

Air Power

The Past, Present and Future of Air Power Studies

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This paper surveys the genealogy of air power studies, highlights the gap between existing theory and the realities of contemporary air operations, and offers directions for future research. Air power studies have long been dominated by two schools – absolutism and relativism – with discussions centring on offensive usage such as ‘which targets to bomb’. Absolutism posits that air power alone can win wars, while relativism argues that air power supports land and sea operations with the course of war ultimately determined by land and sea combat. However, this binary approach no longer fully explains contemporary realities, including air denial in Russia’s invasion of Ukraine, air policing, the diplomatic role of multinational exercises and training, and the relationship between air power and emerging domains such as space, cyber and the electromagnetic spectrum. The paper argues for reconsidering the definition of air power itself.

1. Introduction

This paper¹ provides an overview of studies on air power to date, while aiming to identify the gap between the reality of air power today and academic research, and to suggest future topics and directions for studies into air power. As will be discussed in detail later, following the emergence of aircraft on the battlefields of World War I, the seeds of air power theory were sown during the interwar period, and air power theory has continued to define the use of air power and the nature of air forces. Furthermore, it has continued to serve as a central means of achieving national objectives, standing alongside land power and sea power.

Since its establishment in 1954, the Japan Air Self-Defense Force (JASDF) has developed air power centred on air defence, in accordance with the national policy of exclusive defence (Michishita, 2005, p. 172). Tomoyuki Ishizu has frequently argued that while it is important to analyse global air power and incorporate it into Japan’s defence policy, it is equally important to understand post-war Japanese air power and, on that basis, construct a unique, indigenous Japanese air power strategy (Ishizu, 2005, p. 39, 2014, p. 72, 2019, p. 74).

Air power studies have been characterised by a dichotomy: ‘absolutism’, which posits that air power alone can win wars; and ‘relativism’, which argues that air power

supports land and sea operations and that the course of war is ultimately determined by land and sea combat. These discussions have tended to focus on its utility within an offensive context, such as strategic bombing and surface attacks.² For example, in Russia’s invasion of Ukraine that began in February 2022, it was anticipated that Russia – with its offensive air power – would take the initiative at the outbreak of hostilities, gain command of the air and, through strategic bombing of the capital Kyiv or combined air-ground operations, including air-to-ground strikes, force Ukraine to surrender sooner rather than later. However, this has not been the case. This could be seen as a challenge to the concept of offensive air power and the ‘absolutism’ school of thought. On the other hand, in the 2020 Nagorno-Karabakh conflicts, uncrewed aerial vehicles (UAVs) played a significant role and are said to have had a major impact on the outcome (Center for Preventive Action, 2026; Postma, 2024, pp. 15–20). Likewise, in Russia’s invasion of Ukraine, both the Russian and Ukrainian forces have utilised small drones in addition to UAVs, drawing attention to UAVs and drones as new players in air power (Center for Strategic and International Studies, 2025). These examples support the ‘relativism’ school of thought, where air power functions as a supporting role.

1 This paper is an English language translation of *Ea Pawā Kenkyū no Koremade to Shōrai* originally published in *Air and Space Power Studies* (Y. Tanaka, 2026).

2 Although the definition of air power is multifaceted, Meilinger defines air power as ‘the ability to project power or influence through the medium of the air and space to achieve strategic, operational or tactical objectives’ (Meilinger, 2003, p. 1). Grey cites Brigadier General William’s definition: ‘the ability to do something in or through the air’ (Grey, 2012, p. 8). Furthermore, Olsen defines it as ‘the ability to influence the behaviour of people and the course of events by projecting power from the air’ (Olsen, 2015, p. xvii). Based on the above, this paper defines and uses the term ‘air power’ in its broadest sense as ‘the ability to secure the use of the air and to project power from the air onto the ground or sea in order to achieve a specific objective’.

Coincidentally, in December 2022, the National Security Council and the Cabinet of Japan approved the so-called ‘three strategic documents’ – the ‘National Security Strategy’, ‘National Defense Strategy’ and ‘Defense Build-up Program’. For this paper, the ‘National Defense Strategy’ is the most important and refers to the basic concepts and contents of the seven functions and capabilities necessary for the defence of Japan (National Security Council and the Cabinet of Japan, 2022, pp. 23–29). Focusing specifically on air power, the principal strengthening of Japan’s defence capability is in counterstrike capabilities. The Japan Self-Defense Forces’ (JSDF) capabilities for stand-off defence will be improved, particularly in the employment of aircraft-launched stand-off missiles.

At the same time, JASDF will be renewed as the Air and Space Self-Defense Force, reinforcing its space operation capability and developing a system to ensure superiority in use of space (National Security Council and the Cabinet of Japan, 2022, pp. 30–31). Hence, air power, which has been regarded as a cutting-edge domain since World War I, when aircraft entered the battlefield, is now being relativised by the rise of the space power posture. Thus, as Japan’s defence capabilities undergo a major transformation, it is imperative that we revisit the discussion on ‘what kind of air power strategy Japan should aim for’, as pointed out by Ishizu. To this end, it is first necessary to clarify the historical development of air power theory and studies to date, and to identify the challenges Japan faces in light of recent circumstances.

This paper will first focus on past air power studies to clarify how air power theory has been discussed up to the present day. Next, taking into account today’s security environment, technological trends and the reality of air power in the real world, I will clarify the key issues and future direction of air power studies.

2. Previous debates on air power

Debates on air power have, to this day, centred on two main schools: ‘air power absolutism’, which holds that an enemy nation’s will and capability to wage war can be shattered and the war brought to an end through strategic bombing alone; and ‘air power relativism’, which, while acknowledging the utility of strategic bombing, argues the use of air power to support land and sea operations through ground and naval attacks is indispensable. The debate has thus unfolded in a binary manner, centring on the question of ‘which approach to air power should be adopted?’ I examine this in detail, drawing on secondary sources.

The utilisation of airspace on the battlefield dates back to the 18th century and became fully established during World War I (Ledwidge, 2020, pp. 18–27; Tamura, 2016,

pp. 233–249; T. Tanaka, 2008, pp. 12–52). Initially, aircraft – including hot air balloons and airships – were used for searching for and reconnoitring enemy forces, as well as for observation to enable accurate artillery fire. Eventually, bombing operations began, in which explosives or similar projectiles were dropped from the air onto enemy forces. Then, with the advent of aeroplanes in the early 20th century, fighter aircraft were developed to counter the activities of reconnaissance and bomber aircraft; consequently, aerial combat – that is, dogfights between fighter aircraft – began to take place to ensure the mutual control of the air. However, this utilisation of airspace was largely limited to roles such as scouts and forward observers (FO), and artillery support, and remained subordinate to ground combat. Of course, bombing raids targeting cities were carried out during World War I but these were not considered capable of determining the course of the war or the outcome of battles.

However, during the interwar period, theorists of ‘air power absolutism’ emerged, arguing that war could be won through air power alone. They advocated the use of strategic bombing – the application of air power against an enemy nation’s civilian population and the industrial and commercial infrastructure that underpinned their livelihoods and served as the source of their economic strength – to indirectly destroy the enemy’s ability and will to wage war. Prominent among these theorists were Giulio Douhet of Italy, Hugh Trenchard, John Slessor and Arthur ‘Bomber’ Harris of Britain, and Alexander P. Seversky of Russia. Although they differed on the targets to be bombed and even the mechanisms for achieving victory, they uniformly argued for strategic bombing (Angstrom & Widen, 2014, pp. 158–161; Douhet, 2019, pp. 87–90; Faber, 2015, pp. 17–20; Ledwidge, 2020, pp. 32–36; Pape, 1996, pp. 59–69; Sloan, 2016, pp. 36–39; Suenaga, 2005, pp. 74–76; Tamura, 2016, pp. 249–252).

On the other hand, William ‘Billy’ Mitchell of the United States (US), while acknowledging the usefulness of strategic bombing, believed that support for land and sea operations through ground and naval attacks was also important (Mitchell, 1925/2010, Chapter 3; Sloan, 2016, p. 38). The German Walther Wever further emphasised that air power alone could not win a war; he advocated the creation of a balanced air force, stressing the need for air power to gain control of the air through air annihilation warfare and to defeat the enemy’s ground forces (Ledwidge, 2020, pp. 35–36). Thus, during the interwar period, two schools co-existed: one asserting that wars and battles could be won by air power alone, and the other maintaining that the outcome of wars and battles was ultimately determined by land and sea operations, with air power serving merely as a sup-

porting position. However, there was no substantive debate between these two schools.³

During World War II, strategic bombing was carried out within the context of 'air power absolutism'. While World War II served as a testing ground for 'air power absolutism', subsequent debate on air power stagnated (Ledwidge, 2020, p. 97). This was because, with the advent of nuclear weapons, air forces were established in the early Cold War to operate the strategic bombers that delivered them, and air power thus came to play a key role in nuclear strategy (Angstrom & Widen, 2014, pp. 158–161). However, as an all-out nuclear war would lead to the mutual destruction of both sides, the use of nuclear strategic bombing as a means of winning a war was effectively abandoned. Consequently, Thomas C. Schelling argued that, while targeting the enemy's civilian population and economy with conventional bombing, one should use the intensity of the bombing as a means of escalation control to convey one's resolve and preferences, thereby compelling the enemy to comply (Angstrom & Widen, 2014, pp. 158–161; Pape, 1996, pp. 66–67; Schelling, 2008, pp. 131–141). Insofar as this argument seeks to influence the enemy's will to wage war, it can be regarded as a form of strategic bombing advocated by 'air power absolutism'.

By the 1980s, although glimpses of 'air power relativism' – as seen in the Air-Land Battle doctrine, which advocated land-air cooperation – began to emerge, there was no dialogue between this school of thought and the 'air power absolutism' advocates of strategic air forces and strategic bombing; rather, the divide between them widened (Angstrom & Widen, 2014, p. 161; Faber, 2015, p. 43; Ledwidge, 2020, p. 97). Around that time, John R. Boyd proposed the OODA (Observe, Orient, Decide, Act) loop, which posits that rapid decision-making should force the opponent into a passive position (Boyd, 2018, pp. 383–385).

Subsequently, building on Boyd's ideas, John A. Warden III proposed a concept in which the enemy is viewed as a five-ring system; by applying air power to the 'centre of gravity' at the heart of this system, strategic paralysis is induced, thereby avoiding ground combat and the resulting casualties (Angstrom & Widen, 2014, pp. 161–163; Faber, 2015, pp. 44–46; Ledwidge, 2020, pp. 97–101; Sloan, 2016, pp. 39–40; Warden, 1995, pp. 44–49). Warden's approach was one of 'air power absolutism' in that it sought to neutralise the enemy's ability to wage war by attacking the 'centre of gravity' – such as the leadership or command centre – rather than the enemy forces themselves. Warden's arguments were validated during the Gulf War. This was made possible by technologies such as precision-guided munitions (PGMs) and stealth.

David A. Deptula further advocated for target selection aimed at rendering the enemy's systems inoperable (Angstrom & Widen, 2014, p. 164). In the case of air defence systems, for example, this would include power plants and transformer stations supplying electricity. Technological advances from the late Cold War through to the post-Cold War era brought a new way of thinking to air power, and 'air power absolutism' reached its zenith.

However, in the post-Cold War era, doubts were cast on the efficacy of strategic bombing as advocated by 'air power absolutism'. Robert A. Pape was a pioneer in this regard. Pape classified strategic bombing into 'punishment', 'risk', 'denial' and 'decapitation' (Pape, 1996, pp. 55–86), and argued that 'punishment', 'risk' and 'decapitation' were ineffective (Sloan, 2016, pp. 41–42). Furthermore, while acknowledging the usefulness of theatre level 'denial' – namely Air Interdiction (AI) and Close Air Support (CAS) – he contended that 'denial' achieved through strategic bombing yielded varying results depending on the circumstances (Sloan, 2016, pp. 41–42). Pape's argument rests on 'air power relativism' while also encompassing 'air power absolutism', and it is thought that this marked the beginning of the dialogue between 'air power relativism' and 'air power absolutism'. In this sense, Pape's study can be described as a landmark study in the field of air power studies.

Benjamin S. Lambeth agreed and, adopting the position of 'air power relativism', argued that during the Gulf War, attacks on the 'centre of gravity' – often referred to as 'decapitation' – accounted for less than 10 per cent of the allied force's sorties, while 'punishment' had become obsolete due to the growing precision of weapons (Sloan, 2016, pp. 42–43). 'Air power absolutism', which reached its zenith in the late Cold War period, came under challenge from 'air power relativism' after the end of the Cold War.

Thus, it can be said that the debate surrounding air power to date has been dominated by these two schools of thought, unfolding in a binary manner centred on the question of 'which approach to air power should prevail?' Furthermore, it was not until the post-Cold War era of Pape that a substantive, contentious dialogue began to take place between these two schools.

3. The future of air power studies

In the previous section, I have provided an overview of the debate surrounding air power to date. In this section, I shall identify the key issues that future studies into air power should address, taking into account current trends in military science and technology and the reality of air power in the real world.

³ On this point, Angstrom and Widen note that there are two positions: one holds that air power has the greatest influence as a strategically autonomous asset, while the other maintains that air power should be employed at the operational and tactical levels as an 'air battery' to support ground and naval combat forces (Angstrom & Widen, 2014, p. 154). Faber discusses the conflict between two views of warfare: the position advocated by 'aeromaniacs', who claim that air power can neutralise or overthrow an adversary's political actions, and the position that, since land warfare is always the focal point of war and is inevitable, air warfare cannot replace land warfare (Faber, 2015, pp. 17–19).

3.1. The definition of air power

Air power is generally defined as ‘the capability to secure the use of the air and to project power from the air onto land and sea in order to achieve a specific objective’. While Ishizu defines air power as synonymous with the Air Force, in the current climate where joint operations are being advocated, it is argued that air power should encompass not only the Air Force but also naval anti-submarine patrol aircraft, anti-submarine helicopters, Army attack helicopters, as well as the defence industry’s technological infrastructure and policies that underpin air power. He defines the former as ‘narrow air power’ and the latter as ‘broad air power’ (Ishizu, 2014, pp. 68–69). He also points out that air power has often been misunderstood as being synonymous with the Air Force (Ishizu, 2014, pp. 68–69).

This ‘misunderstanding’ regarding the definition of air power is thought to stem from the fact that air power has primarily been discussed in the context of the Air Force. The US Air Force defines air power as ‘the ability to project military power through control and exploitation in, from and through the air’ (U.S. Air Force, 2021, p. 6). The Royal Air Force defines it in much the same way (UK Ministry of Defence, 2022, p. 3). Furthermore, this definition bears a striking resemblance to the one mentioned at the beginning of this section.

Moreover, defining air power in such narrow terms, ‘from and through the air,’ creates the following problem: it does not encompass surface capabilities, such as surface-to-air missiles (SAM), radars for detecting aircraft, and command and control (C2) systems that support their operation. This is understandable given that in the US the Patriot SAM system is operated by the US Army. On the other hand, Maximilian K. Bremer and Kelly A. Grieco point out that, in the Russia–Ukraine war, the Ukrainian military has established a horizontal and vertical air defence network through the operation of a layered system of short-, medium- and long-range SAMs, thereby denying the Russian military the ability to use the airspace freely. They advocate the concept of ‘air denial’, which involves denying or restricting an adversary’s use of the airspace and operational freedom (Bremer & Grieco, 2022a, 2022b, 2023; Grieco & Bremer, 2023, 2024). Thus, while SAMs have gained significant roles influencing the reality of air power and are attracting increasing attention in research, they are currently excluded from the definition of air power.⁴

Furthermore, although they do not contribute directly to the use of airspace or the projection of power from the air, the same can be said of transport aircraft, which undertake airlift – a primary mission of national air forces – as well as reconnaissance aircraft, airborne early warning (AEW) aircraft, and intelligence-gathering aircraft, which perform intelligence, surveillance and reconnaissance (ISR) from the air. Thomas G. Mahnken et al. at the US think tank, the Center for Strategic and Budgetary Assessments

(CSBA), argue that persistent surveillance using uncrewed aircraft systems (UAS) can deter opportunistic behaviour by exposing an adversary’s actions (Mahnken et al., 2020). If we define power in the manner of Robert A. Dahl – that is, ‘A has power over B to the extent that he can get B to do something that B would not otherwise do’ (Dahl, 1957, pp. 202–203) – might ‘Deterrence by Detection’ be described as the exercise of power from the air through ISR, that is, the exercise of air power?

I shall deliberately avoid the debate here as to whether SAMs, air transport, ISR and the like should be included in the definition of air power, leaving it for future consideration; however, if air power studies continue to interpret air power in a narrow sense, will they not be unable to accurately understand and explain phenomena surrounding aerial warfare?

3.2. Defensive air power

Whether one adopts ‘air power absolutism’ or ‘air power relativism’, both approaches have, as a fundamental premise, assumed that the use of and access to the air are secured, and have focused solely on offensive applications – namely, how to project power from the air and impose one’s will upon the adversary. This is thought to stem from the fact that air power theory has developed primarily in the US, which possesses a strategic air force and expeditionary forces.

Sloan (2016, p. 52) points out that post-Cold War air power theory has been discussed on the premise that the US possesses command of the air – that is, that there are no threats to US airborne assets or to the air bases that serve as the foundation for their operational capabilities. However, the framework of previous discussions cannot account for defensive or denial uses of air power, such as denying the enemy’s strategic bombing from shattering one’s will and ability to wage war or thwarting the enemy’s anti-ship and ground attacks to prevent the attrition of one’s own land and naval forces.

Specifically, this applies not only to the ‘air denial’ in Russia’s invasion of Ukraine mentioned earlier, but also to the air battles during the Battle of Britain and the air battle at the outset of the 1973 Yom Kippur War. The Battle of Britain was an instance during World War II in which Britain, utilising air defence based on anti-aircraft radar and fighter aircraft, shattered the will of Germany which had subjugated France and sought to bring Britain under its control through strategic bombing. The air battles at the outset of the Yom Kippur War were an instance in which the Arab side, through the deployment of multi-layered SAM and anti-aircraft artillery (AAA), dealt a severe blow to the Israeli Air Force, thwarting Israel’s attempt to compensate for its numerical inferiority on the ground through CAS. In other words, while there is a body of historical (military) ev-

⁴ Layton (2018) also discusses how SAMs are being overlooked despite their significant impact on modern air power.

idence regarding the defensive use of air power, it has not yet been fully theorised.

Today, not only are the air defence networks of the US' rivals becoming increasingly robust but, due to the increasing speed and range of missiles, air bases and the mainland are ceasing to be sanctuaries. Consequently, even for the US, it is no easy task to gain command of the air, to use air bases as a foundation for power projection and to exercise offensive air power on that basis. This is evidenced by the fact that concepts such as the 'Golden Dome for America' and 'Point Defense' have been gaining prominence in the US in recent years.⁵

Of course, a review of the history of air power reveals that there are few instances where defensive air power has secured victory. The air strikes carried out by the US and Israel against Iranian nuclear facilities during the so-called '12-Day War' of 2025 suggest that offensive air power remains very much alive. Furthermore, UAVs and drones, as new players in the realm of air power, are likely to have some impact on offense-defence balance. In this sense, the use of defensive air power may well be an exception. While there is no shortage of research, such as that by Bremer and Grieco, which focuses on the defensive aspects of air power, such studies remain isolated in their focus on these defensive aspects alone and cannot comprehensively explain air power throughout history and across the globe. Although there remains room for debate regarding the relative importance and treatment of offensive and defensive approaches, the emergence of an air power theory that integrates these two is desirable.⁶

3.3. The non-military roles of air power

As we have already seen, air power theories to date – whether 'absolutist' or 'relativist' – have focused solely on the military aspects of how to project power using the air and towards what objectives. On the other hand, turning to sea power theory, the renowned scholar Ken Booth argues that the functions of the Navy include a military role, a policing role and a diplomatic role (Booth, 2014, p. 16).

The military role refers to: (1) strategic nuclear deterrence, (2) conventional deterrence and defence, (3) extended deterrence and defence, and (4) the maintenance of international order. The policing role includes (1) coast-guard responsibilities, such as the maintenance of sovereignty, the resource enjoyment and the maintenance of good order, and (2) nation-building that contributes to internal stability and development. The diplomatic role encompasses (1) negotiations involving the reassuring, strengthening and signalling of perceptions amongst allies and friendly nations, (2) the manipulation of negotiating

positions, and (3) prestige-building activities such as providing reassurance to home country and enhancing the national image (Booth, 2014, pp. 17–22). In contrast, in the discourse on air power, discussions focusing on aspects other than these military dimensions remain limited, despite the existence of actual policies and realities.

In fact, since its establishment in 1954, JASDF has conducted measures against airspace violations in accordance with Article 84 of the Self-Defense Forces Act. Specifically:

The ASDF detects and identifies aircraft flying in airspace surrounding Japan using warning and control radars as well as early warning and control aircraft. If any suspicious aircraft heading to Japanese territorial airspace are detected, fighters and other aircraft scramble to approach them to confirm the situation and monitor the aircraft as necessary. Furthermore, in the event that such suspicious aircraft have actually intruded into Japanese territorial airspace, the ASDF issues a radio transmission or other warning such warning to leave the airspace (Ministry of Defense, Japan, 2025a, p. 251).

Measures against airspace violations constitute the exercise of police powers to maintain public order, as only the Self-Defense Forces possess the capability to carry them out, with the ASDF primarily shouldering this role (Ministry of Defense, Japan, 2025b, p. 240).

Such activities have been conducted not only by JASDF but also by the North Atlantic Treaty Organization (NATO). Since 1961, under the name of 'Air Policing', NATO has kept fighter aircraft and their crews on standby 24 hours a day, 365 days a year, with the aim of preserving the security of Allied skies and reacting quickly to airspace violations, suspicious air activities, and unsafe air traffic that does not adhere to international air safety norms (North Atlantic Treaty Organization, 2025). This mission is regarded as a permanent peacetime mission of the Alliance, conducted within the framework of NATO Integrated Air and Missile Defence (IAMD) (North Atlantic Treaty Organization, 2025). Although the maintenance of air security through the exercise of policing powers utilising air power has a historical tradition, it can be said that air power studies to date have not paid sufficient attention to this aspect.

In recent years, in response to the increasingly contested and complicated security environment, the Ministry of Defense has promoted multilateral and multi-layered defence cooperation and exchanges – including high-level and working-level cooperation and exchanges as well as joint training and exercises – to build trust with allies and like-minded countries and to work together to solve regional security issues (Ministry of Defense, Japan, 2025a, pp. 355–359). JASDF is no exception; joint fighter training and

⁵ For further details, see The White House (2025) and U.S. Air Force (2025).

⁶ On the other hand, a closer examination of military doctrine reveals references to the defensive aspects of air power. The doctrines of the US and Australia refer to concepts such as 'Defensive Counter-Air (DCA)', 'Air and Missile Defence (AMD)', 'Ballistic Missile Defence (BMD)' and 'Integrated Air and Missile Defence (IAMD)' (Australian Defence Force, 2023; U.S. Air Force, 2023). The problem is that previous research on air power has emphasised only power projection and offensive aspects and has not paid equal attention to the defensive aspects of air power, which are becoming increasingly important in the modern operational environment.

exercises extend not only to the US but also to Australia, France, Germany, Italy, Spain, the United Kingdom and other nations (Air Staff Office, Japan Air Self-Defense Force, 2026, p. 54), playing a part in strengthening coordination and improving interoperability among allies and like-minded nations. Such diplomacy through air power is becoming the norm, and it can be said that the role of air power is now one that cannot be ignored. The time has come for air power studies to discuss its significance.

4. Japan's air power in the era of cross-domain operations

The 'National Defense Program Guidelines for FY2019 and beyond (NDPG 2019)' stated that 'rapid expansion in the use of new domains, which are space, cyberspace and electromagnetic spectrum is poised to fundamentally change the existing paradigm of national security, which has prioritized responses in traditional, physical domains, which are land, sea and air' (National Security Council and the Cabinet of Japan, 2018, p. 1). This approach was also adopted in the 2022 'National Defense Strategy', which identified cross-domain operation capabilities as one of the seven fields of key capabilities for fundamental reinforcement of defence capabilities, stating that:

It has become increasingly important for Japan to overcome inferiority in individual domains by conducting cross-domain operations which organically fuse capabilities in all domains including space, cyber, electromagnetic spectrum, land, sea, and airspace to generate synergy and amplify the overall strength, and thereby ensuring Japan's national defence (National Security Council and the Cabinet of Japan, 2022, p. 25).

While 'air power absolutism' asserts that air power alone can win wars, 'air power relativism' has argued that joint and combined operations are also vital, maintaining that it is essential to overcome disadvantages in the land and sea domains through support for land and sea operations via ground and anti-ship attacks. From this perspective, it cannot be said that air power has necessarily neglected coordination with other domains.

On the other hand, there has been little discussion regarding the coordination between air power – which has traditionally been the dominant force in the air domain – and the domains of space, cyber, electromagnetic and information warfare (which encompasses the cognitive domain), all of which have attracted attention as new domains in recent years. In particular, while it is clear that modernised air power since the Gulf War has benefited from the space, cyber and electromagnetic domains – including positioning (GPS: Global Positioning System), communications, meteorology, C2, information systems and electronic warfare – there is, to the best of my knowledge, no discussion of how air power can contribute to these new domains.

There remains room for debate as to whether, as 'air power absolutism' contends, the air domain will continue to be decisive in determining the outcome of wars, or whether it will be supplanted by the space, cyber and electromagnetic domains. Since aircraft first appeared on the battlefield during World War I, the air domain has, so to speak, remained a 'new domain' to this day. However, with the emergence of the space, cyber and electromagnetic domains, it has been forced to cede that status.

Of course, strategic studies have not entirely neglected research into space, cyber and electronic warfare, where military applications have advanced, nor have studies on joint operations become less common (Sloan, 2016, Chapters 8–9). However, these merely address air power from the perspective of other domains or within the context of joint operations (Gompert, 2003; Nisser, 2022). As the air domain becomes increasingly relativised, air power studies must centre on itself without falling into insularity. Just as it once discussed land-air and sea-air cooperation – that is, cooperation with land power and sea power – it is necessary to reaffirm the significance and role of air power in cooperation with space power, cyber power, 'electromagnetic power' and 'cognitive power' (Lambeth, 2011).⁷

5. Conclusion

Having surveyed the discussions surrounding air power to date and taking into account the current reality of air power, I have identified the issues that air power studies should clarify and the direction they should take in the future. Previous air power studies have been characterised by a dichotomy: on the one hand, 'air power absolutism', which posits that air power alone can win wars; and on the other, 'air power relativism', which argues that since the course of war is ultimately determined by land and sea combat, it is also important to support land and sea operations. This division has unfolded in a binary manner, centring on the question of 'which approach to the use of air power is correct?'

Air power theory, however, has focused on air forces and air assets, particularly fighter and bomber aircraft, and has been confined to the question of 'how to project power against which targets', paying attention solely to the offensive context. Consequently, theory has failed to account for the defensive usage of air power, such as the air battles leading up to the Battle of Britain and the outset of the Yom Kippur War, or the 'air denial' during Russia's invasion of Ukraine. Furthermore, it has also neglected the diplomatic role of air power, such as air policing activities like measures against airspace violations, as well as the strengthening of cooperation with allies and like-minded countries through joint training and exercises using air assets. Lastly, although the emergence of new domains – space, cyberspace and the electromagnetic spectrum – has long been

⁷ However, sources such as this primarily treat air power, space power and cyber power as parallel concepts and are limited to describing their conceptual similarities.

highlighted, the direction of air power's cooperation with these domains remains unclear.

Although these points are important issues, I have refrained from elaborating on them due to space constraints. I hope to revisit these topics in a future article and look forward to further studies in this area.

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References

- Air Staff Office, Japan Air Self-Defense Force. (2026). *Overview of the Japan Air Self-Defense Force 2026*. <https://www.mod.go.jp/asdf/special/uploads/images/20260403.pdf>
- Angstrom, J., & Widen, J. J. (2014). *Contemporary Military Theory: The dynamics of war*. Routledge. <https://doi.org/10.4324/9780203080726>
- Australian Defence Force. (2023). *ADF Air Power*. Air and Space Power Centre. <https://airpower.airforce.gov.au/sites/default/files/2024-01/ADF-I-3%20ADF%20Air%20Power%20Ed%201.pdf>
- Booth, K. (2014). *Navies and Foreign Policy*. Routledge.
- Boyd, J. R. (2018). *A Discourse on Winning and Losing* (G. T. Hammond, Ed.). Air University Press. https://www.airuniversity.af.edu/Portals/10/AUPress/Books/B_0151_Boyd_Discourse_Winning_Losing.pdf
- Bremer, M. K., & Grieco, K. A. (2022a). *Air denial: The dangerous illusion of decisive air superiority*. Atlantic Council. <https://www.atlanticcouncil.org/content-series/airpower-after-ukraine/air-denial-the-dangerous-illusion-of-decisive-air-superiority/>
- Bremer, M. K., & Grieco, K. A. (2022b). *In Denial About Denial: Why Ukraine's Air Success Should Worry the West*. War on the Rocks. <https://warontherocks.com/2022/06/in-denial-about-denial-why-ukraines-air-success-should-worry-the-west/>
- Bremer, M. K., & Grieco, K. A. (2023). *In Defense of Denial: Why Detering China Requires New Airpower Thinking*. War on the Rocks. <https://warontherocks.com/2023/04/in-defense-of-denial-why-detering-china-requires-new-airpower-thinking/>
- Center for Preventive Action. (2026). *Tensions between Armenia and Azerbaijan*. <https://www.cfr.org/global-conflict-tracker/conflict/nagorno-karabakh-conflict>
- Center for Strategic and International Studies. (2025). *The Russia-Ukraine drone war: Innovation on the frontlines and beyond* [Event transcript]. <https://www.csis.org/analysis/russia-ukraine-drone-war-innovation-frontlines-and-beyond>
- Dahl, R. A. (1957). The concept of power. *Behavioral Science*, 2(3), 201–215. <https://doi.org/10.1002/bs.3830020303>
- Douhet, G. (2019). *The Command of the Air* (D. Ferrari, Trans.). Air University Press.
- Faber, P. R. (2015). Paradigm Lost: Airpower Theory and Its Historical Struggles. In J. A. Olsen (Ed.), *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd* (pp. 11–47). Naval Institute Press.
- Gompert, D. C. (2003). *Preparing Military Forces for Integrated Operations in the Face of Uncertainty*. RAND Corporation. https://www.rand.org/content/dam/rand/pubs/issue_papers/2005/IP250.pdf
- Grey, C. S. (2012). *Airpower for Strategic Effect*. Air University Press. <https://apps.dtic.mil/sti/trecms/pdf/AD1122882.pdf>
- Grieco, K. A., & Bremer, M. K. (2023). *Assumption Testing: Airpower is inherently offensive*. Stimson Center. <https://www.stimson.org/2023/assumption-testing-is-airpower-inherently-offensive/>
- Grieco, K. A., & Bremer, M. K. (2024). Contesting the Air Littoral. *ÆTHER: A Journal of Strategic Airpower & Spacepower*, 3(3). https://www.airuniversity.af.edu/Portals/10/ÆtherJournal/Journals/Volume-3_Number-3/Grieco_and_Bremer.pdf
- Ishizu, T. (2005). Air power: Its past, present, and future. In T. Ishizu, K. Tachikawa, N. Michishita, & K. Tsukamoto (Eds.), *Air Power: Theory and Practice*. Fuyō Shobō Shuppan.
- Ishizu, T. (2014). Reconsidering the Possibilities and Limitations of Air Power. *Air Power Studies*, 1, 64–74. <https://www.mod.go.jp/asdf/meguro/center/arpw01/062AP1.pdf>
- Ishizu, T. (2019). *The Utility of Aerospace Power*. (T. Ishizu & I. Yamashita, Eds.). Nihon Keizai Hyōronsha.
- Lambeth, B. S. (2011). Airpower, Spacepower, and Cyberpower. *Joint Force Quarterly*, 60. https://ndupress.ndu.edu/Portals/68/Documents/jfq/jfq-60/jfq-60_46-53_Lambeth.pdf
- Layton, P. (2018). Book review of Routledge Handbook of Air Power. *The Williams Foundation - Central Blue*. https://www.academia.edu/37142608/Book_Review_of_Routledge_Handbook_of_Air_Power
- Ledwidge, F. (2020). *Aerial Warfare: A Very Short Introduction*. Oxford University Press. <https://doi.org/10.1093/acrade/9780198804314.001.0001>
- Mahnken, T. G., Sharp, T., & Kim, G. B. (2020). *Deterrence by Detection: A Key Role for Unmanned Aircraft Systems in Great Power Competition*. Center for Strategic and Budgetary Assessments. <https://csbaonline.org/research/publications/deterrence-by-detection-a-key-role-for-unmanned-aircraft-systems-in-great-power-competition>
- Meilinger, P. S. (2003). *Airwar: Theory and Practice*. Frank Cass Publishers.
- Michishita, N. (2005). The development and significance of air power in the Japan Self-Defense Forces. In T. Ishizu, K. Tachikawa, N. Michishita, & K. Tsukamoto (Eds.), *Air Power: Theory and Practice*. Fuyō Shobō Shuppan.
- Ministry of Defense, Japan. (2025a). *Defense of Japan 2025 (Defense White Paper)*. https://www.mod.go.jp/j/press/wp/wp2025/pdf/DOJ2025_EN_Full.pdf
- Ministry of Defense, Japan. (2025b). *Defense of Japan 2025 (Defense White Paper)*. <https://www.mod.go.jp/j/press/wp/wp2025/pdf/R07zenpen.pdf>
- Mitchell, W. (2010). *Winged Defense: The Development and Possibilities of Modern Air Power--Economic and Military*. University of Alabama Press. (Original work published 1925)

- National Security Council and the Cabinet of Japan. (2018). *National Defense Program Guidelines for FY2019 and Beyond*. https://www.mod.go.jp/j/policy/agenda/guideline/2019/pdf/20181218_e.pdf?utm_source=chatgpt.com
- National Security Council and the Cabinet of Japan. (2022). *National Defense Strategy*. https://www.mod.go.jp/j/policy/agenda/guideline/strategy/pdf/strategy_en.pdf
- Nisser, J. (2022). Integration is the New Black: Thoughts on Future Warfare in Academic and Military Discourses. *Scandinavian Journal of Military Studies*, 5(1). <https://doi.org/10.31374/sjms.169>
- North Atlantic Treaty Organization. (2025). *NATO Air Policing*. https://www.nato.int/cps/en/natohq/topics_132685.htm
- Olsen, J. A. (Ed.). (2015). *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd*. Naval Institute Press.
- Pape, R. A. (1996). *Bombing to Win: Air Power and Coercion in War*. Cornell University Press.
- Postma, J. (2024). Drones over Nagorno-Karabakh: A glimpse at the future of war? *Atlantisch Perspectief*, 45(2), 15–20. <https://www.atlcom.nl/artikel-atlantisch-perspectief/drones-over-nagorno-karabakh-a-glimpse-at-the-future-of-war/>
- Schelling, T. C. (2008). *Arms and Influence*. Yale University Press.
- Sloan, E. C. (2016). *Modern Military Strategy: An Introduction* (2nd ed.). Routledge.
- Suenaga, S. (2005). Genealogy of Strategic Bombing Theory. In T. Ishizu, K. Tachikawa, N. Michishita, & K. Tsukamoto (Eds.), *Air Power: Theory and Practice*. Fuyō Shobō Shuppan.
- Tamura, N. (2016). *An Introduction to the History of Military Thought*. Sakuhinsha.
- Tanaka, T. (2008). *The history of air warfare*. Kodansha Gendai Shinsho.
- Tanaka, Y. (2026). Ea Pawā Kenkyū no Koremade to Shōrai. *Air and Space Power Studies*, 13, 31–46. https://www.mod.go.jp/asdf/meguro/center/asp13/ASP13_03.pdf
- The White House. (2025). *Presidential Actions: The Iron Dome for America*. <https://www.whitehouse.gov/presidential-actions/2025/01/the-iron-dome-for-america/>
- UK Ministry of Defence. (2022). *Joint Doctrine Publication 0-30 (JDP 0-30): UK Air Power* (3rd ed.). https://assets.publishing.service.gov.uk/media/636baad0d3bf7f1649c4e36d/UK_Air_Power_JDP_0_30.pdf
- U.S. Air Force. (2021). *Air Force Doctrine Publication 1, The Air Force*. https://www.doctrine.af.mil/Portals/61/documents/AFDP_1/AFDP-1.pdf
- U.S. Air Force. (2023). *Air Force Doctrine Publication 3-01 (AFDP 3-01): Counterair Operations*. https://www.doctrine.af.mil/Portals/61/documents/AFDP_3-01/3-01-AFDP-COUNTERAIR.pdf
- U.S. Air Force. (2025). *Air Force Doctrine Advisory: Point Defense of Air Bases*. https://www.doctrine.af.mil/Portals/61/documents/Doctrine_Advisory/Point%20Defense%20Doctrine%20Advisory.pdf
- Warden, J. A., III. (1995). The Enemy as a System. *Airpower Journal*, 9(1). https://www.airuniversity.af.edu/Portals/10/ASPI/journals/Volume-09_Issue-1-Se/1995_Vol9_No1.pdf