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Russia's War in Ukraine

Two Decisive Factors

Gilbert W. Merckx, PhD

Abstract: The various stages of the Russian invasion of Ukraine, and of Ukrainian responses, are analyzed in terms of two decisive factors: 1) force structures and 2) command and control. Both these factors are in turn conditioned by characteristics of the governing political regime and the evolution of that regime.

Keywords: Ukraine, Russian invasion, force structure, command and control

Military Invasions

Most wars begin with invasions. The success of an invasion is determined largely by the relative strength of the opposing armed forces and by the strategy and tactics employed by those forces.¹ The comparison of force structures (and the determinants of these forces) in the Ukraine war is one of the two focuses of this analysis. The second focus is the comparison of command and control (C2), which determine the strategy and tactics employed by both sides in the Ukraine war.

There is a considerable literature on the force differentials needed for an invasion, leading to the classic rule of thumb that a frontal assault requires a 3:1 force ratio to compensate for the higher casualties suffered by an attacking force.² This ratio was incorporated in the 1976 revision of the U.S. Army's *Operations*, Field Manual 100-5, supervised by General William E. DePuy, and in Soviet Army doctrine by Colonel A. A. Sidorenko.³ The corresponding rule of thumb for maintaining control of an occupied area is usually given as 20 troops per 1,000 civilians.⁴

The literature on command and control is even more extensive, as docu-

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mented in Martin van Creveld's magisterial *Command in War*, which distinguishes between command, control, and the C2 system, illustrated by case studies.⁵ A later Rand corporation study, *Command Concepts*, updates van Creveld's work and offers additional case studies.⁶ The authors of this study conclude that "the quality of a commander's ideas is a critical factor in the functioning of C2 systems."⁷

Van Creveld's incisive analysis recognizes the important technological advances in C2 systems, but draws similar conclusions, which, given their relevance to the Ukraine war, are worth quoting at length:

Attempting to generalize from the historical experience studied here, I suggest that there are five implications [for the organization of command systems]: (a) the need for decision thresholds to be fixed as far down the hierarchy as possible, and for freedom of action at the bottom of the military structure; (b) the need for an organization that will make such low-decisions possible by providing self-contained units at a fairly low level; (c) the need for a regular reporting and information-transmission system working both from the top down and from the bottom up; (d) the need for the active search for information by headquarters in order to supplement the information routinely sent to it by units under its command; and (e) the need to maintain an informal, as well as a formal, network of communications inside the network.⁸

Force structures and command and control are embedded in regimes and nation-states and will reflect the priorities of those regimes and the cultural norms of the society of the nation-state. Societies where freedom of expression is possible are more likely to have access to diverse information and to have more participation in decision-making. Conversely, limitations on freedom of expression tend to result in conformity and authoritarian decision-making. These qualities will also be infused into military institutions.⁹

Force structures and C2 may also be embedded in external alliances, such as the North Atlantic Treaty Organization (NATO) and the former Warsaw Pact. Ukraine was not a NATO member, despite its desire to join, and the Warsaw Pact was defunct. However, Ukraine's force structure and C2 were to benefit from substantial military assistance by NATO countries, whereas Russia's remaining allies, such as China, North Korea, Belarus, and Serbia, were to primarily provide moral support.

Russian Invasion Planning

Russian president Vladimir Putin had systematically consolidated his power by eliminating other forms of authority and all rivals, arriving at a one-man dictatorship. Fiona Hill and Angela Stent write that "after 23 years at the helm of the Russian state, there are no obvious checks on his power."¹⁰ Putin's successful

invasion of Crimea met little resistance at a time of political turmoil in Ukraine, and it proved enormously popular in Russia. His establishment of pro-Russian puppet zones in the Donbas region of Ukraine mimicked similar Russian enclaves in Georgia and Moldova.¹¹

Putin then began to promote his long-held rationale for restoring Russia as a world power presiding over a modern equivalent of the Soviet Union. Hill and Stent explain that “Putin and his cohort’s beliefs are still rooted in Soviet frames and beliefs, overlaid with a thick glaze of Russian imperialism.”¹² The key to this reconstituted system was to be the absorption of Ukraine into the Russian Federation, presumably to be followed by Belarus, Georgia, and Moldova, later the Asian “stans” of the former Soviet Union, and eventually the former European provinces and satellites of the Soviet Union.

Russian decision-making prior to the invasion almost entirely top down. Putin’s obsession with secrecy meant that consultations were limited to a small circle of trusted military advisors. Not even Russia’s foreign minister, Sergey Lavrov, was included in this group. He was informed of the invasion on 24 February, the day it took place. Russian field commanders on the ground in Belarus for military exercises had no idea that they would be leading an invasion. Publicly, Putin’s regime posed as nonbelligerent, even while it planned the invasion. As a result, neither the Russian people nor the Russian field commanders were expecting a war.

The obsession with secrecy came at a high cost: there was no opportunity for critiquing the invasion plan and no consideration of fallback strategies should something go wrong. Due to this lack of critique, “The plan itself, while theoretically plausible, compounded optimism bias in each of its stages. . . . There is no evidence in the Russian planning that anyone had asked what would happen if any of its key assumptions were wrong.”¹³

Among these mistaken assumptions were that: (1) a high-speed invasion would demoralize the Ukrainian military, (2) the Russian military would defeat the Ukrainian military on the battlefield, (3) the top Ukrainian leaders would be quickly captured and executed, (4) the vast majority of Ukrainians would either welcome the Russian invaders or remain passive, and (5) the large Russian intelligence network inside Ukraine would not be needed for military victory but only for post-victory pacification and control.¹⁴

Ironically, U.S. intelligence quickly learned of Russia’s planning and alerted not only the Ukrainians but also NATO allies. Some NATO allies were skeptical, but Ukraine, while publicly accepting Russia’s peaceful declarations, quickly ramped up its preparations for defense, while trying, with only partial success, to conceal them from Russian intelligence.¹⁵

Putin’s strategy relied on faulty intelligence given to him by the SVR, Russia’s Foreign Intelligence Service. The SVR had an extensive network of pro-Russian sympathizers inside Ukraine, whose self-serving assessments proved to be worthless. Putin was advised that the Ukrainian government would provide

little resistance to a Russian invasion, that many Ukrainians would be apathetic or inactive, and that large numbers of collaborators would constitute cheering crowds to welcome Russian troops.¹⁶ All of this intelligence was inaccurate.

Russian intelligence was also wrong about the response of macroenvironmental actors to a Russian invasion of Ukraine. The successful Russian invasion of Crimea in 2014 had not led to major interventions by other countries, and after 2014 Western Europe had grown increasingly dependent on flows of Russian natural gas. Russian intelligence predicted that European objections to an invasion of Ukraine would be pro forma rather than substantive.

Another major problem was that Putin had been misled about the state of readiness of the Russian military. On paper, the Russian force structure significantly outnumbered Ukrainian forces in every category. However, in an authoritarian system, reports of achieving targets are rewarded, while failure is punished. As a result, the information flows from the bottom up about force structure capabilities were exaggerated. Most Russian military units from platoons, companies, and battalions on up were severely undermanned.¹⁷ Moreover, like many authoritarian regimes, the Russian state had become such a vast kleptocracy that corruption was expected and tolerated. Military institutions were no exception, from the procurement system to senior commanders to ordinary soldiers, who sold weapons and fuel on local markets. As a result, the Russian force structure had been seriously weakened. As an example, many of the battalions doing exercises in Belarus were low not just on manpower but also on fuel when ordered to invade.¹⁸

The planning of the invasion was a symptom of the top-down C2 culture inherited from the old Soviet Union. Every one of van Creveld's five recommendations for effective command systems were violated. Another surprising element of Putin's invasion plan is that it violated the Sidorenko force requirements in Russian military field manuals. At the start of 2022, the Ukrainian military had 196,600 active-duty personnel, which, according to the 3:1 force ratio rule, would have required an invasion of 590,000 Russian personnel. Instead, the Russians planned an invasion with 190,000 personnel, actually smaller than the combined Ukrainian armed forces.¹⁹ Using the standard figure of 20 military occupiers per 1,000 inhabitants, the Russians would have needed an occupation army of 880,000 to pacify the 44 million Ukrainians, about the size of the entire military of the Russian Federation. The actual invasion force of 190,000 would have given them a ratio of only 4.5 per 1,000 Ukrainians.

Instead of massing force to achieve a breakthrough at one point, the Russians decided to attack on six different axes: from the Black Sea in the southeast; from Crimea in the south; from Donbas in the east; from Belgorod in the northeast (toward Kharkiv); from Kursk in the northeast (toward Kyiv); and from Gomel, Belarus, in the north (toward Kyiv). The Russians thought that they had planned an invasion of sufficient scale, speed, and pressure to cause a catastrophic breakdown of the Ukrainian state. The Russian emphasis on this shock and awe strategy simply assumed that it would be sufficient, an assump-

tion that was never questioned. The Russians also ignored the potential for breakdown in their command and control of an extremely complex invasion by a military with unprepared field officers and slow top-down decision-making.

Ukrainian Preparations

The Ukrainian context had been defined by several previous and very popular uprisings against political corruption, election rigging, and Russian domination, including the Revolution on Granite (1990), the Orange Revolution (2004), and the Revolution of Dignity (2014), also known as the Maidan Revolution. The Maidan Revolution was triggered by the decision of the pro-Russian then-president of Ukraine, Viktor Yanukovich, to withdraw from negotiations with the European Union in favor of closer ties to Putin's Russia. Prior to Maidan, Yanukovich's government had been systematically lowering missile and artillery troop strength. When the Maidan Revolution led to Yanukovich's ouster in February 2014, he fled to Russia. Putin responded within days by occupying Crimea and then annexing it on 18 March 2014. The new Ukrainian government was unable to prevent the occupation of Crimea, but when the Russians tried to install breakaway republics in the Luhansk and Donetsk provinces, the Ukrainian army successfully resisted the further expansion of these regimes in a series of hard-fought battles.²⁰

Two results of this political history stand out. First, there was considerable disenchantment with traditional Ukrainian politicians and parties. Second, there could be no doubt that the vast majority of Ukrainians did not want to be part of Putin's Russia, despite information to the opposite sent to the Kremlin by Russia's spies.

In May 2014, Petro Poroshenko was elected president of Ukraine. As one of the richest men in Ukraine, he was not a traditional politician. An outspoken proponent of closer ties to the West and the first president to speak Ukrainian as his mother tongue, Poroshenko faced daunting challenges, such as bolstering Ukrainian identity, improving a weak economy, defending the front lines in the Donbas region, and dealing with a church subservient to Moscow. His nationalist policies were summarized in a three-word slogan: "military, language, faith." With economic assistance from the European Union, Poroshenko was able to stabilize the economy. Broadcast media were required to use more hours of Ukrainian than Russian, many Russian place-names were replaced by Ukrainian ones, and dozens of Soviet-era monuments were removed. He established the Orthodox Church of Ukraine, which was recognized as autonomous (from Moscow) by the Ecumenical Patriarchate of Constantinople.²¹ Most important, Poroshenko did his best to rebuild the capacity of the Ukrainian military.²²

In the latter part of Poroshenko's presidency, the pace of reform slowed, the Donbas war slowed economic recovery, and allegations of public corruption continued. In Poroshenko's effort to be reelected, he was decisively defeated by Volodymyr Zelensky, a television star who ran on an anticorruption platform

and promised to seek peace in the Donbas. Zelensky's government was mostly composed of a younger generation of technocrats uncompromised by previous political involvements.

The main problem that the Ukrainian Armed Forces (UAF) faced was low pay in comparison to civilian sectors. As a result, there was a constant turnover of personnel, particularly of technicians and specialists, which meant that the Ministry of Defence had to spend large amounts to train new personnel. On the positive side, this meant that the military reserves and Ukrainian society had a large pool of military-trained people who could be mobilized in an emergency. At the start of the war, the size of Ukrainian reserves was 900,000, almost one-half the size of Russian reserves.²³

The Ukrainians also established elite units of special forces where turnover was less of an issue, including seven brigades of air assault forces, two regiments of special operations forces, and special units within the Main Intelligence Directorate, the Security Service, the National Guard, the State Border Service, and the Foreign Intelligence Service.²⁴ In January 2022, the Territorial Defense Force (TDF) was also established, but it was not fully equipped and trained when the invasion began a month later. By May 2022, the TDF had enrolled 180,000 volunteers and was playing an important role.²⁵

Artillery was another priority for the UAF. At the 2014 low point under Yanukovich, the UAF had only one missile brigade, two artillery brigades with howitzers, and three regiments with multiple launch rocket systems (MLRS). By February 2022, the UAF had 10 army artillery and missile brigades and one artillery regiment and an additional brigade and regiment as part of the navy.²⁶ When the Russians attacked that month, they had approximately a 2:1 artillery advantage (2,433 barrel artillery systems versus 1,176, and 3,547 MLRS versus 1,680), well below the 3:1 ratio of military doctrine.²⁷

Armor was a category of weapons in which the Russians did exceed the 3:1 ratio. Although Ukraine had added 500 main battle tanks to the UAF, the total number of tanks the UAF was able to deploy in February 2022 was 900, whereas the Russian Army fielded 2,800 and their Donbas proxies another 400. The Ukrainians were able to deploy significant numbers of anti-tank guided weapons, some imported, like Javelins, and some manufactured in Ukraine, like the Stugna-P. However, they faced significant shortages of ammunition.²⁸

Ukraine also devoted resources to expanding air defense systems, which included the deployment of modernized radar systems superior to those used by the Russians, anti-aircraft missile forces, and extensive deployment of man-portable air-defense systems (MANPADS). Fighter airplanes were also part of the air defense system, which in February 2022 included about 50 older Mikoyan MiG-29s, 32 Sukhoi Su-27s, and some Sukhoi Su-24s and Sukhoi Su-25s, for a total of about 120 fixed-wing aircraft. Efforts were made to modernize these planes, and the air force was trained to deploy from major airports to subsidiary airfields in case of attack. Nonetheless, Ukrainian fighter jets were

outclassed by the 350 modern and better-equipped fast jets deployed by the Russian Aerospace Forces (VKS) for the Ukraine invasion.²⁹

The Ukrainian Navy was the weakest component of the defense forces. After the Crimean debacle of 2014, it focused on building the intelligence, surveillance, and reconnaissance of its coastal defense, installing modernized radar systems and coastal artillery. The navy also commissioned the Neptune ground-to-sea missile system, which became operational shortly after the Russian invasion.³⁰

The Initial Phases of the Six Fronts of the Invasion

The Russian invasion began on 24 February 2022 on six axes. One of these fronts quickly proved a failure. The Russian Navy had planned to land two amphibious task forces of marine brigades in three large amphibious ships along the Kherson-Mykolaiv-Odesa axis to seize key intersections and choke points. This was to pave the way for a rapid advance of Russian ground forces to Odesa, leaving the entire coast under Russian control.³¹ However, the Ukrainian coastal defense defeated the initial Russian efforts at reconnaissance landings by special forces, sinking their boats and inflicting heavy casualties. The Russian Navy called off the landings. The navy's success on the first day of the invasion in capturing Snake Island south of Odesa also proved to be a failure, as it was within easy reach of Ukrainian artillery. After heavy losses of manpower and equipment, the Russians were eventually forced to evacuate.³²

The Russian spearhead north toward Kherson and Melitopol from Crimea was more successful. Russian jets took out the Ukrainian air defenses in this area. Both Kherson and Melitopol were captured with little resistance, and the larger city of Mariupol was largely encircled. At this point, the Russian advance slowed, with the Ukrainians successfully defending Mykolaiv, north of Kherson. To the east, the Ukrainian Azov Battalion fought a spirited resistance in Mariupol that inflicted heavy losses on Russian troops and tied them down for almost three months, before finally surrendering on 16 May.³³

The Ukrainians had expected that the main Russian attack would come from the Donbas in the east, and there was indeed a major Russian assault from that direction. After fierce fighting, the Russian forces made little progress against the Ukrainian defense line. However, they succeeded in making it impossible for the Ukrainians to transfer troops from this theater to other fronts where they were needed.

The primary Russian assaults came from the northeast and north. The Russian spearhead toward Kharkiv, Ukraine's second largest city, came from Belgorod in the northeast and was led by the *6th Combined Arms Army* and the *1st Guards Tank Army*. This had been anticipated by the Ukraine Army, which had mobilized an artillery brigade, a heavily armed mechanized brigade that included a tank battalion and several artillery battalions, units of the National Guard and TDF, and several volunteer regiments. Although some Russian units, after taking heavy casualties, were able to fight their way into the outskirts

of Kharkiv, they were quickly surrounded and cut off. The Russian offensive stalled, and over the next six weeks the Ukrainians were able to push the Russian forces nearly back to the border. The Kremlin dismissed the two lieutenant generals in command of the Kharkiv front.³⁴

The most serious threat to Ukraine came from the two Russian spearheads toward Kyiv. Immediately north of Kyiv sits a large reservoir known as the Kyiv Sea that has a surface area of more than 900 square kilometers and is filled by rivers from Belarus. The Russians launched one assault group from Kursk toward Chernihiv and Sumy to the east of the Kyiv Sea, and one from Gomel, Belarus, toward Chernobyl to the west of the Kyiv Sea. The Ukrainians had placed their 1st Tank Brigade near Chernihiv, but they were taken by surprise by the Russian assault from Gomel.

In addition, Russian air forces struck the major Ukrainian airports and military airfields. Anticipating such attacks, the Ukrainian Air Force had emptied its hangars near Kyiv, moving its fighter planes to secondary airfields and hiding them under camouflage. Russian aircraft destroyed the empty hangars. The Ukrainians then photographed the damage from above, printed the images on sheets, and used these to cover new shelters for the airplanes they returned. This ruse deceived the Russians into concluding that the airports were still in rubble and debating whether the Ukrainians were using underground shelters.³⁵

Hostomel Airport on the edge of Kyiv was a particular target. The Russians planned to capture the airport with Russian Airborne Forces (VDV) and proceed to capture and execute the Ukrainian president and his entire cabinet, as well as to arrest all members of the Ukrainian parliament. To this end, after strafing Hostomel with attack helicopters, 20 VDV transport helicopters in two waves carrying 300 troops were dispatched. Two of the transport helicopters in the first wave were shot down by Ukrainian MANPADs. After landing, the VDV came under heavy artillery fire and then were eliminated by a Ukrainian counterattack with heavy armor.³⁶

The Ukrainians also acted swiftly to confront the Russian assault from Gomel, which was approaching the outskirts of Kyiv. They committed most of their available special forces and special units of other security units, called up all their reserve units, and mobilized the cadets and staff of their military academies into new battalions, supported by two brigades of artillery and one mechanized brigade. Even so, the Russians had a 12:1 troop advantage on the Gomel axis.³⁷ On 27 February, their advance units were able to capture the suburb of Bucha, just west of Kyiv. The Russian effort to enter Kyiv was repulsed, so Russian units then tried to encircle Kyiv. Bucha was retaken by Ukrainian forces on 3 March and fell again to the Russians on 12 March.

The 24 February Russian assault from Kursk toward Chernihiv and Sumy had been ordered to bypass Ukrainian combat units to speed their advance. The Ukrainian 1st Tank Brigade found itself encircled. However, the Russians, trying to advance through 200 km of dense woods, suffered heavily from ambushes and tactical assaults by the Ukrainian mechanized units and special forces of

the 1st Tank Brigade. The Russians reached Chernihiv on the third day of the invasion, but they were successfully repulsed when they tried to capture the city. They surrounded it and tried to press on toward Kyiv, but their advance stalled in the face of Ukrainian counterattacks and they were unable to continue. The Russian assault on Sumy, which began on the same day, was driven off with heavy losses. The Russians then encircled Sumy and pressed on toward Kyiv. This Russian spearhead was able to reach Brovary, an eastern suburb of Kyiv, on 9 March, where it was ambushed and stopped.³⁸

The Russian Air Force, which earlier had conducted long-range attacks, was now assigned to provide close cover for their ground forces. The Ukrainians were well equipped with MANPADS, however, and the loss of Russian aircraft was so high that Russian pilots began to refuse to fly support missions. The obsolescent Ukrainian fighter jets, which had suffered losses against Russian aircraft in the opening days of the invasion, became more effective in low-altitude attacks on Russian columns as Russian air coverage diminished.

As the Russian columns stopped moving, their losses multiplied. The Russian advance units that had reached the suburbs of Kyiv were short on fuel, ammunition, and manpower, but they were confident that these would soon arrive. They proceeded to terrorize the local population, perpetrating atrocities that were to attract international condemnation. The expected Russian reinforcements failed to arrive, and the advance Russian units were suddenly on the defensive. On 16 March, the Ukrainian government announced a counter-offensive in the Kyiv region, and by the end of March Russian ground forces were retreating north from the Bucha area and northeast from Brovary. By 2 April, the entire Kyiv Oblast was back in Ukrainian hands, including the area bordering Belarus.³⁹

Why did the initially successful Russian invasion from Gomel ultimately fail? Russian secrecy about the invasion had left the Russian ground forces in Belarus completely unprepared. They were informed of their roles in the invasion only 24 hours before it took place. As a result, they lacked ammunition, fuel, food, communications, and an understanding of their tactical roles. They were not anticipating heavy fighting. Old maps led them to congregate on just a few roads, causing traffic jams. They encountered entire towns that were not on their maps, requiring them to stop and ask civilians where they were. Residents reported the Russian positions, permitting Ukrainian artillery to target the Russians. The Ukrainian forces knew the territory well, giving them a huge tactical advantage, and they were able to assault the slow-moving Russian columns almost at will, causing panic, abandonment of equipment, and blockage of the roads.⁴⁰

The failure of the Russian attacks from the north was a classic case of an almost complete breakdown of command and control in terms of planning, intelligence, operations, and communications. It also reflected paralyzing weaknesses in the Russian force structure, including understaffed units, inappropriate equipment, lack of support infrastructure, and low troop morale.

First Stalemate

From early April through the end of August, the Russian-Ukrainian fronts were marked by a relative stalemate. Russian forces made gains in the south and east, but at a high price in casualties. A constant barrage of Russian artillery along the eastern front, accompanied by missile strikes on the Ukrainian interior, failed to dislodge the defenders. Russian forces then made a major effort to capture the twin cities of Sievierodonetsk and Lysychansk facing each other on the Siverskyi Donets River, at high cost. Sievierodonetsk fell on 24 June and Lysychansk on 3 July. At that point all the Luhansk Oblast was in Russian hands, but the territorial gains were limited.

On the southern front, Russian forces were able to conclude their siege of Mariupol on 16 May when the Ukrainian defenders holding out at the Azov steelworks finally surrendered. On 25 June, the Ukrainians began to deploy newly supplied high-mobility artillery rocket systems (HIMARS) from the United States, along with wooden HIMARS decoys to deceive the Russians. Russia has claimed to have destroyed many of these HIMARS, but the Pentagon has repeatedly confirmed that the HIMARS were still operational. The HIMARS soon forced Russian artillery and command posts to move farther away from the front lines.⁴¹ On 22 July, Russia and Ukraine signed a United Nations/Turkey-sponsored agreement to resume grain shipments from the Black Sea.⁴² On 26 July, Russian forces captured the Vuhlehirska power station on the approach to Bakhmut, but nine months later their siege of Bakhmut was still not fully successful.

Fighting continued along the entire front throughout the remainder of July and August, with minor Russian gains and Ukrainian counterattacks. The prevailing Western opinion was that the war had settled into a stalemate. On 13 August 2022, Lieutenant General Sir James Hockenhull, the departing head of the UK Strategic Command, was quoted by the BBC as saying, “Neither Russia nor Ukraine is likely to achieve any decisive military action in Ukraine this year.”⁴³ The defense and security editor of *The Guardian*, Dan Sabbagh, wrote on 24 August that “the war is essentially deadlocked” and that “Ukraine has no means of effective conventional counterattack.”⁴⁴ Such views were soon proven wrong.

The First Ukrainian Counteroffensive

Beginning on the 9 July, Ukrainian officials had been openly hinting about a coming counteroffensive in the Kherson region, although these comments were widely discounted. On 29 August, Ukrainian authorities announced that the Kherson counteroffensive had begun with a major assault near Kherson that broke through the Russian line of defense. In response, Russia began to transfer troops from the northeast toward Kherson. The Kherson offensive, while eventually successful, was really a feint to weaken Russian defenses against a larger Ukrainian counteroffensive in the Kharkiv region to the north.

On 6 September, Ukrainian troops attacked the Kharkiv front near the Rus-

sian border, and on 9 September Ukrainian mechanized units broke through. Russian resistance crumbled, and Ukrainian forces raced north and east. The cities of Kupiansk and Izium fell to the Ukrainians on 10 September. By the next day, the Russian forces north of Kharkiv had retreated over the border, leaving the Kharkiv Oblast under Ukrainian control.

Pressing on to the east, Ukrainian forces on 12 September crossed the Siverskyi Donets River, and on 13 September broke a Russian attempt to stop them at the Oskil River. On 1 October, the Ukrainians recaptured Lyman, a major railway hub, and took as prisoners an estimated 5,000 Russian troops trapped inside the city.

With Russian forces now rushing to the northeast front, on 2 October Ukraine launched its actual counteroffensive in the Kherson region. By 9 October, Ukrainian forces had retaken 1,170 square kilometers of territory, pressing on toward the Dnieper River and the city of Kherson. On 9 November, with Kherson surrounded on three sides by Ukrainian forces, Russia began to withdraw from Kherson across the Dnieper. On 11 November, Kherson was occupied by the Ukrainians.

Second Stalemate

The second period of stalemate dates from 12 November 2022 through the end of May 2023. During this period, Russia launched massive missile and drone attacks on Ukrainian infrastructure throughout the entire country, with a particular concentration on the electrical grid and railroad network. Ukrainian air defenses took out the majority of these attacks, but damage was still severe. Remarkably, the Ukrainians were able to restore power and railroad service repeatedly. By 9 April 2023, Ukraine was able to resume electricity exports to Western Europe.

Russian ground forces conducted a winter-spring offensive that cost them major losses, but it was largely unsuccessful. These included their sieges of Avdiivka (started on 21 February 2022), Huliaipole (5 March), Marinka (17 March), Bilohorivka (5 May), Bakhmut (1 August), Pervomaisk/Vodiane (15 August), and Vuhledar (24 January 2023), all of which were still being contested in May 2023. In Bakhmut, the most intense of these battles, recent estimates suggest that Russian forces suffered between 32,000 and 43,000 dead and 95,000 wounded, with Ukrainian losses at about 15–20 percent of that. The battle of Vuhledar, viewed by Ukrainians as an effort to divert attention from Bakhmut, also led to major Russian losses, including 130 units of equipment and 36 tanks. The fighting resulted in the almost complete destruction of the *72d (Tatar) Motorized Rifle Brigade* and the *155th Separate Marine Brigade*.⁴⁵

Consequences of the Second Stalemate

The second stalemate bought time for the NATO countries to rearm. It also allowed the process of NATO expansion to continue, with Finland admitted on 4 April 2023 to full membership and Sweden waiting in the wings. Their

abandonment of neutrality in response to Russian aggression was an ironic confirmation of the failure of Russian intelligence. With the exception of Russia's traditional allies Serbia and Belarus, all the former Soviet satellites and most of the newly independent former Soviet republics are fearful of being absorbed into the new Russian empire that Putin is promoting. These states have conspicuously avoided providing military support for Russia's invasion.⁴⁶

The stalemate has provided time for the Russians to learn from previous mistakes and to adapt their tactics to a situation in which Ukrainian defenders were inflicting disproportionate casualties on Russian attackers. Russian infantry are now assigned to four types of units: disposable, specialized, assault, and line infantry. Disposable infantry are used as cannon fodder to identify Ukrainian firing positions. These positions are then targeted by specialized units such as snipers, artillery spotters, or drone operators. If the Ukrainians withdraw or their position is deemed weak enough, then Russian assault units move in. Line infantry are used to hold ground and prepare defenses. Russian infantry now also use Orlan-10 drones to identify Ukrainian positions.⁴⁷

Russian electronic warfare has improved dramatically, with a focus on disrupting Ukrainian unmanned aerial vehicles (UAVs). As a result, Ukrainian forces are now losing about 10,000 UAVs per month. The speed of Russian artillery has been sharply accelerated through their use of drones, allowing artillery strikes within five minutes of target detection. The Russian Strelets system, using multiple feeds of information from ground-based sensors and spotters, although much slower, has greatly improved accuracy. As a result, artillery is currently Russia's most important tactical weapon system.⁴⁸

After heavy losses in frontal assaults, Russian tanks and other armor are now used primarily for artillery purposes rather than assaults.⁴⁹ Likewise, due to improved Ukrainian air defenses, the Russian Aerospace Forces are now used for launching missiles from across the border rather than direct assaults, with a considerable loss of accuracy.⁵⁰ In compensation, Russian air defenses also have improved, reducing the ability of Ukrainian fighter jets to attack. Russian engineers have been effective in designing and building defensive trenchworks, minefields, tank traps, and other obstacle belts.⁵¹

Russian command and control remain problematic. Communications between headquarters and forward command posts have been hardened and are more reliable, but brigade command posts remain 20 km behind front lines and only the battalion command posts are near the front. Commands downward from the battalion level tend to be sent by radio and are not encrypted. The entire system remains top-down oriented, with little communication across units at the brigade or battalion levels.⁵² The rigidity of this C2 system might not matter with a relatively stable front line, but it would be problematic if conditions change.

All the adaptations made by the Russian military during the second stalemate can be considered problematic if faced with a different set of tactical challenges, such as a Ukrainian breakthrough. Defensive barriers are useless

once bypassed. Ammunition supply networks could be cut off. Strelets systems would not be easily repositioned. Artillery and rocket launchers could be stranded. Antiquated tanks and armored vehicles could be repositioned but might not be a match for modern Western armor. Morale problems among ground forces could lead to panic. Lack of coordination among Russian units could prevent unified resistance. And, of course, the delays caused by centralized decision-making might lead to orders that are already bypassed by events.

Ukraine's officials have been outspoken in asking for more military equipment to upgrade their existing stocks and equip new forces. The fact sheets of the U.S. Department of Defense on security assistance to Ukraine, cited above, provide evidence of new weapons and equipment, although they may intentionally understate the extent of support. According to an article in *Forbes*, the Ukrainian Army is creating a dozen new brigades, including six mechanized brigades, an assault brigade, an air assault brigade, and several territorial brigades.⁵³ A Reuters article describes the Ministry of Internal Affairs as training eight "storm" brigades totaling 40,000 personnel for the counteroffensive, with names such as Border of Steel, Hurricane, Spartan, and Rage.⁵⁴

The usual estimates of Ukrainian military personnel cite a figure of about 200,000 active-duty military. In contrast, Ukrainian Minister of Defence Oleksii Reznikov was quoted in the *The Sunday Times* (London) as stating, "We have approximately 700,000 in the armed forces and when you add the national guard, police, border guard, we are around a million strong."⁵⁵

Determining the current strengths of the two militaries from public sources is difficult, given that most sources on the Russian military are outdated and do not take into account Russian losses, and given the silence about Ukrainian assets. However, substantial equipment losses led Russia to deploy T54 and T55 main battle tanks from the 1940s as early as 22 March 2023. On 30 May 2023, an independent Ukrainian source estimated Russian losses of military personnel at 220,000 of which 50,000 were killed.⁵⁶ By mid-August 2023, the official Ukrainian count of Russian losses had reached approximately 257,000 military personnel, 4,300 tanks, 8,400 armored combat vehicles, 5,200 artillery systems, 700 multiple rocket launch systems, 490 air defense systems, 315 fixed-wing airplanes, 316 helicopters, 4,300 tactical unmanned aircraft, and 7,650 vehicles and tankers.⁵⁷ Ukrainian losses are not available but are commonly estimated to be less than 20 percent of Russian losses. For example, the Dutch outlet Oryx reported that Ukraine had lost 558 tanks, about 14 percent of Russian tank losses. Oryx also reported that Ukraine had captured 545 Russian tanks.⁵⁸

Secretary of Defense Lloyd J. Austin III said on 21 April 2023 that the Ukraine Defense Contact Group, an alliance of 54 nations working to assist Kyiv against Russia's invasion, had delivered more than 230 tanks and 1,550 armored vehicles.⁵⁹ By early July 2023, the Kiel Institute reported that 471 tanks had been delivered to Ukraine by NATO countries, with another 286 scheduled to arrive.⁶⁰ These included German-made Leopard 1A5, Leopard 2,

British-made FV4034 Challenger 2 tanks, and Swedish Stridsvagn 122 tanks, all far superior to Russian models. Abrams M1A1 tanks are being refurbished by the United States and will be delivered this fall. Ukraine now has more tanks than Russia.⁶¹ Ukraine can field as many as 2,000 main battle tanks, of which at least 500 are superior to Russian models.

The United States has delivered at least two U.S. Patriot missile defense batteries, eight advanced surface-to-air missile systems, more than 230 howitzers, 38 HIMAR systems with advanced rockets, more than 4,000 BGM-71 TOW missiles, 4,000 Zuni aircraft rockets, 7,000 Hydra-70 aircraft rockets, 109 Bradley Fighting Vehicles, 400 armored personnel carriers, and vast quantities of other equipment and munitions.⁶² NATO allies have delivered French CAESAR self-propelled howitzers, German Flakpanzer Gepard anti-aircraft tanks, Swedish Combat Vehicle 90 infantry fighting vehicles, Finnish 120 KRH 92 heavy mortars, and Swedish Bofors L/70 anti-aircraft guns. Training of Ukrainian troops by NATO militaries has been enlarged and accelerated. On 19 May 2023, President Joseph R. Biden announced that the United States had approved training Ukrainian pilots on General Dynamics F-16 Fighting Falcon fighter jets. A day later, the UK, the Netherlands, Denmark, and Portugal announced plans to transfer F-16s to Ukraine.

Given that NATO countries have been providing Ukraine with new equipment and that the Russians have been drawing on their reserves of old equipment, the sizable Russian advantage in equipment at the start of the invasion has been considerably degraded. As mentioned, most sources conclude that Ukraine now has more main battle tanks than Russia. Both sides in the conflict have faced supply issues with ammunition, although the Russians have an advantage both in stores and production of munitions.

The present Ukrainian counteroffensive is the subject of considerable anxiety among Ukraine's allies, including the U.S. government. The headline of the lead story in the *New York Times* of 25 April 2023 sums up this anxiety: "Battle Looms, and for Kyiv, Immense Risks—'Everything Hinges' on Spring Offensive."⁶³ In part, this anxiety reflects the same pessimism among Western observers that preceded the initial Russian invasion of February 2022 and the first Ukrainian counteroffensive of September. The earlier pessimisms were based on an overestimation of Russian military capabilities. Whether that is also the case now is an open question.

Western overestimation of Russia's military is the counterpart of Russian overoptimism. The *New York Times* article cited above quotes a senior European official as observing that Russian minister of defense Sergei Shoigu in recent conversations "came across as supremely confident that Russia would eventually prevail."⁶⁴ Russian overoptimism has been fueled by inflated battle damage assessments. To give just one example of many, in June 2022, Lieutenant General Igor Konashenkov of the Russian Ministry of Defence reported that Russia had destroyed 207 Ukrainian aircraft, 132 helicopters, 2,043 artillery systems, and 3683 tanks and armored vehicles since the invasion began. However, at the start

of the war in February 2022, Ukraine had only 120 aircraft, 55 helicopters, 1,176 artillery systems, and 3,307 tanks and armored vehicles.⁶⁵

Counteroffensive Scenarios

By May 2023, Ukrainian forces were supporting various “shaping” operations to unsettle Russian strategy prior to the counteroffensive. These appear to have included a drone attack on the Kremlin on 3 May, a 22 May incursion into Russian Belgorod Oblast by two right-wing Russian partisan military units, a 24 May attack on the Russian intelligence ship *Ivan Khurs* by three sea drones, and various attacks on Russian command posts, ammunition stockpiles, and fuel depots. None of these attacks were decisive, but their intention was to embarrass the Kremlin, cause controversy, and undermine morale.⁶⁶

There are three scenarios for the coming Ukrainian counteroffensive. The highest value for Ukraine and the highest cost to Russia would be a breakthrough in the south from the Kherson region that resulted in the liberation of Crimea. To prevent this, the Russians have constructed formidable defenses and troop concentrations. The Dnieper estuary also would be difficult to cross under the best of circumstances. The Russian destruction of the Kakhovka dam on the Dnieper south of the Zaporizhzhia nuclear power plant, which flooded Kherson, made that temporarily impossible. However, as retired UK vice air marshal Sean M. Bell observed on 8 June 2023, Russia blew the dam prematurely.⁶⁷ The flood waters receded, the Dnieper returned to its normal banks, and warm summer weather dried the ground. A Ukrainian assault across the Dnieper can no longer be threatened by destruction of the dam.

The second scenario would be a Ukrainian breakthrough in the Zaporizhzhia region in the center of the current front, which would split Russian ground forces in half and enable the Ukrainian Army to strike either north, or south, or both. The Ukrainian Army has been conducting probing attacks in this region and has made minor progress.

The third scenario would be a breakthrough farther north in the Donbas region, where battles are currently raging around Vuhledar and Bakhmut. This would permit Ukrainian forces to attack south and east toward the Sea of Azov, also splitting Russian ground forces. Again, the Russians have made a substantial troop buildup in this area, while the Ukrainians are probing and have recovered some ground.

As noted earlier, the September 2022 Ukrainian counteroffensive began with a feint in the Kherson region, was followed by the successful Donbas counteroffensive, which in turn was followed by the real Kherson counteroffensive, also successful. The Ukrainians will again follow a deceptive strategy. This will probably include the deployment of decoy MLRS, artillery, and armored vehicle mockups and the conspicuous buildup of real or fake ground forces in all three regions. The initial assaults may also be feints.

The Ukrainians will rely on U.S. military signal intelligence and imagery/geospatial intelligence to advise them on Russian weak points, although they

will not inform the United States of their actual battle plans. A breakthrough by Ukrainian forces would be the prelude to an all-out effort to destroy the Kerch Bridge linking Crimea to Russia. This would create immediate problems for the resupply of Russian ground forces. Well aware of the striking power of Russian airplanes, the Ukrainians will deploy real Patriot missiles where they plan to attack and deploy decoy Patriots where they do not. If they can bring down enough Russian jets in the early days of their offensive, Russian pilots may again refuse to fly.

As previously noted, the Russians face a number of serious problems. Many of their infantry units have low morale and are poorly trained and equipped. They have a shortage of experienced field officers and a sclerotic command structure. Communication across battalions and brigades is poor. Russian satellite imaging remains mediocre, and its signals intelligence is weak. Russia has lost most of its modern armor and it now relies on models that are decades old. However, the Russians continue to have superiority in sheer manpower, artillery barrels, and munitions, as well as vast reserves of outdated equipment.

The mutiny by Prigozhin and his Wagner Group troops in late 28 June 2023 was another illustration of C2 problems. Prigozhin's widely disseminated criticisms of Minister of Defence Sergei Shoigu and Chief of the General Staff Valery Gerasimov cast doubt on their capacity as commanders. While it appears that Prigozhin's mutiny was ill-conceived, ultimately unsuccessful, and without immediate consequences for fighting along the front, it nonetheless was damaging to Putin's regime. President Alexander Lukashenko of Belarus, by negotiating Prigozhin's withdrawal, is the only figure involved to have enhanced his position.

The mid-July 2023 dismissal of Russian major general Ivan Popov, the major general commanding the *58th Combined Arms Army*, which has been engaged in heavy fighting in the Zaporizhzhia region, is further evidence of C2 issues. Popov's departing statement to his troops, which was unexpectedly circulated, said, "Our senior commander hit us from the rear, treacherously and vilely decapitating the army at the most difficult and tense moment."⁶⁸

Predictions

At some point, Ukraine will break through Russian lines and use their superiority in armor to strike toward the Sea of Azov, dividing Russian forces and cutting off Russian land access to Crimea. A reasonable prediction is that the first breakthrough will come in the Zaporizhzhia region, after a feint attack in the Donbas. If that breakthrough were successful in creating panic among Russian defenders, it would be followed by a second breakthrough either from Kherson or the Donbas.

The Russians believe they have at least achieved a stalemate, but there is a real possibility that they may be fully ejected from Ukrainian territory. If that happens, a consequence might be the ouster of Putin.⁶⁹ Alternatively, the Ukrainian counteroffensive might be relatively successful, but fail to retake all

the Ukrainian territory held by Russia. Thus, one aftermath of the counter-offensive might be a settlement, albeit one negotiated on terms far more favorable to Ukraine than it can expect at present.

Conclusion

The Russian invasion of Ukraine has not been a thorough failure in strictly military terms, given that Russia still controls a large swath of eastern Ukraine. However, given Putin's strategic objectives, it has been a disaster. The invasion has strengthened Ukrainian nationalism and discredited Ukrainian sympathizers of Russia. It energized NATO, led to the expansion of NATO membership, and doubled the length of the NATO frontier with Russia. It destroyed the myth of Russian military superiority. It ended Russian natural gas exports to the European Union, which had been carefully cultivated for decades. It led to the emigration of more than half a million of Russia's best and brightest young educated professionals. It caused Western countries to block exports of technology and strategic goods to Russia. It led to the confiscation of Russian assets abroad and the expulsion of Russian spy networks. Ironically, it made Putin an international pariah and Ukrainian president Zelensky an international celebrity.

The Russian failure occurred in all five of the command-and-control priorities identified by van Creveld. Russian decision thresholds were fixed as far up the hierarchy as possible, blocking freedom of action at the bottom of the military structure. Russian military organization made lower-level decisions even more impossible by not making lower-level units self-containing. There was no regular reporting and information-transmission system working both from the top-down and from the bottom-up. There was no active search for information by headquarters to supplement the information routinely provided. There was little or no effort to maintain an informal, as well as a formal, network of communications.

The Russian force structure proved to be far below expectations for reasons that have already been discussed, such as lack of maintenance, inadequate support, understaffed units, corruption, and low morale. Equipment and manpower losses were massive. This forced Russia to employ obsolete equipment and poorly trained troops. Russia's air force and navy maintained their dominance, but its land forces had been degraded.

Ukraine's command-and-control system reflected all the van Creveld priorities. Decision thresholds were set as far down the hierarchy as possible. Freedom of action at the bottom of the structure was encouraged. Lower-level units were as self-contained as possible. Reporting and information transmission was frequent and worked from the bottom-up as well as the top-down. Headquarters actively searched for supplemental information. New ideas were encouraged and implemented. There were informal communication networks operating at all levels of the hierarchy.

The Ukraine force structure exceeded all expectations, despite its numerical inferiority in equipment. Initial losses of armor and artillery were rapid-

ly replaced by captured Russian equipment. Ukraine's manpower losses were far less than Russian losses and were replaced by highly motivated and previously trained reserves. Troop morale remained high. Ukrainian technicians proved masterful at repair and maintenance of damaged equipment, as well as retrofitting old equipment to serve new purposes. Flows of equipment and ammunition from NATO countries began to ramp up, eventually including Western tanks, howitzers, MANPADs, and missile systems (such as Javelins and HIMARS) that were better than Russian models. By mid-summer of 2023, Ukraine's ground forces were superior to Russia's. However, Ukraine was unable to equal Russian air and sea forces.

As noted earlier, C2 systems and force structures reflect the priorities of the regime of which they are a part, as well as the culture of the society governed by that regime. Authoritarian regimes are by definition top-down systems in which dissent is either ignored or punished. In contrast, democratic regimes encourage debate and protect the right to disagree. Authoritarian regimes also tend to allow increasing levels of corruption in their societies, as a reward for compliance and as a potential excuse for punishment. Democratic regimes, while not immune from corruption, fear it because of its potential electoral costs.

As Putin's "special military operation" has dragged on, his regime has become increasingly authoritarian. Levels of dissent that were previously tolerated are now banned, not only in the media but even in private conversation. The only sources of information for most Russians are now the state media, especially television. Russia is again experiencing Soviet levels of punishment for dissent, as well as Soviet levels of corruption.

The contrast with Ukraine is again noteworthy. As the invasion proceeded, Ukraine has become more democratic, not less. Its various ministries are decentralized and able to act autonomously. Dissent is accepted. Debate is encouraged. The rationale for government decisions is made public. The regime has actively publicized and prosecuted cases of corruption. The popular demands for honesty in government and in elections, and for the removal of Russian influence, which motivated the Granite, Orange, and Maidan revolutions, seem to be increasingly realized.

The Russian war with Ukraine has therefore become in more than one way an exemplar of the contrast between democracy and dictatorship. It has been commonplace to observe that this is a war to prevent Western democracies from falling under Russian control. This is also a war that demonstrates that democracy is an asset on the battlefield for command and control and for the armed forces themselves, whereas an authoritarian dictatorship is counterproductive for both.

Endnotes

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