



People look at the gutted remains of Russian military vehicles on a road in the town of Bucha, close to the capital Kyiv, Ukraine, 1 March 2022. (Photo by Serhii Nuzhnenko, Associated Press)

# Winning by Outlasting

## The United States and Ukrainian Resistance to Russia

Marc R. DeVore

Andrew Orr, PhD

Ash Rossiter, PhD

The failure of Russia's plan to quickly win the war in Ukraine and topple the country's democratically elected government by occupying Kyiv and other major cities has opened strategic possibilities, including a long-term war of attrition that most strategists did not anticipate before Russia's expanded invasion. Nevertheless, the Russian invasion still poses an existential threat to Ukraine. Russia retains large reserves of equipment and munitions and can mobilize far more troops than it has thus far committed. The invasion and continuing conflict also challenge NATO deterrence and European security more broadly. The threat of economic sanctions—even massive ones—failed to deter Russia's invasion, as such threats have failed to deter aggression in the past.<sup>1</sup> Since the war began, sanctions are clearly already punishing Russia's economy, but show no signs of compelling President Vladimir Putin to withdraw from Ukraine.

Despite the Ukrainian government and military's heroic resistance, an outright military victory for Ukraine appears impossible. Russian forces are making important gains in the south and show no sign of being forced to withdraw from Ukraine. Only NATO military intervention can drive the Russians out of Ukraine quickly, but direct intervention would place nuclear-equipped militaries into conflict and precipitate a general war in eastern Europe, the consequences of which are hard to predict and extraordinarily dangerous. In addition, Putin has threatened to widen the war and even use nuclear weapons if the United States or its NATO allies increase support for Ukraine. NATO—for perfectly good reasons—has been more fearful of Putin's threats of escalation to the nuclear level than Putin has shown himself of NATO. In effect, the United States has ceded escalation dominance by allowing Russia to control intrawar deterrence.

NATO is heading toward a position that will be increasingly hard to justify, domestically or morally, as its members express solidarity with Ukraine but take very limited military action in its support. NATO's quandary will become increasingly acute as Russia forces escalate the battle of Kyiv using the tactics they are employing in the siege of Mariupol. As the war drags on, supporting Ukraine will require the United States and its NATO allies to be creative and accept a level of risk to make sure Ukrainian forces have the equipment and munitions they need to continue to resist Russia.

Washington can do this by looking to history for examples of ways to extend Ukraine's resistance short of committing their own military forces.

The United States can help Ukraine's government show Russian leaders that it can keep the Ukrainian military in the field for much longer than they had imagined. The longer Ukraine resists, the more effect sanctions will have on Russia's economy. The combination of deepening economic pain, high casualties, and a war with no end in sight will maximize the pressure on Putin to seek a negotiated settlement. A strong and stable Ukrainian resistance will also shift the balance of power in negotiations toward the Ukrainians by reducing their need to make major concessions for a quick cease-fire.

NATO and the United States need military options that allow them to challenge Russia's escalatory dominance, further bleed Russian forces, and give Ukraine a realistic chance of surviving a long war as an independent state that controls its own political, economic, and cultural life. Military actions can demonstrate NATO's willingness to act beyond economic sanctions and light defensive weapons, helping to restore a deterrent capability that seems to have all but collapsed. Those options, however, must be chosen with great care given the risks of escalation. Western leaders should empower the Ukrainian armed forces by extending their material and political means of resistance without directly engaging Russian forces. By avoiding overt acts of military intervention, Western leaders can deny Putin the ability to effectively use the threat of Russian escalation to publicly deter their military actions.

Based on a careful analysis of historical examples, we recommend that the United States and its NATO allies

- increase the training and equipping of Ukrainians abroad to contribute to their country's defense,
- train and support "cyber auxiliaries,"
- provide large numbers of unmanned combat air vehicles (UCAVs),
- become a "middleman" by buying weapons systems that are compatible with Ukrainian inventories from third parties and transferring them to Ukraine,
- assist Ukraine in recruiting foreign volunteer pilots and ground crews, and
- help Ukraine establish a fallback government and defensive bastion in western Ukraine.



Ukrainian Territorial Defence Forces members train to use an NLAW antitank weapon in Kyiv outskirts, Ukraine, 9 March 2022. (Photo by Efrem Lukatsky, Associated Press)

## Training Ukrainians Abroad

Weaponry is flowing into Ukraine, including much needed antitank and anti-aircraft missiles. Shoulder-launched missiles are particularly vital to thwarting aero-mechanized assaults, especially once conventional air defense capabilities are lost. Ukraine, however, faces substantial challenges incorporating all the sophisticated shoulder-launched missiles being provided by NATO members due to a dearth of trained crews. The United States and its allies can mitigate this shortage of skilled crews by training Ukrainian expatriates at their own domestic training facilities on man-portable missile systems before returning them home to fight.<sup>2</sup>

At the beginning of the 1973 Arab-Israeli War, Israel did not possess any of the cutting-edge American TOW (tube launched, optically tracked, wire guided) antitank missiles that later proved extremely valuable to their success. Much like Ukrainians today, Israelis from all over the world returned to Israel to aid in the defense of their homeland. When the U.S. government agreed to provide Israel with TOWs, Israel's embassy in Washington, D.C., mobilized Israeli students studying

at American universities. The U.S. Army rushed these students through a rapid training program that included firing far more practice rounds in a shorter time than was normally the case. This, in turn, significantly boosted their proficiency since a lack of practice rounds is a key inhibitor for confidence in usage regardless of simulators' quality. The U.S. Air Force then airlifted the Israelis with their TOWs to the conflict zone as part of President Richard Nixon's Operation Nickel Grass. This was done fast enough that the TOW teams reached combat and scored ample tank kills before the two-week war concluded.<sup>3</sup>

Ideally, the United States would have begun this program within days of the Russian invasion, but there are still Ukrainian expatriates who have military experience and want to fight. There are also expatriates and refugees, including women, who are making up a growing percentage of returnees and who lack military experience but are willing to fight.<sup>4</sup> While prioritizing expatriates with military



experience, the U.S. government should divert some of these returnees into short, intensive training courses for using Javelin, Stinger, and other shoulder-launched missiles. This could also be extended to tube-launched, antiarmor loitering munitions such as the Polish Warmate. Ukrainian consulates, embassies, cultural organizations, and immigrant aid societies can be helpful in identifying candidates, providing transportation, and facilitating their link-up with the Ukrainian military. Training could be conducted either on U.S. military bases, in camps near the Ukrainian border, or even by private military companies, should deniability be desired.

Promising basic military training will encourage patriotic Ukrainians who want to contribute but fear their lack of experience would make them militarily useless to volunteer. Providing specialized training in man-portable systems will reduce the time it takes to make volunteers minimally effective. It would take longer to train Ukrainians without military experience than those with experience, but even previously untrained volunteers could be made effective in time to support military operations if Ukraine receives enough other support to elongate the war.

Sgt. Richard Lacombe, a soldier from Company C, 173rd Airborne Brigade, shows Ukrainian National Guard soldiers the proper procedures for operating an M4 rifle during situational training exercise lanes at Rapid Trident 2014. A rapid and steep increase in focused training of Ukrainian military personnel by U.S. military advisors would increase the chances of the Ukrainian military facilitating the survival of Ukraine as a nation. (Photo by Spc. Joshua Leonard, U.S. Army)

## Channeling “Cyber Auxiliaries”

Civilian hackers—most prominently the loosely connected global group calling itself Anonymous—have already begun independently targeting Russia and Belarus, reportedly bringing down or defacing government or state-linked websites and releasing hacked documents.<sup>5</sup> The impact of these efforts has been limited, but the effect can be amplified by better guidance on target selection, including what not to attack. Computer programmers, though highly skilled, often lack contextual knowledge to maximize damage from their efforts. Civilian hackers in the West are by inclination distrustful of governments; any attempt to fruitfully channel their expertise needs to be done with tact and likely surreptitiously through front entities.



Utilizing civilian auxiliaries in pursuit of national security goals is not novel. In naval warfare, nations have long used private citizens called privateers to support military operations.<sup>6</sup> In the cyber domain, Russia and China have already demonstrated efficacy of employing private actors as “cyber auxiliaries” to target adversaries.<sup>7</sup> During Russia’s 2007 distributed denial-of-service (DDoS) attacks on Estonia, Moscow’s intelligence agencies provided software and guidance to ordinary citizens, or “patriotic hackers,” wanting to punish Estonia for removing a statue to the Red Army’s victory over Germany.<sup>8</sup> For reasons already mentioned, Western governments would need to take a more indirect approach to channeling the capabilities of their citizen hackers.

From behind the scenes, security agencies could provide technical succor and encouragement to cyber auxiliaries to subvert Russian efforts to shut down or censor those domestic news outlets trying to provide accurate war coverage. Civilian hackers’ efforts could be channeled toward gathering images and videos of Russian indiscriminate attacks, Russian military casualties, and instances of Russian domestic opposition and getting this information through to Russian audiences. Finally, and more actively, cyber auxiliaries could, with discreet direction, use DDoS attacks to target companies identified as bottlenecks

Eugene Dokukin, known on the internet as “MustLive,” is a principal organizer of cyber resistance against Russian cyberwar efforts aimed at undermining the government of Ukraine. He is an example of many Ukraine cyber experts who have organized themselves in an effort to counter Russian cyber attacks and to conduct counterattacks against Russian networks. (Photo courtesy of Euromaidan Public Relations)

in economic and military supply chains. Despite media hype about civilian groups unleashing a cyber war, such efforts, even with greater direction and support, will not change the facts on the ground. Nonetheless, they represent a relatively low-cost and largely deniable means of causing disruption to the Russian state and for shaping the battle over information.

## More Unmanned Combat Air Vehicles

In the first three weeks of war, Turkish-made Bayraktar TB2 UCAVs have been one of the only means Ukraine has used to attack Russian ground forces from the air.<sup>9</sup> The boost to morale from videos of TB2s striking Russian targets is palpable (so much so that a catchy Ukrainian tune of indeterminant origins titled “Bayraktar” has gone viral).<sup>10</sup> The success of the TB2 is all the more remarkable considering Russia’s much lauded air defenses, which have largely neutralized Ukrainian Su-25s, and that Ukraine possesses so



A Bayraktar TB2 drone of the Ukrainian Air Force armed with a MAM-L Smart Micro Munition guided bomb; two ground control stations are in the background. (Photo courtesy of Ministry of Defence of Ukraine via Wikimedia Commons)

few of these systems. More UCAVs would threaten Russian supply lines and slow movement, especially given how strung-out Russia's armored and mechanized columns are and how poor their short-range air defenses appear to be.

Ukraine is not the only recent conflict in which tactical UCAVs—and Bayraktar TB2s in particular—have proved their worth. Azerbaijan used UCAVs extensively during the 2020 Nagorno-Karabakh War to defeat Armenia's Russian-style army.<sup>11</sup> They destroyed significant quantities of Armenian military equipment and convoys, eventually leading to operational paralysis. Indeed, rather than risk airstrikes by operating in the open or resupplying their units, Armenians mostly hunkered down under camouflage.

The best means to sustain and build upon successful UCAV attacks on Russian forces would be to acquire and send TB2s, which the Ukrainian military already operates, from stockpiles and production lines in Turkey and have them piloted by private sector contractors. Existing and very public prewar contracts between Kyiv and Ankara provides reasonable political cover for Turkey, who has, at any rate, already taken more provocative actions such as selectively closing the straits to Russian naval vessels.<sup>12</sup>

If Turkey is hesitant, other UCAVs could easily be substituted. Medium-altitude, long-endurance

(MALE) UCAVs hold the advantage of being remotely piloted, perhaps by private sector personnel, at longer distances from the battlefield. American Predators and Reapers are the best systems and could be provided in large numbers yet would appear the most provocative. Chinese Wing Loongs, on the other hand, are less capable but widespread globally (employed, for example, by Nigeria, Egypt, Saudi Arabia, Morocco, and the United Arab Emirates).<sup>13</sup> They could thus be supplied without Russia easily discerning their origins. Even providing MALE drones in an unarmed intelligence, surveillance, reconnaissance role would significantly boost Ukrainian forces' effectiveness by giving them real-time sensor/targeting data.

In parallel with UCAVs, NATO governments could provide Ukraine with small commercial-off-the-shelf drones such as the DJI Mavic and Phantom, whose widespread availability make them difficult to trace. These platforms provide tactically useful intelligence, can be modified to carry explosives, and can be used for propaganda purposes such as documenting Russian war crimes and filming successful Ukrainian operations.<sup>14</sup>

## Brokering the Replacement of Ukraine's Equipment Losses

Despite significant losses, Ukraine's land and air forces have prevented Russia obtaining air superiority. The Russian air force's unexpected failure to destroy Ukraine's surface-to-air missile capability or its MiG-29 and Su-27 fighter force has impeded Russia's close air support and ability to target Ukraine transportation infrastructure. This has allowed Ukrainian forces to

weapons systems and munitions that the United States and its western European allies neither build nor operate. There are, however, ways for the United States to obtain what Ukraine needs.

In World War II, the United States was the arsenal of democracy that provided weapons and munitions to its allies, but Ukraine needs the United States to become the middleman of democracy that scours the globe for replacement MiG-29s; spare parts for Hind attack heli-

“ The Russian air force's unexpected failure to destroy Ukraine's surface-to-air missile capability or its MiG-29 and Su-27 fighter force has impeded Russia's close air support and ability to target Ukraine transportation infrastructure. ”

hamper Russia's ground offensives by moving troops and supplies around the country and stopping Russia from establishing air bridges to resupply its ground forces.<sup>15</sup>

Russia can replace its losses by transferring planes and surface-to-air missiles (SAM) from other areas, but Ukraine cannot organically replace its lost equipment. Based on previous examples such as the 1973 Arab-Israeli War, Ukraine is likely losing trained operators and pilots more slowly than it is equipment. In 1973, Israel, Egypt, and Syria all ran out of usable aircraft despite still having robust pools of pilots. Emergency deliveries of fighters from American and Warsaw Pact stocks kept their air forces operational until the end of the war. For Israel, that meant relying on American-made aircraft that its pilots had trained in before the war. The United States transferred approximately one hundred F-4 Phantom fighter-bombers and another thirty-two A-4 Skyhawk attack aircraft (all the A-4s and 40 F-4s arrived before the cease-fire), which enabled the Israel Defense Forces to maintain full air-support operations despite suffering heavy losses.<sup>16</sup>

The United States has a vast inventory of air and land equipment, but unlike Israeli personnel in 1973, Ukrainian soldiers and pilots are not trained to use American aircraft and heavy weapons systems; the Ukrainian air force needs MiG-29s, Su-27s, Su-24s, and Su-25s.<sup>17</sup> The Ukrainian army needs replacement

copters; and replacement missiles, radars, and launchers for Ukraine's S-300 SAMs. Several eastern European NATO members have compatible weapons and munitions, and some have shown a willingness to transfer them to Ukraine. Slovakia has pledged to provide S-300 systems from its inventories, but Russia has threatened to target any attempt to transfer the systems. The United States should firmly support suppliers, including by backfilling the lost defense capabilities and providing interim defense by deploying U.S. personnel and until replacement systems are operational.<sup>18</sup>

If U.S. leaders believe it is too dangerous for NATO to openly supply major weapons systems and munitions, the United States could work with states outside of NATO that have compatible weapons to encourage them to transfer their systems to Ukraine. The United States could accomplish this through a multitude of techniques. The U.S. government can bankroll Ukraine's buying the weapons directly from foreign suppliers, it can purchase the weapons and then provide them to Ukraine, or it orchestrate barter deals, providing replacement weapons on favorable terms in exchange for states supplying their own ex-Soviet/Russian weapons to Ukraine. Many of the weapons Ukraine needs, including SAM systems and MiG-29s, can be broken down and carried in C-5, C-17, or IL-76 aircraft, allowing them to be move

**Marc R. DeVore** is a senior lecturer at the University of St. Andrews' School of International Relations. His primary interests lie in the political economy of defense industries and in military innovation. He has published in the *Review of International Political Economy*, *Security Studies*, *New Political Economy*, *Journal of Strategic Studies*, *Defence and Peace Economics*, *European Journal of International Security*, *War in History*, and *Terrorism and Political Violence*. He has conducted field research in the Balkans, Libya, Iraq, Lebanon, and the Central African Republic. His monograph "When Failure Thrives: Institutions and the Evolution of Postwar Airborne Forces" (Army University Press) helped reshape how U.S. Army leaders viewed the utility of large-scale airborne operations. His coauthored book *Financial Management for National Defense* was assigned reading for Pentagon comptrollers. He has advised the Republic of Korea's Agency for Defense Development, Switzerland's Ministry of Defense, and NATO.

quickly to Ukraine. Between Soviet-era and Russian post-Cold War sales, many countries operate systems identical or similar to Ukraine's existing equipment. Even after excluding states the United States might be loath to deal with, Poland, Bulgaria, Slovakia, Peru, Chad, Malaysia, Indonesia, Algeria, and Angola operate MiG-29s and/or Su-25s. Su-27s are rarer, but Angola, Eritrea, and Indonesia have Su-27s.<sup>19</sup> Russian tanks and artillery are ubiquitous, and even SAM systems are

**Andrew Orr** is associate professor of military history at Kansas State University and director of the Institute of Military History. He received his BA from Claremont McKenna College and his MA and PhD in European history from the University of Notre Dame. His works include *Women and the French Army during the World War, 1914-1940* and articles in the *Journal of Military History*, *French History*, *French Historical Studies*, and the *International Journal of Military History and Historiography*.

widespread. Algeria, Armenia, Bulgaria, Azerbaijan, Greece, and Slovakia operate either the same model of S-300 SAMs the Ukrainians possess or potentially superior versions that, critically, are later evolutions of the S-300 PS systems the Ukrainians use.

## Foreign Volunteer Pilots and Ground Crews

To keep flying, the Ukrainian air force will soon need more pilots and ground crews. This presents a dilemma: it takes a long time to train pilots and maintenance crews, and training needs to match aircraft type. NATO governments have thus far hesitated to commit their own pilots to Ukraine's defense, either by intervening on behalf of Ukraine or declaring some form of "no fly zone," which would entail similar escalatory risks. They can, nonetheless, still help Ukraine's efforts to deny Russia air supremacy in less escalatory and more deniable ways, mainly by facilitating eastern European volunteers' flying for Ukraine.<sup>20</sup>

There is historical precedent for such efforts. Before the United States officially joined the Second World War, President Franklin D. Roosevelt autho-

rized American Army Air Corps, Navy, and Marine Corps pilots to fly American-made aircraft for China against Japan.<sup>21</sup> The ninety-nine American pilots who originally comprised the American Volunteer Group (AVG, or "Flying Tigers") were discharged from the U.S. Armed Forces with the clear understanding that they would be welcomed back thereafter. The AVG impeded Japan's offensives in Burma, contested Japanese air supremacy, and achieved a favorable kill ratio.<sup>22</sup> The AVG is but one example of volunteer fighter groups. Finland's 19th Squadron during its 1940 Winter War with the

**Ash Rossiter** is assistant professor of international security at Khalifa University in Abu Dhabi. He received his PhD from the University of Exeter in 2014. He is author of *Security in the Gulf*, published in 2020 by Cambridge University Press, and he has published widely on security affairs. His work has appeared in journals such as *Intelligence & National Security*, *Defence Studies*, *International Politics*, *Parameters*, and *Middle Eastern Studies*, as well as other outlets.





Soviet Union was comprised entirely of Swedish pilots, Israel's air force in 1948 was comprised almost entirely of foreign volunteers, and France's Lafayette Escadrille of World War I was comprised of American volunteers.<sup>23</sup> Although not exactly volunteers, Soviet pilots flew MiGs with Chinese markings against Americans in Korea, and they flew Egyptian aircraft against Israelis in 1970.<sup>24</sup>

Eastern European volunteer pilots and ground crews who already have familiarity with Ukrainian aircraft models can be encouraged to serve in Ukraine in several ways. They can be offered leaves of absence from their own national armed forces or reserve forces. Commercial airlines employing military veterans and reservists could be incentivized to do the same. A state could donate its Soviet-era aircraft and encourage their pilots to volunteer for Ukrainian service. Limited numbers of volunteer pilots and ground crews qualified on NATO-standard aircraft could also be recruited by providing conversion training. Western European and American pilots tend to fly more hours and train more realistically than their Russian or Ukrainian counterparts (150–250 hours per year as opposed to 100–120).<sup>25</sup> Non-Ukrainian pilots, however, should not fly beyond the forward-edge of the battle area because of the negative consequences of foreign volunteers falling into Russian custody.

A Ukrainian air force Mikoyan-Gurevich MiG-29A (9-12A) departs the Royal International Air Tattoo 1997 in Fairford, England. (Photo courtesy of Mike Freer via Wikimedia Commons)

## Continuing the War in Western Ukraine

Russian commanders focused their planning on taking Kyiv because they believed it would end effective Ukrainian resistance and allow them to form a client government. The key to prolonging Ukraine's resistance from weeks to many months or years is to prepare for the day when Kyiv falls. President Volodymyr Zelensky's decision to remain in Kyiv energized Ukraine's resistance and influenced global popular opinion. Ideally, Zelensky and other government leaders will escape from Kyiv if it falls, but steps need to be taken to allow a legitimate Ukrainian government to continue functioning even if Zelensky, his ministers, and much of the parliament are killed or captured. The survival of a legitimate government will make it extremely difficult for a Russian-installed regime in occupied Kyiv to garner any domestic legitimacy and will inspire resistance behind Russian lines.

The United States and its allies should strongly encourage the Ukrainian government to establish a fallback government based in western Ukraine. This government should consist of a person who can

legitimately succeed to the office and functions of the presidency and a fully staffed cabinet of shadow ministers who would assume their powers if the incumbents were captured or killed. The United States and European countries should provide any communications technology and other infrastructure necessary for the government to communicate with its own people and the rest of the world.

Winston Churchill laid plans for re-creating a British government in 1940 when he, like Zelensky

but in the west, it touches and crosses the Carpathian Mountains. Zakarpattia Oblast extends west of the Carpathian passes and parts of three neighboring oblasts include the heights of the Carpathians. If properly fortified and defended by a well provisioned and determined force, the Carpathian line could prove extremely difficult, and very expensive, for the Russian army to break through.

The United States and European countries should help prepare a defense of the Carpathians. This in-

“ This government should consist of a person who can legitimately succeed to the office and functions of the presidency and a fully staffed cabinet of shadow ministers who would assume their powers if the incumbents were captured or killed. ”

now, faced the prospect of his capital being attacked. Churchill previewed his intentions in the House of Commons on 4 June 1940 when he promised that “even if, which I do not for a moment believe, this Island or a large part of it were subjugated and starving, then our Empire beyond the seas, armed and guarded by the British Fleet, would carry on the struggle.”<sup>26</sup> At the time of his speech, Churchill’s plans were not fully formed, but he soon approved plans to send King George VI and his family to Madresfield Court in Worcestershire if the need arose. The plan, dubbed Operation Rocking Horse, also provided for the reconstitution of a British government in Stratford-upon-Avon.<sup>27</sup> Churchill also laid the groundwork to send the king and part of the government abroad by ordering Operation Fish, which transported billions of pounds worth of gold and securities from Britain to Canada so a resistance government would have access to the resources necessary to continue the war.<sup>28</sup>

Maintaining a legitimate existent government will help remaining Ukrainian forces to keep their cohesion and reform a defensive front in western Ukraine. It may be possible to defend Lviv, but even if that proves untenable, the Ukrainian army can sustain resistance by taking advantage of extreme geography. Most of Ukraine consists of a flat plain,

volves building infrastructure including ammunition depots and hardened command complexes to support a defending army and tactical fortifications to block the passes through the Carpathians. The work can be done by Ukrainian workers, but some experts will be needed to properly design and oversee the work. Any Western experts should be contractors instead of serving soldiers.

If strongly fortified, the Carpathians are a formidable barrier. Twice in the twentieth century, the Carpathians frustrated victorious Russian or Soviet Armies—first in 1914–1915 and again in 1944. In 1914 and 1915, the leaders of Tsarist Russia’s army, which had inflicted crushing losses on the outnumbered Austro-Hungarian army, found to their dismay that even outnumbered and previously demoralized troops were capable of successfully stopping them from breaking through the Carpathians.<sup>29</sup> In 1944, despite Soviet air superiority, German and Hungarian forces held the Dukla Pass against a Red Army force that outnumbered them 3.7:1 for over fifty days and inflicted an estimated sixty-five thousand casualties on the eventual victors. Soviet forces ultimately forced their way across the Carpathians but had to rely on forces moving through Romania to overrun Hungary, lengthening Germany’s resistance on the eastern front.<sup>30</sup>

The use of extreme geography to shelter outnumbered armies and beleaguered governments is an ancient tactic. In 878, Alfred the Great used the Somerset marshes as a base of operations that allowed his outnumbered army to survive in the face of superior Danish forces. His tactic proved critical in laying the foundations of English nationhood.<sup>31</sup> Both the Chinese Communist Party (CCP) and the Kuomintang (KMT) survived annihilation at each other's hands by taking advantage of extreme geography. When KMT forces defeated the CCP in Jiangxi in 1934, it began the Long March to Yan'an, a mountainous region in the north. Then, when the CCP defeated the KMT's armies in 1949, Chiang Kai-Shek ordered a retreat to Formosa (Taiwan), which took advantage of the Formosa Strait to delay any PLA attack. The retreat ultimately saved the Republic of China as a state.<sup>32</sup> Finally, during World War II, the Swiss military used the threat of retreating to a well-provisioned fortress belt in the Alps to deter Adolf Hitler from invading Switzerland after the fall of France.<sup>33</sup>

## Conclusion

Ukraine's best chance to survive the Russian invasion is to prolong the war and force Putin to reassess the cost of winning. The longer the war lasts, the more likely it is that the growing economic damage sanctions are causing Russia will combine domestic discontent and casualties to convince Putin it is too politically dangerous for him to continue the war. Putin has implicitly and explicitly threatened to use nuclear weapons against the United States or NATO, and the United States should not needlessly risk a nuclear exchange. However, it is not strategically, morally, or politically tenable for the United States and NATO to allow Russia to conquer Ukraine through a strategy of attrition while the West stands aside. Such a policy would undermine deterrence by making it look to Putin like the West can be cowed by using threats of escalation.

The best way forward for the United States and its allies is to dramatically broaden the range of support it is providing to Ukraine to include the full spectrum of modern war. The United States should train and arm Ukrainian expatriates and refugees who wish to go home to fight. It should also facilitate Ukraine obtaining equipment ranging from fighters to SAMS, and UCAVs, artillery, and ammunition to sustain Ukraine's forces. If the political will exists, it could also facilitate cyberattacks by cyber auxiliaries and encourage the formation of international volunteer squadrons to help defend Ukraine's air space. Finally, the United States should strongly encourage the Ukrainians to create a backup government in western Ukraine and to take advantage of Western aid to create a western redoubt by fortifying western Ukraine, especially the Carpathian Mountains.

These measures will not guarantee Ukraine wins the Russo-Ukrainian War but will help Ukraine hinder Russia and help restore NATO's deterrence by confronting Russia with hard-to-stop military actions that signal that new acts of aggression will lead to escalation by NATO and the United States. Should Ukraine fall to Russia, many of these policies—including training returning Ukrainians, creating a backup government, and preparing western Ukraine to resist Russian attacks—would facilitate Ukrainian resistance against the occupation. If Ukraine is more successful in defending itself, such measures would strengthen Ukraine's hand in any negotiations with Russia. Ukraine cannot defeat Russia alone, but with enough help it might be able to force Russia to negotiate seriously with Zelensky's government. Whatever the outcome, deepening the United States' military support of Ukraine will leave the United States in a better strategic position at the end of the war than if it just continues a policy of sanctioning Russia and providing Ukraine with financial aid and light weapons. ■

## Notes

1. David A. Deptula et al, "6 Things NATO Can Do to Help Ukraine Right Now," *Foreign Policy* (website), 16 March 2022, accessed 14 April 2022, <https://foreignpolicy.com/2022/03/16/nato-ukraine-support-russia-war-help-ideas/>.

2. *Ibid.*

3. Pierre Rezoux, *La Guerre du Kippour D'Octobre 1973* (Paris: Economica, 1999).

4. Rafal Niedzielski and Jamey Keaten, "'I Will Stay until the End': Ukrainian Women Vow to Return and Help," *Christian Science Monitor* (website), 18 March 2022, accessed 8 April 2022, <https://www.csmonitor.com/World/Europe/2022/0318/I-will-stay-until-the-end-Ukrainian-women-vow-to-return-and-help>.

5. Monica Buchanan Pitrelli, "Global Hacking Group Anonymous Launches 'Cyber War' against Russia," CNBC, 1 March 2022, accessed

- 8 April 2022, <https://www.cnn.com/2022/03/01/how-is-anonymous-attacking-russia-disabling-and-hacking-websites-.html>.
6. Forrest B. Hare, "Privateering in Cyberspace: Should Patriotic Hacking Be Promoted as National Policy?," *Asian Security* 15, no. 2 (2019): 93–102, <https://doi.org/10.1080/14799855.2017.1414803>.
7. Scott D. Applegate, "Cybermilitias and Political Hackers: Use of Irregular Forces in Cyberwarfare," *IEEE Security & Privacy* 9, no. 5 (2011): 16–22, <https://doi.org/10.1109/MSP.2011.46>.
8. Stephen Herzog, "Revisiting the Estonian Cyber Attacks: Digital Threats and Multinational Responses," *Journal of Strategic Security* 4, no. 2 (2011): 49–60, <http://dx.doi.org/10.5038/1944-0472.4.2.3>.
9. Brett Forrest and Jared Malsin, "Ukraine Says It Used Turkish-Made Drones to Hit Russian Targets," *Wall Street Journal* (website), 27 February 2022, accessed 8 April 2022, <https://www.wsj.com/livecoverage/russia-ukraine-latest-news-2022-02-26/card/ukraine-says-it-uses-turkish-made-drones-to-hit-russian-targets-DrigGO7vkGfDzbBuncnA>.
10. Spencer Kornhaber, "The Military Weapon That Has Become a Musical Touchstone in Ukraine," *The Atlantic* (website), 10 March 2022, accessed 8 April 2022, <https://www.theatlantic.com/culture/archive/2022/03/ukraine-war-music-history/627024/>.
11. Kareem Fahim, "Turkey's Military Campaign beyond Its Borders Is Powered by Homemade Drones," *Washington Post* (website), 29 November 2020, accessed 8 April 2022, [https://www.washingtonpost.com/world/middle-east/turkey-drones-libya-nagorno-karabakh/2020/11/29/d8c98b96-29de-11eb-9c21-3cc501d0981f\\_story.html](https://www.washingtonpost.com/world/middle-east/turkey-drones-libya-nagorno-karabakh/2020/11/29/d8c98b96-29de-11eb-9c21-3cc501d0981f_story.html).
12. See, for example, "Ukraine, Turkey to Jointly Produce New-Gen Armed Drones," *Daily Sabah* (website), 13 December 2021, accessed 8 April 2022, <https://www.dailysabah.com/business/defense/ukraine-turkey-to-jointly-produce-new-gen-armed-drones>.
13. Francesco F. Milan and Anisheh Bassiri Tabrizi, "Armed, Unmanned, and in High Demand: The Drivers behind Combat Drones Proliferation in the Middle East," *Small Wars & Insurgencies* 31, no. 4 (2020): 730–50, <https://doi.org/10.1080/09592318.2020.1743488>.
14. On the tactical uses of commercial-off-the-shelf drones, see Ash Rossiter, "Drone Usage by Militant Groups: Exploring Variation in Adoption," *Defense & Security Analysis* 34, no. 2 (2018): 113–26, <https://doi.org/10.1080/14751798.2018.1478183>.
15. Justin Bronk, "The Mysterious Case of the Missing Russian Air Force," RUSI Commentary, 28 February 2022, accessed 8 April 2022, <https://rusi.org/explore-our-research/publications/commentary/mysterious-case-missing-russian-air-force>; Kris Orbom, "Russia Still Hasn't Gained Air Superiority Over Ukraine," *The National Interest* (website), 11 March 2022, accessed 8 April 2022, <https://nationalinterest.org/blog/buzz/russia-still-hasnt-gained-air-superiority-over-ukraine-201170>.
16. David Tal, "A Tested Alliance: The American Airlift to Israel in the 1973 Yom Kippur War," *Israel Studies* 19, no. 3 (Fall 2014): 29–54, <https://doi.org/10.2979/israelstudies.19.3.29>.
17. "2022 World Air Forces" Flight International, 32, accessed 8 April 2022, [https://d3lcr32v2pp411.cloudfront.net/Uploads/s/ut/flightglobal\\_worldairforcesdirectory\\_2022\\_28129.pdf](https://d3lcr32v2pp411.cloudfront.net/Uploads/s/ut/flightglobal_worldairforcesdirectory_2022_28129.pdf).
18. Katie Bo Lillis et al., "Slovakia Preliminarily Agrees to Send Key Air Defense System to Ukraine," CNN, 16 March 2022, accessed 8 April 2022, <https://www.cnn.com/2022/03/16/europe/slovakia-s-300s-ukraine/index.html>; Georgi Gotev, "Russia Says Will Attack Slovakia's S-300 Missile Supplies to Ukraine," Euractiv, 18 March 2022, accessed 8 April 2022, <https://www.euractiv.com/section/global-europe/news/russia-says-will-attack-slovakias-s-300-missile-supplies-to-ukraine>.
19. "2022 World Air Forces."
20. Deptula et al., "6 Things NATO Can Do to Help Ukraine Right Now."
21. Eugenie Buchan, *A Few Planes for China: The Birth of the Flying Tigers* (Lebanon, NH: University Press of New England, 2017), 34–74.
22. Daniel Ford, *Flying Tigers: Claire Chennault and His American Volunteers, 1941-1942* (Washington, DC: Smithsonian Institution Press, 1991), 222–322.
23. Martina Sprague, *Swedish Volunteers in the Russo-Finnish Winter War, 1939-1940* (Jefferson, NC: McFarland, 2010), 125–47.
24. Igor Seidov, *Red Devils over the Yalu: A Chronicle of Soviet Aerial Operations in the Korean War 1950-53* (Solihull, UK: Helion, 2013), passim.
25. On these estimates, see Bronk, "The Mysterious Case of the Missing Russian Air Force."
26. Winston Churchill, "June 4, 1940," International Churchill Society, accessed 8 April 2022, <https://winstonchurchill.org/resources/speeches/1940-the-finest-hour/we-shall-fight-on-the-beaches/>.
27. Andrew Stewart, "Protecting the King," chap. 3 in *The King's Private Army: Protecting the British Royal Family during the Second World War* (Solihull, UK: Helion, 2016).
28. Alfred Draper, *Operation Fish: The Fight to Save the Gold of Britain, France and Norway from the Nazis* (Toronto: General Publishing Co., 1979), passim.
29. Alexander Watson, *The Fortress: The Siege of Przemysl and the Making of Europe's Bloodlands* (New York: Basic Books, 2020), 190–94; David Stone, *The Russian Army in the Great War: The Eastern Front, 1914-1917* (Lawrence: University Press of Kansas, 2015), 125–30, 140–45.
30. Karl-Heinz Frieser et al., *Die Ostfront 1943/44 – Der Krieg im Osten und an den Nebenfronten Das Deutsche Reich und der Zweite Weltkrieg* [The Eastern Front 1943/44 – the war in the east and on the secondary fronts the German Reich and the Second World War], vol. VIII (Munich: Deutsche Verlags-Anstalt, 2007).
31. Benjamin Merkle, *The White Horse King: The Life of Alfred the Great* (Nashville: Thomas Nelson, 2009), 91.
32. Ed Jocelyn and Andrew McEwen, *The Long March: The True Story behind the Legendary Journey That Made Mao's China* (London: Constable, 2006), passim; Jay Taylor, *The Generalissimo Chiang Kai-shek and the Struggle for Modern China* (Cambridge, MA: Belknap Press, 2011), 378–453.
33. J. E. Kaufmann and Robert M. Jurga, *Fortress Europe: European Fortifications of World War II* (Cambridge, MA: Da Capo Press, 2002), 154–59.