

Air Denial: *Pis Aller* to Counter Power Differential

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INTRODUCTION

All air power doctrines and air power theorists since Giulio Douhet have unambiguously championed control of the air as the first and foremost mission of the air force. Therefore, the first task for any air force is to gain and maintain a degree of control of the air which would then facilitate unhindered progression of surface, sub-surface, and air operations. Gaining the desired control of the air demands dedicated and concentrated air operations, which are termed as counter-air operations.¹ A large number of forces with sustained efforts are required to prosecute such operations successfully.

However, when an air force finds itself as the weaker force facing a superior adversary, aiming to achieve the desired control of the air could be suicidal due to the adverse power differential. In such a scenario, 'air denial' to asymmetrically apply air power

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1. Air Headquarters, Vayu Bhawan, Indian Air Force, "Doctrine of the Indian Air Force: IAP 2000-22", p. 51.

has the potential to emerge as a viable fallback strategy where the doctrinal way of application of air power has been assessed to be ineffective. The purpose is to deny the enemy control of the air rather than putting one's own limited forces in harm's way to gain control of the air. Such asymmetric application of air power would provide an opportunity to an inferior force to continue to fight a stronger force while trying to achieve limited political or strategic objectives.

UNDERSTANDING AIR DENIAL

Air denial may be understood when it is taken as a corollary to control of the air. While control of the air aims at gaining control in order to execute one's own operations, air denial aims at **denying operational freedom** to an adversary without necessarily being able to gain control of the air. The subtle difference is in one's aim: whether it is to gain control for own exploitation or to deny it to the adversary for his exploitation. The air denial strategy may be considered analogous to guerrilla warfare where the medium of the air is used to affect the conduct and progress of operations. It needs to be considered as a strategy and not an act like air defence, as air denial also stresses on offensive application of air power although in bursts to derive maximum effect.

Therefore, air denial may be considered as a **fallback strategy employed by a militarily and financially weaker force to restrict or deny the operational effectiveness of an adversary's air power.**² Unlike conventional air operations which focus on achieving control of the air, air denial focusses on minimising the adversary's ability to project power through the medium of the air by ensuring that the airspace remains contested. Denying him control of the air, would deprive the adversary of the desired

2. Author's articulation.

operational freedom which would adversely impede his progress in all types of operations.

While employing this strategy, one would be able to preserve one's forces, allowing one to stay in the fight for a longer duration. The foremost and continued objective of this strategy would be to maintain a 'force in being' which needs to be catered for by the adversary. In order to preserve combat power, it must be applied in offensive bursts against the stronger adversary. These bursts would mainly comprise continued harassment strikes to weigh down the adversary's morale and garner international attention. The offensive application of air power would have to be calibrated so as to achieve the maximum damage on the adversary for the minimal loss/effort. These bursts must incorporate the cardinal principle of Effect-Based Operations (EBOs) by targeting adversary's crucial vulnerability of critical capability, directly or indirectly. All through one would continue to generate combat power while finding an opportunity to affect a transition from bursts of offensive to a sustained offensive and, if further desired, affect a transition to gaining control of the air.

Historical Perspective: The concept of air denial is not new in application. The Battle of Britain may be considered as the best example of the use of the air denial strategy. The German military wanted to execute Operation Sea Lion, an amphibious invasion of the United Kingdom, for which control of the air over the English Channel was assessed as essential. Therefore, the aim of the German forces was to gain control of the air, and the aim of the British forces was to prevent them succeeding in gaining control of from the air. Dowding employed an air power strategy which may be related to air denial, in which the British forces aimed to deny operational freedom to the German forces without necessarily being able to control that

airspace.³ It must be borne in mind that the strategy was used as a necessity rather than a choice.

Recent Conflict: The ongoing Russia-Ukraine War also serves as a ready example of the employment of the air denial strategy by Ukraine. The air force of Ukraine is roughly ten times smaller than Russia's. Still, Ukraine has managed to deny control of the air to Russia. The protracted war, lasting nearing three years, without any end in sight, may be attributed to the air denial strategy being adopted by Ukraine.⁴ The ability of Ukraine to effectively engage a far superior Russia has been perceived by many as a strategic win for Ukraine though at the tactical level it may have ceded some territory to Russia.

Air Denial as a Measure of the Control of the Air: At present, the degree of control of the air is discussed in three doctrinal terms namely, Air Supremacy, Air Superiority and Favourable Air Situation (FAS).⁵ These degrees of control of the air depend upon the extent of control and freedom from the adversary's opposition towards the conduct of own operations. These terms rely on the ability to control the airspace for own exploitation, but they do not consider the ability to deny the airspace to the enemy for his exploitation. Further, FAS is understood to be dynamic, the attainment of which in most cases is realised after the achievement of the objectives. Here, the failure to achieve

3. Maximilian K. Bremer and Kelly A. Grieco, "In Defence of Denial: Why Detering China Requires New Airpower Thinking", *War on the Rocks*, April 3, 2023, <https://warontherocks.com/2023/04/in-defense-of-denial-why-detering-china-requires-new-airpower-thinking/>. Accessed on August 24, 2024.

4. Maximilian K. Bremer and Kelly A. Grieco, "Success Denied: Finding Ground Truth in the Air War over Ukraine", *Defence News*, September 21, 2022, <https://www.defensenews.com/opinion/commentary/2022/09/21/success-denied-finding-ground-truth-in-the-air-war-over-ukraine/>. Accessed on August 24, 2024.

5. n. 1, pp. 45-46.

even the lowest degree of control of the air may be termed as air denial being achieved by the opposing belligerent. And, hence, air denial may be construed as a subset of FAS where none of the belligerents enjoy control of the air and the airspace remains contested. Fig 1 amplifies the concept where the control of the air continuum is laid out. Air denial is depicted as a subset of FAS where one belligerent has prevented the other from achieving any degree of control of the air.

Fig 1: Control of the Air Continuum



Source: Author's articulation.

APPLICABILITY OF AIR DENIAL

Air power, due to its unique attributes, is inherently at its best when employed offensively. The *raison d'être* of any air force is to gain the desired control of the air which is essential for the successful conduct of other surface, sub-surface, and air operations. It may be said that the lack of control of the air adversely impacts all other operations. To achieve the desired control of the air, the air force is required to prosecute dedicated and concentrated Counter Air Operations (CAOs) which involve Offensive Counter Air (OCA) and Air Defence (AD) operations. The campaign needs to be pursued throughout the war to establish, and then retain, the desired control of the air.⁶ The prosecution of CAOs demands a large number of forces with a high risk of attrition, especially when pitted against an equally formidable opponent. Such a large number of forces may not be available to the weaker force. In such a scenario, if the weaker force aims to gain control of the

6. Ibid., p. 51.

air, it may face existential crises due to the attrition expected in its endeavour. Therefore, the air denial concept of operations appears as a viable fallback option to the weaker belligerent where an attempt to use air power offensively to gain any degree of control of the air was assessed to be unachievable. Hence, the strategy of air denial must be employed as a *pis aller* under very specific circumstances. Some of these circumstances are discussed in the succeeding paragraphs.

Air Denial as a Necessity: If a weaker force tries to conduct mass strikes on enemy airfields and central air defence nodes to gain control of the air, it may sustain unacceptable losses. A better option available to the weaker force would be to deny control of the air to the enemy while ensuring the protection of own assets. This is a pragmatic approach by a weaker force, as the forces required for denying control of the air to the adversary would be substantially less than those required for gaining any degree of control of the air.

Deterrence by Denial:⁷ The aim of a weaker belligerent is to convince the adversary that an attack is likely to be infeasible considering the cost of the attack and the likelihood of attaining the desired political/strategic objectives. The denial strategy adopted would act as deterrence by denial.

Reduced Escalatory Risks: When the stance of a nation is defensive, arming its own forces to gain control of the air would accelerate an arms race and contribute towards increasing the tensions. The offensive concept of operations might appear threatening to the adversary and force its leadership to act aggressively. Therefore, adoption of air denial would reduce the escalatory risks.

Stalemate as an Indicator: The weaker force here does not aim to win the war but to draw the stronger enemy into a stalemate

7. Bremer and Grieco, n. 3.

which may not be acceptable to the stronger belligerent due to varied reasons. This aspect is best appreciated in the Russia-Ukraine context, where the ability of Ukraine to continue to fight Russia over a protracted period has been conceived by many as a strategic win for Ukraine.

Economy of Effort: Air denial is likely to be adopted by a nation that cannot afford to build a large and expensive air force. Modern Air Defence (AD) systems and offensive elements used for the implementation of the air denial strategy are cheaper and easier to build and maintain. The strategy also forces the adversary to resort to stand-off weapons, which would incur higher costs on the adversary and adversely affect his economy of effort.

Protracted War: Air denial is most suited for a nation that is ready to sustain the war for a protracted duration even at the cost of tactical objectives. The aim here would be to continue to fight for a longer duration while trying to find opportunities to apply short offensive bursts to achieve limited political/strategic objectives.

Garnering International Support: The strategy of air denial is defensive by design and, hence, the acts of aggression by a stronger force are likely to be condemned by the world. The weaker force would aim to garner international sentiment and support in its fight against a superior force.

TACTICAL IMPLEMENTATION OF AIR DENIAL

The success of air denial depends on careful tactical planning. The tactical execution of air denial hinges on the following:

Maintaining a Force-in-Being:⁸ The idea here is that the force remains effective as long as it is not expended. The adversary

8. Maximilian K. Bremer and Kelly A. Grieco, "In Denial About Denial: Why Ukraine's Air Success Should Worry the West", *War on the Rocks*, June 15, 2022, <https://warontherocks.com/2022/06/in-denial-about-denial-why-ukraines-air-success-should-worry-the-west/>. Accessed on August 24, 2024.

would be compelled to give due recognition to the threat posed by this force. A dispersed and unexpended force would continue to remain a threat to the adversary, thereby affecting his calculations.

Dispersion of Assets: Dispersion of the weaker force's combat systems across a wide area reduces their vulnerability to enemy strikes. It contributes to ensuring one's own survivability, complicates targeting by the enemy and creates a more challenging operating environment for the enemy.

Manoeuvring and Evasion: The weaker force can utilise geographical features such as mountains, forests, or even urban areas to hide/evade the superior air forces. By employing hit-and-run tactics, they can quickly strike and retreat to areas where they enjoy better protection.

Integrated Air Defence System (IADS):⁹ Weaker forces can establish an integrated network of radars, surface-to-air missiles, and anti-aircraft artillery to ensure robust volumetric defence. This improves the overall efficiency of the AD set-up and makes it difficult for enemy aircraft to penetrate or operate effectively within the defended airspace, thereby increasing the risk and cost of air operations.

Volumetric Defence:¹⁰ This concept employs defence in depth—both laterally (distance) and vertically (altitude). It forces an attacker to penetrate layer upon layer of air defence systems. It consists of a mix of different sensors, platforms with air-to-air missiles, surface-based mobile long and medium range surface-air-missiles catering for the threat from the blue skies, and anti-aircraft artillery and man-portable air defence systems catering for low level threats. Each of these layers is mutually supportive of, but not entirely dependent on, the others, making it much harder for an attacker to defeat volumetric defence.

9. Ibid.

10. Bremer and Grieco, n. 3.

Harassment Strikes: Harassment strikes should be undertaken at irregular intervals during the entire period of conflict. This would force the enemy to divert considerable assets to defence from offence and significantly reduce his capability to launch offensive missions.

Surprise and Decoys: To ensure the success of a smaller offensive force, surprise and decoys must be extensively used in the tactical plans.

Camouflage and Deception: Concealing combat assets, runways or critical infrastructure through camouflage and deception techniques can make it harder for the enemy to identify and strike them accurately. The inferior force would be encouraged to use urban areas for its concealment.

Electronic Warfare: Utilising Electronic Warfare (EW) capabilities, the weaker force can disrupt/degrade the adversary's communication, navigation, and sensor systems. Extensive use of EW would diminish the effectiveness of the enemy's surveillance, target acquisition, and coordination; thereby adversely affecting overall operational capability.

Automation of Tasks: Automation of tasks would allow a weaker force to achieve more than would be possible otherwise. As one of the circumstances applicable for employing air denial is a protracted war, a force with automation would be able to achieve less fatigue of its troops.

LIMITATIONS OF AIR DENIAL

The strategy of air denial must be employed only as a matter of necessity and not as a matter of choice. Adoption of the strategy needs careful deliberation at all levels of warfare by the planners. They must adopt the strategy only after understanding its various limitations. Some of these limitations are as follows:

Defensive Design: The air denial strategy by design is defensive in nature. It concedes the initiative to the stronger

adversary. Here, the stronger adversary has the freedom to act at a place and time of his choosing. The weaker force may even receive an existential blow from a determined and well-equipped stronger adversary.

Non-exploitation of Lethal Air Power: Air power displays distinct characteristics of shock effect, concentration of force, and offensive action, giving it much offensive lethality.¹¹ The freedom to exploit these attributes is achieved by gaining the desired degree of control of the air. And, hence, the adoption of the air denial strategy restricts the exploitation of the full offensive lethality of air power.

Progress of Other Operations: Air denial may inhibit freedom of operation to the enemy. But, at the same time, it does not guarantee progress of own operations and, therefore, other surface and sub-surface operations would also be adversely affected due to the lack of control of the air.

Higher Risks: Due to the defensive design of air denial, there is always the risk of incurring tactical losses in terms of losing both ground and combat potential. The party employing air denial must be ready to accept such risks.

Vulnerability to Counter-Measures: These counter-measures may include electronic counter-measures, precision air strikes or intelligence driven operations that may reduce the effectiveness of air denial.

Limited and Delayed Achievement of Objectives: The strategy capitalises on the asymmetric application which relies more on wearing down the superior adversary over a protracted war. And, hence, due to the design of the air denial strategy, only limited political/strategic objectives may be achieved after engaging in a protracted campaign.

11. n. 1, p. 6.

CONCLUSION

The achievement of control of air for the progression of all types of operations remains undisputed and should remain the prime objective of the application of air power. However, the effort and forces required for it may not be available with the weaker belligerent and it may prove disastrous for it to pursue control of the air. In such scenarios, the weaker belligerent must explore other ways for the application of air power.

History has shown that when weaker forces have embraced the asymmetric employment of power, they have been able to achieve the desired end states. Similarly, the adoption of asymmetric application of air power through air denial has the potential to emerge as a viable fallback option for the weaker belligerent to achieve limited political/strategic objectives. Amalgamation of the tenets of the air denial strategy in symmetric application of air power as per the theatre of operation, phase of war, and other circumstances would form part of the operational art for the application of military force.