

# Employment of Air Power Since its Inception and its Relevance in Future Conflicts

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## INTRODUCTION

Since its inception, air power introduced a new chapter in the history of warfare. A new domain came into being which, in no time, questioned the monopoly enjoyed by the land and naval domains. The entry of air power in the annals of warfare is presumably the biggest Revolution in Military Affairs (RMA) that humankind has ever seen. Air power not only revolutionalised the way war was fought; it also raised an existential question in front of proponents of land and naval warfare. Soon it was realised that this formidable instrument of national policy was capable of achieving a decisive strategic effect by rapidly shrinking the time dimension. The practitioners of warfare need to ponder over the idea that *if there had been no air power employment during the Great War and World War II, how long would it have taken to achieve the culmination point?*

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This article aims to provide a brief insight into air power employment since its inception and will ponder on the thought of its relevance in future wars.

### **AIR POWER EMPLOYMENT SINCE ITS INCEPTION**

This new kid in town had so much capability that it was put to test within no time. The years 1909 to 1914 saw the transformation of airships and airplanes into embryonic instruments of modern warfare. The rigid airship, exemplified by Germany's gigantic Zeppelin, initially appeared like a vehicle for aerial bombardment but war-time events revealed it to be expensive and vulnerable. Instead, the small fragile airplane quickly proved itself as a means of reconnaissance and artillery spotting in 1914, and by 1918, its mission had expanded to include aerial fighting, ground attack, and tactical and, ultimately, strategic bombing.<sup>1</sup> In a short span of four years, this instrument of military application had evolved towards facilitating a decisive victory through strategic effect.

After the Great War, the immense potential of air power was recognised by the theorists and proponents of warfare and it was during the inter-war period that the world saw the evolution in the theory and consequent application of air power. Viscount Hugh Trenchard, General Giulio Douhet and General William Mitchell were some of the theorists who shaped air power theory and strategy.

Employment of air power reached its zenith during World War II. The world saw various methodologies of air power employment adopted by different nations. Germany, France and the Soviet Union saw air power being primarily used towards the support of the ground forces. Though the German doctrine showed some awareness towards long-range bombing, it was not an integral element of what German airmen termed the "Operational Air

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1. John Andreas Olsen, *A History of Air Warfare* (Vij Books Private India Ltd. in collaboration with Potomac Books Inc. 2010), p.1.

War”.<sup>2</sup> The Royal Air Force (RAF) followed a different path. The British leaders were of the opinion that an independent bombing campaign directed at the enemy’s production, and economic infrastructure and the population would prompt a political upheaval and force the enemy to surrender.<sup>3</sup>

The offensive employment of air power during World War II not only saw the application of the theories developed during the inter-war period, but also witnessed a widespread development of new tactics, techniques and procedures, and rapid progress of technology. Just to put things in perspective, the United States alone produced close to 3,00,000 aircraft during this period. Air power employment saw the use of close air support, operational interdiction, strategic interdiction and strategic bombing. The use of nuclear bombs through the medium of air was a watershed moment towards coercive and deterrent strategies.

Post World War II, the Korean War (1950-53) and Vietnam War (1965-72) brought forth some very important lessons in air power employment. The Korean War demonstrated that the US philosophy of “*one size fits all*” would not work. The use of air power to attack the civilian morale did not generate any leverage towards the achievement of objectives in comparison to World War II. The systematic use of close air support, and operational interdiction in support of the ground forces led to the concessions during the Korean War.<sup>4</sup> Technologically, swept-wing jet fighters and the widespread use of rotary-wing aircraft were the two most significant advances.<sup>5</sup>

The Vietnam War also demonstrated that employing air power against the basic doctrinal precepts would prove counter-productive. Issues like restrictive rules of engagement,

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2. Ibid., p. 27.

3. Ibid., p. 28.

4. Robert A. Pape, *Bombing to Win-Air Power and Coercion in War* (Cornell University Press Ithaca and London, 1996), p. 173.

5. n.1, p. 105.

and fragmentation of air power by the commanders intent on preserving their organic capability diminished the effectiveness of air power employment.<sup>6</sup> The basic air force doctrine formulated by the US in World War II mandated a single manager to orchestrate the use of air power across a theatre. However, during the Vietnam War, the complex command arrangements made it impossible to establish a single manager for air operations.<sup>7</sup> The effect of not having a singular command and control of air assets for air power employment was a major takeaway. In terms of tactics, training and procedure, the Vietnam War highlighted the extensive use of surface-to-air missiles (SA-2) which forced the Americans to revise their tactics which were successfully demonstrated during Operation Linebaker II.

### **AIR POWER TAKES A QUANTUM LEAP: EFFECT OF AIR SUPERIORITY**

From the period 1967-82, the wars fought between Israel and its rivals re-emphasised the fact that air power is primarily an offensive tool, and control of the air is the key to air power's freedom of action and, hence, to dominance in the battle on the ground. Another important lesson that emerged was that it is air power, that possesses the capability to project the national will across long distances in a short time. Technologically, these wars in the Middle East highlighted the use of unmanned vehicles, electronic warfare, and combat-enabling assets like the Airborne Early Warning and Control System (AWACS) and Airborne Early Warning and Control (AEW&C) towards air power employment.

Operations Desert Storm, 1991, and Allied Force, 1999, comprised the watershed moment, marking the dawn of a new era in air power employment. The doctrinal precept of the

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6. Benjamin S Lambeth, *The Transformation of American Air Power* (A RAND Research Study, Cornell University Press, Ithaca and London, 2000), p. 32.

7. *Ibid.*, p. 33.

offensive nature of air power was at its zenith during this war. The apt fusion of technology and air power employment resulted in the Coalition achieving air superiority over the Iraqi airspace. The use of attack helicopters (Apaches), high-speed anti-radiation missiles (AGM-88) through F-4s, jamming support provided by the EF-111s, EC-130s and EA-6Bs, and the use of BQM-74 jet-powered drones and tactical air-launched decoys ensured that the potent KARI Air Defence (AD) system of the Iraqi Air Force was rendered non-operational within 36 hours of commencement of the offensive action.<sup>8</sup>

The utterly undisputed success of Operation Allied Force is testimony to the fact that employing air power under a single commander, offensive use of air power clubbed with precision attack, and technological infusion can assure early achievement of the conflict termination criteria and, thus, ensure the movement of surface forces towards the achievement of the objective, a “cakewalk”.

## THE CANVAS OF FUTURE CONFLICTS

Colin S Gray has mentioned the “five geographies of war viz air, land, sea surface and subsurface, orbital space and cyberspace”.<sup>9</sup> The author opines that in the context of warfare, there are two geographies: land and sea. Air, space and cyber can be termed as the “mediums”. In order to understand the canvas of future conflict, it is important to delineate mediums and geographies, as future wars will be governed more by mediums than by geographies.

The canvas of future war is evolving rapidly, shaped by technological advancements, geopolitical shifts, and emerging

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8. Ibid., pp. 112-113.

9. Colin S Gray, *Air Power for Strategic Effect* (Air University Press Air Force Research Institute Maxwell Air Force Base, Alabama, February 2012), p. 14.

threats. In this dynamic landscape, several key trends are likely to define the nature of future conflicts.

Firstly, the proliferation of advanced technologies, including Artificial Intelligence (AI), autonomous systems, and cyber warfare capabilities, is reshaping the battlefield. Future wars are likely to be characterised by the integration of these technologies, enabling faster decision-making, enhanced situational awareness, and new modes of warfare such as cyber attacks and unmanned warfare.

Secondly, the rise of asymmetric threats, including terrorism, insurgency, and hybrid warfare, presents complex challenges for traditional military forces. Future conflicts may involve non-state actors leveraging unconventional tactics and exploiting vulnerabilities in the cyberspace and information domains to achieve their objectives.

Additionally, the increasing interconnectedness of the global economy and society makes future conflicts more unpredictable and multi-dimensional. Economic warfare, information operations, and political influence campaigns are likely to play a significant role in shaping the outcomes of future conflicts.

Moreover, the growing importance of the mediums of space and information introduces new dimensions to future warfare. Space-based assets such as satellites are critical for communications, navigation, and reconnaissance, making them lucrative targets for adversaries. The employment of space for militarisation and weaponisation is the new normal and will certainly govern the outcomes of future conflicts. The offensive use of mediums like cyber, and AI has unleashed an invisible demon in the battlespace. The side that tames this demon is going to control the canvas of future conflicts.

## AIR POWER RELEVANCE IN FUTURE CONFLICTS

The canvas of future conflict, as mentioned in the preceding paragraphs, will be governed by the mediums of air, space and cyberspace. Air power, in particular, finds its place in the air and space domains. In future conflicts, the classic roles of air power will be enduring. What will change in the future conflict is how these roles are conducted. The control of air, or in future conflicts we can call it control of air and space, will still be a prerequisite for all operations to succeed.<sup>10</sup> As technology advances and geopolitical landscapes evolve, air power will continue to play a pivotal role in shaping the outcome of conflicts.

Let us see how air power will shape the canvas of future conflicts. First and foremost, air power provides unmatched strategic reach and agility. With the ability to rapidly deploy forces and strike targets anywhere on the globe, air power enables military operations to be conducted with speed and precision. This capability is especially crucial in modern warfare, where agility and the ability to project force quickly can deter aggression and shape the strategic environment. This fact is amply emphasised by Air Marshal (Dr) D Chaudhury when he says, “*Aerospace power will play a vital role in the multi-domain security environment simply because of its continued future ability to transcend geographical limitations with its strategic agility.*”<sup>11</sup>

However, to achieve this capability in future conflicts, it will be incumbent on the practitioners of air power to integrate the ever-evolving nuances of technology into the fabric of air power theory. This technology integration needs to be done at the tactical, operational and strategic levels, and enmeshed in a manner so as

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10. Sanu Kanikara, “Air Power in 21st Century: Enduring Trends and Uncertain Futures, Air Power Development Centre”, [https://espas.secure.europarl.europa.eu/orbis/system/files/generated/document/en/ADFJournal204\\_Air\\_power\\_in\\_the\\_21st\\_century.pdf](https://espas.secure.europarl.europa.eu/orbis/system/files/generated/document/en/ADFJournal204_Air_power_in_the_21st_century.pdf). Accessed on April 21, 2024.

11. Air Marshal (Dr) D Chaudhary, *Air Power, Contemporary and Future Dynamics* (New Delhi: KW Publishers, 2024), p. 185.

to reduce the decision loop to a minimum. At the tactical level, computing, sensing and data compression will change the way air power is applied.<sup>12</sup> At the operational level, with the integration of technology, air power can achieve the desired outcomes while ensuring precision, assurance, and minimum collateral damage.<sup>13</sup> At the strategic level, the technology integration will allow the highest security apparatus to project power in the least possible time and with maximum effect. A case in point is the Balakot strike by the Indian Air Force (IAF) on the terrorist camps. This technology integration of air and space power will ensure the tightening of the Observe, Orient, Decide, Act (OODA) loop in a networked battlefield, thereby shrinking the decision loop at the tactical, operational and strategic levels.

Aerospace power offers unparalleled reconnaissance and surveillance capabilities. Unmanned Aerial Vehicles (UAVs) and other advanced surveillance platforms provide real-time Intelligence, Surveillance, and Reconnaissance (ISR) capabilities, allowing military commanders to gather crucial information about enemy movements, terrain, and potential threats. *In future conflicts, the ability to gather actionable intelligence from the air will be indispensable for maintaining situational awareness and making informed decisions on the battlefield.*

In addition to reconnaissance, air power provides dominant firepower and precision strike capabilities. From manned fighter jets to unmanned drones, modern aircraft can deliver a wide range of munitions with unprecedented accuracy and lethality. This precision allows military forces to target enemy assets while minimising collateral damage, reducing the risk to civilians and infrastructure. *In future conflicts, the ability to conduct precision strikes from the air will be essential for achieving military objectives while minimising risks to friendly forces and non-combatants.*

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12. Kanikara, n. 10.

13. Ibid.

Furthermore, aerospace power serves as a force multiplier for joint and combined operations. The integration of aerospace assets with ground, naval, and cyber forces enables synergistic effects that enhance overall military effectiveness. In future conflicts, the seamless integration of aerospace power with other military components will be essential for achieving victory on the battlefield.

## **CONCLUSION**

There is no exaggeration in the fact that air power being the youngest of all the forces, the last 122 years of air power employment have transformed the way wars have been fought. The 20th century has witnessed air power evolving by leaps and bounds, and becoming a decisive arm towards the achievement of national policy and furtherance of national goals. Another aspect that needs attention is that the character of air power has evolved exponentially as it is highly sensitive to technology. A very important lesson for the practitioners of air power is that technology integration with air power roles is the key ingredient of future conflicts. Aerospace power will remain a critical component of military strategy in future conflicts, offering unmatched strategic reach, reconnaissance and surveillance capabilities, firepower and precision strike capabilities, and force multiplication effects. As technology advances and geopolitical dynamics evolve, air power will continue to play a pivotal role in shaping the outcome of conflicts in the 21st century and beyond.