

RETHINKING CONVENTIONAL DETERRENCE: THE STRATEGIC LOGIC OF FIFTH-GENERATION AIRPOWER

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(Views expressed in the brief are those of the author, and do not represent those of ISSI)



In the opening weeks of its invasion of Ukraine, the Russian Aerospace Forces, one of the world's largest air arms, failed to secure control of the skies it was attacking. With a huge superiority in aircraft numbers and surface-to-air missiles (SAM), Russian aircraft were unable to neutralize Ukrainian ground-based air defenses and were restricted to low-level and standoff operations within a few weeks.¹ It challenged a long-standing doctrine in airpower thinking that was widely accepted: that superior forces and technology inevitably meant control of the air.

The staple methods of conventional deterrence, however, have been based on force size, technological advantage, and the capability to create (or fail to create) air superiority. That's no more the case in modern battlefields. Instead, the operation of militaries in the air has now been transformed by integrated air defense, advanced sensors, electronic warfare, networked command, and long-range precision weapons. The "big question" is, then, who can keep functioning once their airspace is challenged. Fifth-generation airpower has emerged as one answer to that shift.

¹ Justin Bronk, Nick Reynolds, and Jack Watling, "The Russian Air War and Ukrainian Requirements for Air Defence," RUSI Special Report (London: Royal United Services Institute, November 7, 2022), <https://static.rusi.org/SR-Russian-Air-War-Ukraine-web-final.pdf>.

From Air Superiority to Operational Access

Modern airpower is no longer about the exercise of uncontested dominance but keeping operational access, defined in the U.S. Joint Operation Access Concept (JOAC) as the capacity to project military power into an operational area without being denied by the enemy.² That is an important distinction, as adversaries have been increasingly incorporating layered air defense, electronic warfare, cyber warfare and intrusion-surveillance networks to attempt to block rather than just go up against access.³ Even a state that can't destroy an opponent's air force can inflict undeniable costs on it and render its activities slow, uncertain and costly.

This alters the role of the air forces. In addition to destroying a target, you need an additional objective to achieve that target. Conducting air operations in today's world requires adversaries to be able to find, identify, and target within an environment specifically designed to foil this ability. In this brief, this capability that could result in penetration is known as "Credible Penetration Capability." It's the ability to maintain military capability within defended airspace, and to cause an enemy to remain in doubt about the protection of its key assets.

Credible Penetration Capability does not necessarily mean that there is an intent to attack. Its deterrent power is giving an opponent the false sense that as long as they have their own defense, then they can rely on it. When a State is not sure whether its air defense system will hold, it should take these doubts into account in every calculation relating to aggression. This is where fifth-generation airpower comes into the equation as not a triumphant weapon of air supremacy, but as a viable force within contested airspace.

² U.S. Department of Defense, Joint Operational Access Concept, Version 1.0 (Washington, DC: Government Printing Office, 2012), 6. <https://nsarchive.gwu.edu/media/17735/ocr>.

³ Timothy M. Bonds et al., What Role Can Land-Based, Multi-Domain Anti-Access/Area Denial Forces Play in Deterring or Defeating Aggression? (Santa Monica, CA: RAND Corporation, 2017). https://www.rand.org/pubs/research_reports/RR1820.html.

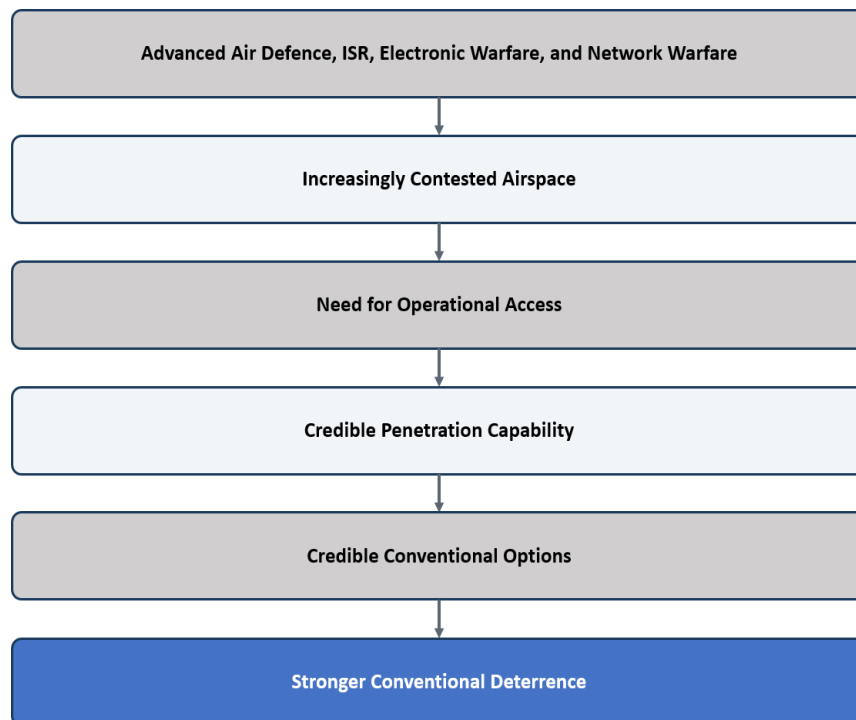


Figure 1: The Logic of Credible Penetration Capability (Made by Author)

Fifth-Generation Airpower: Enabling Credible Penetration Capability

Survivability comes first. So, fifth-generation's major benefit is survivability, provided it is a product of stealth and onboard electronic warfare capabilities and of improved situational awareness. Low observability will decrease the range at which an aircraft will be seen and engaged. Once detected, electronic warfare systems disable an enemy capability to track it. When combined, these capabilities enable an aircraft to operate in proximity to defended assets, as well as longer than previous generations aircrafts.

The Russian Aerospace Forces' experience in Ukraine is exactly the opposite. That imbalance has endured right through the fourth year of this war, with long-range and sustained air defense operations continuing to influence the range of operations both air forces can consider as they fight the war.⁴ The lesson will go beyond this one war. Air forces must now be constructed to occupy and operate within a contested airspace as well as dominate open airspace.

⁴ Justin Bronk, "Four Years On: An Update on the Air War over Ukraine," RUSI Commentary (London: Royal United Services Institute, July 28, 2026). <https://www.rusi.org/explore-our-research/publications/commentary/four-years-update-air-war-over-ukraine>.

However, Information moves to the center. Stealth explains how a fifth-generation aircraft survives; sensor fusion explains what makes it valuable once inside contested airspace. These aircraft combine data from multiple onboard sensors into a single “tactical picture”, then share that picture with other aircraft, ships, and ground units in real time.⁵ A fifth-generation fighter is more than just a weapons platform; it is used within a larger combat network and is valuable in the extent to which information passes through the network quickly and accurately.

It's a preamble to an older debate over the nature of modern warfare – that the key to war now lies not necessarily with mass alone,⁶ but with information. Information supremacy isn't just a supporting role for fifth-generation air power. It's the organizing one.

Rivalry has evolved from isolated platforms to interconnected systems. This is all interrelated. Fifth-generation aircraft without airborne early warning, secure communication, EW escort, and precision-guided munitions have only a slim advantage from their sensors and stealth. The effectiveness depends on the ecosystem of which it is a part: intelligence systems, unmanned systems, command-and-control systems, and weapons carried.

Conventional Deterrence Implications

Fifth-generation airpower affects conventional deterrence in three specific ways.

First of all, it takes down an opponent's confidence in defense. Advanced air defenses make it more difficult for an enemy to penetrate, but they do not alone provide complete protection. A credible penetration capability means that an adversary can never make an assumption that their critical assets are out of reach.

Secondly, it helps to maintain flexibility outside of nuclear thresholds. Nuclear signaling is not an issue when states with credible conventional strike capability have choices during a

⁵ "How the F-35A's Sensor Fusion Turns Pilots into Battle Managers, and Redefines What Air Superiority Means," Defence Industry Europe, July 2026. <https://defence-industry.eu/how-the-f-35as-sensor-fusion-turns-pilots-into-battle-managers-and-redefines-what-air-superiority-means/>.

⁶ Arthur K. Cebrowski and John J. Garstka, "Network-Centric Warfare: Its Origin and Future," U.S. Naval Institute Proceedings 124, no. 1 (January 1998). <https://www.usni.org/magazines/proceedings/1998/january/network-centric-warfare-its-origin-and-future>.

crisis. Recent research into escalation management in Europe suggests that a nuclear response to a conventional or gray-zone provocation may not be enough.⁷ Nuclear postures leave a gap which can be plugged by conventional counterforce options. That also applies to airpower: the greater the range of credible conventional options, the less that the posture of deterrence must rely on a credible nuclear face.

Lastly, it increases strategic uncertainty that an adversary has to take on. A part of deterrence depends upon what an opponent cannot confidently predict; the likelihood and costs of aggression grow with uncertainty over the security of the state's greatest military assets. This sort of uncertainty can provide a greater deterrent power than any single weapons system.

Policy Considerations: Building Effective Airpower in the Fifth-Generation Era

There are four lessons to be drawn by defense planners from these dynamics.

1. Focusing on integration, not acquisition, is worth the priority in modernization strategies. An aircraft from the fifth generation that comes without a commensurate investment in sensors, EW, C2, and UAS is just a fraction as effective as intended.
2. Operational access, not air superiority in the traditional sense, must be the objective of guidance of the design process for planners. That means prioritizing survivability, resilience, information superiority, and the capacity to adapt as adversary defenses evolve, rather than measuring readiness by aircraft count alone.
3. States also need to manage what they reveal about these capabilities. Public discussion of advanced systems can unintentionally signal intentions or expose vulnerabilities a state would rather keep ambiguous. Analysis of emerging military trends should inform planning without becoming a vehicle for unnecessary signaling.
4. Finally, capability development has to be sustainable. Advanced systems demand sustained financial, industrial, and human capital investment over decades, not only at the point of purchase. States that acquire fifth-generation platforms without planning

⁷ Linde Desmaele and Austin R. Cooper, "A Hole in the Nuclear Umbrella? Rethinking European Deterrence and Escalation Management through Conventional Counterforce," *International Affairs* 102, no. 4 (July 2026): 1267–86. <https://doi.org/10.1093/ia/iaag091>.

how to sustain their technological capabilities, training pipelines, and long-term affordability risk building capability they cannot actually sustain through a real crisis.

Conclusion: Redefining the Purpose of Airpower

The strategic value of fifth-generation airpower is more complex than simply stealth or modernizing an aircraft. It embodies a general trend of the evolution of conventional deterrence, where survivability, information dominance, and access to operations are increasingly being viewed as factors to define military effectiveness. When it comes to contested battle space, the goal isn't to obtain the ability to dominate the airspace, but to maintain at least a viable alternative opportunity despite being denied that by the air opponent.

Fifth-generation airpower contributes to that objective through credible penetration capability, but its value is conditional. A fighter without the network around it is a diminished asset. Evaluation of future air power strategy should not just be assessed on the platforms a state has at its disposal, but on the capacity to maintain credible conventional deterrence in today's more treacherous security environment.