A Ukrainian soldier pulls security during an antisabotage exercise as part of Rapid Trident 2021 at Combat Training Center-Yavoriv near Yavoriv, Ukraine, on 27 September 2021. Rapid Trident is designed to increase the efficiency of Ukrainian troops and improve compatibility among of the headquarters of the Armed Forces of Ukraine, the United States, and other NATO members. (Photo by Spc. Preston Hammon, U.S. Army)

The Russia-Ukraine War

It Takes a Land Force to Defeat a Land Force

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While new technologies such as sensors, drones, and long-range fires are excellent complements to contemporary (and future) armed forces, they will have a minimal impact on the future operational environment. If we remove the sensationalism association with the terminology of sensors, drones, precision, and long-range fires, all we are essentially left with is the basic idea of "attacks from above," which is a challenge that has hampered military forces since at least World War I.[1]

Today, however, we have the additional problem in the West that most militaries seek to limit the commitment of their own land forces into direct combat with a hostile force while preferring to leverage attacks from above as an adjunct to military victory. Viewed collectively, these two elements (i.e., "attacks from above" and limiting the commitment of one's land forces to combat) can be referred to as "standoff warfare."

Today, Western militaries make the case that standoff warfare will be how wars in future operational environments will be won. Multidomain operations doctrine, Project Convergence, and the slew of other sensor, precision, and long-range strike-centric concepts dominating military, academic, and policy discussions make this abundantly clear.[2]

Nonetheless, the wars of the twenty-first century demonstrate an alternative reality that is likely more realistic than the standoff warfare visions of the future. Wars of the future will remain fought for territory. They will remain fought by armies, or at least amalgamated forces fighting on land, for land. When attacked from the sky, they will seek refuge in the land—whether in bunkers, trenches, or urban areas. Attacks from the sky are empirically proven to be less effective against land forces hiding beneath the surface of the land or in urban terrain. Thus, to defeat a hostile army holding contested terrain, standoff warfare will not be the path to success in future operational environments. To win in future wars, Western militaries will require robust and resilient land forces that can address the unique challenges of land warfare while capitalizing on the technological advantages available to Western military forces. Put in more plain English, it will continue to take a land force to defeat a land force.

These robust and resilient land forces will not be the status quo land forces of today, however. Robotics, AI-enabled combat and command-and-control systems, and human-machine integrated teams should be used in the future operational environment to augment manpower and enhance human capabilities on the battlefield and in the data computation space.

Standoff Warfare and the Limitations of Technology

The war in Ukraine has provided the defense and security studies communities, as well as Western states and militaries, to include Army forces, ample opportunity to observe large-scale, technologically advanced combat operations between two industrialized states. Early in the conflict, many commenters were trying to be the first and loudest to be "right," making grandiose pronouncements about technology's revolutionary impact on the operational environment and the tactics of warfare therein.[3] Many of these technophiles were the same commenters who made similar pronouncements regarding how the technology and tactics of the 2020 Nagorno-Karabakh War had revolutionized future armed conflict and made operational environments in future conflict increasingly challenging to navigate.

The thrust of most of these commenters' arguments is that drones, united with precision strikes and long-range fires, have revolutionized how reconnaissance and strike work together, creating kill chains or kill webs.[4] Done correctly, the theory posits that if a combatant can properly integrate and tune their reconnaissance-strike complex to the operational environment's variables, including the threat actor(s), the physical terrain, and temporal considerations, then they can quickly gain the upper hand against adversaries who operate with more traditional means and methods.[5] Previous iterations of "novel" thinking broadly referred to this conceptual idea as the "quality of firsts," rapid

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dominance, and convergence, among a handful of others. Each phrase is another generation using the same basic idea to make the same basic point.

Further, in bygone eras of military thought, this line of logic produced now-defunct theories such as John Warden's five rings theory, which was used in 1991 in Iraq during Operation Desert Storm, and the deep-strike doctrine used by the U.S. Army during Operation Iraqi Freedom, which relied on deep helicopter raids into Iraq.[6] In both the five rings theory and deep-strike doctrine, each concept hinged on the belief that sensors, precision strike, and long-range fires would

- eliminate hostile land forces,
- obviate the need for the commitment of large-scale friendly land forces,
- usher in an era of short and decisive wars, and
- reduce civilian casualties and collateral damage on future battlefields.[7]

Collectively, this theory of warfare can be packaged as the idea of "standoff warfare."

In short, the belief coming into the twenty-first century was that a rebooted approach to standoff warfare, in which the newest sensors, even better drones (armed and unarmed), more precision fires, and longer range and faster fires would breathe fresh air back into the lungs of these dying ideas. Both the United States's wars in Afghanistan and Iraq were supposed to carry on the essence of standoff warfare, with their early emphasis on light footprints and heavy reliance on reconnaissance-strike linkages. However, uncooperative local populations and competing third-party actors caused those wars to quickly devolve into insurgencies that exceeded the scale and scope of standoff warfare's mandate (and highlighted a significant shortcoming in the concept's theoretical foundation).

Nagorno-Karabakh, however, brought hope back to the proponents of standoff warfare. Azeri sensors, drones, and precision strikes seemingly made quick work of Armenian land forces operating in mountainous terrain and urban areas.[8] Seizing on the Azeri's lopsided victory over the Armenian forces, commenters were again quick to make declarations about kill webs and how war's future operational environment was forever changed because standoff warfare was now realized.[9]

The problem with much of the commentary emerging from Nagorno-Karabakh, however, was that it did not account for strategic, operational, and tactical variables of war and warfare. Instead, the commentary used titillating YouTube and TikTok videos to illustrate the effectiveness of singular drone strikes while not demonstrating how aspects such as terrain, the lack of appropriate Armenian air defense, or other factors contributed to the success of what was shown in a specific video.[10] Nonetheless, it is imperative to go on the record and note that standoff warfare is engineered to solve a specific type of military problem: tightly packed military formations, which are easily identified from above, moving in densely packed formations, along predictable lines of travel. This situation was the dynamic that the international community witnessed unfolding between Azerbaijan and Armenian military forces in Nagorno-Karabakh in 2020. Another great example of this idea was the infamous "Highway of Death" from the 1991 Iraq War in which American airpower slaughtered retreating Iraqi land forces along Highway 1.[11] Yet, when removed from this situation, the geometries and physics of standoff warfare break down and yield marginal results.

The outset of the Russian invasion of Ukraine in early 2022 echoed many of standoff warfare's successes in Nagorno-Karabakh. This is because the Ukrainian battlefield had not yet expanded in early 2022, and thus, standoff warfare tactics fit the scale and scope of the battlefield. Ukrainian sensors detected Russian armored columns, which were meandering on just a handful of routes into neighboring Ukraine. Ukrainian sensors passed the information on Russian troop movement to their armed drones (and other forces) that subsequently decimated those Russian columns.[12] Meanwhile Kyiv's small air defenses, gleaning information from Western partners, crippled Russian air forces at the conflict's outset.

Yet, the conflict quickly turned sour for Ukraine and relatively profitable for Russia. The conflict turned into a relative stalemate by the summer of 2022. By that point, Russia had all but solidified its hold of the Donbas and reinforced its position in Crimea. More importantly, Russian forces had taken possession of the so-called "land bridge to Crimea," or the oblasts that link the Donbas to Crimea.[13]

Throughout this period, the nominal drone revolution of the Nagorno-Karabakh and early phase of the Russia-Ukraine War had given way as electronic warfare and antiaircraft defense prove effective in

In an undated photo, Ukrainian soldiers fire an antitank gun in Avdiivka, Ukraine. (Photo courtesy of the Ground Forces of the Ukrainian Armed Forces)

neutralizing many of the most sophisticated and successful drones of this period.[14] Large medium-altitude long-endurance drones like the Turkish manufactured TB-2 Bayraktar have generally been sidelined since the conflict's early days, and they have been replaced by small, dual-use first-person-view drones.[15] Medium-altitude, long-endurance drones are key enabling capabilities for standoff warfare thanks to their range, flight time, and weapons payload, whereas the first-person-view drone is much more of a close fight weapon system.

Ukrainian precision strikes, focused on eliminating Russian leadership and command posts, have proven ineffective at best, and are truly little more than a distraction, and have done next to nothing to curtail Russian military operations or truly allow Kyiv's forces to retake any of their confiscated land.[16] By the same token, long-range strikes like the U.S.-provided High Mobility Artillery Rocket System have proven effective at killing exposed, static forces but are indecisive to the larger outcome of any battle, campaign, or the overall war.

Russian precision strikes, on the other hand, appear almost missing from the discussion altogether. This is likely due to the Kremlin's seemingly indiscriminate targeting of civilians alongside military forces. This fact, in addition to other coordinating factors, led the International Criminal Court to issue an arrest warrant for Russian President Vladimir Putin for war crimes.[17] Moreover, the absence of Russian precision strikes from truly standing out on the battlefield might result from Ukraine's tight-lipped reporting of their own casualties, which prevents Western open-source observers from identifying when and where precision strikes are used and how effective those strikes truly are.

This raises an important point. Once the Kremlin realized that the blitz to Kyiv and Kharkiv failed, it withdrew from those axes and redeployed forces to reinforce its holdings in the Donbas, the land bridge to Crimea, and Crimea itself.[18] It built a defensive line along that lengthy perimeter, thus changing the war's dynamic. Russian land forces were no longer on the

move, meaning that they were not as exposed, mobile, or traversing easily identifiable roads. As a result, the Kremlin forced Kyiv's hand. Moscow forced Kyiv's theory of victory change from defeating a mobile Russian army (an easier proposition) to retaking territory from a relatively static, defending Russian land army (a much more challenging proposition).

In military situations such as these, it is imperative to remember that standoff warfare quickly outlives its utility and that winning in this operational environment boils down to a simple heuristic: it takes a land force to defeat a land force. This is not to say that this land force cannot be one in which the latest technology, to include robotic formations and human-machine integrated teams, are standard practice. In fact, far from it. But standoff warfare quickly hits diminishing returns against forces intent on holding ground.

Reflections on Standoff Warfare in the Russia-Ukraine War

The Russia-Ukraine War demonstrates that major battles and campaigns among resilient land forces, supported by—not subservient to—joint services are how large-scale wars between industrialized wars are won and lost. Armies provide the fulcrum upon which all military operations pivot and upon which a state's policy outcomes in wars hinge. The battle of Kyiv, including the battle of Hostomel Airport, was a decisive early battle that delivered an outsized impact on the strategic and political course of the war.[19] Ukraine's ability to blunt Russia's assault in the conflict's dawn with conventional, unconventional, and irregular means and methods, retake Hostomel Airport, retain Kyiv, and reinforce the arteries leading into and out of the city with additional land forces and artillery decided the outcome.[20]

On the other hand, Ukraine's use of brute force outdid Russia's finesse-oriented, maneuver-centric, standoff warfare approach in the war's initial phase. Battles like Mariupol, Bakhmut, and Avdiivka followed suit. Kyiv's land forces, supported by joint services operating in and from all domains, have continued to fight both valiantly and brutally against Russian land forces for usurped territory. As U.S. and Western support to Ukraine increased the latter's ability to strike the Russian army from afar, as already noted, a traditional front emerged as the Russian army dug bunkers, trenches, and further defensive fortifications from the Donbas to Crimea to offset the effectiveness of U.S.-Western supplied long-range precision strike.[21]

Since the Russian army has transition to a defensive posture to hold the land that is taken from Ukraine, the conflict is littered not with deft battles of sweeping maneuver but of blistering battles of pulverizing attrition.[22] Attrition is not an anomaly, nor is it the effect of bad tactics, poor armies, or maladapted generalship.[23] In reality, attrition is the causal outcome of two features of modern (and future) warfare: attacks from above and the logic of land wars.[24]

Attacks from above. The phrase "attacks from above" is another way to think about standoff warfare because it articulates the character of standoff warfare at the end of contact closest to an adversary military force. Attacks from above today can be counted as any artillery bombardments (to include ground launched missiles and rockets), drone strikes, and any other long-range, top-down oriented precision strikes. This mental model, instead of viewing the drone or precision strike, for instance, in isolation, puts the technology in the proper environmental context and illustrates that the technology is not revolutionary per se but just another stepping-stone on warfare's evolutionary pathway.

Sustained attacks from above, whether from 1914, 1944, or 2024, always generate the same response from ground forces—they go underground. The infantrymen of World War I avoided artillery and primitive aerial bombardment using elaborate trench systems. In World War II, mobility was often used to bypass attacks from above. When that was not possible, much like both Russian and Ukrainian land forces today, soldiers used trenches, bunkers, and other fortifications to protect themselves from aerial attack, regardless of the type of technology used.

Nonetheless, attacks from above always generate the same basic response in land forces—they go underground. Land forces will also seek refuge from attacks from above in urban areas, if they are sufficiently close to a town or city to do so. This dynamic might change in the future with the increase of human-machine integrated land forces or more roboticized armies, but that remains to be seen. The artificial intelligence and machine learning of those future systems might develop their own survival instincts, like those of human soldiers, and develop similar survival patterns. As for

A Ukrainian soldier pulls security during a training exercise as part of Rapid Trident 2021 at Combat Training Center-Yavoriv near Yavoriv, Ukraine, 27 September 2021. Rapid Trident has been conducted since 2006 under the "Partnership for Peace" program with the participation of NATO servicemembers to prepare for joint actions as part of a multinational force during coalition operations. (U.S. Army photo by Spc. Preston Hammon)

now, this remains within the realm of science and technology development. Nonetheless, there are no game changing technologies today, nor game changing tactics. There is only a logic of land war.

Logic of land war. The logic of land war, which is alluded to in the previous paragraph, is simple and constant. Land war is almost exclusively fought for the control of territory. Even conflicts fought for the control of island states like Taiwan should be considered land wars, because at the end of the day if a state like China were to invade and occupy Taiwan, liberating Taiwan would require a subsequent invasion, clearance of Chinese army forces, and holding of the island.

It is not a stretch to compare the Russia-Ukraine War's battle of Mariupol and a potential campaign to liberate Taiwan. While Russian aggressors sought to overtake the city, a siege quickly developed around the Mariupol steel plant as defenders held out.[25] One should expect a similar dynamic to unfold in Taiwan if China invades the island and attempts to annex that territory. On the back side, any attempt to retake Mariupol, just as any attempt to retake Taiwan from China might entail, would require a significant land operation to clear the occupying forces. Thus, armies—whether state or nonstate forces—fight land wars, regardless of how they have to get to the land war. Further, armies fight other armies in land wars, regardless of the presence or degree of combined arms or joint capabilities one combatant might possess over the other.

Considering the logic outlined above, coupled with the ideas on standoff warfare described in this article, a handful of enduring challenges of land warfare emerge. These challenges transcend the theater of conflict and the way the armies get to the land war; that is, the challenges of land warfare are relevant in a Russia-type scenario or a China-Taiwan scenario. Further, these are germane challenges whether the armies have to conduct amphibious landings from ship to shore, airborne drops from a variety of aircraft, or attack on the ground in broad armored thrusts across international boundaries. The challenges, primarily identified in the Russia-Ukraine conflict but salient in all land wars are listed in the table. This list is not in order of priority but as a general grouping to assist policymakers, military practitioners, and scholars remain grounded in the principles of war when states or non-state actors fight conflicts for the physical control of territory.

Table. Requirements of Land Forces

Requirement	Task
1	Armies must be capable of taking and/or retaking territory.
1.a.	Armies must not culminate (i.e., exhaust their combat power) while taking or territory. (Note: Culmination makes an army prone to counterattack and being unable to exploit success and opportunities.)
1.b.	Armies must not culminate (i.e., exhaust their combat power) while retaking territory. (Note: Culmination makes an army prone to counterattack and being unable to exploit success and opportunities.)
2	Armies must be capable of clearing enemy armies from territory. (Note: Clearing, in this instance, means physically removing a recalcitrant, hostile military force from territory from which they are reticent to part.)
3	Armies must be capable of holding territory. (Note: Taking, retaking, and clearing territory of hostile forces often exacts a high toll on an army, leaving it in a weakened state. Armies with small, fragile force structures are even more prone to this problem, and even less likely to be able to hold onto costly gains. Resilient land forces are critical to ensuring that military forces can retain territorial gains, whereas standoff warfare tools and techniques provide marginal returns on investment when it comes to holding territory.)
4	Armies must be capable of protecting populations.
5	Armies must be capable of encircling a hostile force. (Note: This is the best way an army can maximize the effects of joint firepower.)
6	Armies must be capable of sealing boundaries. (Note: If armies cannot effectively seal boundaries, then they are always prone to invasion by hostile neighbors. Resilient land forces, not missiles and drones, are the first line of defense to ensuring proper border security.)

(Table by author)

Recommendations for Army Forces

In closing, the Russia-Ukraine War provides a set of useful considerations for Army forces. Importantly, however, these considerations are not just Russia or Europe-specific but apply to any conflict in which fights for territory (i.e., land conquest) are the goal. So, if China were to invade Taiwan, for instance, and Army forces were required to assist Taiwan in extricating Chinese forces from the island, the challenges of land warfare outlined above would remain germane, regardless of the naval, air, or contested logistics challenges also associated with that situation.

Nonetheless, the first thing Army forces must consider is not getting caught up in the hype and sensationalism of standoff warfare. Drones, long-range strike, and precision warfare all just present continued challenges of "strikes from above," which soldiers have addressed since World War I. When strikes from above dominate the battlefield, soldiers go below ground. When soldiers go below ground, static battlefields develop. When static battlefields develop, positional warfare replaces maneuver and conflicts drift into wars of attrition.

Thus, a hypothesis emerges for Army forces to examine in greater detail: standoff warfare paradoxically accelerates wars of attrition, whereas a more weighted land campaign lightly supported by joint elements better animates a war of maneuver, thus unlocking a quicker and less destructive war. It therefore follows that if Army forces want to avoid wars of attrition, they should further examine this line of logic through experimentation. War-games and tabletop exercises might reveal that standoff warfare sounds like the solution to the challenges of future warfare but is contributing to more problems than it is solving.

Second, Army forces should take pause and examine the relationship among battlefield transparency,

targeting, force design, dispersed operations, and future military operations. One of the major talking points to emerge from the Russia-Ukraine War, which is a continuation of the discourse from the 2020 Nagorno-Karabakh War, is that sensors and drone technology are obviating large land forces and making things like the tank and towed artillery, as noted by scholar Sean McFate and Gen. James Rainey, relics of a bygone era of armed conflict.[26] Many people looking at a potential conflict with China are making similar arguments.[27] Ostensible change advocates assert that to address these challenges, Army forces must become smaller, lighter, and operate with dispersed operations to defeat battlefield transparency, enemy drones, threat missile and artillery targeting, and other high-technology threats in the future.[28]

The problem with these assertions is that they only think through the problems of being seen by an enemy, but they do not think through the challenges armies have to address once they have made it to their objectives. Put another way, the problem with the arguments made by many policymakers, military leaders, and other pundits is that they only address Army forces first layer of the problem but do not address any of the land warfare challenges Army forces would have to face and overcome once they made it to the battlefield. Thus, it would be prudent for Army policymakers and military leaders to think through military operations from beginning to end, and not just beginning, which is part of why the U.S. military failed so epically in both Afghanistan and Iraq.

Therefore, policymakers must appreciate that the alliance requires resilient and robust, not light, small, and dispersed, land forces. The U.S. Army requires land forces that can make its way through the rigors of a transparent battlefield and array ready forces with sufficient combat power to meet the challenges of land warfare. Small, light, and dispersed land forces fighting through standoff warfare will not be able to defeat an ensconced challenger intent on retaining confiscated or annexed land. Strikes from the sky, regardless of how precise or how deftly adjudicated, will not effectively eliminate those land forces. Ruggedized, resilient land forces—human, human-machine integrated, robotic, or otherwise—are needed to accomplish that task. Thus, policymakers, military leaders, and other supporters should advocate for the development of larger, more armored land forces.

Yet, in doing so, they must make it clear to policymakers why larger, not smaller land forces are needed. To accomplish the challenges of land warfare—of which any future war with Russia, China, or even Iran or North Korea would likely be—standoff warfare, precision strike, and long-range fires would only play small supporting roles. The real policy-accomplishing portion of combat would occur on the ground between land forces. They would have to be capable of accomplishing the seven challenges of land warfare outlined within this article. They would have to accomplish these tasks not marginally, but in an unambiguous manner, leaving no question of victory on the battlefield, thus simplifying diplomacy for the policymakers. ■

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