



The Mitchell Forum

The Nuances of Air Control in Great Power Competition: What the No-Fly Zone Debate is Missing

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Abstract

Ukraine's request for a "no-fly zone" in response to Russia's 2022 invasion sparked a debate in the United States over the use of this policy instrument against a nuclear-armed opponent. Concerns about direct military confrontation between nuclear powers dominate the conversation and largely drive policymakers away from the idea. By focusing exclusively on escalation risk, the debate thus far sidesteps a critical evaluation of the utility of no-fly zones in today's geopolitical and technological environment. The changing nature of military competition and the rapid advancement of technology, particularly inexpensive automated aircraft, have fundamentally altered what air control means in the 21st century. Air control is a spectrum, and the United States needs flexible options with targeted effects and varying degrees of escalation risk. Focusing exclusively on all-or-nothing "no-fly zones" as implemented in the 1990s leaves the DOD and the U.S. Air Force poorly prepared to provide usable airpower policy options. We would benefit by discarding the weighted term "no-fly zone" in favor of presenting a more nuanced understanding of air control as well as what it takes to develop the tools, capabilities, and policy options that offer useful military choices in great power competition.



Forty countries attended a Ukraine Defense Consultative Group at Ramstein Air Base in April 2022

Source: [U.S. Air Force Photo](#)

Through the first six weeks of the Ukrainian War, President Volodymyr Zelensky appealed to the United States to establish a no-fly zone over his country in an attempt to abate the destruction being wrought by Russian forces through the air domain.¹ The Biden administration consistently declined the request, citing the potential for uncontrolled escalation

to open hostilities between American and Russian forces.² Although a few prominent U.S. lawmakers disagreed with this decision, the majority of the national punditry and most American citizens favored restraint.³ While the establishment of a U.S.- or NATO-enforced no-fly zone appears unlikely, this debate illuminates an assumption that deserves greater scrutiny

as global politics continue to shift toward multipolarity: namely, that the U.S. military could feasibly pursue supremacy of the air domain via activities that would remain below the level of war. In the context of great power competition, and in the current era of rapid technological advancement and proliferation, the concept of an “old fashioned” and rigid no-fly zone as a policy option that can be conducted short of war is obsolete.

The no-fly zone had a relatively successful track record as a policy instrument in the 1990s and early 2000s. In that period, the United States spearheaded four official no-fly zones: Operations Southern and Northern Watch over Iraq, Operation Deny Flight in the Balkans, and finally Operation Odyssey Dawn over Libya.⁴ All were tactically and operationally successful and did not entail significant casualties or materiel losses.

The United States and its partners were able to achieve success and keep losses low for four reasons. First, these no-fly zones were not enforced against great power opponents who had the ability to cause significant, direct harm to the U.S. homeland, U.S. forces, or U.S. partners. With no risk of nuclear or conventional escalation in Iraq, Libya, or Serbia, the United States was free to unleash its military assets in pursuit of its tactical aims. Second, America possessed superior comprehensive warfighting technology. U.S. forces employed the most advanced fighter aircraft and munitions, excelled in battlefield sensing, and possessed dominant command and control capabilities as well as the training backbone to exercise integrated warfighting using these capabilities. Third, each operational environment was relatively uncluttered by significant numbers of adversary military, commercial, or private air vehicles. Finally, the lack of congestion in the airspace enabled the United States to employ offensive tactical air operations, for which U.S. air forces were optimized. U.S. Air Force and Navy air superiority fighters; multi-spectrum intelligence, surveillance, and reconnaissance (ISR) constellations; airborne warning and control systems (AWACS); precision strike fighters and bombers; and electronic attack platforms were optimized for dissecting, suppressing, and destroying limited regional air defenses.

The battlespace has changed. The current conflict in Ukraine possesses none of those factors, and neither do most future combat scenarios in the current era of great power competition. Military interaction is likely to take place over contentious, third-party nations—like Ukraine—or around strategic choke points in the global commons. In these areas, the specter of nuclear escalation will temper

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great power options, likely constraining offensive actions against adversary bases. Additionally, the United States no longer maintains a wide technological margin of superiority in the air domain. Adversaries, particularly China, have parried America's thrust for stealth, sensor fusion, precision weapons, and exquisite datalinks with advanced radar technology, mobile integrated air defense systems, and powerful electronic warfare technology. Though programs like the F-35 may still benchmark the current technological competition, the qualitative U.S. advantage is a fraction of what it was at the turn of the century. Finally, the sheer quantities of unmanned aerial vehicles, or drones create congested environments for which our force structure was not designed.

In the 1991–2011 period, the majority of military aircraft operated by lesser regional states were manned, mostly large, easy to detect, and operated in small numbers.

The few adversaries that took to the air did not fare well against well-trained Western pilots who could see and shoot farther. Those Western pilots, however, would be quickly overwhelmed if they tried to counter the kinds of threats that now exist in today's battlespace. Two recent incidents are illustrative.

The 2019 attack on Saudi Aramco's Abqaiq and Khurais facilities consisted of 25 low-flying missiles and drones.⁵

And in Ukraine, Russia has launched salvos of as many as 30 cruise missiles at individual target areas and has leveraged its massive drone fleet, rumored in the thousands.⁶ Attacks like these would be difficult, if not impossible, to prevent with current U.S. combat aircraft and missile

capabilities. Furthermore, these limited attacks are a mere fraction of the challenge posed by China, which has demonstrated the ability to launch and control thousand-drone swarms. While the United States maintains the technical ability to engage missiles and drones, existing platforms and munitions cannot keep up with the sheer numbers or the corresponding costs. The current employment model calls for aircraft priced in the hundreds of millions to shoot missiles priced in the ones of millions and airborne drones in the ones or tens of thousands.⁷ This simply doesn't make sense from an operational or cost-effectiveness perspective. While the U.S. Army and Navy possess ground- and sea-based air defense options with deeper magazines, these can be overwhelmed by massed swarms. They are also more easily targeted and avoided by adversaries, and most are still on the wrong side of the cost-per-engagement equation.

U.S. policymakers require a more nuanced approach to air control in this new environment. The debate over no-fly zones has highlighted two false assumptions. One is that air superiority is a binary, all-or-nothing condition of the battlespace. Policymakers would be better served to evaluate competition in contested domains as a tug-of-war along a spectrum representing degrees of control and denial. Airpower advocates laid the groundwork for this in the 2017 revision to U.S. joint doctrine, which redefined the concept of air domain control as a continuum characterized by "degrees of control," but the Defense Department has yet to operationalize this concept into policy options.⁸ The second assumption is that air superiority can always be cheaply, quickly, and sustainably achieved. The ability to establish theater air supremacy over the past 30 years was as historically anomalous as the broader geopolitical unipolar moment of the United States. The air domain once

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again resembles the contested, congested, competitive arena that it was for the first 80 years of military flight.

In order to provide competitive policy options to accompany a more nuanced approach to control of the air, the United States must develop and acquire more defense-oriented technology and adjust the force structure accordingly. In addition to pursuing their own multi-purpose swarms, directed energy systems, and drone-tailored electronic attack capabilities, the DOD should leverage its existing systems and prioritize compatible technologies tailored to a congested, contested air environment. The F-22 and

F-35 are highly survivable, exquisite sensor platforms but possess limited payloads—eight and four missiles, respectively—that are insufficient to respond to a massed swarm attack. As members of the F-35 program, the Air Force, Navy, and Marines might together acquire cheaper, short-range micro-munition offensive missiles that could be carried in greater numbers to improve the F-35's applicability in a congested space. Additionally, the services might consider leveraging the powerful sensors on fifth-generation aircraft in novel ways to disrupt

swarm attacks non-kinetically, possibly by jamming or spoofing drone guidance signals. Because China and Russia continue to invest in high-end aircraft like the Su-57, J-20, and J-31, the DOD cannot abandon the F-22, the F-35, and the USAF's Next Generation Air Dominance (NGAD) program. However, the department can and should broaden their utility through targeted investments in smaller, more numerous munitions and electromagnetic spectrum (EMS) capabilities.

While leveraging existing manned platforms, DOD would be wise to keep in mind the strategic utility of unmanned platforms, particularly in an environment where policymakers will likely value escalation control. Unmanned systems offer a degree of attribution ambiguity, particularly if they can be launched covertly. For instance, the 2019 attack on Saudi Aramco was claimed by a Yemeni militant group, although officials strongly suspected Iranian involvement based on the direction of the attack.⁹ In addition, the destruction of an unmanned vehicle may not trigger political pressure to respond, offering political leaders more decision space than would be present following a killed or captured servicemember. The 2019 Iranian destruction of an unmanned American RQ-4 surveillance aircraft did not spark significant public outrage or an overt military response.¹⁰

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Illustrations of potential NGAD concepts

Source: illustrations courtesy of the Boeing Company, Lockheed Martin, and Raytheon Technologies

Taking advantage of these new technologies will require reimagining force structure and designing more flexible employment options. Currently, the Air Force and Navy each have distinct approaches to airborne air defense, the former centered mostly around operations over key terrain, locations, and facilities, and the latter around naval surface formations. Their operational approaches center around offensive actions against the sources of adversary aircraft (enemy bases) and airborne engagement of enemy aircraft with exquisite platforms shooting expensive missiles. As additional protection for high-value friendly locations, the U.S. Army operates Patriot and Theater High Altitude Area Defense (THAAD) missile systems, and the Marines have a limited, organic, short range air defense (SHORAD) capability. These dedicated, ground-based air defense units are typically possessed by much larger ground or composite units, limiting the deployment flexibility. The dispersion of air control assets amongst the services creates organizational seams in joint force design that make it difficult to efficiently research, develop, and acquire complementary systems and quickly mix and match different force capabilities in response to the particularities of specific environments or customized policy options. Until DOD is ready to tackle these seams with larger doctrinal and organizational changes, it should continue to resource and leverage existing organizations—like the Air Land Sea Application (ALSA) Center—in order to refine joint force employment. The DOD should also consider directing higher levels of joint participation within service-administered, large force employment exercises, such as the Air Force’s Red Flag and the Navy’s JTFEX. The DOD might go even further by shifting training resources from the services

to geographical combatant commands to execute joint, expeditionary exercises in complex, contested environments where the utilization of tools and capabilities from multiple services is needed to achieve objectives.

With these investments, the DOD could develop more nuanced air domain control options relevant to great power competition. Approaches to domain denial should focus on specific battlespace effects, such as degrading adversary ISR capabilities or defending against long-range fires, so that policy makers have options that are targeted and specific. Solutions should seek to capitalize on asymmetric solutions to the challenges posed by the rapid democratization of the air domain. Looking forward, U.S. strategists should assume great power involvement and consider the associated risk of nuclear exchange. They must balance the need to compete with managing the risk of escalation.

As the DOD’s primary air domain service, the U.S. Air Force advertises air superiority as its first of five stated core missions.¹¹ The lack of options to compete militarily for air superiority in Ukraine is indicative of a failure to provide flexible options for air control in great power competition. Change is needed now, starting with these initiatives:

- DOD policy options should accommodate a spectrum of air control conditions and should clearly articulate the range of risks—to force, to mission, and of escalation.
- Contingency plans should acknowledge that persistent operations will be required to compete for air control throughout a campaign and that such control will likely vary across space and time.

- Force design planners should seek to improve defensive capabilities and capacity to meet the needs of warfighters operating in congested, ambiguous, and contentious environments. In addition to developing new systems, this may include improving magazine depth on existing platforms and leveraging existing EMS capabilities in novel ways.
- The DOD should improve joint integrated air and missile defenses through continued doctrine development, more joint training opportunities, and holistic capability development reviews to ensure the services invest in complementary and interoperable systems.

If effective, these changes could provide a blueprint for larger force restructuring and design. Technology and great power conflict have altered other domains as well. The proliferation of small, inexpensive, unmanned surface and underwater vehicles portend the same issues for sea control. The democratization of space launch has led to an increasingly cluttered on-orbit environment, and the EMS and cyberspace continue to vex U.S. policymakers as they struggle to maintain escalation control within these messy, contested domains. These overlapping challenges pose an opportunity to learn and evolve, but to do that we must abandon terms and policies that are no longer relevant. We must embrace the complexity and nuance of the environments within which we must now compete. ✪

Endnotes

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