

# Challenges in Transforming Airpower in the Twenty-first Century

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## Abstract

This article argues that airpower's effectiveness is not solely defined by technological advantage, control of air, or capability to undertake strategic or tactical air strikes but rather by the synergy between the services and members of alliances and the adaptability of industry and people. The article examines lessons from World War II and shows that the coordinated action of all three services of the United States showcased how a technologically and numerically superior enemy can be defeated. The article highlights that what matters ultimately is achieving political and strategic objectives that protect and advance national interests and are preferably attained cost-effectively. The author also emphasizes the importance of alliances and collaboration with like-minded countries to tackle China's hegemonic intentions collectively and the need for a continued effort toward integration during peacetime to synergize the efforts of all services. Finally, the article argues that airpower's effectiveness is not limited to defense forces but spans the industrial domain.

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Airpower has, since its inception, played a dominant role in generating and successfully enforcing favorable asymmetry for nearly a century. Its ability to achieve desired outcomes in the shortest period with minimal casualties has made it the preferred choice in many nations' security apparatus. By rendering battlefields three-dimensional and breaking the bounds of Mercator projection, airpower has enhanced the advantage of high ground. While many zealots focus on maintaining technical supremacy over adversaries to meet India's security goals in the twenty-first century, budgetary constraints often challenge the pursuit of technological advantage. Understanding the less tangible lessons of airpower from World War II, which are often neglected, is the solution to this problem for the Indian Air Force. Thus, this paper argues that no single application of airpower forms its chief strength. Rather, it is the synergy between the services and members of alliances, along with the adaptability of industry and people, that defines the effectiveness of airpower, be it through technological advantage, control of the air, or the capability to undertake strategic or tactical air strikes.

A coherent and effective strategy is essential to achieving a specific objectives. However, interservice rivalry and competition for prominence often overshadow synchronization and cooperation between armies, navies, and air forces. For in-

stance, in 1941, doctrinal views mainly governed by the Soviet Army resulted in the decentralized utilization of the Soviet Air Force, leading to low efficiency during the initial war period. Similarly, the rift between the German Navy and Luftwaffe over budgetary allocation was visible during July 1940, costing thousands of aircraft and aircrew to the Luftwaffe. Ultimately, unsynchronized efforts caused the Germans to lose the Battle of Britain when the German Navy's original plans for Operation Sea Lion were put on hold due to Admiral Erich Raeder's decision that the new battleships *Bismarck* and *Tirpitz* were not ready.<sup>1</sup>

In contrast, coordinated action by all three US services in the Pacific theater during World War II showcased how a technologically advanced and numerically superior enemy like Japan could be defeated. The situation facing India, with adversaries on two fronts, is no different than what the Allies encountered during World War II. It may be impossible for India to match the economic might of China and Pakistan and retain its technological advantages in all domains. Additionally, with India facing land, sea, and air threats, no one service can be neglected or preferred. Continued efforts toward integration during peacetime would not only allow New Delhi to synergize the efforts of all three services but also illuminate the fault lines that need to be tackled by other possible means.

In 1944, as US forces pushed westward in the Indo-Pacific toward Hollandia, Dutch New Guinea (now Jayapura, Papua, Indonesia), US Lieutenant General George Kenney argued passionately for using land-based bomber aircraft instead of carrier-based aircraft.<sup>2</sup> However, General Douglas MacArthur rejected Kenney's proposal as a self-serving bias and instead focused on effectively utilizing available resources to gain greater flexibility. MacArthur's decision highlighted that achieving political and strategic objectives that protect and advance national interests, and are preferably attained cost-effectively, is paramount.

This article argues that synchronization and cooperation between services and the adaptability of industry and people are critical to the effectiveness of airpower. Achieving political and strategic objectives that protect and advance national interests and are attained cost-effectively is what ultimately matters. Lessons from World War II highlight the importance of coordinated action and flexibility in utilizing available resources. In the case of the Pacific theater, General Douglas MacArthur's decision to reject Lieutenant General George Kenney's recommendation to use land-based bomber aircraft demonstrated the importance of prioritizing objectives and utilizing available resources effectively.

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<sup>1</sup> Stephen Bungay, *The Most Dangerous Enemy: A History of the Battle of Britain* (London: Aurum Press, 2015), 113.

<sup>2</sup> Bungay, *The Most Dangerous Enemy*, 113.

In today's geopolitical milieu, it is difficult to claim that any nation possesses self-sufficiency in dealing with its enemy. Even during World War II, no country was self-sufficient in its resources or fighting potential. Germany had world-class airpower but lacked naval supremacy like Britain. To address this shortfall, Adolf Hitler relied on Japanese naval strength to tie down the United States in the Pacific. Hitler declared war on the United States on 11 December 1942, less than a week after Japan's attack on Pearl Harbor, Hawaii.<sup>3</sup> This was a great strategic move that divided US forces into vastly geographically separated theaters. However, this strategy failed to sustain its charm, as the Axis Powers prioritized their own interests and failed to pursue a unified course of action throughout the war.

The Allies struggled as well. Britain had a formidable naval force but lacked the capital to sustain it. The United Kingdom depended heavily on the US Lend-Lease Program to overcome this deficiency.<sup>4</sup> The Soviets could produce thousands of aircraft but lacked four-engined, long-range bombers. Timely reinforcement from Siberia saved the Soviets from complete defeat by the Germans.<sup>5</sup> The Soviet Air Force reversed the game in the air by defeating the formidable Luftwaffe after securing Douglas A-20 Havoc medium bombers from the United States.<sup>6</sup> The United States had numbers but lacked powerful engine technology that could support its P-51 Mustang long-range fighter aircraft, which proved its worth when the British Rolls Royce engine replaced the aircraft's original underpowered engine. The Allies could now successfully undertake long-range strikes and revisit strategically important targets like the Schweinfurt ball-bearing factory and oil installations.

In a critical situation, what mattered was the alignment—or misalignment—of interests of alliances that defined victory or loss. Therefore, it is imperative for nations to cultivate and maintain strong alliances with shared goals and strategies to effectively deal with potential threats. The lessons of World War II should guide India to assert more emphasis on aligning with like-minded countries—such as the United States, Australia, Japan, and France—to tackle China's hegemonic intentions collectively. In this regard, India's participation in collaborations like the Quadrilateral Security Dialogue (Quad) seems to be a sensible step. Although the Quad is not a security alliance like the North Atlantic Treaty

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<sup>3</sup> Craig Lee Symonds, *The Battle of Midway*, Pivotal Moments in American History (New York: Oxford University Press, 2011), 19.

<sup>4</sup> Phillips Payson O'Brien, *How the War Was Won: Air-Sea Power and Allied Victory in World War II*, first paperback edition, Cambridge Military Histories (Cambridge: Cambridge University Press, 2018), 184.

<sup>5</sup> Von Hardesty and Ilya Grinberg, *Red Phoenix Rising: The Soviet Air Force in World War II* (Lawrence: University Press of Kansas, 2021), 87.

<sup>6</sup> Hardesty and Grinberg, *Red Phoenix Rising*, 105.

Organization (NATO), it has undoubtedly assisted in the formulation of strategic partnerships between and among Japan, Australia, India, and the United States. It is also essential to understand that alliances' effectiveness is not limited to defense forces but spans the industrial domain.

*Airpower* is defined as a nation's "capacity to impose its will through the medium of air and includes the employment of all its aviation resources, civil and military, public and private, potential and existing."<sup>7</sup> In the aftermath of World War I, working under severe sanctions, Germany could only build its air force during the interwar period by solely relying on the civilian aviation industry. During the Weimar Republic, the civilian aviation industry allowed the German military to build infrastructure and technology supporting aviation. In turn, it allowed German pilots and airpower strategists to stay relevant by maintaining flying currency and updating doctrine and plans.<sup>8</sup>

During the interwar period, the United States expanded its reach globally through the efforts of Pan American World Airways (better known as Pan Am), which created infrastructure, navigation routes, and aids, and, more importantly, US airmindedness.<sup>9</sup> Likewise, so-called *hump operations* across the mighty Himalayas saw civil industry initially stepping up for military operations with crew and machines in South Asia.<sup>10</sup>

Various auto industries played a crucial role in upscaling defense production during World War II. Bayerische Motoren Werke (BMW) was placed under the supervision of William Werner, an efficient expert recruited from the car maker Auto Union AG (the immediate predecessor of today's Audi) to produce engines for Junker aircraft.<sup>11</sup> It was not only machines but the expertise of civil industry in sustaining air maintenance operations across the globe that helped educate the military and sustain operations by lateral cooperation.<sup>12</sup>

In the twenty-first century, if New Delhi aims to match every technology for the military independently and indigenously to meet India's security goals, then it will undoubtedly starve its population like Hitler did when he dedicated almost

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<sup>7</sup> *Basic Doctrine of the Indian Air Force* (New Delhi: Ministry of Defence, 2012), 5.

<sup>8</sup> James S. Corum, *The Luftwaffe: Creating the Operational Air War, 1918–1940* (Lawrence: University Press of Kansas, 1997), 124.

<sup>9</sup> Jenifer Van Vleck, *Empire of the Air: Aviation and the American Ascendancy* (Cambridge, MA: Harvard University Press, 2013), 303.

<sup>10</sup> John D. Planting, *Hump: America's Strategy for Keeping China in World War II* (College Station: Texas A&M University Press, 2017), 61.

<sup>11</sup> J. Adam Tooze, *The Wages of Destruction: The Making and Breaking of The Nazi Economy* (New York: Penguin USA, 2008), 579.

<sup>12</sup> Planting, *Hump*, 138.

two-thirds of Germany's budget to defense. Even during war, raising defense allocations drastically is not likely to be possible in the age of total war because of the interdependence of the economy and military. The best way around this would be to remain flexible and adapt to situations based on the capability of an available industry that can bolster military performance. Hence the best way to define airpower is to count the nation's aviation and related capabilities, including civil aviation, along with their associated organizations, infrastructure, logistics, and, most importantly, personnel.

In *War and Peace*, Leo Tolstoy famously insisted that chance determines events, but people make history. Situations in the war are not preordained; if they were, then nobody would have suffered shortfalls in their plans. In a difficult situation, people with experience and knowledge always have a greater probability of success. Hermann Göring, though a World War I ace, had little understanding of the current situation of aviation during World War II and, thus, struggled with major decisions. On the contrary, Alexander Novikov, commander of the Soviet Air Force, with his experience, was able to rebuild his air force from the ashes. Similarly, during the Pacific Campaign, General Kenney overcame all odds by innovating under extremely resource-constrained situations. Kenney could imagine and implement his idea in various fields, which included logistics, air transport support, and fighters and bombers.<sup>13</sup> Colonel Philip S. Meilinger aptly posits, "Doctrine does not fight the war; people do. And although airmen may prefer to be 'doers,' only those who can think rigorously but creatively about future war are likely to be successful when a crisis presents itself."<sup>14</sup> For leaders and military personnel to be creative and imaginative in dealing with crisis situations requires training and investment.

During the interwar period, the Luftwaffe could strengthen itself primarily by adequately investing in examining other air forces' campaigns, according to the importance of staff courses and overseas interactions.<sup>15</sup> However, it would be incorrect to point out the efforts of people in the military and not civilians. Rescue operations from Dunkirk, local support in building airports during hump operations, and efforts of women in the workforce that filled magazines and dug trenches for the Soviets, describe the importance of civilians. India is fortunate in this regard and must utilize the potential of its billion-plus population. However,

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<sup>13</sup> Thomas E. Griffith Jr., *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific* (Lawrence: University Press of Kansas, 2017), 127.

<sup>14</sup> Phillip S. Meilinger, "Development of Air Power Theory," in *Air Power Leadership Theory and Practice*, ed. Peter W. Gray and Sebastian Cox (London: The Stationery Office, 2002),

<sup>15</sup> Corum, *The Luftwaffe*, 70.

to garner the support of civilians in a crisis, the Indian Air Force needs to continue its nation-building efforts to help civilians via employment, humanitarian assistance, and education to make Indian citizens airminded.

World War II highlights that it was not only technological advantage, strategic bombing, battlefield air strikes, or gaining control of the air that turned the tide for any nation. This nearly six-year period also silently underlines the contribution of invisible factors like the synergy between the services and players of the alliances, along with the ability to adapt to the industrial base and people. The circumstances and challenges of conflict in the twenty-first century are evolving rapidly, which places strain on time, space, and force structure more frequently. This means that current doctrine, strategy, tactics, and organizational structures may have to be modified at shorter intervals if we are to remain combat-ready and counter or defeat our current and future adversaries. As defined by Freedman, “the threat from terrorism, nuclear, and suicide bombers as a part of unconventional warfare is on the rise.” In this regard, technological might or numerical superiority is likely to be less relevant in the face of strength than a combination of various services (including space now), international alliance, industrial support, and people. ★

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