

When Johnny Strikes up the Band

Military assistance to Ukraine and its significance in the
Russo-Ukrainian War

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Introduction

Military assistance to Ukraine had a significant impact on the Russo-Ukrainian war. NATO (North Atlantic Treaty Organization) states have provided assistance to Ukraine since 2014 which led up to the invasion and during the war from only non-lethal aid to heavy weaponry under eight years. Many of these Western systems are touted to be ‘game changers’ and weapons to win the war for Ukraine, but is there a basis for these claims? Did these NATO weapon systems have a profound role in swaying the war, and if they did was there a single system dominant enough to wear the mantle of ‘game changer’?

The author decided to investigate this question because of an equal interest in international relations and military matters and has been closely following the war through its entirety. The topic of international military assistance bridges these two fields and lends itself perfectly to the author’s interest.

This paper will showcase some of the more prominent weapon systems going down the timeline in a chronological order starting from 2014 to the Russo-Ukrainian war which is split into three distinctive phases. The capabilities of weapon systems will be explained and their use and effects in the war shown. Each of the showcased systems will be evaluated on the magnitude of their impact on the battlefield and one system will be chosen as the undisputed most important of everything NATO states have provided. The paper will also address some of the geopolitical difficulties that hampered military assistance and some of the programs and reasoning that helped it and made it possible. Lastly, it will compare donor states based on the financial value of their military assistance. The paper ends with a conclusion.

1. Phase 1: Invasion

1.1 From Maidan to war

Ukraine plays a major role in European politics and geopolitics. An independent buffer state between NATO and Russia. In 2013 a chain of protests known as Euromaidan swept through the country after president Viktor Yanukovych’s decision to not sign the European Union-Ukraine Association Agreement and inching closer to Russia. Protests turned into the Revolution of Dignity which was successful in overthrowing Viktor Yanukovych. Russia reacted to the revolution by occupying Crimea with a military force and annexing Crimea. Simultaneously pro-Russian protests started in Donbas and Luhansk oblasts that turned into an armed insurgency starting the Donbas War (Hamilton, 2019). Fearing further Russian

expansion, the USA (United States of America) provided the first package of military assistance to Ukraine (Razom, 2017).

The Barack Obama administration supported Ukraine with 600 million dollars of non-lethal military assistance in total. The package included equipment for soldiers: body armour, helmets, night vision and thermal imaging devices. Support equipment included first aid and medical kits, communication and engineering equipment. An important addition was counter battery radars¹ to help fight the enemy artillery (Razom, 2017). IMVs (Infantry Mobility Vehicle) were provided as well in the form of 200 unarmored Humvees and 30 with an armour add-on package. An unspecified number of Raven UAVs (Unmanned Aerial Vehicle) found their new home in Ukraine's drone fleet (Lathome, 2015). Tangible assistance aside the USA provided training for the Armed Forces of Ukraine and hosted training exercise Operation Trident (DVIDS, n.d.)

The Donald Trump administration sold weapons to Ukraine in 2018. The cause for sending lethal weapons was elevated separatist aggression and violation of the Minsk II. Agreement by breaking the ceasefire on multiple occasions (Miller, 2018). The deal included 37 Javelin launchers and 250 missiles (Martinez et al., 2019). This was followed up with a second deal of two launchers and 150 missiles. The choice fell on the Javelin for its anti-tank capability as separatist fielded Russian armour (Warsaw Institute, 2018). Due to the weapons defensive nature its potential to escalate with Russia was estimated to be low, and turned out to be insignificant. Donald Trump's government was rocked by The First Impeachment trial. Donald Trump was accused of soliciting election assistance from Ukraine to win the 2020 Presidential Election. This trial nullified a planned aid package (BBC, 2020). Military assistance only resumed after Trump was acquitted with 250 million dollars worth of packages in 2020 (U.S Embassy Kyiv 2020).

Joe Biden was a voice behind sending weapons to Ukraine as Vice President under Barack Obama. In 2021 as President Joe Biden was facing escalation from Russia. In the latter half of 2021 Russia started building up military infrastructure around the Ukrainian border and amassed troops in Belarus, Crimea and mainland Russia. The USA kept up a steady supply of military equipment and Javelins. New packages included small arms and heavy weaponry ammunition and C-UAS² (Counter Unmanned Aircraft System) (U.S Embassy Kyiv 2021). Mark VI (U.S. Department of Defense 2021) and Island Class patrol boats with training to bolster the Ukrainian Navy. Satellite imagery, intelligence and analysis

¹ Radar that pinpoints the location of enemy artillery by calculating the trajectory of their shells.

² Electronic warfare system that disrupts a drone's radio or GPS guidance.

was also included. (U.S Embassy Kyiv 2021) By the end of year a looming Russian offensive was evident. The start of 2022 was marked by elevated separatist aggression, numerous false flag attacks and false claims of a future Ukrainian offensive (Institute for the Study of War 2022). Due to rising tensions more NATO states decided to provide Ukraine with military assistance (Dettmer, 2022). These newly provided packages only landed a few days before the war started and they too only included small arms, AT (Anti-Tank) weapons and MANPAD³s (Man-Portable Air-Defence System). No heavy weapons and vehicles other than IMVs were provided and missile launchers were a strictly defensive tool against armour and aerial threats.

1.2 Invasion

In the early hours of February 24 a salvo numbering more than 100 cruise and short to medium range ballistic missiles struck Ukraine followed by a subsequent invasion of the Kyiv, Kharkiv, Donbas and Kherson axis by mechanised units. VDV (Russian Airborne Forces) units seized the strategic Hostomel Airport northeast of Kyiv in a helicopter assault. Ukrainian forces were withdrawing in a fighting retreat to slow down Russian advances and halt them at advantageous positions far from their supply hubs. Russian forces gained ground, but were unable to capture several strategic locations (Clark et al., 2022). Due to the spontaneous nature of the attack, lacking communication between BTGs (Battalion Tactical Group) and high command and inadequate planning lead to disastrous consequences. The Russian army suffered greatly from often being unable to exercise combined arms tactics⁴. Despite the initial missile barrage Ukrainian Air Force and air defences suffered damages but stayed operational. Russia did not achieve air supremacy, making CAS (Close Air Support) hard and costly. BTGs were not manned at full capacity meaning the mechanised unit lacked dismounted infantry support making the vehicles vulnerable. In some areas they were able to fill in the gaps with DPR (Donetsk People's Republic) and LPR (Luhansk People's Republic) troops. This lack of manpower also impacted the tail section of the army. Logistical and artillery support units were undermanned and were too slow to keep up with the advancing forces. Without logistical support frontline units often ran out of gas and ammunition (Makowiec, 2022).

Ukraine instantly declared general mobilisation and vastly increased the number of TDF (Territorial Defence Forces) brigades. The TDF system was set up in January in

³ Shoulder-fired missile launcher against aerial threats such as helicopters and low flying planes.

⁴ Integration of infantry, armour and air support.

anticipation of the Russian attack. It's a volunteer force tasked with supporting the main army, setting up centres of resistance and performing partisan attacks in occupied areas. They lacked training and experience, but their knowledge of land proved to be valuable in setting up ambushes and fighting in urban areas (Flanagan & Kepe, 2022). Compared to the Russian army they were vastly overmatched in training and equipment, but AT weapons and MANPADs greatly leveraged their strength and enabled them to form a capable resistance and offset the losses sustained.

1.3 Shoulder-fired thorn in their side

Shoulder-fired weapons provide excellent capabilities for countering enemy armour and certain aerial threats at a low cost and high mobility. MANPADs fire guided missiles that home in on aerial targets (U.S. Department of State n. d.) AT weapons utilise missiles armed with shaped charges to disable. A shaped charge uses explosives to focus a metal liner into a high velocity jet capable of penetrating thick plates of armour. (ScienceDirect n. d.) Tanks have ways of defending against chemical rounds. ERA (Explosive Reactive Armour) is an add-on unit with a layer of explosives sandwiched between steel plates. When hit it explodes and the blast propelled steel plates block the high velocity jet from forming right and neutralising it (Ogorkiewicz n. d.). Another but less sophisticated layer of defence is slat armour. A slat of steel strips can defend against a shaped charge by getting hit without triggering the detonator and breaking the liner. This was often improvised to defend against top-attack strikes and was seen on many Russian tanks. Because of their poor performance the Internet dubbed them "cope cages" (Nash, 2022).

The FGM-148 Javelin proudly stood in the spotlight as the tool to crack all problems that come on tracks and weigh 50 tons. An integrated computer tracks moving and stationary targets, designates them and the user only has to push a button to fire and hit their target. A direct attack mode guides the missile in a straight line to the target. It's also capable of a top-attack mode which arcs the missile up to high elevation and strikes the target at a steep angle hitting the least armoured parts. The launcher comes with two types of missiles. The multipurpose missile is a general round against all targets from heavy armour to light armour. The tandem missile is specifically designed to counter ERA by the usage of two shaped charges. The first charge triggers reactive armour making way for the second charge which penetrates the tank (Lockheed Martin, 2021).

NLAW (Next generation Light Anti-tank Weapon) is a system co-developed by Britain and Sweden. Ukraine received a shipment and training for these weapons

(Ponomarenko, 2022). Although it didn't garner as much media attention as the Javelin, its capabilities are not to be belittled because of this. The NLAW has a PLOS (Predicted Line Of Sight) system that gathers data by tracking the target for a short time then calculates a prediction for the strike. The missile flies a few metres above the target and fires its warhead right on top of it. The warhead is angled downwards achieving a perpendicular hit (Saab, 2020).

FIM-92 Stingers formed the backbone of air-defence weapons provided by military assistance. The weapon system already saw a lot of successful usage against Soviet helicopters and gunships⁵. Since then it has undergone modernisation efforts to keep the weapon from falling into obsolescence. Upgrades enabled it to target cruise missiles and smaller UAVs (Raytheon, n. d.). Poland also chipped in by sending Pioruns. A modernised version of the GROM system based on the Soviet Igla. The Piorun is important as it makes up for the Stinger's shortcoming: being unable to target super low flying targets (Army Recognition, 2022).

All four of these weapons have good capabilities, but they were not game changers. They proved themselves to be effective in combat, but didn't have an impact great enough to have a major influence on the war, due to limited numbers and situational use against specific threats. Ukrainian air defences recovered from the initial strike and short range was covered by Soviet era MANPADs. After Hostomel Russia didn't attempt another helicopter assault and CAS was limited. They didn't suffer many losses (Mitzer et al., 2022). Ukraine also had a large stockpile of Soviet era AT weapons and their in-house developed Stugna ATGM (Anti-Tank Guided Missile) system which has longer range and can be fired remotely (Eastwood, 2022).

1.4 Withdrawal

Russia was unable to complete their war goals by capturing strategic objectives such as Kyiv and toppling Volodymyr Zelensky's government and disabling their army by mid-March. Russia did manage to capture Kherson and encircle Mariupol. They also secured a considerable part of Kherson, Zaporizhia, Donetsk and Luhansk Oblasts. Major advances in Kyiv, Chernihiv and Sumy Oblasts and marginal gains in Kharkiv Oblast. Their offensive bogged down due to stout resistance and completely exhausted logistical lines. In areas around Kyiv the Russian forces started deploying minefields and going on the defensive

⁵ Heavily armed helicopter, in this case the Mi-24 Hind

(Clark et al., 2022). Realising that their original war goals are impossible to achieve they set out a new narrative: the war goal is securing the Donbas (Donetsk and Luhansk Oblast). With this they began rotating troops from Kyiv to the Donbas (Clark et al., 2022).

Ukraine has succeeded in maintaining existence and Volodymyr Zelensky's government remained in power. He thanked NATO states, especially the US for their military assistance and support, but was unsatisfied. He asked for more, and heavier weapons. A no-fly zone⁶ was brought up as well and it didn't get anywhere because it's unrealistic and impossible as Russia would never agree and NATO having to force it would result in a war between them and Russia. A more promising proposal was ex-Eastern European states sending Soviet equipment. The main draws behind this idea was Ukraine being familiar with these weapons and Eastern European states having the opportunity to get rid of old equipment and backfill with new NATO ones (Edmondson & Shear, 2022).

Ukrainian forces took advantage of the Russian rotation and began small counter offensives on the Kherson, Kharkiv and Kyiv axis. Kyiv was the main effort where they concentrated on Irpin northwest of Kyiv's centre on March 28 (Clark & Barros, 2022). In the following days Russia defended their holdings around Kyiv by using elite units such as the VDV but suffering heavy losses because the lightly armoured paratroopers were facing heavy armour in urban combat without artillery or air support (Urban, 2022). In April the Kremlin gave up on its original plan and ordered mass rotation of all forces towards the Donbas seize Izyum, which they did on April 1. The Kyiv axis was completely abandoned and the objective of capturing Kharkiv was cancelled but Russian forces held their positions (Clark et al., 2022). The withdrawal happened in disarray as a lot of equipment got left behind and some units got stuck in pockets. On April 3 the Institute of Study of War declared the Battle of Kyiv to be over as a Ukrainian victory (Kagan et al., 2022).

2. Phase 2: Donbas

2.1 Operational pause and the Siege of Mariupol

Russia reconstituted its plans after the first disastrous month of the offensive. It was apparent that they don't have the manpower and logistical framework to support four different offensives with no cohesion between them. High command was reorganised with the appointment of Army General Alexander Dvornikov on April 11 to replace the three commanders that previously led the offensive (Clark et al., 2022). Forces from Kyiv and

⁶ Demilitarised airspace. Military aircraft are not permitted to fly.

Kharkiv were transferred over to the Donbas in preparation for a new offensive. The rearrangement of these units took about two weeks from early to mid April. In the meantime Russian troops conducted smaller attacks targeting Rubizhne, Severodonetsk, Popasna and Slovyansk. These attacks were often repelled and only came with minor territorial gains (Clark & Stepanenko, 2022).

Mariupol is a large city on the northern bank of the Azov sea. The city played a crucial role in Russia's plan to form a land bridge between Crimea and the Donbas. During the early weeks of the war they managed to unite the southern and eastern offensive and encircle Mariupol (Kagan et al., 2022). Initial assaults on the city were repelled prompting Russian forces to lay siege to the city. Large portion of Russian troops were relocated to the Donbas and the responsibility of capturing the city was given to DPR forces. The city underwent relentless heavy artillery shelling and aerial bombing to make way for incremental gains. By April 10 most of the city centre was under Russian control and they bisected the defenders forcing them into the southwestern port and the Azovstal Steel Plant. On April 21 Russian Defence Minister Sergey Shoigu announced that Russian forces captured the southwestern port and asserted control over the whole city except the Azovstal complex. Apart from a few probing attacks no larger attack took place to take the complex, instead the attackers opted to shell it and starve out the defenders (Clark et al., 2022).

The Donbas offensive commenced on April 18. The operational pause taken before the offensive was insufficient and didn't last long enough for the recently reassigned Kyiv and Kharkiv forces to recover. Some of these damaged units had to merge as Russia didn't have enough battle ready troops in reserve. Large scale assaults were conducted on Rubizhne, Popasna and Marinka. Assaults were complemented by heavy artillery barrages (Clark et al., 2022). The new slower and methodical approach allowed Russian forces to make small gains by softening defences with artillery and by progressing on parallel roads instead of only major highways like they have done previously. This new tactic allowed Russian troops to make slow and steady advancements out of Izyum in multiple directions (Clark et al., 2022). By May 7 Russians were able to capture and hold Yampil 40 kilometres deep into Ukrainian territory and conduct offensives out of Izyum with the same depth. They also captured the strategically important city of Popasna. The objective of this offensive was cutting off Ukrainian forces in Severodonetsk and Lysychansk by encircling them with Izyum and Popasna serving as the two prongs. On the previous day the assault on the outskirts of Severodonetsk began (Hird et al., 2022).

2.2 Military assistance in full effect

In early April the leaders of Poland, Latvia and Estonia were the first to visit Ukraine. They toured settlements north of Kyiv that were once occupied by Russian troops. Members of the International Criminal Court (ICC) were performing an investigation in the affected areas. Serious damage to residential housing and evidence of torture and mass killings were found. These atrocities were brought to the world's attention by the press (Schreck, 2022). Soon leaders from Western European countries arrived in Kyiv as well. On April 8 Ursula von der Leyen visited Kyiv and condemned Russia. A day later Boris Johnson made a surprise visit on April 9 and promised a new aid package that included armoured vehicles and anti-ship missiles (GOV.UK, 2022). The West promised Ukraine heavy weapons, but a question arose, how are they going to get to Ukraine?

The war made it impossible to ship military equipment by directly landing cargo planes in Kyiv. New routes had to be developed in order to keep circulation alive. The use of transport ships in the Black Sea was ruled out as Russia firmly held it with their Baltic Fleet and they controlled the strategically important Snake Island. Instead the choice fell on Ukraine's eastern neighbours. The main artery became Rzeszow, a Polish city 100 kilometres away from the Ukrainian border. The city fielded a small regional airport which turned into a bustling hub of military logistics with multiple planes landing everyday. Equipment was loaded up on convoys and made their way to Lviv (Time News, 2022).

The missiles Boris Johnson promised would have played a role in deterring the Russian Baltic Fleet from even considering an amphibious assault. Previously the fleet performed multiple demonstrations near Odessa with a lineup of both warships and landing ships (Sutton, 2022). Only four days later on April 13 Baltic Sea flagship Moskva was hit. She foundered under tow on her way back to Sevastopol the following day. Moskva's sinking is attributed to two Ukrainian Neptune missiles striking its amidships causing a large explosion and subsequent fire. (Sutton, 2022) With Moskva's loss Russia was discouraged from further demonstrations and the possibility of an amphibious assault was ruled out. British missiles were alleged to be UGM-84 Harpoons, the missile Ukraine's home developed Neptune is based on also played a role in deterrence for the future. In June Harpoons were used to strike armed tugboat Vasily Bekh (Ozberk, 2022) and several offshore drilling rigs (Krutov & Prince, 2022).

The second phase of the war was static trench battle defined by non-stop artillery barrages and duels. Artillery was dubbed "God of War" by Stalin in 1944 (Saxena, 2022) and played a major role in Russian doctrine since the Napoleonic Wars. Russia possessed a large

supply of both barrel and rocket artillery made during Soviet times, but didn't lack modern pieces either. Long range barrel artillery ranged from 122mm to 203mm with most pieces falling in the middle at 152mm. This is complemented by an arrangement of light and heavy mortars. Maximum range of these guns with conventional shells is 30-40 kilometres. Russia's rocket artillery also takes a great part in their doctrine. Multiple-Launcher Rocket System (MLRS) ranges from Grads with a range of 20 kilometres to larger Uragan and Smerch systems with a range of 70-80 kilometres. These system have a wide assortment of rockets such as: high-explosive, submunition⁷ carriers, and incendiary rockets with magnesium and thermite pellets. Unique to the Russians is the Tos that uses thermobaric⁸ rockets opposed to conventional explosives (Saxena, 2022).

Ukraine was facing a considerable threat to which they didn't have a clear solution. They themselves were using the same Soviet systems, but had less guns and less ammunition than the Russians. They also didn't possess production to replenish guns and shells. Western heavy weapon aid was crucial for Ukraine to compete with Russian artillery superiority (Saxena, 2022). In April the US Department of Defense announced the first dozen of 90 artillery guns that would prove to be the most important military assistance piece for the upcoming months (Tollast, 2022). The M777 is a lightweight towed 155mm artillery piece weighing less than five tons. Lightweight is necessary for traversing the Ukrainian countryside in harsh conditions. Despite the light weight, it doesn't sacrifice range as it's able to send shells 30 kilometres far. It also has a quick setup and displace time which is crucial in avoiding counter-battery from enemy artillery. An on-board digital computer allows quick and accurate targeting and doesn't require central-fire control to be effective. Coupled with GPS-guided M982 Excalibur shells the range increases to 40 kilometres with spot on accuracy for precision strikes (Army Recognition, 2022). The US provided the largest share of these guns with Canada and Australia contributing a few pieces as well. In May Italy and Estonia sent an undisclosed amount of FH-70 towed guns. Older than the M777 but still a capable 155mm piece. In July the United Kingdom (UK) helped the cause with 36 L118 and L119 howitzers. Smaller calibre and shorter range, but light weight allowing good mobility. Ex-Eastern Bloc states provided a small amount of Soviet artillery pieces (Oliemans & Mitzer, 2022).

⁷ A submunition is a small bomblet stored in a larger weapon. Shortly before reaching the target the carrier opens up and a cluster of submunitions comes out.

⁸ Thermobaric weapons spray a highly flammable aerosol around the target area. This vapour cloud is ignited by a delayed detonator combusting the fuel-air mixture. The combustion sucks in air and creates a vacuum which is capable of collapsing the lungs. Fire itself also causes severe burns.

Towed guns have one huge disadvantage, their lack of mobility. Using them in modern symmetrical warfare is very risky because they are susceptible to counter-battery fire and air strikes. Permanent artillery positions are an absolute death trap. A good example of this is the 2020 Nagorno-Karabakh war where Azerbaijan used drones, mostly Bayraktar TB2s, which decimated the Armenian army. Out of 233 visually confirmed artillery pieces 212 were lost to drone strikes (Hecht, 2022). Drone surveillance makes it impossible to hide artillery pieces on open fields. Counter-battery radars pin-point the exact location of an active artillery piece and opens it up for counter-battery fire. Staying in one position for a long time is dangerous because of these factors. The solution is putting the gun on a vehicle instead of towing, thus cutting out placement and displacement times. This is a self propelled gun (SPG). Poland and Czechia were the first in April to provide Ukraine with SPGs. More than 20 old Soviet 2S1 Gvozdikas and 20 modern 77 Danas. The Netherlands stood out in Western Europe by being the first to send eight state of the art Panzerhaubitze 2000s. Only in June they were followed by Germany with 14 donations and the purchase of 100 pieces. Delivery is still ongoing as of October. Apart from Gvozdikas Poland donated 18 AHS Krabs and a further 54 were bought by Ukraine. France contributed 18 Caesars in May. By midsummer Ukraine had over 300 artillery guns donated by the West (Oliemans & Mitzer, 2022).

Despite significant military assistance in regards to artillery Russia was still maintaining a 3:1 artillery superiority, up to 20,000 shells fired a day in area based fire missions. The goal is levelling a designated zone with non-stop artillery barrages forcing the defenders to withdraw. This tactic was sufficient to make small gains without the loss of vehicles and the continuous shelling had a profound psychological effect on the defenders, albeit this tactic is inefficient (Saxena, 2022). Russia had a large stockpile, but ammunition is finite and gun barrels can only last so many shots before wearing out or in the worst case splitting like a banana. 20,000 shells a day puts a huge strain on logistical lines that were already stretched thin. This problem was elevated by having to move back supply hubs from the frontline to keep it safe from artillery fire (Axe, 2022). Ukraine's strategy was to make up for Russian artillery superiority by opting for precision strikes instead of area barrages. Counter-battery radars and guided shells enabled them to conduct accurate strikes against Russian artillery and other targets. Ukraine too suffered from logistical issues in the form of running out of shells to fire. Stocks of old Soviet shells were depleting as NATO scrambled to search for shells in ex-Eastern Bloc member states. NATO artillery pieces were entirely reliant on ammunition provided in aid packages (O'Grady et al., 2022). The combination of

these 300 donated and Ukraine's older artillery guns weren't enough to gain the upper hand and weren't able to stop Russian advances, but they did inflict sizable casualties.

Conducting mechanised warfare to advance requires a large quantity of armoured and mobility vehicles. On the Kharkiv axis Ukraine was on the advance and required more vehicles. NATO countries were keen on sending vehicles to support the offensive. The most numerous category was IMVs. These all-terrain vehicles didn't require a long training course and their maintenance is relatively simple. Hundreds of US Humvees joined the ones donated before the war. These Humans would make up the brunt of the IMV force and they were joined by smaller quantities of vehicles sent by the UK, Poland, Canada, Norway and Italy. . Next in the line came Mine-Resistant Ambush Protected (MRAP) vehicles. These vehicles possess a V shaped chassis which dissipates the force of a mine in two directions to save the crew inside. They are often armoured against small arms fire and armed as well with light and heavy machine guns. Armoured Personnel Carrier (APC) is a vehicle capable of stopping small arms fire and is often tracked opposed to wheeled. Ukraine has received more than 300 M113 variants. A tracked system developed by the US for the Vietnam war made from aluminium. The US donated 200, the Netherlands, Denmark, Norway and Portugal each sent dozens of variants. The UK provided FV103 Spartans while the French sent lighter wheeled VABs. Infantry Fighting Vehicles (IFV) are armoured vehicles carrying infantry, but also possess heavy firepower in the form of an autocannon or a medium calibre gun. ATGMs are mounted on some types as well. Ukraine has received over 200 BMP-1 variants from Czechia, Slovakia, Poland and Greece. The UK sent an assortment of Armoured Fighting Vehicles (AFV) which are IFVs without infantry dismounts and serve a purely combat fire support role. Close to 300 tanks were transferred from Polish, Czech and Lithuanian stocks. All tanks were T-72 variants with the most modernised being the Polish Pt-91 Twardy (Oliemans & Mitzer, 2022).

Poland and Czechia sent more than 40 Grad MLRS systems (Oliemans & Mitzer, 2022). This is an old Soviet weapon developed in the 1960s and is regarded as obsolete by today's standards. With a 20km range and poor accuracy these systems weren't all that useful and likely Poland and Czechia was passing on a system that's more than past its half-life. Both states donated variants in the original BM-21 configuration, but Czechia sent the RM-70 version with a more modern chassis and an integrated fire control system. Ukrainians were familiar with the system as they also possessed Grads (Army Recognition, 2022).

In May Joe Biden announced a package which had a weapon system that was expected to change the war. Ukraine was pleading more for no other system. After training

the first set of M142 High Mobility Artillery Rocket System (HIMARS) made its way to Ukraine on June 1 (Gould, 2022). The HIMARS possesses a capability that Russia absolutely lacks and is unable to counter. It's armed with six 227 mm missiles with a range of 70-80 kilometres. These missiles are GPS (Global Positioning System) guided, meaning precision strikes on target. The combination of these two factors allows strikes deep behind the frontline targeting supply hubs and command posts. Russia already suffered from attacks on their logistics infrastructure from artillery fire and in rare cases short range ballistic missile attacks. They were reluctant to move them back further as that would elongate the line between supply and the frontline even further. A perfect example of unwillingness is the numerous artillery attacks conducted on Chornobaivka airbase leading to heavy losses of aircraft. (58 Live UA Map) HIMARS' extended range over barrel artillery posed a great threat to Russian logistics. Ukrainians now had the tool, and painted targets with the help of Western intelligence. The crews of the HIMARS systems had busy nights ahead of them. They hit Russian logistics, multiple supply depots going up in flames every night. The problem was exacerbated negligence and improper storing of ammunition. Large amounts of munitions and fuel being dumped in close proximity to others is a recipe for disaster. Critical infrastructure like bridges were also struck. Russian air defences weren't capable of dealing with HIMARS. This is due to salvos of missiles simply overwhelming defences and such attacks being masked with larger Tochka short-range ballistic missiles. Russia doesn't have a sure way of destroying these systems either. Ukraine does a good job keeping them mobile and hidden so a missile attack is ruled out. Airstrikes aren't possible as well because air defences are intact and airspace is contested. (Ponomarenko, 2022) In July the UK donated six M270s (Oliemans & Mitzer, 2022) which is the original version of the system on a tracked chassis and with two pods for a total of 12 missiles. The HIMARS is a lighter variant with only one pod on a truck chassis. As of October no systems were lost in the war (Mitzer & Oliemans, 2022).

Western aid in the second phase of the war was very significant. The influx of heavy weaponry made a big difference on the field. Silencing Russian artillery was the most crucial task and the West provided both direct and indirect methods for Ukraine. M777s and other artillery pieces coupled with counter-battery fire could duel enemy artillery and destroy guns. They could also target military vehicles and infantry as well. HIMARS and M270 are the most important elements of military assistance to Ukraine. They pose a major threat to Russian forces who lack an effective counter against them and it exploits the already weak links of their logistics. It forces Russians to pick and choose which artillery unit gets ammo

because they simply can not supply all. It neutered Russia's biggest advantage which was heavy artillery. If one weapon system had to be dubbed 'game changer', then it would definitely be awarded to the HIMARS and M270. It has to be noted that this system is not a Death Star. It has a specific role and purpose on the battlefield which it performs well. It does help with the war, but it doesn't destroy the whole Russian army and win the war.

2.3 The Battle of Severodonetsk

On April 19th Russia declared the start of a new major offensive. Plans for encirclement were capturing Bakhmut, Kramatorsk and Sloviansk (Clark et al., 2022). Due to the low number of troops committed to the offensive and because many of these troops didn't have the time and resources to restock after heavy losses suffered on the Kyiv and Kharkiv axis the offensive wasn't expected to come with any quick breakthroughs. Concentrated artillery barrages lead the way for marginal positional improvements. Regardless of the new slower approach the offensive stalled by the end of April. The Ukrainian counteroffensive on the Kharkiv axis was a cause of concern for the Russians which required more units to be stationed up north instead of the Donbas (Hird et al., 2022). Realising the stagnant state of the offensive in mid-May the goals were scaled down and solely focused on Severodonetsk and Lysychansk (Stepanenko et al., 2022). Fighting for these two cities were disadvantageous for the defenders as they were partially surrounded both north and east. Russia managed to make incremental gains from Popasna and captured several settlements around Severodonetsk and Lysychansk. Despite the looming prospect of urban combat the Russian forces began their assault on the city of Severodonetsk on May 27 without adequate preparation and complete encirclement (Stepanenko et al., 2022). Intensive urban warfare was characterised by a series of attacks and counterattacks. Frontlines only changed by individual streets with both sides suffering heavy losses. For Russia seizing the city pair was important because it was the last major obstacle in exercising complete control over Luhansk Oblast. For Ukraine holding out instead of withdrawing was justified with slowly grinding down the combat capability of Russian forces who were suffering from replenishment issues. Close quarters fighting also nullified Russian artillery advantage as friendly fire was a serious risk. (65 ISW). Territorial changes mostly stayed stagnant as Russia was assigning more and more reinforcements to make up for degraded forces in the Severodonetsk (Stepanenko et al., 2022). After two months of gruelling fighting for Severodonetsk and heavy losses Ukraine ordered a withdrawal from the city on June 25 (Hird et al., 2022). Lysychansk was abandoned a week later on July 2 (Stepanenko et al., 2022). With the fall of both cities Russia claimed victory

over Luhansk Oblast but the question arose. Is Russia going to be capable of continuing the offensive, or are they going to order an operational pause to replenish their forces after suffering heavy losses. They were also facing growing Ukrainian counter offensives supported by Western heavy weaponry on the Kherson and Kharkiv axis.

3. Phase 3: Counter Offensives

3.1 Operational pause

The Russian offensive for the Donbas culminated with the fall of Severodonetsk and Lysychansk. In the days after a few settlements and pockets were cleared and captured, but beyond that no further advances were made. An operational pause was declared to give some breathing room for the troops (Hird et al., 2022). Russian forces were exhausted from the hard fighting in Severodonetsk and were facing serious replenishment issues. From the start Russia didn't have nearly enough manpower to realise their original grandiose plans and with mounting losses the capabilities for offensives were quickly degrading. The main issue was the aforementioned lack of boots on the ground. Vladimir Putin didn't want to declare a partial mobilisation fearing the damage it would cause to public opinion and instead opted for a covert or shadow mobilisation. Volunteers were attracted with lucrative six month contracts, but this wasn't sufficient to fill in the gaps and they lacked training as well because many units responsible for the replenishment infrastructure were assigned to the frontline to be active combatants (Stepanenko et al., 2022). After a two-week long operational pause on July 15. Russia restarted the offensive at a much lower intensity. Probing attacks met resistance at Bakhmut and Siversk only making incremental gains, essentially the renewed offensive stalled and didn't have nearly as much momentum as the previous one did (Hird et al., 2022). This pause was also important for the Ukrainians as they too suffered heavy losses in Severodonetsk. Replenishment was much easier compared to their counterpart as adequate manpower was provided by volunteer and mobilised units who received training with the help of advisors, or went to training camps in Western nations. More heavy weaponry also made their way with a steady supply of ammunition (Hird et al., 2022).

3.2 Ukrainian counterattacks

During the fight for Donbas Ukrainian forces on the Kherson and Kharkiv axes had minor but steady gains during June and July. Russian forces pulled their units from these two axes to reinforce the Donbas offensive, granting an opportunity for the defenders to go on the offensive against areas with low troop concentrations. Kharkiv's outskirts were recaptured and in the most western corner the frontline was driven back to the Russian border. The Kherson counter offensive was successful as Ukraine captured the imminent area of Mykolaiv and crossed the Inhulets river. Kherson is a hard position to defend for the Russians as supply routes are limited to bridges that came under artillery and HIMARS fire. Antonovsky bridge in Kherson city was damaged by consecutive HIMARS strikes. Pontoon bridges and ferries were established to make up for the temporary loss of the bridge as engineers scrambled to patch it. On July 24 Ukrainian officials were putting an emphasis on the Kherson offensive which was supported by strikes against strategic Russian targets and generally elevated activity on the frontline. NASA FIRMS⁹ satellite imagery showed a decrease in Russian and an increase in Ukrainian artillery strikes. (ISW 70) For the latter half of the month both sides made marginal territorial gains in their respective areas of operation without any major movements (Stepanenko et al., 2022). On the contrary to the Ukrainian announcement August only saw Ukraine taking marginal ground on a few days. Their attack was focused on dealing as much damage to Russia's logistics infrastructure as possible. Bridges going across the Dnipro were damaged and disabled with the Antonovsky bridge absorbing multiple salvos. The last functioning bridge at the Nova Kakhovka hydro-electric dam was disabled on August 12 (Stepanenko et al., 2022). August resumed with multiple Russian failed attempts around Bakhmut and Ukrainian artillery and HIMARS strikes against command bases and supply depots and pontoon bridges in Kherson. On August 29 Ukrainian command announced the Kherson offensive again and declared operational silence (Stepanenko et al., 2022). Ukrainian forces have continued carrying out strikes against Russian logistics critically degrading the combat capability and reinforcement of troops on the Kherson axis. They also made small territorial progress by recapturing a few settlements (Stepanenko et al., 2022).

Ukrainian forces began a large-scale offensive on the Kharkiv axis on September 6. Russian intelligence failed as there were no signs of defensive preparation leading up to the attack. Russian forces were preoccupied with Kherson and Bakhmut where they concentrated

⁹ Open source satellite that records fires.

most of their troops. Small Kharkiv axis garrisons combined with the shock factor of the attack lead to Ukrainian forces advancing as much as 20 kilometres a day (Hird et al., 2022). Western equipment played a crucial role in the offensive. Western light and armoured IMVs like Humvees lead the charge into undermanned and shocked Russian defences which were already weakened by HIMARS strikes. Defenders couldn't mount an effective defence and Russian lines fell into disarray. In a few days the defenders degraded into mass routes, mass surrenders and isolated pockets without communication or reinforcements. Ukrainian forces were hogging up territory unimposed. On September 9 Kupyansk became contested and on the following day the strategically important city of Izyum that served as the northern staging area for Russia's Donbass offensive fell without much resistance. Ukrainian forces asserted full control over Kupyansk on September 12 (Hird et al., 2022).

The Kremlin acknowledged the catastrophic outcome of the Kharkiv offensive and postponed the fake referendums on the annexation of Kherson, Zaporozhizia, Luhansk and Donetsk Oblasts to September 20. The framework for mobilisation was also introduced the same day and an announcement for partial mobilisation was made on the following day. According to Minister of Defence, General Sergey Shoygu 300,000 reservists will be summoned to fight. The exact number of conscripts is conflicted, but evidence suggests that the mobilisation isn't as partial as it was on paper. Ethnic minorities were called up at a disproportionate rate. Men above the age of 50 and suffering from physical or mental disabilities also received summons. Mobilisation may help alleviate Russia's manpower issues, but the training these troops received is lacking and eroded mothballed equipment was pulled from deep storage to gear them up. The move was highly unpopular with the population as many tried to escape to Finland, Georgia and Central Asian states (Hird et al., 2022).

Ukrainians concluded the Kharkiv offensive with the capture of Lyman and crossing of the Oskil River in late September. Vladimir Putin delayed the announcement of the annexation because of public opinion on the mobilisation and Ukrainians capturing territory that's part of the newly annexed areas, meaning Russia doesn't exercise completely over their claimed lands (Stepanenko et al., 2022). To make it worse the United Nations General Assembly held a vote on the territorial integrity of Ukraine. Only four states sided with Russia. This was surprising because Russia's allies turned out to be less loyal to Russia than previously thought. The General Assembly soundly agreed to recognise Ukraine's territorial integrity and demanded Russia to reverse their annexation claims (UN News, 2022).

3.3 Drones, missiles and Kerch

The Ukrainian offensive didn't end on the Kharkiv axis. Numerous settlements were captured around Lyman and the forces that crossed the Oskil river assumed control on the highway between Svatove and Kremina. The Kherson axis saw rapid changes as well. Ukrainians crossed the Inhulets river and established a beachhead on the eastern side. HIMARS and artillery bombardment was still present and Ukraine managed to achieve artillery supremacy as Russians couldn't get their resupply because bridges serving and logistical arteries were severed (Stepanenko et al., 2022). On October 4 an attack was launched against the northern side of the Kherson pocket capturing more than a dozen settlements.

Bridges across the Dnipro were arteries to the Kherson war effort but the Kerch bridge connecting mainland Russia and Crimea is the aorta of the whole southern offensive. On October 8 a major explosion shook the bridge. One of the two auto lanes collapsed into the sea while the other got severely damaged. The parallel railways bridge also suffered serious damage as a whole tanker carriage was standing there. The blast caught the tankers on fire. Two days later on October 10 Vladimir Putin ordered a massive missile strike over 20 cities in Ukraine to retaliate for the Kerch bridge attack (Stepanenko et al., 2022). These missiles were aimed at residential areas and critical infrastructure relating to electricity. Substation and power plants were targeted extensively. Aside from premeditated attacks on civilians the strike unveiled Russia's new strategy of targeting the power grid all over the country. Electricity is necessary for all other infrastructure to run including heating. Strikes on agriculture were not just conducted by Russia's waning missile arsenal but by newly acquired drones as well (Ellyatt, 2022).

Russia brokered a deal with Iran for Shahed 131 and 136 loitering munitions¹⁰ as Iran is one of the pioneers of drone development. The Shahed 136 is a larger drone with a range exceeding 1,000 kilometres (Mitzer & Oliemans, 2022). Russia resorted to using Iranian drones because their stockpile of cruiser and short to medium range ballistics missiles have emptied to the point where further strikes would take away from the reserve that must be conserved for state security (Hird et al., 2022). These drones, although a lot smaller than missiles, but with their cheap prices, ease of manufacture and long range still pose a threat to critical infrastructure.

Air defence systems are crucial for Ukraine. Missile and drone strikes are causing serious damage to the electrical grid. Cities are facing blackouts which also affect other areas

¹⁰ A loitering munition is a drone usually armed with a first person camera which can loiter around an area, search for targets and strike.

of infrastructure. In Kyiv 4-8 hour blackouts are a daily occurrence (Sabbagh, 2022). Ukraine possesses air defence systems ranging long range such as an S-300 to mid-range with Buk, Strela and Osa to short range covered by MANPADS. Despite the layered Surface-to-Air Missile (SAM) coverage is limited and a major attack can overwhelm it. Another problem is the cost-efficiency of Shahed drones. These drones are cheap expendables with a quick production time. Ukraine has a limited stockpile of Soviet era air-defence systems and is unable to produce more of these weapons. (Khurshudyan, 2022). To solve this problem NATO states have pledged mid-range air defence systems. Germany delivered four IRIS-T SLM systems. The US has pledged eight NASAMS batteries (Oliemans & Mitzer, 2022). Both are modern medium ranged systems. The IRIS-T SLM has already been put to use and received praise from its operators (Bisht, 2022). Spain pledged older HAWK missile systems and Aspide Batteries. France promised Crotale missile systems for shorter range interceptions. Earlier in the war Germany delivered 30 Gepard Self-Propelled Anti-Air units that use conventional guns for short range air-denial (Mitzer & Oliemans, 2022). The limited number of these systems is a cause for concern for the Ukrainians. Depending on damage drones and missile strikes deal NATO nations will probably provide more air-defence systems in November.

4 What helps, and what hinders military assistance

4.1 Why does NATO send weapons to Ukraine

Ukraine is wedged right between East and West. An ex-Soviet state gaining independence with a neutral standing between the two political poles. In 1994 Ukraine agreed to join the Non Proliferation Treaty by giving all nuclear weapons stationed on their territory to Russia in exchange for guaranteed sovereignty and territorial integrity. Ukraine asked the US for security assurance, but the US didn't accept, thinking it was too risky and aggressive towards Russia which would go against the Détente achieved during the late Cold War. This treaty was the Budapest Memorandum (Hood, 2022).

Serving the role of buffer-state it was important for both sides to try to sway it towards themselves, like Russia did with Belarus. In the twenty-first century Ukraine was closely going towards the EU, but the population was split on it. The split is showcased by the election of pro-Russian President Viktor Yanukovich who decided to not sign the EU-Ukraine Association Agreement and protest turned revolution which deposed him in 2014 because of it. The political failure of Yanukovich prompted Russia to invade and annex

Crimea, and to found the Donbas revolution. Both actions were a violation of the Budapest Memorandum (Hamilton, 2019).

The reason behind Russia's use of force was NATO expansion. The Visegrad 4, Baltic and many Balkan states joined NATO between 1999 and 2009. Most of the Eastern-Bloc in Europe were opposing Russia (Shehadi, 2022). Belarus and Serbia were the only close allies of Russia. Power balance in Europe was changing rapidly with Russia being on the losing side so they had to take more drastic measures to stop further expansion, and Ukraine became a target. For Russian national interest it is absolutely necessary to at a minimum keep Ukraine neutral and at the maximum make it an ally by installing a pro-Russian government. Annexing parts of Ukraine was part of the Novorossiia project that plans to gain the following regions: Crimea where ethnic Russians are an absolute majority, Southern Ukraine and the Donbas where ethnic Russians are a considerable demography (Basora & Fisher, 2016).

NATO and the EU responded with sanctions targeting many general industries and primarily the defence industry. Sanctions were lighter than the 2022 sanctions but they had a profound effect on the Russian economy causing a minor recession (Bělin & Hanousek, 2019). Despite specially targeting the defence industry it didn't stop western manufactured parts from making it into Russian weapons. Thales, manufacturer of the Javelin came under criticism after parts made by them were found in captured Russian tanks (Cole, 2022). NATO also responded with military action by bolstering the eastern flank with additional divisions and promising financial and military support for Ukraine (North Atlantic Treaty Organization).

NATO and the EU support Ukraine because it's geopolitically just as important for them as it is for Russia. This tug of war decides who holds absolute control over Eastern Europe and with Ukraine under Petro Poroshenko and Volodymyr Zelensky favouring the West because of Russia's aggression they also see an ally and a potential member of both organisations. The West provides military support to help Ukraine secure its existence and because they can essentially trade weapons for a weakened Russia which benefits them.

4.2 War, gas and nuclear sabre rattling

NATO plays carefully by not sending in troops to Ukraine which would lead to a direct confrontation with Russia, but doing the most to help Ukraine. Military assistance had its associated risks of an aggressive reaction from Russia which is the main reason why almost

no aid was provided to Ukraine until the 2022 when a Russia invasion was materialising. Russia had three threats towards the West for helping Ukraine.

Military invasion and retaliation is the first threat Russia had for the West providing military assistance and Finland and Sweden's accession into NATO. Russia has threatened Finland and Sweden with retaliation and has shown very minor signs of military preparation by moving anti-ship cruise missiles near the Finish border (BBC News, 2022). As a response to Russia's aggression Lithuania embargoed the Kaliningrad exclave by blocking crucial railway lines into the area. The city was only accessible for supply by sea and air which wasn't enough to sustain it. Russia threatened Lithuania with consequences that never realised and after EU pressure Lithuania lifted the sanctions (Reuters, 2022)n Poland already had tense relationships with Belarus and Russia and the war only amplified the mutual resentment. Belarus made an attempt to undermine Polish state security by battering its borders to which Poland responded by building a wall. Poland is also a staunch supporter of Ukraine and sent considerable military assistance. Head of the Chechen Republic Ramzan Kadyrov has threatened Poland by stating that they are next after Ukraine falls (Ramdev, 2022). The West didn't heed these threats simply because Russia is in no way, shape, or form capable of conducting an invasion against any of these states. Fighting in Ukraine has significantly degraded their military capabilities and judging by their progress, or lack thereof the Russian military is a lesser threat to NATO then assessed before the invasion. Poland and the Baltic States are NATO members meaning an invasion would result in Article 5 being invoked making it all out war. Finland and Sweden's security is assured by the US (Pohjanpalo & Buttler, 2022).

The second and only threat that became reality was oil and gas. Europe is reliant on Russian oil and gas which plays greatly into Russian power projection. The threat of shutting off pipelines was serious as it was an actual possibility that Russia might turn them off. With the power of hindsight Europe was rightfully worried as Russia did limit the quantity of gas and oil delivered. Lowered supply and high demand caused gas and oil prices to skyrocket giving Russia a gas cannon. Russia also forced Europe to pay for gas in rubles to help alleviate the damage sanctions dealt to it. After the initial spike prices steadily dropped as Europe found alternatives in the form of US gas supplies and a proposed LNG (Liquified Natural Gas) line with Middle Eastern states. An unusually warm autumn also helped Europe in curbing gas consumption. By late October European gas storages were above 90%, exceeding the 80% goal. The drop in demand caused gas prices to drop below zero. Despite succeeding in preparation for winter the consumer price of electricity and gas is above the

previous year causing political tensions in European states (Cooban, 2022). The transition away from Russian hydrocarbons is harsh on Europe, but it's in their interest to take away one of Russia's main strengths as after transition this threat wouldn't exist, or wouldn't nearly have the impact it did for the first time.

The threat of nuclear annihilation is the scariest, but least likely threat. Since the start of the war Vladimir Putin has been threatening the West directly or indirectly by declaring to put nuclear weapons on high alert. These claims were regarded as no more than an attempt at intimidation and sabre rattling as Pentagon intelligence has found no evidence of heightened nuclear readiness from Russia (Seligman, 2022). The situation is no different from the fundamental question of nuclear wars: should the threat of nuclear war be feared at all? Implying rational thought nuclear war is always the worst possible outcome for any conflict and using historical experience of many close calls that always ended in a nuclear war being averted it should not. Without fear a threat is powerless. The use of a nuclear weapon in Ukraine wouldn't cause an automatic worldwide nuclear war, but the US made a counter-threat to escalate into a direct conflict with Russia if it were to happen (Smith, 2022).

4.3 What made it possible

Donating weapons results in a flat decrease of one's own military capabilities, but there are justifications for doing so. Ukraine received both old and new equipment, with the latter being easily justifiable (Oliemans & Mitzer, 2022). A weapon system can have three value categories during their lifespan. The most valuable is being used in combat as it fulfils its intended purpose. In the middle of the value scale is selling it to another state which might return a part or the whole procurement cost. The least valuable ending is the weapon sitting in a depot until it expires, gets decommissioned and scrapped. In the case of Ukraine mostly the first case is true as donors see Russia as a threat and it's in their interest to weaken them. Ukraine has shown to be capable of using these weapons to inflict casualties on the Russian forces. Older weapons are justified with their age and relative usefulness in the donor's army. These weapons are close to being decommissioned and aren't super essential in state security, so the best course of action is sending it to Ukraine to help weaken Russia. For newer weapons their usefulness on the battlefield plays a large role in the decision. If sent, is the weapon system going to inflict damage that makes up for its loss from the home arsenal, and the procurement cost. This is the reason why some equipment, for example modern NATO tanks and jets likely wouldn't have a sizable return and the possibility of confidential

technology being lost is always there. Weapon systems like the M777 and HIMARS have influenced the war enough to be worth it

Eastern Europeans possessing large Soviet weapon stocks also had the motive of exchanging them for modern NATO systems. The Ringtausch program allowed Czechia, Greece, Slovakia and Slovenia to supply Ukraine with tanks and IFV's in exchange for German replacement (Mitzer & Oliemans, 2022). Poland sent more than 200 tanks which is a great number in proportion to the Polish tank stock (Oliemans & Mitzer, 2022). What made this possible is their gigantic weapons deal with South Korea that will grow Poland's army with 980 modern K2 tanks, 648 K9 SPGs and 48 FA-50 fighter jets. (Lendon & Seo, 2022)

4.4 Comparison of military assistance providers

In terms of gross financial value of aid provided the US has provided more than all other states combined. This is due to both the high procurement cost of some items and the quantity of these items that lead to this large number. The UK holds second place followed by Poland and then Germany. Germany has received heavy criticism over their reluctance of not sending heavy weapons, the excuses and unfulfilled promises made, but they delivered enough items to secure their place opposed to other larger mainland European military powers like France who delivered less than a fourth of Germany's aid value and Italy didn't even disclose what they sent to Ukraine (Buchholz & Richter, 2022)

Absolute value comparison heavily favours states with larger defence budgets and GDPs (Gross Domestic Product) so a relative aid provided to GDP ratio gives a fairer comparison. With that metric Baltic and Eastern European states lead the chart. Latvia holds number one spot with slightly more than 1% of their GDP spent on aid for Ukraine. As a general trend, states closer to Ukraine and Russia tend to spend more of their GDP on assistance to Ukraine than those states who are farther away. The two outliers being the UK and the US. Their case is explained by superpower aspirations, especially for the US who has a lot to gain from a weakened rival (Armstrong & Richter, 2022).

Conclusion

The paper argued about the significance of military assistance provided to Ukraine. It answered the question of how significant a role did NATO systems play in the war. It was very significant with the combination of systems slightly swaying the war in their respective time and the HIMARS system was standing out as the single most important weapon system.

It also addressed the issue of drone and missile attacks which at the time of the writing of this paper only had a partial solution and anything beyond is purely speculative. The three main obstacles and multiple supporting factors for military assistance were described as well

The paper faced some limitations in the form of genuine information being scarce in the field due to intentional or unintentional disinformation published by both sides of the conflict. Further limitations include the sole use of open source material and analysis as the fog of war is shrouded in layers of secrecy and operational security.

For the future there is much to be elaborated on in greater detail. The war changes on a daily basis and with such a rapid change of events update is required. Hindsight would also give a better ground for analysis as nothing is certain but the past.

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