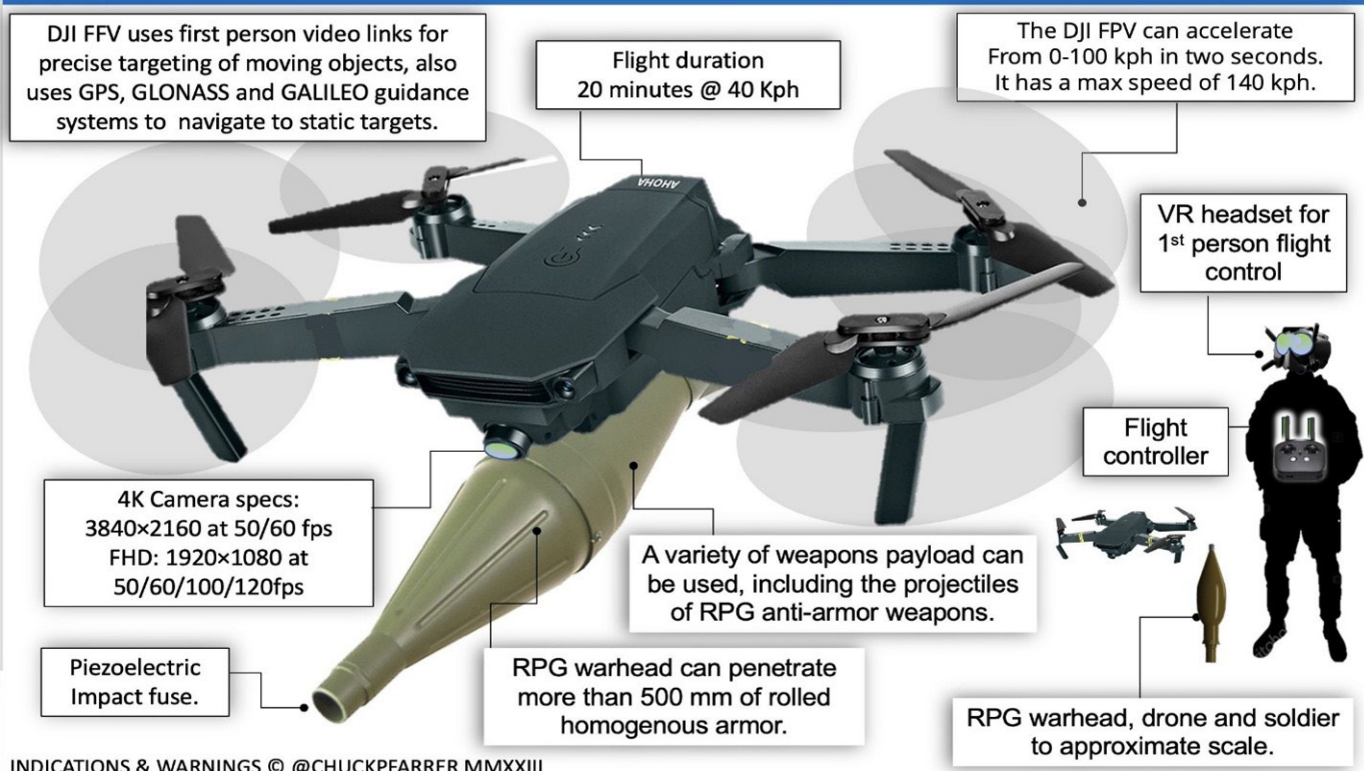


Figure 3. Mockup diagram of one version of FPV drones utilized by Ukrainian forces in late December 2023.⁶⁰

refurbishment and modernization rates at several of its own repair plants including the 61st BTRZ in Saint Petersburg, the 81st BTRZ in Armavir, 103rd BTRZ in Chita, 144th BTRZ in Yekaterinburg, 60th BTRZ in Vozzhaevka.⁹²⁻⁹⁶ Like the German tank problem the use of the BTRZs to refurbish multiple variants of vehicles, both MBTs and AFVs presents analysts with a difficult challenge in attempting to understand output potential as the vehicles arrival to the battlefield could come from multiple facilities. As a result, without the ability to exploit captured or abandoned vehicles, Western and Ukrainian analysts must rely heavily on persistent intelligence collection on individual factories.

Why Accuracy Matters

Along with its internal defense industry, Russia continues to benefit from economic partners in nations such as Kazakhstan and China which have seemingly ignored sanctions with critical parts and funding to its defense

industrial base.⁹⁸ However, not all is perfect in Russia's defense industry. Russian pundits have begun to call into question the sustainability of the conflict given increasing labor shortages and record high inflation, which has plagued many facets of not only the defense industry but the average daily life of Russian citizens.^{99,100} The work force across the nation, especially that of the defense industry has only gotten "older" in age as young able-bodied men are sent to Ukraine to fight, leaving their fathers and grandfathers behind to build their systems of war and the ammunition to support ongoing operations.^{101,102} This too is affecting deployed soldiers as the economic issues have forced pensioners, disabled persons, and ill citizens to serve in combat roles.^{103,104} Russian ground forces in Ukraine have continued its offensive actions but are in many ways losing its armored teeth relying on light armored vehicles, personally owned vehicles, all-terrain vehicles, etc, which offer little in protection, speed, or firepower.¹⁰⁵

While the war in Ukraine continues to rage, accurate intelligence assessments will be key, especially when presented to major political players in the West. The assessments which underestimated the UAF in 2022 are just as dangerous as overestimation of Russian capabilities today. The factors which will lead to future assessments must examine all aspects of Russia's defense industry, political and public will, and combat casualty rates, and must be free of Western intent to influence political narratives. History has proven that estimation of adversarial capability and allied combat power is not always the strong suit of Western or U.S. intelligence. From GEN George B. McClellan's overestimation of the size of the Army of Northern Virginia in the American Civil War, to France overestimating the size and intent of the invading Wehrmacht forces in 1940, the belief the Afghanistan National Security Forces would hold its resistance to the Taliban in 2020, or that the UAF would collapse in three days in 2022, overestimating the

correlation of forces of one's adversary and underestimating the capability or failures of allies burdens battlefield commanders with command paralysis and forces policy makers to make strategic and long lasting decisions that could affect generations.¹⁰⁶⁻¹¹⁰

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