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# Russia's War in Ukraine: Military and Intelligence Aspects

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## Russia's War in Ukraine: Military and Intelligence Aspects

Russia's renewed invasion of neighboring Ukraine in February 2022 marked the start of Europe's deadliest armed conflict in decades. After a steady buildup of military forces along Ukraine's borders since 2021, Russia invaded Ukraine on February 24, 2022, with Russian ground forces attacking from multiple directions.

Initially, Russian forces made gains along all lines of advance. However, Russian forces ran into effective and likely unexpected levels of Ukrainian resistance from the invasion's outset. In addition, many analysts and officials assess that during this first stage of the war the Russian military performed poorly overall and was hindered by specific tactical choices, poor logistics, ineffective communications, and command-and-control issues. The Ukrainian military, while at a quantitative and qualitative disadvantage in personnel, equipment, and resources, has proven more resilient and adaptive than Russia expected.

Over the course of the first several weeks of the war, Russian President Vladimir Putin and the Russian military had to adjust to various setbacks and other developments on the ground. With many of its advances stalled, in late March 2022, Russian defense officials announced that Russian military operations would focus on eastern Ukraine, including the regions of Donetsk and Luhansk (collectively known as the Donbas, where Russian-led separatists have been fighting since 2014) and that Russia would withdraw its forces around Kyiv and Chernihiv in the north.

Since refocusing on the Donbas region of Ukraine, Russia has gained territory in the Donetsk and Luhansk regions. President Putin recalibrated his stated war aims to emphasize helping "the people in the Donbas, who feel their unbreakable bond with Russia." It is unclear whether Russia has the necessary forces to achieve its recalibrated objectives, considering losses of personnel and equipment. However, short-term strategies to increase recruitment are unlikely to resolve personnel challenges and likely will undermine Russian capability going forward.

As Russia suffers from a lack of personnel and supply challenges, momentum may be shifting to Ukrainian Armed Forces (UAF) counterattacks. The UAF continues to train and deploy personnel to exploit Russian weaknesses, including the use of advanced Western systems to target key Russian logistics, infrastructure, and command centers. How the UAF decides to deploy limited resources and personnel likely will play a crucial role in the conflict's evolution.

After unprecedented Ukrainian success retaking territory in Ukraine's northeastern region of Kharkiv in September 2022, many observers believe momentum has swung in Ukraine's favor for the immediate future. The UAF has demonstrated an ability to deploy forces effectively to conduct offensive operations, and the Russian military continues to suffer from endemic and structural failings. Recent Russian losses in personnel, equipment, and morale likely will limit its operational capability for the immediate future.

Congress is poised to continue to track these developments closely, especially as it considers U.S. and international efforts to support Ukraine militarily and respond to events on the ground. For more, see CRS Report R47054, *Russia's 2022 Invasion of Ukraine: Related CRS Products*.

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## Introduction

Russia's renewed invasion of neighboring Ukraine in February 2022 marked the start of Europe's deadliest armed conflict in decades. It also prompted intensive international efforts to respond to the war. Multiple Members of Congress have engaged with U.S. and international measures, including by supporting sanctions against Russia, providing assistance to Ukraine, and bolstering support to neighboring NATO countries. The immediate and long-term implications of the war are likely to be far-reaching, affecting numerous policy dimensions of concern to Congress.

This report addresses Russian and Ukrainian military and intelligence aspects of the war, which are of interest to many in Congress as Congress considers various legislative measures and conducts oversight of U.S. policy. It provides an overview of the conflict, including the run-up to the invasion, the performance and conduct of the Russian and Ukrainian militaries, possible Russian intentions, and recent developments on the ground. For other CRS products related to Russia's invasion of Ukraine, including U.S. policy dimensions, see CRS Report R47054, *Russia's 2022 Invasion of Ukraine: Related CRS Products*.

## Prelude to Invasion: Military Buildup and Force Posture

In mid-October 2021, social media and news outlets began to report significant movement by Russian military forces, with limited Russian transparency, on or near the Ukrainian border and within Ukraine's occupied Crimea region. The buildup came after a sustained increase in Russia's permanent force posture on the Ukrainian border.<sup>1</sup> Since 2014, Russia has created two new Combined Arms Armies (CAAs), one in the Western Military District (20<sup>th</sup> CAA, headquartered in Voronezh) and one in the Southern Military District (8<sup>th</sup> CAA, headquartered in Rostov-on-Don and Novocherkassk) bordering Ukraine. Russia created these CAAs to oversee, coordinate, and manage command and control of units transported to the border. The 8<sup>th</sup> CAA also reportedly commands the separatist units in two Russia-controlled areas in eastern Ukraine (the so-called Donetsk and Luhansk People's Republics, or DNR/LNR).

Throughout December 2021, Russia continued to build up its forces in the region. Prior to the February 2022 invasion, Russia had mobilized between 150,000 and 190,000 personnel and 120 Battalion Tactical Groups (BTGs) on its border with Ukraine,<sup>2</sup> in Belarus, and in Ukraine's occupied Crimea region, according to U.S. government estimates.<sup>3</sup>

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<sup>1</sup> Michael Kofman, "Putin's Wager in Russia's Standoff with the West," *War on the Rocks*, January 24, 2022.

<sup>2</sup> Battalion Tactical Groups (BTGs) are ad hoc, task-specific formations designed to operate autonomously as combined arms formations. BTGs are built around infantry and armor units, with supporting air defense, artillery, and other units. BTGs comprise the higher readiness units of the Russian military and are staffed by professional (also known as contract) personnel. Each Russian regiment or brigade is intended to generate two BTGs. In August 2021, Russian Defense Minister Sergei Shoigu stated the Russian military had 168 BTGs. Lester W. Grau and Charles K. Bartles, *The Russian Way of War: Force Structure, Tactics and Modernization of the Russian Ground Forces* (Leavenworth, KS: Foreign Military Studies Office, 2016), pp. 34-40; Tass, "Russian Army Operates Around 170 Battalion Tactical Groups—Defense Chief," August 20, 2021; Sebastien Roblin, "Russian Battalion Groups Are Assembling Around Ukraine. What Is Putin Up To?" *19FortyFive*, December 17, 2021; Conflict Intelligence Team, "'Almost All Contract Soldiers Are Going to the Border:' Comments on Social Media Shed Light on Russian Troop Transfer," January 19, 2022.

<sup>3</sup> U.S. Mission to the Organization for Security and Cooperation in Europe, "U.S. Statement for the Vienna Document Joint PC-FSC Chapter III Meeting," February 12, 2022; Department of Defense, "Senior Defense Official Holds a Background Briefing," March 3, 2022, at <https://www.defense.gov/News/Transcripts/Transcript/Article/2954139/senior-defense-official-holds-a-background-briefing/>.

During this buildup, analysts and observers documented the movement of Russian units from across Russia toward Ukraine.<sup>4</sup> The 41<sup>st</sup> and 2<sup>nd</sup> CAAs moved from the Central Military District into Belarus and to Ukraine's northeast border with Russia; the 1<sup>st</sup> Guards Tank Army and the 6<sup>th</sup> CAA moved from the Western Military District to Ukraine's eastern border with Russia; the 49<sup>th</sup> and 58<sup>th</sup> CAAs moved from the Southern Military District to occupied Crimea and to Ukraine's southeast border with Russia; and the 35<sup>th</sup> and 36<sup>th</sup> CAAs (and elements of the 29<sup>th</sup> and 5<sup>th</sup> CAAs) moved from the Eastern Military District to Belarus.<sup>5</sup> In addition, Russia deployed elite units—such as Russian Airborne (VDV), Naval Infantry, and *spetsnaz* (elite light infantry units used for reconnaissance and direct action)—around Ukraine's borders.<sup>6</sup>

These forces included the full range of Russian military capabilities, including artillery and support systems. The ground forces included air defense, artillery and rocket artillery, long-range precision missile systems (Iskander-M short-range ballistic missile [SRBM] systems), electronic warfare, support, and logistics units.<sup>7</sup> Additionally, by February 2022, Russia had mobilized large numbers of Aerospace Forces (VKS) fighter, fighter-bomber, and helicopter squadrons, which some observers believed would play a key role in the initial invasion.<sup>8</sup>

On February 21, 2022, Russian President Vladimir Putin announced that Russia would recognize the independence of the DNR and LNR. Russian recognition appeared to include the entire regions of Donetsk and Luhansk (collectively known as the Donbas), most of which had remained under Ukrainian control since Russia's first invasion of Ukraine in 2014, and not just territory controlled by DNR/LNR.

Shortly after February 21, Putin announced Russia would send “peacekeepers” into the DNR/LNR, claiming they were to defend against Ukrainian plans for invasion and sabotage attempts. These Russian charges had no basis in fact. Despite denials from Russian officials, Russia had spent months amassing a significant portion of its military capabilities around Ukraine.<sup>9</sup>

On February 24—following months of warning and concern from the Biden Administration, European allies, NATO, and some Members of Congress—Russia invaded Ukraine.<sup>10</sup> Russia claimed its invasion was to conduct a “special military operation” to protect the civilian

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<sup>4</sup> For more on the Russian military buildup, see CRS Insight IN11806, *Russian Military Buildup Along the Ukrainian Border*, by Andrew S. Bowen.

<sup>5</sup> Units from all 11 Combined Arms Armies (CAAs) and one Tank Army (as well as the 14<sup>th</sup> and 22<sup>nd</sup> Army Corps) were present on the borders of Ukraine in the run-up to the invasion. For more, see Konrad Muzyka, “Tracking Russian Deployments near Ukraine—Autumn-Winter 2021-22,” Rochan Consulting, November 15, 2021; Dmitry Gorenburg and Michael Kofman, “Here's What We Know About Russia's Military Buildup near Ukraine,” *Washington Post*, January 15, 2022.

<sup>6</sup> VDV include elite paratroop and air assault forces. VDV act as Russia's elite rapid response forces. For more on Russian military capabilities and structure see CRS In Focus IF11589, *Russian Armed Forces: Capabilities*, by Andrew S. Bowen; Christian Haimet, “Russian Troop Buildup Continues on Ukrainian Borders,” *Janes IHS*, February 21, 2022.

<sup>7</sup> Michael R. Gordon and Max Rust, “Russian Buildup near Ukraine Features Potent Weapons Systems, Well-Trained Troops,” *Wall Street Journal*, February 14, 2022.

<sup>8</sup> Russia's Aerospace Forces include the air force, air defense, and space defenses forces. Russia merged these organizations into the VKS in 2015. Julian E. Barnes, Michael Crowley, and Eric Schmitt, “Russia Positioning Helicopters, in Possible Sign of Ukraine Plans,” *New York Times*, January 10, 2021; Tass, “Russia's Su-35S Fighter Jets Deployed in Belarus for Upcoming Drills-Ministry,” January 26, 2021.

<sup>9</sup> Tara Copp, “They Could Go at Any Hour Now; U.S. Official Warns of Larger Russian Invasion of Ukraine,” *Defense One*, February 23, 2022.

<sup>10</sup> Shane Harris et al., “Road to War: U.S. Struggled to Convince Allies, and Zelensky, of Risk of Invasion,” *Washington Post*, August 16, 2022.

population and to “demilitarize” and “de-Nazify” Ukraine; many observers understood the latter term as a false pretext for overthrowing the democratically elected Ukrainian government.<sup>11</sup>

**Figure I. Ukraine**



**Source:** Congressional Research Service.

## Initial Invasion

On February 24, 2022, hours after Putin’s televised address announcing a “special military operation,” Russia invaded Ukraine with an air and missile attack, using precision-guided munitions (PGMs) against key targets. These early targets included logistics centers, naval installations, command and control centers, air defenses, and critical infrastructure.<sup>12</sup> In the opening stages of the attack, the Pentagon assessed that Russia launched over 100 SRBMs, including Iskander-M SRBMs, and air- and sea-launched cruise missiles.<sup>13</sup>

Some observers believe Russia’s initial strategy was (or was intended) to achieve air superiority, degrade Ukrainian air defenses, and undermine the Ukrainian military’s ability to coordinate defenses and counterattacks. This initial bombardment, however, was more limited in duration

<sup>11</sup> Audrius Rickus, “Baseless Claims of ‘Denazification’ Have Underscored Russian Aggression Since World War II,” *Washington Post*, March 9, 2022.

<sup>12</sup> Isabelle Khurshudyan et al., “As West Unleashes Sanctions, Russian Military Pushes Toward Kyiv,” *Washington Post*, February 24, 2022; Alex Kokcharov and John Raines, “Russia Begins ‘Blitzkrieg’ Invasion of Ukraine with Objective of Quick Victory; Intensive Fighting Likely Across Country,” *Janes IHS*, February 25, 2022.

<sup>13</sup> RFE/RL, “Zelenskiy Says Ukraine Has Suffered ‘Serious Losses’ After Russian Air Strikes Pound Dozens of Targets,” February 24, 2022; Thomas Newdick, “These Are the Standoff Missiles Russia Used to Open Its War Against Ukraine,” *The Drive*, February 24, 2022.

and scale than some analysts expected.<sup>14</sup> In particular, analysts noted that the Russian air forces (VKS) failed to conduct effective suppression of enemy air defense missions, either because of an unwillingness to act or because of a lack of capability. Russia's failure to degrade the Ukrainian air force and air defenses, as well as Ukrainian command and control capabilities, allowed the Ukrainian military to respond more successfully to Russia's invasion than most observers expected, both at the outset and subsequently.<sup>15</sup>

After the air assault, Russian ground forces attacked from multiple directions: north from occupied Crimea in the direction of Kherson; limited incursions west from DNR/LNR; from Russia's Belgorod and Kursk toward Ukraine's cities of Kharkiv and Sumy; and a strong two-pronged thrust toward the capital of Kyiv from Belarus.<sup>16</sup> The first phase of the war was subsequently defined by rapid maneuver operations to outflank and seize key objectives.

Kyiv was an initial key Russian military target.<sup>17</sup> Led by elite, but comparatively lightly equipped, VDV, *spetsnaz*, and reconnaissance units, Russian forces advanced along the western side of Kyiv and reached the outskirts of the city within days.<sup>18</sup> In the early hours of the invasion, Russian VDV units conducted a risky air assault to seize the Antonov International Airport in Hostomel, on the outskirts of Kyiv.<sup>19</sup> Analysts have argued that the Russian attack to seize the airport was intended to allow the rapid introduction of follow-on VDV units to surround and seize the Ukrainian capital.<sup>20</sup> Ukrainian forces, however, responded and repulsed the attack, reportedly causing heavy Russian casualties and shooting down several helicopters.<sup>21</sup>

Initially, Russian forces made gains along all lines of advance.<sup>22</sup> Russia made the most progress in the south from occupied Crimea, reportedly imposing significant casualties on Ukrainian forces in the region. Russian forces advanced quickly toward Kherson (which they captured on March 2, 2022) and eventually turned toward the Ukrainian coastal city of Mariupol.<sup>23</sup> Analysts argue that Russian advances in the south were successful in part because they involved some of Russia's most modern and professional units from the Southern Military District and had better logistical

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<sup>14</sup> Michael Kofman and Jeffrey Edmonds, "Russia's Shock and Awe: Moscow's Use of Overwhelming Force Against Ukraine," *Foreign Affairs*, February 22, 2022.

<sup>15</sup> Some analysts speculate that this result was due to Ukraine's decision, possibly influenced by U.S. and Western intelligence, to activate and disperse most of its units from their permanent bases in preparation for a possible Russian invasion. Warren P. Strobel and Michael R. Gordon, "Biden Administration Altered Rules for Sharing Intelligence with Ukraine," *Wall Street Journal*, March 8, 2022.

<sup>16</sup> Nicholas Fiorenza, Huw Williams, and Thomas Bullock, "Ukraine Conflict: Russia Launches Multipronged Attack on Ukraine," *Janes IHS*, February 24, 2022.

<sup>17</sup> Yuliya Talmazan et al., "Russian Troops Advance Within 20 Miles of Ukraine Capital, Pentagon Says," NBC News, February 24, 2022; Katie Bo Lillis, Natasha Bertrand, and Barbara Starr, "U.S. Officials Fear the Worst Is Yet to Come for Kyiv," CNN, March 1, 2022.

<sup>18</sup> Mark Galeotti, "Russian Airborne Forces Retool for an Expanded Role," *Janes IHS*, October 25, 2021.

<sup>19</sup> Haley Williams, Ainara Tiefenthaler, and Masha Froliak, "Russian Helicopters Attack an Airport Near Kyiv," *New York Times*, February 24, 2022.

<sup>20</sup> Mason Clark, George Barros, and Kateryna Stepanenko, "Russian Offensive Campaign Assessment," Institute for the Study of War, February 25, 2022.

<sup>21</sup> James Marson, "Putin Thought Ukraine Would Fall Quickly. An Airport Battle Proved Him Wrong," *Wall Street Journal*, March 3, 2022.

<sup>22</sup> CRS Insight IN11872, *Russia's Invasion of Ukraine: Military and Intelligence Issues and Aspects*, by Andrew S. Bowen.

<sup>23</sup> Michael Schwartz and Richard Perez-Pena, "First Ukraine City Falls as Russia Strikes More Civilian Targets," *New York Times*, March 2, 2022.

support than other units, due to rail access from Crimea.<sup>24</sup> In other regions, Russia made slow but initially steady progress, seeking to encircle rather than capture major urban centers such as Sumy, Kharkiv, and Chernihiv.<sup>25</sup> Logistics issues and other factors soon stalled most Russian advances.<sup>26</sup>

Russian forces ran into effective Ukrainian resistance from the invasion's outset.<sup>27</sup> Despite not announcing a general mobilization until February 25, after the invasion began, the Ukrainian military immediately hindered, deflected, and imposed costs on Russian forces in personnel and equipment. The Ukrainian military appeared to exploit numerous tactical and operational deficiencies of Russian forces (which were overextended in many cases), allowing the Ukrainian military to conduct ambushes and counterattacks.

Russian units operated with little tactical sophistication and not as combined arms formations, leaving units exposed and unprepared for Ukrainian resistance, according to observers and analysts.<sup>28</sup> Overall, training and professionalism of Russian units appeared much lower than expected, even among supposedly "elite" units. For example, elite but relatively lightly equipped units (such as VDV, *spetsnaz*, and reconnaissance units) conducted operations they were not trained or equipped to conduct, such as advancing into urban areas, where they appeared to suffer heavy casualties due to the lack of heavy armored support.<sup>29</sup>

Additionally, armored units advanced without infantry support in numerous instances.<sup>30</sup> In another example, Russian National Guard (*Rosgvardiya*) units reportedly advanced alongside, and sometimes in front of, Russian military forces, apparently with little coordination.<sup>31</sup> Contributing to the confusion, observers documented Russian units operating without encrypted communications, often using civilian equipment to communicate.<sup>32</sup>

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<sup>24</sup> Michael Kofman and Ryan Evans, "Into the Third Week: Will Russian Forces Need to Pause?," *War on the Rocks*, March 14, 2022.

<sup>25</sup> Richard Perez-Pena, "Russia Batters and Encircles Ukrainian Cities, as Diplomacy Falter," *New York Times*, March 10, 2022.

<sup>26</sup> Bonnie Berkowitz and Artur Galocha, "Why Russia's Military Is Bugged Down by Logistics in Ukraine," *Washington Post*, March 30, 2022.

<sup>27</sup> Yaroslav Trofimov, "Ukrainian Forces Repel Russian Attack on Kyiv, Prepare for Next Assault," *Wall Street Journal*, February 26, 2022.

<sup>28</sup> Liz Sly and Dan Lamothe, "The War in Ukraine Isn't Working Out the Way Russia Intended," *Washington Post*, February 27, 2022; Jack Watling, "Just How Tall Are Russian Soldiers?" RUSI, March 11, 2022; Mark Galeotti, "Echoes of Afghanistan in Russian Soldiers' Poor Discipline in Ukraine," *Moscow Times*, April 1, 2022.

<sup>29</sup> Observers noted these units suffered particularly high casualties, which undermined Russian military effectiveness due to their perceived high professionalism and ratio of contract/professional servicemen. James Beardsworth and Irina Shcherbakova, "Are There Even Any Left? 100 Days of War in Ukraine for an Elite Russian Unit," *Moscow Times*, June 4, 2022.

<sup>30</sup> Serguy Bobok and Frankie Taggart, "Russian Airborne Troops Land in Ukraine's Second City Kharkiv," *Moscow Times*, March 2, 2022; James Marson and Daniel Michaels, "Ukraine's Troops Fight War of Ambush and Skirmish Against Russian Invaders," *Wall Street Journal*, March 22, 2022; Mark Urban, "The Heavy Losses of an Elite Russian Regiment in Ukraine," BBC, April 2, 2022.

<sup>31</sup> *Rosgvardiya* units are key internal security troops, neither equipped nor trained for conventional combat and likely sent into Ukraine early in the invasion to prevent protests against any new pro-Russian Ukrainian leadership. See CRS In Focus IF11647, *Russian Law Enforcement and Internal Security Agencies*, by Andrew S. Bowen; Vladimir Sevrinovsky, "Refusing to Kill People Isn't a Crime: The Russian National Guard Is Firing Officers Who Refuse to Join the War in Ukraine," *Meduza*, March 29, 2022; Tim Ripley, "Russian National Guard Deployed Across Ukraine," *Janes IHS*, April 4, 2022.

<sup>32</sup> Sergei Dobrynin and Mark Krutov, "Communication Breakdown: How Russia's Invasion of Ukraine Bugged Down," RFE/RL, March 19, 2022; Jack Detsch and Amy MacKinnon, "The Ukrainians Are Listening: Russia's



Despite having significant artillery, rocket artillery, and air capabilities, Russian forces appeared restrained in their use of these systems and capabilities during the initial invasion.<sup>33</sup> Some analysts speculated this occurred because the Russian military underestimated the level of Ukrainian resistance and that it may have indicated an initial hesitation to inflict collateral damage on civilian targets that would be crucial for supporting a Russian occupation.<sup>34</sup>

## Analysis of Russia and Ukraine's Initial Military Performance

### Russian Performance

Despite Russian forces launching heavy attacks and advancing across Ukraine, the Russian military overall performed poorly during the initial phases of the invasion, surprising most observers and analysts (including Ukrainian military and political officials).<sup>35</sup> Reports indicated that Russia's military and political leadership appeared surprised by the military's lack of progress and the level of resistance from Ukrainian forces.<sup>36</sup> Some Russian forces invaded with apparently little preparation. Captured Russian soldiers and intercepted communications revealed that many units were unaware they were to invade Ukraine until shortly beforehand.<sup>37</sup> As Director of National Intelligence Avril Haines stated to Congress in early March 2022, "We assess Moscow underestimated the strength of Ukraine's resistance and the degree of internal military challenges we are observing, which include an ill-constructed plan, morale issues and considerable logistical issues."<sup>38</sup>

In particular, many analysts were surprised at the apparently limited role the VKS played at the outset of the invasion, beyond the initial bombardment.<sup>39</sup> Russian ground forces appeared to have limited air cover, with Russia primarily relying on Iskander-M SRBMs or air-launched cruise missiles launched from VKS bombers inside Belarus and Russia, especially to target Ukrainian infrastructure and other targets in western Ukraine (see **Figure 2**).<sup>40</sup> The Ukrainian air force

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Military Radios Are Getting Owned," *Foreign Policy*, March 22, 2022; Alex Horton and Shane Harris, "Russian Troops' Tendency to Talk on Unsecured Lines Is Proving Costly," *Washington Post*, March 27, 2022; James Rands, "Doctrine, Tactics, and Technical Issues Underpin Russian Forces' Communication Woes," *Janes IHS*, March 29, 2022.

<sup>33</sup> Thomas Newdick, "A Rundown of Russia's Arsenal of Artillery That Could Wreak Havoc on Ukraine's Cities," *The Drive*, March 4, 2022.

<sup>34</sup> Helene Cooper and Eric Schmitt, "Russian's Assault in Ukraine Slows After an Aggressive Start," *New York Times*, February 25, 2022.

<sup>35</sup> Robert Dalsjo, Michael Jonsson, and Johan Norberg, "A Brutal Examination: Russian Military Capability in Light of the Ukraine War," *Survival* 64, no. 3 (2022), pp. 7-28; Sam Jones, John Paul Rathbone, and Demetri Sevastopulo, "A Serious Failure': Scale of Russian Military Blunders Becomes Clear," *Financial Times*, March 12, 2022; Paul Sonne et al., "Battle for Kyiv: Ukrainian Valor, Russian Blunders Combined to Save the Capital," *Washington Post*, August 24, 2022.

<sup>36</sup> Department of Defense, "Ukrainian Resistance, Logistics Nightmares Plague Russian Invaders," press release, March 1, 2022; Michael Schwartz, "Proud Band of Ukrainian Troops Holds Russian Assault at Bay—for Now," *New York Times*, March 6, 2022.

<sup>37</sup> Luke Harding, "Demoralized Russian Soldiers Tell of Anger at Being 'Duped' into War," *Guardian*, March 4, 2022; Helene Cooper, Eric Schmitt, and Julian E. Barnes, "As Russia's Military Stumbles, Its Adversaries Take Note," *New York Times*, March 7, 2022.

<sup>38</sup> U.S. Congress, House Permanent Select Committee on Intelligence, *Worldwide Threats*, 117<sup>th</sup> Cong., March 8, 2022.

<sup>39</sup> Justin Bronk, "The Mysterious Case of the Missing Russian Air Force," RUSI, February 28, 2022; Phil Stewart and Idrees Ali, "What Happened to Russia's Air Force? U.S. Officials, Experts Stumped," Reuters, March 1, 2022.

<sup>40</sup> Reuters, "Ukrainian Official Says Missiles Launched from Belarus to Ukraine," February 27, 2022; Reuters, "Ukraine Says It Downed Missile Launched by Russian Bomber Flying over Belarus," February 27, 2022; Kyrylo

continued to operate over western Ukraine, and its air defenses shot down Russian aircraft and challenged Russian air superiority.<sup>41</sup>

**Figure 2. Ukraine Airfields and Key Infrastructure**



**Sources:** Congressional Research Service, *Janes IHS*.

The Russian military's logistics issues limited its offensives in almost all sectors.<sup>42</sup> Russian units appeared poorly supplied (for example, some captured Russian food reportedly was expired and inedible) and seemed to advance past available logistics support.<sup>43</sup> Available logistics appeared too limited to sustain multiple simultaneous offensives.<sup>44</sup> Moreover, the Ukrainian military appeared to prioritize ambushing Russian supply columns, exacerbating Russian logistics issues.<sup>45</sup>

In addition, the Russian military appears to have challenges with command and control, both at the tactical and the operational levels. First, reports indicate there was no overall Russian

Ovsyaniy, "A Source of Death: Air Bases in Russia, Belarus, and Crimea Used in Moscow's Assault on Ukraine," RFE/RL, March 24, 2022.

<sup>41</sup> Media reports have documented the loss of Su-25 (SM/SM3), Su-30SM, and Su-34 fighters and fighter-bombers, as well as numerous Mi-8, Mi-24, Mi-35, Mi-28N, and Ka-52 helicopters. Jack Siminski, "What the Air Campaign in Ukraine Tells Us About the Current State of the Russian Air Force," *Aviationist*, March 4, 2022.

<sup>42</sup> Alex Vershinin, "Feeding the Bear: A Closer Look at Russian Army Logistics and the Fait Accompli," *War on the Rocks*, November 23, 2021; Ryan Baker, "The Russian Invasion Has Some Logistical Problems. That Doesn't Mean It's Doomed," *Washington Post*, February 28, 2022.

<sup>43</sup> Emily Ferris, "Russia's Military Has a Railroad Problem," *Foreign Policy*, April 21, 2022

<sup>44</sup> Polina Beliakova, "Russian Military's Corruption Quagmire," *Politico.eu*, March 8, 2022; Bill Chappell, "Russia's 40-Mile Convoy Has Stalled on Its Way to Kyiv, a U.S. Official Says," NPR, March 1, 2022.

<sup>45</sup> Julian Borger, "The Drone Operators Who Halted Russian Convoy Headed for Kyiv," *Guardian*, March 28, 2022.

operational commander.<sup>46</sup> As a result, it appears each CAA and axis of advance was operating independently, with questionable levels of coordination.<sup>47</sup> Second, Russian commanders appeared unprepared for many aspects of the invasion, as evidenced by a lack of coordination among branches (such as VKS and Rosgvardiya) and between units.<sup>48</sup> Reporting indicates that communication problems compounded these command and control issues, contributing to higher-ranking officers moving closer to the frontlines and contributing to casualties among these officers.<sup>49</sup>

## Ukrainian Performance

Many observers and analysts have been surprised and impressed by Ukraine's military resistance. Despite having a smaller military than Russia, and a quantitative and qualitative disadvantage in equipment and resources, the Ukrainian Armed Forces (UAF) have proven resilient and adaptive.<sup>50</sup> The UAF has demonstrated greater flexibility than the Russian military and a willingness to adapt to changing conditions to exploit Russian missteps and weaknesses.<sup>51</sup> The UAF also has benefited from high levels of motivation and recruitment, as well as significant Western security assistance and training.<sup>52</sup>

Initially, the UAF traded space to draw Russian forces in, as Russian units advanced without sufficient convoy protection and logistical support. As Russian units advanced, Ukraine emphasized guerrilla strategies, such as hit and run or ambushes, to attack supply lines.<sup>53</sup> Ukraine also isolated Russian units in an effort to tire and deplete Russian forces. Ukraine leveraged key capabilities (such as the TB2 unmanned combat aerial vehicle for strikes and targeting), security assistance, and artillery to stymie Russian advances and undermine Russian advantages, such as

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<sup>46</sup> Katie Bo Lillis and Zachary Cohen, "Who Is Russia's Top Field Commander in Ukraine? The U.S. Isn't Sure." CNN, March 22, 2022; Helene Cooper and Eric Schmitt, "Russia's War Lacks a Battlefield Commander, U.S. Officials Say," *New York Times*, March 31, 2022.

<sup>47</sup> Reportedly, each CAA brought and set up its own headquarters structure rather than integrating under the command of the Western or Southern Military Districts, as most analysts expected. Tim Ripley, "Russian Military Adapts Command and Control for Ukraine Operations," *Janes IHS*, March 7, 2022.

<sup>48</sup> Sam Cranny-Evans and Thomas Withington, "Russian Comms in Ukraine: A World of Hertz," RUSI, March 9, 2022.

<sup>49</sup> Compared with Western militaries, Russian commanders have smaller staffs to assist command and generally are closer to the frontlines, which makes casualties among Russian officers more likely. Many analysts, however, have been surprised by the number and ranks of officers killed. The high number likely indicates that problems forced Russian commanders to accept greater levels of exposure. Jack Detsch, "'Winging It': Russia Is Getting Its Generals Killed on the Front Lines," *Foreign Policy*, March 21, 2022; Alex Horton and Shane Harris, "Russian Troops' Tendency to Talk on Unsecured Lines Is Proving Costly," *Washington Post*, March 27, 2022.

<sup>50</sup> CRS In Focus IF11862, *Ukrainian Armed Forces*, by Andrew S. Bowen; CRS In Focus IF12150, *Ukrainian Military Performance and Outlook*, by Andrew S. Bowen.

<sup>51</sup> Nabih Bulos, "Ukraine's Army, Vastly Outgunned, Inflicts Losses on More Powerful Russian Forces," *Los Angeles Times*, March 9, 2022; Tim Judah, "How Kyiv was Saved by Ukrainian Ingenuity as Well as Russian Blunders," *Financial Times*, April 10, 2022.

<sup>52</sup> <sup>52</sup> Brett Forrest and Alan Cullison, "How Ukraine Blunted the Russian Advance," *Wall Street Journal*, March 6, 2022; CRS In Focus IF12040, *U.S. Security Assistance to Ukraine*, by Christina L. Arabia, Andrew S. Bowen, and Cory Welt. In addition to the significant levels of security assistance, Western training for the Ukrainian military, specifically Ukrainian special operations forces, has played a key role in defending against Russia's invasion. For more, see Andrew White, "Ukraine Conflict: Ukrainian Special Operations Forces in Focus," *Janes IHS*, March 4, 2022.

<sup>53</sup> John Paul Rathbone, Roman Olearchyk, and Henry Foy, "Ukraine Uses Guerrilla Counter-Attacks to Take Fight to Russia," *Financial Times*, April 1, 2022.

airpower.<sup>54</sup> Easily deployable weapons systems (including foreign and domestic anti-tank and anti-air systems) were effective at imposing losses in Russian personnel and equipment.<sup>55</sup> The UAF also appears to have adopted a diffuse command structure, allowing each operational command to coordinate and initiate operations according to local conditions.

## Possible Russian Intentions and Expectations

Observers continue to speculate about Russia's initial objectives and plans in launching its offensive against Ukraine. Many analysts believe Russia's expectations were based on faulty assumptions that undermined Russia's conduct of the invasion.<sup>56</sup> If this is the case, these incorrect political assumptions possibly determined and imposed unrealistic objectives and timetables onto the Russian military. This in turn may partially, but not entirely, explain the Russian military's unpreparedness and poor performance.<sup>57</sup>

On February 25, 2022, the Pentagon assessed that Russia had committed one-third of its available troops into Ukraine. U.S. officials and some analysts believe Russia's initial operation was to "decapitate" the Ukrainian government and rely on fast-moving, elite units to quickly seize key junctures, similar to Russia's seizure of Ukraine's Crimea region in 2014.<sup>58</sup> Some analysts speculate that Russia may have based such a strategy on assumptions that the Ukrainian military would be ineffective and the Ukrainian political leadership could be easily replaced.<sup>59</sup> As Central Intelligence Agency Director William J. Burns testified before the House Intelligence Committee in March 2022, Putin "was confident that he had modernized his military and they were capable of a quick, decisive victory at minimal cost. He's been proven wrong on every count. Those assumptions have proven to be profoundly flawed over the last 12 days of conflict."<sup>60</sup>

Analysts speculate that Putin and other Russian policymakers may have held these faulty assumptions in part due to poor intelligence and a willingness by subordinates to convey only positive information to Russian decisionmakers.<sup>61</sup> Recent media reporting indicates the FSB

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<sup>54</sup> Dave Phillips and Eric Schmitt, "Over Ukraine, Lumbering Turkish-Made Drones Are an Ominous Sign for Russia," *New York Times*, March 11, 2022.

<sup>55</sup> Henry Foy and Ian Bott, "How Is Ukraine Using Western Weapons to Exploit Russian Weaknesses?" *Financial Times*, March 16, 2022.

<sup>56</sup> Zach Beauchamp, "Why the First Few Days of War in Ukraine Went Badly for Russia," *Vox*, February 28, 2022; Jack Detsch and Amy MacKinnon, "How Putin Bungled His Invasion of Ukraine," *Foreign Policy*, March 18, 2022; Jack Watling and Nick Reynolds, "Operation Z: The Death Throes of an Imperial Delusion," *RUSI*, April 22, 2022; Mark Galeotti, "The Interfering Tsar: Why Putin Is Ukraine's Best Hope of Victory," *The Times*, April 23, 2022.

<sup>57</sup> Michael Kofman and Ryan Evans, "11 Days In: Russia's Invasion Stumbles Forward," *War on the Rocks*, March 7, 2022; Isaac Chotiner, "The Russian Military's Debacle in Ukraine," *New Yorker*, March 11, 2022.

<sup>58</sup> Helene Cooper, "Pentagon Gives a Grim Assessment of the First Stages of the Russian Invasion," *New York Times*, February 24, 2022.

<sup>59</sup> Nick Reynolds and Jack Whatling, "The Plot to Destroy Ukraine," *RUSI*, February 15, 2022; *Economist*, "Russia's Army Is In a Woeful State," April 20, 2022.

<sup>60</sup> U.S. Congress, House Permanent Select Committee on Intelligence, *Worldwide Threats*, 117<sup>th</sup> Cong., March 8, 2022.

<sup>61</sup> See Mark Galeotti, "The West Thinks Putin Is Russia's Spymaster. But Are the Spies Controlling Him?" *Guardian*, June 20, 2019; Todd Prince, "Eyeing Ukraine, Putin Huddles in a Tight, Hawkish Circle," RFE/RL, February 15, 2022; Henry Foy and John Paul Rathbone, "Intelligence Failures Hamper Russia's Ukraine Mission," *Financial Times*, March 1, 2022; David V. Goe and Huw Dylan, "Putin's KGB Past Didn't Help Him with Intelligence on Ukraine," *Washington Post*, March 17, 2022; Julian E. Barnes, Lara Jakes, and John Ismay, "U.S. Intelligence Suggests That Putin's Advisors Misinformed Him on Ukraine," *New York Times*, March 30, 2022; Steve Holland and Andrea Shalal, "Putin Misled by 'Yes Men' in Military Afraid to Tell Him the Truth, White House and EU Officials Say," Reuters, March 31, 2022; Philip H. Davies and Toby Steward, "No War for Old Spies: Putin, the Kremlin and Intelligence,"

overstated its influence and agent networks inside Ukraine, possibly contributing to a false expectation of a quick regime change.<sup>62</sup> Additionally, many observers speculate a relatively small circle of advisers may have outsized influence on Putin and may have contributed to potentially unrealistic assumptions.<sup>63</sup> Observers believe this circle includes Minister of Defense Sergei Shoigu, who may have overstated the Russian military's capabilities.<sup>64</sup>

## March-May 2022

Since early March 2022, Russian forces attempted to adapt to the reality of effective Ukrainian resistance. Russia made some changes to its military operations, including more coordination between units and a greater attempt to operate as combined arms formations, increased air support, and significantly higher levels of artillery and rocket artillery fire.<sup>65</sup> Russian forces made slow incremental advances but continued to suffer heavy losses in both personnel and equipment.<sup>66</sup> By March 7, 2022, U.S. officials believed Russia had committed “nearly 100 percent” of its available forces into Ukraine.<sup>67</sup> The Russian VKS increased its number of sorties and operations, although most missions appeared to employ unguided weaponry rather than PGMs.<sup>68</sup> The increased sortie rate also meant heavier losses for the VKS, including some of its most advanced helicopter, fighter, and fighter-bombers.<sup>69</sup>

At this stage of the conflict, instead of concentrating on one area of operations, the Russian military appeared to continue multiple lines of advance.<sup>70</sup> In the north, Russian forces attempted to break through Ukrainian defenses around Kyiv, from both the northwest and the east. In the east, Russian forces surrounded Kharkiv and attacked toward Izyum. In the south, Russian forces conducted an offensive to seize Mykolaiv in the southwest and Mariupol in the southeast.<sup>71</sup> Each

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RUSI, May 20, 2022.

<sup>62</sup> Mari Saito and Maria Tsvetkova, “The Enemy Within,” *Reuters*, July 28, 2022; Greg Miller and Catherine Belton, “Russia’s Spies Misread Ukraine and Mised Kremlin as War Loomed,” *Washington Post*, August 19, 2022.

<sup>63</sup> Analysts have debated the balance between advisers providing false or misleading information to Putin and the leadership itself imposing unrealistic objectives and limitations onto the Russian government and military. See Adam E. Casey and Seva Gunitsky, “The Bully in the Bubble,” *Foreign Affairs*, February 4, 2022; Mark Galeotti, “The Personal Politics of Putin’s Security Council Meeting,” *Moscow Times*, February 22, 2022; Amanda Taub, “Putin Seems to Sideline Advisers on Ukraine, Taking a Political Risk,” *New York Times*, March 1, 2022.

<sup>64</sup> Andrei Soldatov and Irina Borogan, “The Man Behind Putin’s Military,” *Foreign Affairs*, February 26, 2022; Thomas Grove, “Russia’s Military Chief Promised Quick Victory in Ukraine, But Now Faces a Potential Quagmire,” *Wall Street Journal*, March 6, 2022; Sam Cranny-Evans and Sidharth Kaushal, “The Intellectual Failures Behind Russia’s Bungled Invasion,” RUSI, April 1, 2022.

<sup>65</sup> Steven Erlanger, “After a Fumbled Start, Russian Forces Hit Harder in Ukraine,” *New York Times*, February 28, 2022; Dan Lamothe, “Russia’s Invasion Began with Precision Missiles, But Weapons Are Changing as Siege War Begins,” *Washington Post*, March 1, 2022.

<sup>66</sup> Griff Witte et al., “After More Than Two Weeks of War, the Russian Military Grinds Forward at a Heavy Cost,” *Washington Post*, March 11, 2022.

<sup>67</sup> Quint Forgy, “Putin Sends ‘Nearly 100 Percent’ of Russian Forces at Border into Ukraine,” *Politico*, March 7, 2022.

<sup>68</sup> Alan Cullison and Alexander Osipovich, “Russian General Is Killed in Ukraine as Airstrikes Intensify,” *Wall Street Journal*, March 11, 2022; Abraham Mahsie, “Air War Ramps Up in Russia-Ukraine Conflict as Russian PGMs Run Out,” *Air Force Magazine*, March 21, 2022; Dan Lamothe, “Russian Air Force Action Increases Despite Flood of Antiaircraft Missiles into Ukraine,” *Washington Post*, March 22, 2022.

<sup>69</sup> David Axe, “The Russian Air Force Is Losing Its Best Jets over Ukraine,” *Forbes*, March 29, 2022.

<sup>70</sup> For specific tracking of the conflict, see Konrad Muzyka, “Ukraine Conflict Monitor,” Rochan Consulting.

<sup>71</sup> *Financial Times*, “How Russia’s Mistakes and Ukrainian Resistance Altered Putin’s War,” March 18, 2022.

advance appeared to compete against the others for increasingly limited reinforcements, logistics, and air support. Gradually, most Russian offensives began to stall due to a number of factors, including continued logistics issues, mounting casualties and a lack of available reinforcements, and increasing Ukrainian counterattacks.<sup>72</sup>

Throughout mid-March 2022, the Ukrainian military conducted effective counterattacks across most axes of advance, defeating repeated Russian offensives outside of Kyiv, outside of Kharkiv and Sumy, and in Mykolaiv.<sup>73</sup> Ukraine also attacked captured infrastructure, such as an airbase in Kherson and the port of Berdyansk, and destroyed key Russian assets.<sup>74</sup>

Toward the end of March 2022, Russian offensives around Kyiv stalled. Ukrainian forces launched multiple sustained counteroffensives and pushed back Russian forces.<sup>75</sup> Observers noted that, after failing to achieve a decisive victory quickly, Russia was reevaluating its objectives and strategy toward achieving territorial gains in the south and east of Ukraine.<sup>76</sup> On March 25, the Russian Ministry of Defense held a press conference alleging that Russia had mostly met its initial objectives and would move on to the second phase of the operation, focusing on eastern Ukraine, including the Donbas.<sup>77</sup> Russia soon announced it was withdrawing forces from around Kyiv and Chernihiv; analysts speculated that this was aimed at allowing the redeployment of units for further offensives in the east.<sup>78</sup> U.S. National Security Adviser Jake Sullivan stated on April 4, 2022, “Russia is repositioning its forces to concentrate its offensive operations in eastern and parts of southern Ukraine.... All indications are that Russia will seek to surround and overwhelm Ukrainian forces in eastern Ukraine.”<sup>79</sup>

Subsequently, Russia redirected forces to support operations in the east to cut off Ukrainian military units in the Donbas.<sup>80</sup> On April 12, President Putin stated that Russia’s “military

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<sup>72</sup> John Paul Rathbone, Sam Jones, and Daniel Dombey, “Why Russia Is Deploying More Troops to Ukraine,” *Financial Times*, March 17, 2022; Andrew E. Kramer, “Ukraine’s Troops Begin a Counteroffensive That Alters Shape of the Battle with Russia,” March 24, 2022; Alex Horton, “Why Russian Troops Are Using Tree Branches for Camouflage in Ukraine,” *Washington Post*, March 30, 2022; Stephen Fidler and Thomas Grove, “Behind the Front Lines, Russia’s Military Struggles to Supply Its Forces,” *Wall Street Journal*, April 1, 2022.

<sup>73</sup> Yaroslav Trofimov, “A Ukrainian Town Deals Russia One of the War’s Most Decisive Routs,” *Wall Street Journal*, March 16, 2022; Yaroslav Trofimov, “Ukrainian Counteroffensive near Mykolaiv Relieves Strategic Port City,” *Wall Street Journal*, March 18, 2022; David Stern et al., “Ukraine Claims It Had Retaken Key Town Outside Kyiv, as Defenses Hold Against Fierce Russian Onslaught,” *Washington Post*, March 22, 2022.

<sup>74</sup> Most analysts believe Ukraine launched Tochka-U short-range ballistic missile systems during the attacks on Kherson Airbase and the port of Berdyansk. Analysts cite this occurrence as another failure of the VKS to target and destroy such key strategic weapon systems. Joseph Trevithick and Tyler Rogoway, “Barrage Leaves Russian-Occupied Kherson Airbase in Flames,” *The Drive*, March 15, 2022; Andrew Carey et al., “Ukrainians Claim to Have Destroyed Large Russian Warship in Berdyansk,” CNN, March 25, 2022.

<sup>75</sup> Andrew E. Kramer, “In Kyiv Suburb, Ukrainian Military Claims a Big Prize,” *New York Times*, March 29, 2022; John Paul Rathbone, Roman Olearchyk, and Henry Foy, “Ukraine Uses Guerrilla Counter-Attacks to Take Fight to Russia,” *Financial Times*, March 31, 2022.

<sup>76</sup> Michael R. Gordon and Alex Leary, “Russia, Failing to Achieve Early Victory in Ukraine, Is Seen Shifting to ‘Plan B,’” *Wall Street Journal*, March 20, 2022.

<sup>77</sup> Konrad Muzyka, “Ukraine Conflict Monitor: March 25, 2022,” Rochan Consulting, March 26, 2022.

<sup>78</sup> Jim Sciutto, “U.S. Intel Assess ‘Major’ Strategy Shift by Russia as It Moves Some Forces away from Kyiv,” CNN, March 31, 2022; David Axe, “Ukraine’s Best Tank Brigade Has Won the Battle for Chernihiv,” *Forbes*, March 31, 2022; Anjali Singhvi et al., “How Kyiv Has Withstood Russia’s Attacks,” *New York Times*, April 2, 2022.

<sup>79</sup> White House, “Press Briefing by Press Secretary Jen Psaki and National Security Adviser Jake Sullivan,” press briefing, April 4, 2022.

<sup>80</sup> The *Joint Forces Operation* (JFO) is Ukraine’s term for its military operation against the Russian-controlled Donetsk and Luhansk People’s Republics. Most analysts consider Ukrainian military forces in the JFO to be Ukraine’s best units. Barbara Starr et al., “Russia Shifting Focus to Show a Victory by Early May in Eastern Ukraine, U.S. Officials

operation will continue until its full completion” but said, “Our goal is to help the people in the Donbas, who feel their unbreakable bond with Russia.”<sup>81</sup> The terrain in the Donbas favored Russian forces, with its advantages in artillery units, and made it more difficult for Ukrainian forces to conduct guerrilla-style attacks.<sup>82</sup>

Despite the apparent focus on the Donbas, some observers remained concerned about larger Russian objectives. On April 22, 2022, Major General Rustam Minnekayev, the deputy commander of the Central Military District, said in an interview that Russia wanted to take full control of eastern and southern Ukraine, including a possible land bridge to Transnistria, a Russia-supported breakaway territory in Moldova.<sup>83</sup> Many observers believe this statement reflects larger Russian political objectives over the medium to long term, since Russian military force constraints prevent a serious offensive to capture Odessa and link up with Transnistria.

### Sinking of the Moskva and Snake Island

On April 13, 2022, the flagship of Russia's Black Sea Fleet, the Slava class missile cruiser *Moskva*, reportedly was struck by two Ukrainian R-360 Neptune anti-ship missiles. Initially, Russia denied the *Moskva* was hit by missiles, said it sunk in a storm after an accidental fire, and attempted to tow the heavily damaged cruiser back to port in Sevastopol; the damage was catastrophic, however, and the ship eventually sank. Reports indicate the *Moskva* was blockading Odessa and providing air defense support to Russian units in the southwest near Kherson when it was struck. The sinking provided a morale boost to Ukrainian forces and undermined Russian efforts to threaten an amphibious assault against Odessa, potentially freeing up Ukrainian forces defending the city to conduct counteroffensives against Russian forces near Kherson. Russia's new flagship of the Black Sea Fleet is the Project 11356 frigate *Admiral Makarov*.

The sinking of the *Moskva* also threatened Russia's control over Snake Island, a small rock outcropping Russia seized during the initial days of the invasion and used to support the Russian blockade of Odessa. Ukrainian forces harassed Russian forces on the island throughout the conflict using TB2 UCAVs and fighters, sinking Russian ships and destroying air defense systems. Eventually, long-range Ukrainian artillery and the loss of the *Moskva* made the island untenable, and Russian forces departed Snake Island by the end of June.

**Sources:** Brad Lendon, “Moskva Sinking: What Really Happened to the Pride of Russia's Fleet?” CNN, April 15, 2022; Adam Taylor and Claire Parker, “Neptune' Missile Strike Shows Strength of Ukraine's Homegrown Weapons,” *Washington Post*, April 15, 2022; *Economist*, “How Did Ukraine Destroy the Moskva, a Large Russian Warship,” April 20, 2022; B. J. Armstrong, “The Russo-Ukrainian War at Sea: Retrospect and Prospect,” *War on the Rocks*, April 21, 2022; Marc Santora and Ivan Nechepurenko, “Ukraine Drives Russian Forces from Snake Island, a Setback for Moscow,” *New York Times*, June 20, 2022.

On April 18, Ukrainian President Volodymyr Zelensky said Russia had begun its offensive in the Donbas after a barrage of Russian missile strikes across Ukraine.<sup>84</sup> Russian forces initially conducted slow and gradual probing attacks against Ukrainian forces, including the use of heavy artillery and rocket artillery to support operations.<sup>85</sup> Russia concentrated on pressing Ukrainian

Say,” CNN, April 2, 2022.

<sup>81</sup> Anton Troianovski, “Putin Says Peace Talks Are at a ‘Dead End’ and Calls Atrocities in Bucha ‘Fake,’” *New York Times*, April 12, 2022.

<sup>82</sup> Liz Sly and Dan Lamothe, “Battles May Be Tougher for Ukrainians as War Shifts to Wide-Open Terrain in East,” *Washington Post*, April 9, 2022; Jack Watling, “Why the Battle for Donbas Will Be Very Different from the Assault on Kyiv,” *Guardian*, April 9, 2022; Howard Altman, “Ukraine's Ability to Withstand Russian Artillery Critical to Fight for Donbas,” *The Drive*, April 19, 2022; Sam Cranny-Evans and Sidharth Kaushal, “Technical Reflections on Russia's Armoured Fighting Vehicles,” *RUSI*, April 27, 2022.

<sup>83</sup> Mary Ilyushina et al., “Commander Hints at Russian Ambitions Beyond Ukraine,” *Washington Post*, April 22, 2022.

<sup>84</sup> Hannah Allam et al., “Zelensky Says Russia Has Launched Offensive in Eastern Ukraine,” *Washington Post*, April 18, 2022; Max Seddon and Henry Foy, “Vladimir Putin Abandons Hopes of Ukraine Deal and Shifts to Land-Grab Strategy,” *Financial Times*, April 24, 2022.

<sup>85</sup> Ivana Saric, “Russia Seizes Eastern Ukraine City of Kreminna, Official Says,” *Axios*, April 19, 2022; Christopher

forces south of Izyum, west from Severodonetsk toward Kramatorsk and Slovyansk, and from Donetsk to create a large encirclement of UAF.<sup>86</sup>

Russian forces ran into determined and effective UAF resistance and were unable to make significant progress.<sup>87</sup> Russian forces could not break through Ukrainian defenses around Izyum, partially resulting from too few units and a gradual deployment, even with reinforcements from the abandoned effort to take Kyiv.<sup>88</sup> Additionally, UAF forces reinforced and conducted counterattacks outside of Kharkiv, pushing Russian forces in some positions back toward the border and potentially placing the Russian city of Belgorod within striking distance of long-range Ukrainian rocket and missile artillery.<sup>89</sup> Throughout the war, numerous unexplained explosions have occurred at various industrial sites in Russia, some of which are likely the result of Ukrainian air, missile, or sabotage attacks.<sup>90</sup> UAF forces also conducted counterattacks toward Izyum, reportedly advancing against Russian units (such as those from the Russian 1<sup>st</sup> Guards Tank Army), which had suffered significant casualties.<sup>91</sup>

Russia's redeployment of forces away from Kyiv and toward eastern Ukraine indicated the Russian military's need to rest and resupply after using most of its combat-effective units. During this time, analysts noted the need for Russian personnel reinforcements, not only to replace losses but also to support further Russian offensives.<sup>92</sup> Conditions forced Russia to pull units from foreign bases to help replace and rotate out units.<sup>93</sup> Russia reportedly also has deployed private military companies (including heavy use of Wagner Private Military Company) to support operations, primarily to oversee and support Russian-led forces from the DNR/LNR.<sup>94</sup> Many observers speculated that Putin would announce a state of war and national mobilization during Russia's May 9 Victory Day celebration, allowing Russia to call up reserves and use conscripts in combat.<sup>95</sup> The celebration passed with no such announcement. Despite the slow pace of Russian

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Miller and Paul McLeary, "Heavy Weaponry Pours into Ukraine as Commanders Become More Desperate," *Politico*, April 25, 2022; Konrad Muzyka, "Ukraine Conflict Monitor: April 24, 2022," Rochan Consulting, April 25, 2022.

<sup>86</sup> Konrad Muzyka, "Ukraine Conflict Monitor: April 16-18, 2022," Rochan Consulting, April 19, 2022; Author correspondence with Michael Kofman.

<sup>87</sup> Zachary Cohen et al., "Russia Making 'Slow and Uneven' Progress as Military Tries to Fix Problems That Plagued Early Invasion, U.S. Officials Say," CNN, April 28, 2022; Sam Jones et al., "'Anemic' Russian Advance Heralds Long War of Attrition," *Financial Times*, May 5, 2022.

<sup>88</sup> Konrad Muzyka, "Ukraine Conflict Monitor: 9-15 May 2022," Rochan Consulting, May 15, 2022. Some estimated 20-25 Russian BTGs in the Izyum area, but those forces were never fully deployed together and some were held in reserve. Additionally, some units were reported to rotate back to Russia after suffering heavy losses and becoming combat ineffective.

<sup>89</sup> Konrad Muzyka, "Ukraine Conflict Monitor: 5 May 2022," Rochan Consulting, May 6, 2022.

<sup>90</sup> Mike Eckel, "Blasts, Bombs, and Drones: Amid Carnage in Ukraine, A Shadow War on the Russian Side of the Border," RFE/RL, April 29, 2022.

<sup>91</sup> Mike Eckel, "Fizzled Faltering? 'Anemic'? Why Russia's Donbas Offensive Isn't Going Exactly as Anticipated," RFE/RL, May 3, 2022.

<sup>92</sup> Department of Defense, "Senior Defense Official Holds a Background Briefing," press release, April 8, 2022; *Economist*, "Rob Lee on Why Attrition Will Be a Critical Factor in the Battle for the Donbas," April 23, 2022.

<sup>93</sup> Reports indicate Russia was forced to deploy units from several foreign bases, including units from the 201<sup>st</sup> Military Base in Tajikistan, 7<sup>th</sup> Military Base in Russia-occupied Abkhazia (Georgia), and 4<sup>th</sup> Military Base in Russia-occupied South Ossetia (Georgia), to support operations in Ukraine. Digital Forensics Research Lab, "Additional Units from Georgian Breakaway Regions Join Russian Offensive," Atlantic Council, March 28, 2022.

<sup>94</sup> *Economist*, "Russia's Brutal Mercenaries Probably Won't Matter Much in Ukraine," April 9, 2022; Miriam Berger, "What Is the Wagner Group, the Russian Mercenary Entity in Ukraine?," *Washington Post*, April 9, 2022.

<sup>95</sup> Robyn Dixon and Liz Sly, "On a Victory Day Without Victory, Putin Faces Choice over All-Out War," *Washington Post*, May 7, 2022; Dmitry Alperovitch and Michael Kofman, "War in Ukraine," *Silverado Policy Accelerator*, May 8,



progress and need for reinforcements, Director of National Intelligence Avril Haines testified to the Senate Armed Services Committee on May 20, 2022, “We assess President Putin is preparing for prolonged conflict in Ukraine during which he still intends to achieve goals beyond the Donbas.”<sup>96</sup>

A key Russian military objective was the coastal city of Mariupol, in the Donetsk region.<sup>97</sup> Russian forces gradually surrounded and advanced into Mariupol against stiff Ukrainian resistance.<sup>98</sup> The effort to seize the city benefited from Russia shifting operations away from seizing further territory in the Kherson region (which includes Mykolaiv).<sup>99</sup> After weeks of bombardment and fighting, Ukrainian military forces and large numbers of civilians were isolated in the Azovstal iron and steel plant.<sup>100</sup> On April 21, Putin announced that Russia had seized Mariupol and that Russian forces would not assault the Azovstal plant but would surround and seal it off, despite Ukrainian forces’ continued resistance.<sup>101</sup> Ukraine announced on May 16 that it had instructed its remaining troops at Azovstal to cease combat missions.<sup>102</sup> Shortly thereafter, Ukrainian troops began surrendering and were evacuated to Russian-controlled areas.<sup>103</sup> The status of these prisoners remains unclear, with potential options ranging from “trials” for Russian propaganda purposes to some form of prisoner exchange.<sup>104</sup> On July 29, a massive explosion ripped through a prisoner-of-war camp housing many of the prisoners from Mariupol, killing an estimated 50 prisoners.<sup>105</sup> Russia alleged the explosion was the result of a Ukrainian missile strike, but many observers believe it was some other cause.<sup>106</sup>

Russia also continued its use of long-range PGMs against targets in western Ukraine, but the VKS did not seek further air superiority beyond eastern Ukraine. Russia conducted long-range PGM strikes against what Russian officials say are the Ukrainian defense industry and infrastructure targets in an attempt to cripple and undermine the Ukrainian military’s long-term capability. However, observers began to note the questionable precision, capability, and quantity

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<sup>96</sup> U.S. Congress, Senate Committee on Armed Services, *To Receive Testimony on Worldwide Threats*, 117<sup>th</sup> Cong., May 10, 2022.

<sup>97</sup> Alan Cullison, Brett Forrest, and Bojan Pancevski, “Russia Ramps Up Ukraine Attacks in Effort to Seize Strategically Key Port City,” *Wall Street Journal*, March 10, 2022.

<sup>98</sup> Bermet Talant, “Why Is Mariupol So Important to Russian Forces?,” *Guardian*, March 22, 2022.

<sup>99</sup> Nick Paton Walsh et al., “Russia Could Be Losing Ground in Battle for Mykolaiv, But It Still Seeks to Crush What It Cannot Have,” CNN, March 21, 2022.

<sup>100</sup> Ann M. Simmons and Daniel Michaels, “Mariupol, in Ruins, Still Looms Large for Russia and Ukraine,” *Wall Street Journal*, April 19, 2022; Amy Mackinnon, “What the Fall of Mariupol Would Mean for the War,” *Foreign Policy*, April 20, 2022.

<sup>101</sup> Michael Schwartz, “Ukrainians in Mariupol’s Steel Mill Are Holding On, Despite Intensifying Attacks, a Commander Tells the Times,” *New York Times*, April 24, 2022.

<sup>102</sup> Valerie Hopkins, Ivan Nechepurenko, and Marc Santora, “The Ukrainian Authorities Declare an End to the Combat Mission in Mariupol After Weeks of Russian Siege,” *New York Times*, May 16, 2022.

<sup>103</sup> Todd Prince, “Russia’s Capture of Azovstal: Symbolic Success, ‘Pyrrhic’ Victory?,” RFE/RL, May 18, 2022; Michael Schwartz, “Last Stand at Azovstal: Inside the Siege That Shaped the Ukraine War,” *New York Times*, July 27, 2022.

<sup>104</sup> Claire Parker et al., “Moscow Casts Doubt on Prisoner Swap; Soldier Pleads Guilty in Killing,” *Washington Post*, May 18, 2022; Isabel Coles and Ann M. Simmons, “Russia Takes Captured Ukrainian Fighters from Mariupol to Its Territory,” *Wall Street Journal*, June 8, 2022.

<sup>105</sup> Matthew Mpoke Bigg and Maria Varenikova, “Here’s What We Know About the Deadly Blast at a Prisoner Camp in Eastern Ukraine,” *New York Times*, August 1, 2022.

<sup>106</sup> Joyce Sohyun Lee et al., “What We Know About the Blast That Killed Ukrainian POWs in Olenivka,” *Washington Post*, August 6, 2022.

of PGMs still available to Russian forces.<sup>107</sup> U.S. officials have stated most PGMs appear to be air-launched cruise missiles from bombers inside Russia.<sup>108</sup>

## May-September 2022

After the capture of Mariupol, Russia refocused efforts on seizing key urban and infrastructure areas in Donetsk and Luhansk.<sup>109</sup> Due to losses, Russia appeared unable to focus and concentrate combat power on multiple advances, forcing it to refocus efforts on a single objective while consolidating its hold on captured territory (such as in Kharkiv, Kherson, and Zaporizhzhia).<sup>110</sup> By mid-May 2022, Russia appeared unable to capture the key cities of Slovyansk and Kramatorsk, a likely target of Russia's refocused offensives. Instead, Russia focused on seizing the towns of Severodonetsk and Lysychansk, which would give Russia almost total control over Luhansk Oblast.<sup>111</sup>

**Figure 3. Donbas Region of Ukraine**



**Source:** Congressional Research Service

In contrast to the early days of the invasion, the fighting in the Donbas resembled a more traditional conventional conflict of slow but intense fighting, and Russia reverted to its traditional reliance on the massed use of artillery and rocket artillery.<sup>112</sup> Russian forces appeared to conduct a pincer movement to cut off Ukrainian forces in Severodonetsk and Lysychansk.<sup>113</sup> In the north, Russian forces pushed southeast from Izyum, capturing Lyman and attempting to make several crossings of the Siverskyi Donets River near Bilohorivka, but came under Ukrainian artillery fire and suffered heavy casualties.<sup>114</sup> In the Donbas, Russia relied heavily on Wagner Private Military Company (PMC)

<sup>107</sup> John Ismay, "Russian Guided Weapons Miss the Mark, U.S. Defense Officials Say," *New York Times*, May 9, 2022; Thomas Newdick, "We May Have Our First Sight of a Russian Bomber Launching Missiles at Ukraine," *The Drive*, May 11, 2022; Stetson Payne and Tyler Rogoway, "Kyiv Claims Russia is Running Low on Missiles," *The Drive*, August 27, 2022.

<sup>108</sup> Department of Defense, "Senior Defense Official Holds a Background Briefing," press release, May 18, 2022.

<sup>109</sup> Dan Lamothe, Ellen Nakashima, and Alex Horton, "Russia Tries to Rebound in Ukraine as Prospects for Victory Fade," *Washington Post*, May 21, 2022.

<sup>110</sup> Department of Defense, "Senior Defense Official Holds a Background Briefing," press release, May 18, 2022.

<sup>111</sup> Frederick W. Kagan, Kateryna Stepanenko, and George Barros, "Russian Offensive Campaign Assessment, May 28," *Institute for the Study of War*, May 28, 2022.

<sup>112</sup> John Paul Rathbone and Max Seddon, "Battle for Severodonetsk Shows Russian Strategy in Donbas," *Financial Times*, May 25, 2022; John Paul Rathbone et al., "Russia's Barrage Hits Ukrainian Morale in the Donbas," *Financial Times*, June 10, 2022.

<sup>113</sup> Konrad Muzyka, "Ukraine Conflict Monitor: May 21-23, 2022," Rochan Consulting, May 24, 2022.

<sup>114</sup> Howard Altman, "Debacle on the Donets: How Russian Forces Got Obliterated Trying to Cross a River," *The Drive*, May 12, 2022; Daniel Michaels, "Ukraine's Forces Sink Russian River Crossings, Inflicting Heavy Damage," *Wall*

and local DNR/LNR units.<sup>115</sup> These forces sustained heavy casualties but gradually pushed the UAF back and captured key towns such as Popasna.<sup>116</sup>

The UAF continued to staunchly defend territory instead of conducting an organized withdrawal, leading some analysts to speculate that Ukraine's strategy was to impose as much attrition on Russian forces as possible.<sup>117</sup> Nevertheless, Russian forces, including Chechen Rosgvardiya and DNR/LNR troops, continued their offensive into Severodonetsk and gradually seized control of the city after Ukraine ordered its forces to retreat to Lysychansk.<sup>118</sup> Russian forces continued to advance north from Popasna toward Bakhmut, threatening to cut off UAF units and envelope Lysychansk.<sup>119</sup> Subsequently, the UAF withdrew from Lysychansk to prepared defensive lines between Bakhmut and Siversk.<sup>120</sup>

### Reported Russian and Ukrainian Casualties

Estimates of wartime casualties vary widely and may not be considered reliable. Due to the continuing state of war, verifying exact numbers of casualties is nearly impossible. Generally, ranges of possible casualties are given as estimates due to the uncertain and changing nature of assessments. Below are some estimates mentioned in various press reports through August 2022.

#### Russian Casualties

*Russia:* Officially, the Russian government stated in late March 2022 that 1,351 soldiers had died and another 3,850 had been wounded. On March 20, 2022, the pro-Kremlin newspaper *Komsomolskaya Pravda* appeared to publish Russian Ministry of Defense figures that listed 9,861 deaths. This figure remains unconfirmed, and the newspaper deleted the report and stated that it had been hacked. Russia has not provided a casualty update since.

*United States:* U.S. estimates of Russian military losses range from 70,000 to 80,000 total (including killed and wounded). In July, Central Intelligence Agency (CIA) Director William Burns estimated the Russians suffered 15,000 killed. In early August, Under Secretary of Defense for Policy Colin Kahl stated, "I think it's safe to suggest that the Russians are probably taking 70 or 80,000 casualties in less than six months."

*United Kingdom:* UK estimates of Russian casualties are slightly higher than those of U.S. officials. UK Defense Secretary Ben Wallace in August stated Russia has suffered 80,000 casualties, while citing in June estimates that Russia suffered 25,000 killed.

#### Ukrainian Casualties

Until recently, Ukraine has been reluctant to share casualty figures. In June 2022, Ukrainian officials stated that Ukraine was losing 100-200 soldiers per day during the height of fighting around Severodonetsk. On August 22, 2022, Commander in Chief of the Ukrainian Armed Forces Valerii Zaluzhny stated Ukraine had suffered almost 9,000 killed.

*Street Journal*, May 23, 2022.

<sup>115</sup> Observers note Russian Private Military Company (PMC) and DNR/LNR forces are integrated into the Russian military command structure. Reuters, "Conscripts Sent to Fight by Pro-Russia Donbas Get Little Training, Old Rifles, Poor Supplies," April 4, 2022; Ihor Burdyga and Regina Gimalova, "How Ukraine Separatists are Mass Conscripting Anyone of Fighting Age," *DW*, April 27, 2022; Lilia Yapparova, "A Mercenaries' War," *Meduza*, July 14, 2022; Reuters, "Russian Firm Wagner Made Tactical Advances in Donbas-UK Intelligence," July 27, 2022.

<sup>116</sup> Reuters, "Ukraine Troops Retreat from Popasna, Luhansk Governor Confirms," May 8, 2022; Karolina Hird, Frederick W. Kagan, and George Barros, "Russian Offensive Campaign Assessment, May 20," *Institute for the Study of War*, May 20, 2022.

<sup>117</sup> Ian Lovett, "Ukraine Counterattack Takes Back Parts of Strategic Donbas City," *Wall Street Journal*, June 5, 3033; Tim Lister, "Two Months On, Russia Is Still Struggling to Capture This Small Ukrainian City," *CNN*, June 21, 2022.

<sup>118</sup> Yaroslav Trofimov, "Ukrainian Troops Retreat from Severodonetsk After Weeks of Brutal Battle," *Wall Street Journal*, June 24, 2022; Tass, "Mopping Up of Village near Severodonetsk in LPR Being Completed — Chechen Leader," June 19, 2022.

<sup>119</sup> Konrad Muzyka, "Ukraine Conflict Monitor: 27 June – 3 July 2022," *Rochan Consulting*, July 3, 2022.

<sup>120</sup> Jonathan Beale, "Ukraine Confirms Russia Captured Eastern City Lysychansk," *BBC*, July 3, 2022; Annabelle Timsit et al., "Russia Claims Key City in Punishing Conquest of Eastern Ukraine," *Washington Post*, July 3, 3033.

**Civilian Casualties**

In August 2022, the UN High Commissioner for Human Rights estimated 5,587 civilians had been killed and 7,890 wounded since the war began. The commissioner also noted that this was likely an undercount. For example, in Mariupol, a city that suffered especially severe civilian casualties, Ukrainian sources have stated that local morgues have documented at least 87,000 deaths.

**Sources:** BBC, "Kyiv Losing Up to 200 Troops a Day-Zelensky Aide," June 9, 2022; *Economist*, "How Heavy Are Russian Casualties in Ukraine?" July 24, 2022; Niamh Cavanagh, "Russia Has Suffered an Estimated 75,000 Casualties in Ukraine Invasion, U.S. Officials Say," *Yahoo News*, July 28, 2022; Jack Detsch, "Russia Is Readying the Zinc Coffins Again," *Foreign Policy*, August 8, 2022; Helene Cooper, "Heavy Losses Leave Russia Short of Its Goal U.S. Officials Say," *New York Times*, August 11, 2022; Ukrainian Ministry of Defense, "Almost 9,000 Ukrainian Defenders Died in the War with the Russian Federation-Zaluzhny," August 22, 2022; U.N. Office of the High Commissioner for Human Rights, "Ukraine: Civilian Casualty Update 22 August 2022," press release, August 22, 2022; *Kyiv Independent*, "British Defense Minister: Combined Russian Casualties at 80,000 Troops in War Against Ukraine," August 24, 2022; Euromaidan Press, "87,000 Killed Civilians Documented in Occupied Mariupol—Volunteer," August 30, 2022.

The UAF suffered heavy casualties during the fighting for Severodonetsk and Lysychansk, including among experienced veterans who volunteered for the Territorial Defense Forces (TDF) and reserve units.<sup>121</sup> The UAF broke up the core of its maneuver formations into smaller units to spearhead localized counterattacks and to shore up TDF and Reserve units manning defensive positions. According to a RUSI study, "In the defense, this has led to reasonable combat performance by these troops. For the attack, however, the Ukrainian armed forces have found it necessary to bring their best units back together and have them spearhead attacks."<sup>122</sup> Many UAF counteroffensives, such as outside of Kharkiv, slowed as Russian units regrouped and UAF forces concentrated on defending the Ukrainian-controlled areas of the Donbas, leaving TDF units to defend the frontline but unable to launch further offensive action.<sup>123</sup> The UAF also struggled with secure communications and instances of command and control issues between the TDF and regular military, as well as a dire need for artillery and heavy weapon support.<sup>124</sup>

Beginning in mid-May 2022, the UAF began receiving significant shipments of U.S. and Western artillery systems, specifically the U.S. M777 155mm howitzer and ammunition.<sup>125</sup> Security assistance has been critical to sustaining UAF operations and countering the Russian advantage in artillery and rocket artillery, since the UAF reports it is running low on ammunition and parts for its Soviet/Russian artillery systems.<sup>126</sup> Nevertheless, training time and the high need for systems have resulted in most UAF units still relying on older Soviet/Russian systems while waiting for

<sup>121</sup> Dave Lawler, "Ukraine Suffering Up to 1,000 Casualties Per Day in Donbas, Official Says," *Axios*, June 15, 2022; Stephen Kalin, "Ukraine's War of Attrition Exact Heavy Toll on Both Sides," *Wall Street Journal*, June 29, 2022. See also CRS In Focus IF12150, *Ukrainian Military Performance and Outlook*, by Andrew S. Bowen.

<sup>122</sup> Jack Watling and Nick Reynolds, "Ukraine at War: Paving the Road From Survival to Victory," RUSI, July 4, 2022, p. 17

<sup>123</sup> James M. Lindsay, "The Long War in Ukraine, With Michael Kofman," Council on Foreign Relations, July 12, 2022.

<sup>124</sup> Thomas Gibbons-Neff and Natalia Yermak, "On Front Lines, Communication Breakdowns Prove Costly for Ukraine," *New York Times*, June 28, 2022; Viviana Salama, "Ukraine Faces Shortfall in Weapons as It Gears Up for First Major Counteroffensive," *Wall Street Journal*, July 21, 2022.

<sup>125</sup> David Vergun, "M777 Artillery Deliveries Should Help Ukraine in the Donbas, Says Official," *DoD News*, April 29, 2022; and Andrew E. Kramer and Maria Varenikova, "Powerful American Artillery Enters the Fight in Ukraine," *New York Times*, May 23, 2022.

<sup>126</sup> Lara Seligman, "Biden to Send New Precision-Guided Artillery Rounds to Ukraine," *Politico*, July 8, 2022.

new Western weaponry.<sup>127</sup> By July, Ukraine began receiving U.S.-supplied M270 Multiple Launch Rocket Systems (MLRS) and M142 High Mobility Artillery Rocket Systems (HIMARS), providing the UAF with significantly improved targeting ability, including increased range and precision accuracy.<sup>128</sup> Early assessments by U.S. officials and other observers indicate the UAF is using these systems effectively, including to target key Russian command and control, logistics, and transport infrastructure.<sup>129</sup> One significant challenge, however, is maintaining and repairing the vast number of Western systems the UAF has received, all with different standards and requirements for operating.

Over the rest of July, Russian forces attempted to regroup and take an “operational pause” after suffering heavy casualties capturing Severodonetsk and Lysychansk.<sup>130</sup> Most observers believed Russia had exhausted most of its forces and required time to refit, resupply, and reorganize. Russian forces did not achieve any significant territorial progress over the next weeks, other than small gains between Siversk and Bakhmut, and appeared to focus on solidifying their control over existing territory.<sup>131</sup> Russia increasingly relied on Wagner PMC and DNR/LNR forces to probe UAF lines and then direct artillery and rocket artillery upon making contact.<sup>132</sup> Open-source reporting continued to document instances of low Russian morale and increasing reports of Russian soldiers refusing to fight, resigning from their contracts before deployment, or refusing orders from their superiors.<sup>133</sup>

### Russian Command and Control Challenges

Since the start of Russia's 2022 invasion of Ukraine, reports indicate Russia has attempted to address its command and control issues, including the lack of an overall operational commander. It is difficult for most observers to definitively identify and state the nature of Russian command and control due to the changing circumstances and

<sup>127</sup> CRS In Focus IF12040, *U.S. Security Assistance to Ukraine*, by Christina L. Arabia, Andrew S. Bowen, and Cory Welt; Thomas Gibbons-Neff, Natalia Yermak, and Andrew E. Kramer, “Ukraine Is Running Short of Soviet-Era Ammunition for Its Artillery, Crippling Its Ability to Hold the Line in the East,” *New York Times*, June 10, 2022; and Serhiy Morgunov, “As They Wait for Weapons, Ukrainians Hold the Line with Soviet Artillery,” *Washington Post*, July 27, 2022.

<sup>128</sup> Stephen Kalin and Georgi Kantchev, “Ukraine Loses Ground in Battle for Severodonetsk but Gains Firepower from U.S.” *Wall Street Journal*, June 23, 2022; Jack Detsch, “Ukraine Is Bringing a Big Gun to a Knife Fight,” *Foreign Policy*, July 13, 2022; and Isabel Coles and Evan Gershkovich, “Ukraine Strike on Russian Air-Defense Unit Shows Impact of New Weapons from West,” *Wall Street Journal*, July 13, 2022.

<sup>129</sup> Isabelle Khurshudyan and Kostiantyn Khudov, “U.S. Supplied HIMARS Changing the Calculus on Ukraine's Frontlines,” *Washington Post*, July 1, 2022; Illia Ponomarenko, “Ukraine Targets Russia's Ammunition Depots, Undermining Its Artillery Advantage,” *Kyiv Independent*, July 8, 2022; and C. Todd Lopez, “U.S. Provided HIMARS Effective in Ukraine,” *DoD News*, July 15, 2022.

<sup>130</sup> Thomas Gibbons-Neff, “Russia Advances Behind Brutal Barrage, But Will Its Strategy Keep Working?” *New York Times*, July 4, 2022; Erika Solomon, “Behind Russia's ‘Pause’ Are Signs of a Troubled Effort to Regroup,” *New York Times*, September 10, 2022.

<sup>131</sup> Konrad Muzyka, “Ukraine Conflict Monitor: 18-24 July 2022,” Rochan Consulting, July 25, 2022; Dara Massicot, “Moscow's New Strategy in Ukraine Is Just as Bad as the Old One,” *Foreign Affairs*, August 15, 2022.

<sup>132</sup> Konrad Muzyka, “Ukraine Conflict Monitor: 25-31 July 2022,” Rochan Consulting, August 1, 2022.

<sup>133</sup> It is unclear how widespread and pervasive low morale is in the Russian military, but the rise of such reports, along with the reliance on PMC and DNR/LNR units (including public appeals from DNR/LNR units for support), likely indicates it is not an isolated issue. Because Russia states it is not at war and its invasion is a “Special Military Operation,” contract soldiers can refuse deployment and face only dismissal, not prosecution. This places added pressure on the Russian military's personnel issues. Timofei Rozhanskiy, “Why Russian Soldiers Are Refusing to Fight in the War on Ukraine,” RFE/RL, July 20, 2022; Pjotr Sauer, “Russian Soldiers Accuse Superiors of Jailing Them for Refusing to Fight,” *Guardian*, August 2, 2022.

lack of transparency. Recent events and reports, however, have provided greater visibility into the general structure and picture of Russian command.

In April 2022, reports emerged that General Alexander Dvornikov, head of the Southern Military District, was given operational command of Russia's war to help streamline command and control. However, the extent of his direct control and whether he supervised all Russian forces remained unclear. By June, reports emerged that General Dvornikov had been removed from command and replaced by General Gennady Zhidko, the then-head of the Main Military Political Directorate.

As of August, four of five Military District commanders, the head of the Airborne forces (VDV), the commander of the Black Sea Fleet, and multiple junior commanders had been replaced. Russian forces appear to be organized into two "groupings": the Western and Southern Groupings of Forces. General Sergei Surovikin, commander of the Aerospace Forces, reportedly has taken over command of Russia's Southern Grouping of Forces from General Zhidko. Colonel General Aleksander Lapin, head of the Central Military District, now commands the Western Grouping of Forces. Overall operation of the war continues to be controlled through the National Defense Management Center in Moscow, which appears to have greater oversight and management of the "groupings" of Russian forces than in the early stages of the invasion.

**Sources:** Helene Cooper and Eric Schmitt, "Russia's War Lacks a Battlefield Commander, U.S. Officials Say," *New York Times*, March 31, 2022; Miriam Berger and Bryan Pietsch, "What to Know About Russia's Top Commander in Ukraine," *Washington Post*, April 10, 2022; *Kyiv Independent*, "Conflict Intelligence Team: General Dvornikov Dismissed from Leading Russian Troops in Ukraine," June 3, 2022; Karolina Hird, Mason Clark, and George Barros, "Russian Offensive Campaign Assessment, June 25," *Institute for the Study of War*, June 25, 2022; Karolina Hird et al. "Russian Offensive Campaign Assessment, July 28, 2022," *Institute for the Study of War*, July 28, 2022; Russia Experiments with Command and Control in Ukraine," *Janes IHS*, August 2, 2022; UK Defense Intelligence, "Intelligence Update, August 7, 2022," press release, August 7, 2022.

By early August 2022, as Russian advances stalled, a gradual stalemate and war of attrition began to set in. Russia continued some offensive operations (relying on Russian PMC and LNR/DNR forces) toward Bakhmut and Avdiivka, as well as the town of Pisky, just outside Avdiivka in the Donetsk region.<sup>134</sup> The UAF appeared to prepare a shift from defensive to offensive operations. Ukraine began carrying out a series of partisan attacks (including assassinations) against officials in Russia-occupied regions, Russian government infrastructure, and key air bases and supply positions in Crimea.<sup>135</sup> These attacks, conducted by Ukrainian Special Forces and local supporters, drones, and missile strikes, have destabilized the Russian military's control over the region and forced Russia to devote more forces to counterinsurgency and internal security missions.<sup>136</sup>

International observers remain concerned by the Russian military's occupation and management of the Zaporizhzhia Nuclear Power Plant (ZNPP), the largest nuclear plant in Europe.<sup>137</sup> Some

<sup>134</sup> Kateryna Stepanenko et al, "Russian Offensive Campaign Assessment, August 2," *Institute for the Study of War*, August 2, 2022; Susie Blann, "Russian Forces Begin Assault on Two Eastern Ukraine Cities," AP, August 6, 2022; David Axe, "The Russians Want Pisky. The Ukrainians Want Pisky. Neither Army Has Enough Troops For a Quick Victory." *Forbes*, August 1, 2022.

<sup>135</sup> Marc Santora, "Guerrilla Attacks Signal Rising Resistance to Russian Occupation," *New York Times*, June 6, 2022; *Kyiv Independent*, "Russian Puppet Official in Ukraine's Kherson Assassinated," August 7, 2022; Todd Prince, "Long Range Missiles? Special Op? Regardless, Crimean Air Base Blasts Are a 'Real Quandry' for Russia," RFE/RL, August 12, 2022; and Anastasia Tenisheva, "Assassinations of Russia-Installed Officials on the Rise in Occupied Ukraine," *Moscow Times*, September 1, 2022.

<sup>136</sup> Isabelle Khurshudyan, Liz Sly, and Adela Suliman, "Crimea Airfield Blast War Work of Ukrainian Special Forces, Official Says," *Washington Post*, August 10, 2022; and Oren Liebermann, "How Ukraine Is Using Resistance Warfare Developed by the U.S. to Fight Back Against Russia," CNN, August 27, 2022; Al-Jazeera, "Ukraine's Partisans Won't Win War but Can 'Wreak Havoc,'" September 6, 2022.

<sup>137</sup> For more, see CRS Insight IN11883, *Russian Military Actions at Ukraine's Nuclear Power Plants*, by Mark Holt and Mary Beth D. Nikitin; International Atomic Energy Agency (IAEA), "Director General Grossi Alarmed by Shelling at Ukraine NPP, Says IAEA Mission Vital for Nuclear Safety and Security," press release, August 6, 2022.

analysts argue that attacks on nuclear power plants could be considered a “war crime” under international law.<sup>138</sup> The International Atomic Energy Agency (IAEA) negotiated with Russia and Ukraine to send an expert mission to ZNPP to “assess the physical damage to the ZNPP’s facilities, determine whether the main and back-up safety and security systems were functional and evaluate the staff’s working conditions,” according to the IAEA. An IAEA inspection team visited the plant on September 1; six IAEA inspectors remained on-site for a few days. Two of those inspectors reportedly will stay to continue monitoring the plant’s operation as a permanent presence.<sup>139</sup>

The UAF began preparations for a counteroffensive by conducting strikes across Kherson and Crimea to degrade Russian capabilities and hinder the resupply of its forces in Kherson, including attacks against key logistics targets and the bridges connecting occupied Kherson with the rest of occupied southern Ukraine.<sup>140</sup> According to U.S. Chairman of the Joint Chiefs of Staff General Mark A. Milley, Ukraine conducted over 400 HIMARS strikes by September 8.<sup>141</sup> These strikes likely seriously strained Russian logistics and artillery ammunition supply by targeting previously unreachable depots.<sup>142</sup>

The UAF also deployed high-speed anti-radiation missiles (HARM), used to target radar or electronic warfare systems, on its MiG-29 fighters. Russian forces appeared to redeploy from Donetsk and Luhansk to southern Ukraine in preparation for a UAF offensive.<sup>143</sup> Observers had noted reports of Ukrainian preparation for an offensive for months but speculated whether the UAF had enough trained personnel and sufficient equipment (such as tanks and armored vehicles to rapidly transport infantry) to sustain offensive operations, as well as possible risks of exposing other fronts to counterattack from Russian forces by drawing away resources.<sup>144</sup> Ukraine likely considered the benefits—including deterring a possible Russian referendum and annexation of occupied territories, considering winter and potential complications due to European reliance on Russian natural gas, and demonstrating to Western allies that continued assistance could shift the

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<sup>138</sup> George M. Moore, “How International Law Applies to Attacks on Nuclear and Associated Facilities in Ukraine,” *Bulletin of the Atomic Scientists*, March 6, 2022.

<sup>139</sup> IAEA Director General Rafael Grossi, press conference, September 2, 2022.

<sup>140</sup> Stephen Fidler and Daniel Michaels, “War with Russia Enters New Phase as Ukraine Readies Southern Counterblow,” *Wall Street Journal*, July 31, 2022; and Konrad Muzyka, “Ukraine Conflict Monitor 22-28 August 2022,” Rochan Consulting, August 29, 2022.

<sup>141</sup> Reuters, “Ukraine Has Struck More Than 400 Russian Targets with HIMARS - U.S. Top General,” September 8, 2022.

<sup>142</sup> The Russian military must keep large supplies of ammunition close to the frontlines for resupply due to its heavy reliance on massed artillery fires. These supplies present a particularly vulnerable and significant target. Liz Sly, John Hudson, and David L. Stern, “Crimea Attacks Point to Ukraine’s Newest Strategy, Official Says,” *Washington Post*, August 18, 2022.

<sup>143</sup> Russia has constructed multiple lines of defense in preparation for a UAF offensive. Including DNR troops, Russia has a significant concentration of VDV and *Spetsnaz* units (however, as demonstrated in the early stages of the invasion, they are often insufficiently equipped to defend against a large conventional force), as well as various other conventional Russian forces. Isobel Koshiw, “Ukrainian Offensive Forces Russia to Bolster Troops in Occupied South,” *Guardian*, July 31, 2022; Brett Forrest and Bojan Pancevski, “Russia Redeploys Troops in Ukraine as Focus of Conflict Turns South,” *Wall Street Journal*, August 1, 2022; and Matthew Luxmoore, “Russia Moves to Reinforce Its Stalled Assault on Ukraine,” *Wall Street Journal*, August 28, 2022.

<sup>144</sup> Julian E. Barnes and Eric Schmitt, “Russia’s Shortfalls Create an Opportunity for Ukraine, Western Officials Say,” *New York Times*, August 4, 2022; Loveday Morris et al., “On the Kherson Front Lines, Little Sign of a Ukrainian Counteroffensive,” *Washington Post*, August 12, 2022; Andrew E. Kramer, Anton Troianovski, and Helen Cooper, “Ukraine Weighs a Risky Offensive to Break Out of a Stalemate,” *New York Times*, August 26, 2022.

balance of momentum and allow Ukraine to retake territory and defeat Russia—to outweigh the risks.<sup>145</sup>

## Kherson Region Offensive

On August 29, 2022, Ukraine launched a long-awaited offensive into the Kherson region in the south, reportedly making some initial advances.<sup>146</sup> The extent of UAF success may depend on the capability of Russian forces, which have increased in number in recent weeks; sufficient equipment for UAF units; and sufficient reserves to replace casualties and exploit breakthroughs.<sup>147</sup> Some observers and U.S. officials believe the latest offensive may still be part of a “shaping” strategy to improve the UAF position for future counteroffensives.<sup>148</sup> Some reports indicate Ukrainian forces, advised by U.S. officials, determined a smaller offensive would give the UAF flexibility to deploy resources to other fronts and conduct multiple counteroffensives against exposed Russian lines.<sup>149</sup>

By early September 2022, UAF offensives had made small but sustained progress across three fronts in Kherson, pushing back some Russian forces.<sup>150</sup> UAF forces ran into significant and determined opposition, including the heavy use of artillery and air support.<sup>151</sup> At the same time, the UAF began an offensive on another front, in the northeastern region of Kharkiv. Some observers thus speculated the Kherson offensive was intended as a distraction.<sup>152</sup> While possible, the level and scale of UAF resources suggested the Kherson offensive was not simply a feint.

## Kharkiv Offensive

In the Kharkiv region, the UAF appeared to exploit a weak point in Russian defenses and captured several towns (such as Balakliya) in early September 2022, potentially opening the possibility of targeting a key resupply city of Kupyansk. Some initial reports indicated that Russian defense was manned by Rosgvardiya troops not trained or equipped for frontline combat as well as by lower-quality LNR troops.<sup>153</sup> The UAF appeared to consolidate an estimated core of

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<sup>145</sup> Christopher Miller and Paul McLeary, “Ukraine Has Telegraphed Its Big Counteroffensive for Months. So Where Is It?,” *Politico*, August 16, 2022; James Marson, Matthew Luxmoore, and Ian Lovett, “Ukraine Tried to Make Southern Offensive a Turning Point in War,” *Wall Street Journal*, August 30, 2022.

<sup>146</sup> James Marson, “Ukraine Launches Counteroffensive in South, Leading with Artillery Bombardment,” *Wall Street Journal*, August 29, 2022; *Economist*, “Ukraine Starts a Push to Recapture Kherson, a Crucial Russian Occupied City,” August 29, 2022; and Dan Parsons, “U.S. Says Some Russian Units Are ‘Falling Back’ In Kherson,” *The Drive*, August 31, 2022; Thomas Bullock, “Kyiv Begins Offensive in South of Country,” *Janes IHS*, September 2, 2022.

<sup>147</sup> Matthew Luxmoore, “Ukrainian Soldiers Say They Are Advancing in the South, But at a Cost,” *Wall Street Journal*, August 31, 2022.

<sup>148</sup> Jim Sciutto, “Ukrainian Forces Begin ‘Shaping’ Battlefield for Counteroffensive, Senior U.S. Officials Say,” CNN, August 29, 2022.

<sup>149</sup> Katie Bo Lillis and Natasha Bertrand, “U.S. War Gamed with Ukraine Ahead of Counteroffensive and Encouraged More Limited Mission,” CNN, September 1, 2022; Julian E. Barnes and Helene Cooper, “Ukrainian Officials Drew on U.S. Intelligence to Plan Counteroffensive,” *New York Times*, September 10, 2022.

<sup>150</sup> Thomas Gibbons-Neff, “Against Fierce Resistance, Ukraine Makes Small Gains in the South,” *New York Times*, September 2, 2022; John Hudson, “Wounded Soldiers Reveal Steep Toll of Kherson Offensive,” *Washington Post*, September 7, 2022.

<sup>151</sup> Andrew E. Kramer, “For Ukraine, the Fight Is Often a Game of Bridges,” *New York Times*, September 10, 2022.

<sup>152</sup> Isobel Koshiw, Lorenzo Tondo and Artem Mazhulin, “Ukraine’s Southern Offensive ‘Was Designed to Trick Russia,’” *Guardian*, September 10, 2022.

<sup>153</sup> Konrad Muzyka, “Ukraine Conflict Monitor, September 6, 2022,” Rochan Consulting, September 7, 2022.



five brigades to launch a counteroffensive.<sup>154</sup> The UAF benefited from Russia pulling its most combat-effective troops south toward Kherson and from apparent Russian intelligence and command failures, as Russia failed to detect the UAF buildup and organize a coordinated response.<sup>155</sup> Spearheaded by tanks, the UAF quickly exploited its breakthrough with high mobile units that advanced behind Russian forces, conducting ambushes and cutting off Russian reinforcements. By September 8, the UAF had broken through Russian lines and liberated almost 400 square miles, with Russia appearing unable to coordinate effective resistance or reestablish defensive lines despite rushing in reinforcements.<sup>156</sup> The UAF also launched offensives south of Izyum and Lyman to put pressure on Russian forces, threatening to cut off Russian forces in the area.

By September 10, Russian forces had announced a withdrawal from Izyum, a symbolic statement after a near-total rout of Russian forces in the area.<sup>157</sup> The collapse of Russian forces meant the UAF advanced so quickly that UAF command had trouble keeping track of its units.<sup>158</sup> Many observers believe the UAF will focus on defending its recaptured territory to prevent becoming overextended. Ukrainian Defense Minister Oleksii Reznikov stated the offensive had gone “better than expected” and that Ukraine’s focus was on consolidating and defending the recaptured territory.<sup>159</sup> By September 11, Russia announced it had withdrawn all forces west of the Oskil River, with Ukraine retaking more than 1,000 square miles of territory and almost all previously occupied territory in Kharkiv region.<sup>160</sup>

### Russian Personnel and Manpower Challenges

Since the beginning of Russia’s 2022 invasion of Ukraine, analysts have noted that one of the Russian military’s greatest weaknesses is its lack of personnel. The Russian military includes two types of enlisted personnel: conscripts drafted twice a year and contract (professional) soldiers who volunteer for a fixed term of service. Since 2008, Russia has focused with limited success on recruiting contract soldiers, resulting in a mix of conscripts and contract soldiers. Russian law prohibits conscripts from combat unless a national emergency and mobilization is declared. As a result, contract soldiers are prioritized for combat units (and elite units such as VDV, Spetsnaz, and reconnaissance) and to fulfil technical positions requiring higher levels of training and knowledge. Additionally,

<sup>154</sup> President Zelensky praised the 25<sup>th</sup> Airborne Brigade, 80<sup>th</sup> Air Assault Brigade, and 92<sup>nd</sup> Mechanized Brigade in a televised speech, but observers noted other units present in the initial offensive. BBC, “Zelensky Hails ‘Good News’ as Settlements Recaptured from Russia,” September 7, 2022; Marc Santora, “How Ukraine Gained Momentum Against Russia and Took a Critical Hub,” *New York Times*, September 10, 2022.

<sup>155</sup> John Paul Rathbone and Roman Olearchyk, “Ukraine Gains Momentum with Kharkiv Offensive,” *Financial Times*, September 9, 2022.

<sup>156</sup> Kateryna Stepanenko, “Russian Offensive Campaign Assessment, September 8,” Institute for the Study of War, September 8, 2022; Jack Detsch, “They Are Pushing Everywhere: Kyiv Goes on the Offensive,” *Foreign Policy*, September 8, 2022; Isabel Coles, “Ukraine’s Rapid Advance in East Puts Russian Forces on Defensive,” *Wall Street Journal*, September 9, 2022; *Economist*, “Ukraine Seizes the Initiative in the East,” September 9, 2022.

<sup>157</sup> John Paul Rathbone and Roman Olearchyk, “Lightning Ukraine Offensive Pushes Russia Back 70km in a Week,” *Financial Times*, September 10, 2022; Thomas Grove and Evan Gershkovich, “In Major Advance, Ukraine Drives Russians Out of Key Front-Line Cities,” *Wall Street Journal*, September 10, 2022.

<sup>158</sup> *Economist*, “Is Russia on the Run?,” September 11, 2022; Mike Eckel, “Turning the Tide? Ukraine Stuns Russia with Counteroffensive but Can’t Claim Victory Yet,” RFE/RL, September 11, 2022.

<sup>159</sup> Jack Watling, “Ukraine Can Now Exploit Russia’s Confusion, But Must Plan Carefully,” *Guardian*, September 10, 2022; John Paul Rathbone and Roman Olearchyk, “Ukraine’s Reznikov Warns on Russian Counter-attack,” *Financial Times*, September 11, 2022.

<sup>160</sup> James Marson, “Ukraine Claims Fresh Gains Against Russian Forces in Country’s East,” *Wall Street Journal*, September 11, 2022; Konrad Muzyka, “Ukraine Conflict Monitor, 5-11 September 2022,” Rochan Consulting, September 12, 2022; Illia Ponomarenko, “With Successful Kharkiv Operation, Ukraine Turns the War in Its Favor,” *Kyiv Independent*, September 13, 2022.

conscripts receive most training in their home units by contract personnel and officers, making contract personnel crucial to the overall readiness of the Russian military.

The Russian military is a tiered readiness force, with personnel levels ranging from 70% to 90% of their authorized strength. Additionally, since 2012-2014, Russia has expanded its ground forces structure by creating new units without increasing the available personnel. Michael Kofman and Rob Lee note, "Russia regressed to a partial-mobilization force, hoping to have the best of both worlds: more forces and equipment, reduced staffing and cost, plus the ability to generate substantial combat power on short notice." However, as new units were created, the actual staffing level was reduced further due to insufficient personnel. Each Russian brigade or regiment is intended to field and deploy two Battalion Tactical Groups (BTGs) of 700-900 contract soldiers (a third would consist of conscripts), but it became clear that the BTGs varied in staffing levels. Some BTGs deployed with 400-600 contract personnel. The result was that the Russian military had a relatively limited core of deployable maneuver combat formations of contract personnel relative to the total size of the military.

Heavy Russian casualties have exacerbated the personnel situation. In the initial invasion, Russia mobilized an estimated 80% of its deployable units. Since Russia states its war is a "Special Military Operation," which prohibits the use of conscripts, it has limited contract personnel and staffed units available to reinforce, rotate, and replace Russian casualties. Force quality has continued to deteriorate as units (especially elite forces) poach the best available officers and men from the lower-tiered units, which in turn do the same to the units below them (including pulling officer cadets from training schools and into command positions). This cycle undermines the quality of the unit, as those pulled up are not of the same quality and do not have sufficient training. As a result, Russia has turned to a variety of "shadow mobilization" strategies to recruit and mobilize forces to sustain offensive operations. These strategies include the following:

- Pressuring conscripts to sign as contract soldiers
- Offering high salary levels and signing bonuses for new contract soldiers (estimates range from 3-5 times the average Russian salary) and on a short-term basis (six months)
- Recruiting at least one volunteer battalion per Russian federal district, with most of these battalions reportedly forming the core of the newly established 3<sup>rd</sup> Army Corps in Mulino, Russia
- Forcing conscription of local residents in DNR/LNR (Since these territories are not Russian territory and the inhabitants not Russian citizens, they do not have the protections afforded to Russian conscripts and likely are viewed as more expendable by the Russian leadership.)
- Increasing reliance on Private Military Companies (PMCs), including the Wagner Group, to conduct offensive operations, especially in the Donetsk and Luhansk region. (PMCs reportedly have been recruiting from Russian prisons in return for a reduced sentence.)

Most observers believe these strategies are short-term solutions to avoid a politically costly decision to declare national mobilization. However, it is unclear how long these solutions will suffice and to what extent they can compensate for casualties among Russia's professional contract soldiers. Many of these recruitment strategies compete over the same recruits, and analysts note these recruitment drives are likely coming up short of proposed goals. The strategies are further complicated by retention issues, as many volunteers reach the end of their short-term contracts. On August 29, 2022, a Pentagon official stated, "This effort is unlikely to succeed, as Russia has historically not met personnel and strength targets.... In fact, if you look at the Russian armed forces, prior to the invasion, they may have already been 150,000 personnel short of their million personnel goal."

Observers also note these recruitment drives have lifted previous age and health restrictions, likely resulting in lower-quality candidates and recruits (in addition to large regional and ethnic disparities among new volunteers). Additionally, the extent and level of training for many of these new units is unclear. Since contract soldiers and junior officers conduct most training at the unit level, including for new conscripts, casualties to these troops likely will negatively affect the Russian military's ability to train and prepare incoming conscript cycles and will undermine readiness in the future. However, in the event of a national mobilization, conscripts with the most recent service and personnel who served in motor rifle or elite units (VDV, Naval Infantry, *Spetsnaz*) likely would be among the first targeted and thereby have decreased the training requirements before deployment.

On August 25, 2022, Russian President Putin signed a decree increasing the size of the active military to 1.15 million, an increase of 137,000. Although the decree by itself does not resolve Russia's personnel issues and does not meaningfully allow for greater recruitment, it likely reflects the Russian government planning for a protracted conflict and could provide a legal instrument to coordinate the integration and consolidation of volunteer and DNR/LNR units into the Russian military.

**Sources:** Neil MacFarquhar, "Russia Planned a Major Military Overhaul. Ukraine Shows the Result," *New York Times*, May 16, 2022; Dara Massicot, "The Russian Military's People Problem," *Foreign Affairs*, May 18, 2022; Michael Kofman and Rob Lee, "Not Built for Purpose: The Russian Military's Ill-Fated Force Design," *War on the*

Rocks, June 2, 2022; Neil MacFarquhar, "Desperate for Recruits, Russia Launches a 'Stealth Mobilization,'" *New York Times*, July 10, 2022; Mike Eckel, "The Orchestra Needs Musicians: Behind the Covert Mobilization to Reinforce Russian Troops in Ukraine," *RFE/RL*, July 14, 2022; Kateryna Stepanenko, George Barros, and Frederick W. Kagan, "Russian Volunteer Units and Battalions," *Institute for the Study of War*, July 16, 2022; Anastasia Tenisheva, "Russia Sends Army Recruits to Fight in Ukraine After Just Days of Training," *Moscow Times*, July 22, 2022; *Moscow Times*, "Russia Regions Form 40 Volunteer Battalions," August 8, 2022; *Economist*, "Russia is Forcing Ukrainian Conscripts into Battle," August 11, 2022; *Novaya Gazeta*, "To War or to Prison?" August 12, 2022; Mary Ilyushina, "In Ukraine, a Russian Mercenary Group Steps Out of the Shadows," *Washington Post*, August 18, 2022; Yaroslav Trofimov, "Wagner Mercenaries Enter the Spotlight as Russian Troops Struggle in Ukraine," *Wall Street Journal*, August 18, 2022; Olga Ivshina, "Lost Battalions: Calculating Russia's Casualties in Six Months of War in Ukraine," *BBC*, August 22, 2022; *Economist*, "Ukraine and Russia Both Need More Soldiers," August 25, 2022; Ann M. Simmons, "Russia's Dwindling Manpower in Ukraine Spurs Recruitment Drive," *Wall Street Journal*, August 26, 2022; Yuliya Talmazan, "Putin Orders Russian Military to Increase Its Forces as Ukraine War Passes the Six-Month Mark," *NBC News*, August 25, 2022; Department of Defense, "Russian Efforts to Raise Numbers of Troops 'Unlikely to Succeed,' U.S. Official Says," press release, August 29, 2022.

## War Crimes

Numerous countries, the International Criminal Court, the Organization for Security and Cooperation in Europe (OSCE), think tanks, and human rights organizations have identified instances of potential Russian war crimes and human rights violations in Ukraine.<sup>161</sup> On April 12, 2022, an OSCE report on possible human rights violations and war crimes in Ukraine found that, "while in the circumstances a detailed assessment of most allegations of IHL (International Humanitarian Law) violations and war crimes concerning particular incidents has not been possible, the Mission found clear patterns of such violations by the Russian forces on most of the issues investigated."<sup>162</sup>

Russian forces have been accused of indiscriminate and mass killings, particularly after the discovery of mass graves and murdered civilians following the Russian military's withdrawal from the Kyiv suburb of Bucha; rapes; and the forced "filtration" (interrogation and separation) of civilians and noncombatants from occupied territories.<sup>163</sup> On July 13, 2022, U.S. Secretary of State Antony Blinken called on Russia to "halt its systematic filtration operations and forced deportations in Russian-controlled and held areas of Ukraine."<sup>164</sup> Observers also have accused

<sup>161</sup> See, for example, Amnesty International, "Russian Military Commits Indiscriminate Attacks During the Invasion of Ukraine," February 25, 2022; International Criminal Court, *Statement of ICC Prosecutor, Karim A.A. Khan QC, on the Situation in Ukraine: Receipt of Referrals from 39 States Parties and the Opening of an Investigation*, March 2, 2022; Steve Holland, "U.S. Begins Collecting Material For Russia War Crimes Inquiry," Reuters, March 7, 2022; Human Rights Watch, "Ukraine: Russian Assault Kills Fleeing Civilians," March 8, 2022; Jamie Dettmer, "Judgement Day: European Nations Start Probing Alleged Russian War Crimes in Ukraine," VOA, March 9, 2022; Eliot Higgins, "These Are the Cluster Munitions Documented by Ukrainian Civilians," Bellingcat, March 11, 2022; Valerie Hopkins, "Investigators of War Crimes in Ukraine Face Formidable Challenges," *New York Times*, July 3, 2022.

<sup>162</sup> OSCE, *Report on Violations of International Humanitarian and Human Rights Law, War Crimes, and Crimes Against Humanity Committed in Ukraine Since 24 February 2022*, April 12, 2022.

<sup>163</sup> Malachy Browne, David Botti, and Haley Willis, "Satellite Images Show Bodies Lay in Bucha for Weeks, Despite Russian Claims," *New York Times*, April 4, 2022; Cara Anna, "War Crimes Watch: A Devastating Walk Through Bucha's Horror," AP, April 10, 2022; Anthony Deutsch, "Ukraine Prepares War Crimes Charges Against Russian Military Personnel, Including Pilots," Reuters, April 26, 2022; Ivana Kottasova and Aleksandra Ochman, "Ukrainians Must Endure a Brutal 'Filtration' Process to Escape Russian-Held Territory: Here's What That Means," CNN, May 23, 2022; National Intelligence Council, "Russian Forces Conducting Detentions and Forced Deportations Through Systematic Filtration Operations," unclassified press release, June 15, 2022.

<sup>164</sup> U.S. State Department, "Russia's 'Filtration' Operations, Forced Disappearances, and Mass Deportations of Ukrainian Citizens," press release, July 13, 2022.

Russia of shelling humanitarian corridors established to allow civilians to flee urban and conflict areas and targeting civilian areas.<sup>165</sup> Russian authorities continue to deny accusations; Russian President Putin honored one unit alleged to have conducted war crimes in Bucha for its actions in Ukraine.<sup>166</sup>

## Outlook

With the war past its six-month mark, most observers believe there is little likelihood for political settlement or cessation of hostilities.<sup>167</sup> Few observers expect Russia to agree to a political settlement or cease-fire unless it believes it has realized enough territorial gains to achieve its revised objectives and present a victorious narrative to domestic audiences.<sup>168</sup> Observers continue to speculate whether Russia has the military capabilities to achieve a decisive outcome or if the UAF can sustain operations through the winter.<sup>169</sup> For both sides, observers believe one of the most critical issues will be raising, supporting, and deploying limited resources of personnel and equipment most effectively.<sup>170</sup>

Russia likely believes it retains advantages heading into the winter that will allow it to regain the initiative. On September 8, CIA Director William Burns stated, "Putin's bet right now is that he is going to be tougher than the Ukrainians, the Europeans, the Americans."<sup>171</sup> Russia also is betting that its economy will weather international sanctions, and that international support for Ukraine will dwindle as rising energy costs take hold in Europe.<sup>172</sup> It is unclear whether Russia's recent battlefield failures have influenced these views.<sup>173</sup>

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<sup>165</sup> Tim Lister et al., "Civilians Killed as Russian Military Strike Hits Evacuation Route in Kyiv Suburb," CNN, March 7, 2022; Amy Cheng, and Annabelle Timsit, "At Least Six Killed in Kharkiv Strikes; Chasiv Yar Death Toll Hits 34," *New York Times*, July 12, 2022.

<sup>166</sup> The U.S. State Department has identified Russia's 76<sup>th</sup> Guards Air Assault Division, its subordinate 234<sup>th</sup> Guards Air Assault Regiment, and the 64<sup>th</sup> Separate Motorized Rifle Brigade as involved in possible war crimes in Bucha. U.S. State Department, "Targeting Russia's War Machine, Sanctions Evaders, Military Units Credibly Implicated in Human Rights Abuses, and Russian Federation Officials Involved in Suppression of Dissent," fact sheet, June 28, 2022; See also Bryan Pietsch, "Putin Honors Brigade Accused of War Crimes in Bucha," *Washington Post*, April 19, 2022; and Jade McGlynn, "Russia's War Crime Denials Are Fuel for More Atrocities," *Foreign Policy*, April 23, 2022.

<sup>167</sup> Anton Troianovski, Andrew E. Kramer and Steven Erlanger, "Six Months into War, Ukraine and Russia Are Both Reshaped," *New York Times*, August 24, 2022; Mehul Srivastava et al., "Six Months of War in Ukraine: The Enemy Learned Fast," *Financial Times*, August 24, 2022.

<sup>168</sup> Max Seddon and Henry Foy, "Vladimir Putin Abandons Hopes of Ukraine Deal and Shifts to Land-Grab Strategy," *Financial Times*, April 24, 2022.

<sup>169</sup> Lilia Yapparova, "The Fog of War: Military Analyst Rob Lee on Ukraine's Push to Liberate Kherson and Russia's Manpower Problem," *Meduza*, September 1, 2022; Michael Kofman and Ryan Evans, "Into the Breach: Ukraine's Counter-Offensive Begins," *War on the Rocks*, September 2, 2022.

<sup>170</sup> *Economist*, "Ukraine and Russia Both Need More Soldiers: Who Can Train Them Faster?," August 25, 2022; Jack Watling, "The Ukrainian Offensive Must Come in Stages," RUSI, September 2, 2022.

<sup>171</sup> Julian E. Barnes, "Russia's Invasion of Ukraine Looks Like a 'Failure,' C.I.A Director Says," *New York Times*, September 8, 2022.

<sup>172</sup> Liz Alderman, "As Russia Threatens Europe's Energy, Ukraine Braces for a Hard Winter," *New York Times*, August 2, 2022; Mark Galeotti, "Organized Labour in Neoliberal and Authoritarian Russia," *In Moscow's Shadows*, September 5, 2022.

<sup>173</sup> The need to replace losses could force Putin to make a decision to declare national mobilization, which he has previously resisted. Anton Troianovski, "As Russians Retreat, Putin Is Criticized by Hawks Who Trumpeted His War," *New York Times*, September 10, 2022; John Paul Rathbone, Roman Olearchyk, and Polina Ivanova, "Russia to Press on 'Until All the Goals' Achieved in Ukraine, Says Kremlin," *Financial Times*, September 12, 2022; Robyn Dixon, "Putin, Tone Deaf and Isolated, Pursues War 'Goals' and Refuses to Lose," *Washington Post*, September 13, 2022.

Russia has suffered significant equipment losses, including tanks, armored fighting vehicles, and artillery systems.<sup>174</sup> These losses have forced Russia to pull older systems out of storage and deploy them to the battlefield.<sup>175</sup> Additionally, some reports indicate Russia is mobilizing its defense industry to retool to produce and repair a variety of modern and older systems, including new legislation giving the government “special economic measures” to control and compel the work of the defense industry.<sup>176</sup> However, even with these measures and considering the losses suffered, it will take several months before production can be mobilized to full production capacity. Even at full production, it is unclear how long and to what extent Russia can replace equipment losses.

Observers are more skeptical regarding Russia’s ability to procure key components for advanced weaponry (including microchips) and if countries (such as China or India) are willing to bear the risks to assist Russia in avoiding export controls.<sup>177</sup> Captured and destroyed Russian weaponry have demonstrated the extent to which Russia has circumvented export controls and sanctions, as well as the extent to which it has adapted civilian technology for military use.<sup>178</sup> It is unclear if Russia has sufficient stockpiles of critical components to continue producing advanced weaponry or if its ability to replenish stockpiles is limited.<sup>179</sup>

Some have speculated about the potential for Russia to use nuclear, chemical, or biological weapons if Russian policymakers perceive inadequate military advances or to demonstrate capability. Most analysts, however, believe the likelihood of Russia’s use of nuclear weapons remains low. CIA Director Burns said the United States has not “seen a lot of practical evidence of the kind of deployments or military dispositions that would reinforce that concern.”<sup>180</sup>

For Ukraine, there is optimism, as some observers believe momentum has swung in its favor as the UAF retakes territory across the country, and the Russian military continues to retreat.<sup>181</sup> Ukraine’s Commander in Chief Valery Zaluzhnyi stated on September 7, “for the Armed Forces of Ukraine, the situation will be a complex mix of the actual location of the line of contact, the available resources, the pool of combat-ready forces, and, obviously, the strategic initiative that

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<sup>174</sup> *Oryx* (blog), “Documenting Russian Equipment Losses During the 2022 Russian Invasion of Ukraine,” February 24, 2022; James Beardsworth, “Tank Losses in Ukraine Raise Strategic Questions for Russia,” *Moscow Times*, July 18, 2022.

<sup>175</sup> Alberto Nardelli, “Russia Turns to Old Tanks as It Burns Through Weapons in Ukraine,” *Bloomberg*, June 14, 2022.

<sup>176</sup> Mark Trevelyan, “Russian Parliament Passes First Vote on War Economy Measures,” Reuters, July 5, 2022; Polina Ivanova, “Russia Prepares to Mobilize Economy for Longer War in Ukraine,” *Financial Times*, July 7, 2022; Mark Galeotti, “Russia Is Militarizing Its Economy,” *Spectator*, July 9, 2022; Sebastien Roblin, “Russia Mulls Restarting Production of Older Vehicles to Replace Ukraine Losses,” *Forbes*, August 31, 2022.

<sup>177</sup> Sidharth Kaushal, “Can Russia Continue to Fight a Long War?,” RUSI, August 23, 2022; John Ismay, “How Russia Uses Low Tech in Its High Tech Weapons,” *New York Times*, September 4, 2022.

<sup>178</sup> James Byrne et al., “Silicon Lifeline: Western Electronics at the Heart of Russia’s War Machine,” RUSI, August 8, 2022.

<sup>179</sup> Maria Shagina, “Technology Controls Can Strangle Russia—Just Like the Soviet Union,” *Foreign Policy*, August 22, 2022; Zoya Sheftalovitch and Laurens Cerulus, “The Chips Are Down: Putin Scrambles for High-Tech Parts as His Arsenal Goes Up in Smoke,” *Politico.eu*, September 5, 2022; Julian E. Barnes, “Russia Is Buying North Korean Artillery, According to U.S. Intelligence,” *New York Times*, September 5, 2022.

<sup>180</sup> Central Intelligence Agency, “Director Burns’ Remarks at Georgia Tech,” press release, April 14, 2022; Kate O’Keeffe, “Zelensky Warns That Russia Could Use Nuclear, Chemical Weapons,” *Wall Street Journal*, April 17, 2022; CRS Report R45861, *Russia’s Nuclear Weapons: Doctrine, Forces, and Modernization*, by Amy F. Woolf.

<sup>181</sup> Marcus Walker and Gordon Lubold, “After Six Months in Ukraine, Momentum Tilts Against Russia,” *Wall Street Journal*, August 23, 2022; Jack Detsch, “Ukraine’s Lightning Counteroffensive Approaches the Russian Border,” *Foreign Policy*, September 12, 2022.

will remain in the enemy's hands."<sup>182</sup> Despite being underequipped, UAF forces continue to demonstrate high levels of operational and tactical flexibility to sustain operations.<sup>183</sup>

As the conflict shifts away from the Donbas to southern Ukraine, the UAF likely needs continued support to replace lost equipment and support transitioning toward NATO-style weaponry.<sup>184</sup> Ukraine's recent Kharkiv offensive saw the UAF capture large quantities of Russian weaponry and ammunition that can be used to replenish UAF stocks.<sup>185</sup> The conflict has consumed significant amounts of ammunition, and the UAF likely needs replenishment of ammunition, assistance and advice in equipment maintenance and repair, and continued training of personnel. Additionally, Ukraine continues to benefit from high levels of volunteers, and foreign support for training will likely give Ukraine a personnel advantage as Russia continues to exhibit recruitment problems.<sup>186</sup>

Congress is poised to continue to track developments in the war in Ukraine closely, especially as it considers U.S. and international efforts to support Ukraine militarily and respond to events on the ground.

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<sup>182</sup> General Valery Zaluzhny and Lieutenant General Mykhailo Zabrodsky, "Prospects for Running a Military Campaign in 2023: Ukraine's Perspective," *Ukrinform.net*, September 7, 2022.

<sup>183</sup> John Hudson, "Ukraine Lures Russian Missiles with Decoys of U.S. Rocket System," *Washington Post*, August 30, 2022; and Thomas Gibbons-Neff and Natalia Yermak, "A Frontline Shadow Economy: Ukrainian Units Swap Tanks and Artillery," *New York Times*, August 30, 2022.

<sup>184</sup> Such as tanks, infantry fighting vehicles, reconnaissance and surveillance systems, medium-range air defenses, and mobile artillery. CRS In Focus IF12040, *U.S. Security Assistance to Ukraine*, by Christina L. Arabia, Andrew S. Bowen, and Cory Welt.

<sup>185</sup> Jack Detsch, "Russia Is Supplying Ukraine with Lightly Used Tanks," *Foreign Policy*, September 13, 2022.

<sup>186</sup> Jill Lawless, "Urban Combat and Beyond: Ukrainian Recruits Get UK Training," AP, August 15, 2022; Vivienne Machi, "Europeans Mull New Training Mission for Ukrainian Army," *Defense News*, August 30, 2022.