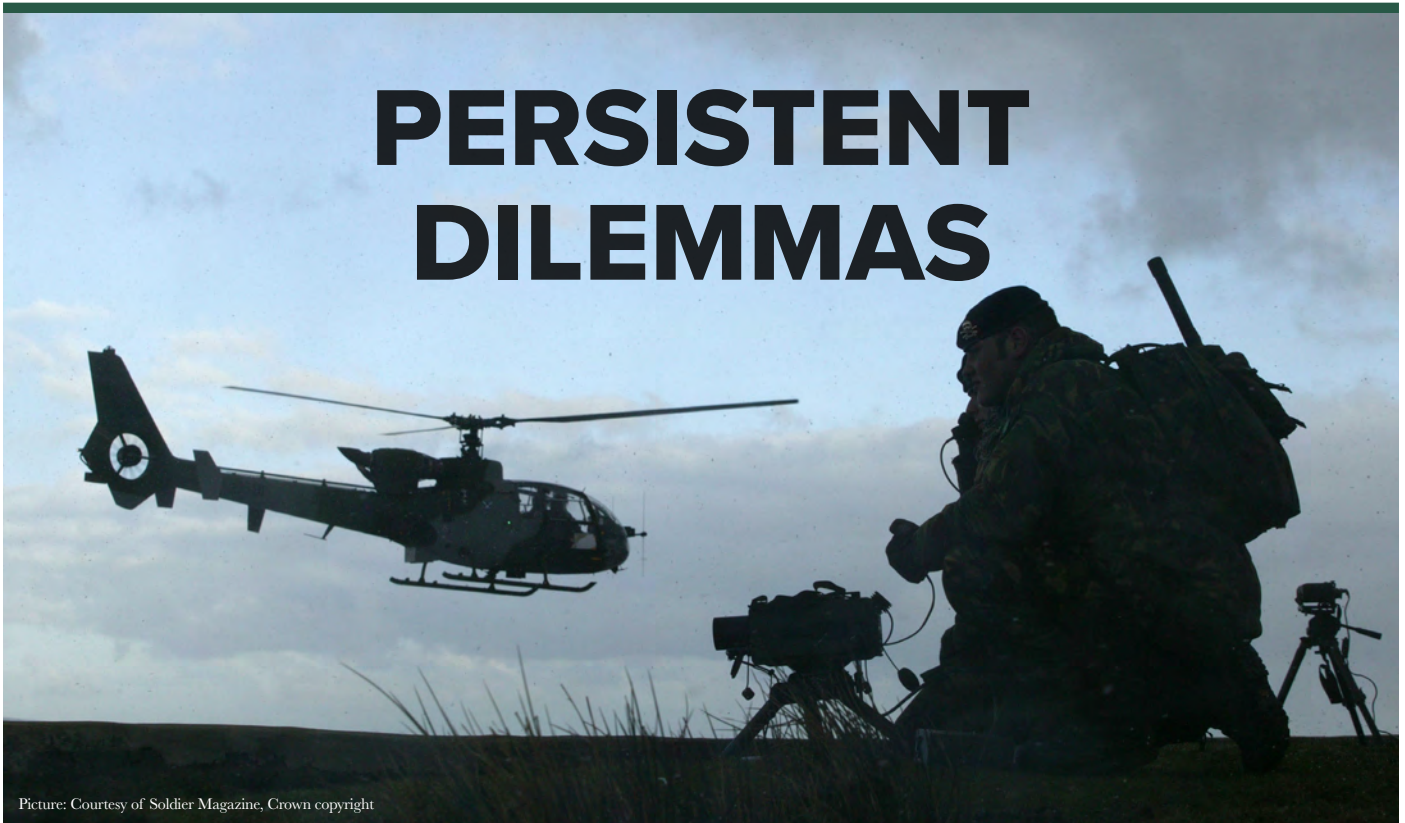


# PERSISTENT DILEMMAS



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## THE ENDURING CHALLENGES OF AIR-LAND INTEGRATION

**S**INCE the First World War when the partnership on the battlefield between air and land forces provided an early view of both the potential and the problems associated with this then budding collaboration, air forces and armies have had an uneasy relationship of collaboration. What in contemporary United Kingdom doctrine has been labelled 'air-land integration'

<sup>1</sup>For the purpose of this paper the descriptor 'air-land integration' will be used less as UK doctrinal terminology than as a generic phrase to describe the close cooperation of air forces and armies in the battlespace.

<sup>2</sup>Joint Doctrine Publication 0-30 UK Air Power, 3rd Edition, (The Development, Concepts and Doctrine Centre: September 2022), p. 72.

<sup>3</sup>See: Army Ground Forces and the Air-Ground Battle Team including Organic Light Aviation, Study No. 5, Historical Section, Army Ground Forces, 1948 and Field Manual, 100-26, The Air-Ground Operations System, Headquarters, Department of the Army, Washington D.C., 30 March 1973.

(ALI) historically proved its value in warfighting but also demonstrated how frustratingly difficult it could be to achieve in practice.<sup>1</sup>

### SAME HYMN SHEET?

The foundation of achieving effective air-land integration undoubtedly must be a common understanding of what it is, how it works and what it is meant to achieve. Thus, the first problem to consider is definitional as there is a lack of common terminology among major western military powers describing the integration of air and land forces together operationally. The United Kingdom uses the descriptor 'air-land integration' and defines it in the following manner: "Air-land integration maximises the combat power created by coordinating and synchronising complementary capabilities from the air and land domains. It encompasses all the processes that plan, coordinate, control and

deconflict the activities of the air and land components within a given engagement space. Air power takes advantage of the strengths of land forces, such as awareness of the land engagement space, whilst compensating for their limitations, such as providing additional firepower to help preserve freedom of action. Effective ALI requires an understanding of the land domain within which such operations are planned."<sup>2</sup>

In contrast, the United States armed forces from the time of the Second World War adopted the descriptor 'air-ground cooperation', which evolved by the 1970s into 'air-ground operations'. A recent US Army definition describes air-ground operations as: "The simultaneous or synchronized employment of ground forces with aviation maneuver and fires to seize, retain, and exploit the initiative."<sup>3</sup> While some common threads

can be found in the UK and US definitions, they still reflect differences in focus and scope. With NATO now approaching three-quarters of a century of its existence and its attempts to harmonise the military approaches of its members, the Atlantic Alliance's offering to the western descriptor mix is 'air-land cooperation'. In the *NATO Term* database air-land cooperation is defined as: "All organizational measures and procedures enabling the convergence of land and air forces." The NATO descriptor, however, is so general that it could apply to a range of activity from an inter-service collaboration to hold a barbecue to air and land forces conducting the most demanding and complex integration of efforts on the battlefield. While the lack of commonality in a descriptor may simply reflect national or alliance proclivities for what is essentially the same thing, the lack of a widely accepted descriptor can also reflect a lack of a conceptual consensus as to what the integration of air and land forces means.

The issue of common basic definitions and terminology is just the tip of the conceptual iceberg. Having a developed doctrine that joins together the air and land components is the foundation that makes air-land integration work. Historically,

<sup>4</sup>*The Employment of Air Forces with the Army in the Field 1938*, (London: The War Office, 28 September 1938), pp. 33-34.

<sup>5</sup>*Field Service Regulations, Command and Employment of Air Power*, (Washington: 1944), p.11.

<sup>6</sup>*Ibid.*, p. 12.

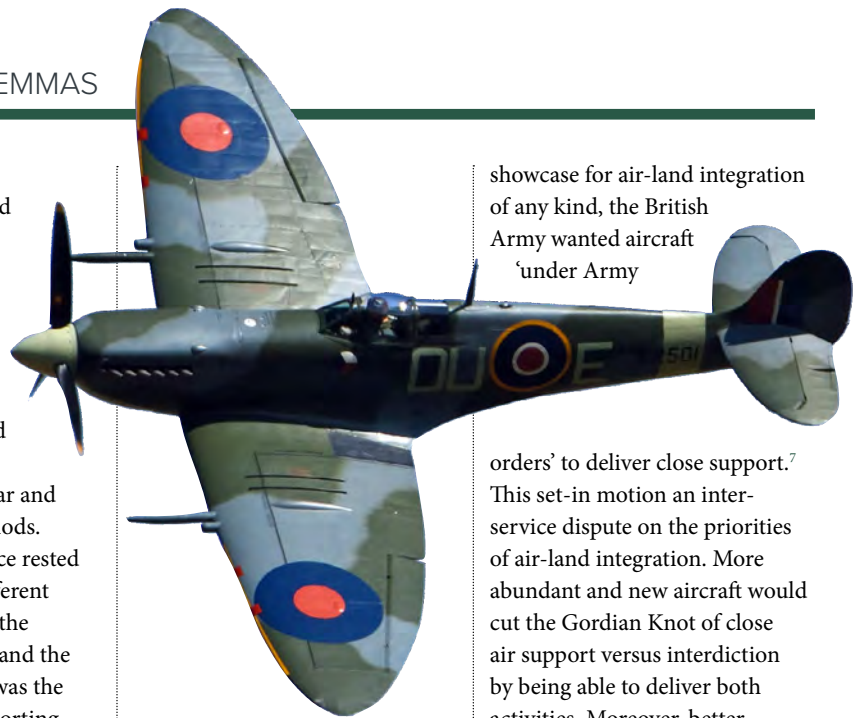
<sup>7</sup>*Air Publication 3235, The Second World War 1939-1945, Royal Airforce, Air Support*, (Air Ministry; 1955), p. 14.

<sup>8</sup>*Air Marshall Sir Arthur Coningham, 'The Development of Tactical Air Forces', The Journal of the Royal United Service Institution, Vol. 91, No. 562, (May 1946), p. 221.*

<sup>9</sup>*Phillip S. Meilinger, 'Air-Ground Cooperation Perspectives', Military Review, November-December 2003, p. 52.*

the lack of an agreed doctrine for air and land integration has been an important source of failure in air-land integration. A good example of this issue can be seen in the development of air-land doctrine in the United Kingdom in the interwar and Second World War periods. The doctrinal dissonance rested on a fundamentally different understanding of what the Royal Air Force (RAF) and the British Army believed was the role of the RAF in supporting the army in the field. Interwar RAF doctrine had developed the view that the British Army was best supported by air operations against an opposing army's lines of communications, command centres and bases. The Army priority was close support for the contact battle and reconnaissance. As *The Employment of Air Forces with the Army in the Field 1938* stated: "The objectives of the bomber squadrons of the air component will normally be either the enemy's fighting troops, or his aerodromes, or vital centres in his rear organisation in the field. These vital centres may be defined as points in the enemy's system of communications or supply of which the destruction or constant interruption will most hamper the enemy and may even be fatal to his continuance of effective operations."<sup>4</sup>

The RAF was not alone in its view of how air power should be employed to aid the Army. In the Second World War US Army Air Force (USAAF) wartime doctrine emphasised that aircraft in support of land operations sought "the disruption of hostile lines of communication... the destruction of supply dumps, installations, and



showcase for air-land integration of any kind, the British Army wanted aircraft 'under Army

"IN THE CASE OF THE RAF AND BRITISH ARMY, HARMONISING THEIR IDEAS ON AIR-LAND INTEGRATION TOOK SOME TIME TO DEVELOP DURING THE SECOND WORLD WAR."

the attack of hostile troop concentrations will cause the enemy great damage and may decide the battle"<sup>5</sup> The last of the priorities was close support of the army with the doctrine arguing "only at critical times are contact zone missions profitable"<sup>6</sup>

In the case of the RAF and British Army, harmonising their ideas on air-land integration took some time to develop during the Second World War. Not surprisingly, the British Army believed that close air support was important not least for morale of the troops. After the disastrous campaign in France in 1940 that was hardly a

orders' to deliver close support.<sup>7</sup> This set-in motion an inter-service dispute on the priorities of air-land integration. More abundant and new aircraft would cut the Gordian Knot of close air support versus interdiction by being able to deliver both activities. Moreover, better cooperation and integration of planning between the two services reduced wartime friction and increased effectiveness of air-land integration. These successful remedies, however, did not result from a fully common doctrinal understanding.<sup>8</sup>

The case of RAF and British Army differences in what is the priority effort in air-land integration is not limited to the British experience. The differences between land forces seeing close air support as a number one priority while air forces believe that interdiction is the more important priority in air-land integration has been a persistent source of conceptual discord between many air forces and armies.<sup>9</sup> This example highlights what is the most important question to be addressed in air-land integration in any period: Do the air force and army share a common conceptual (doctrinal) understanding of the





purpose for and means to achieve effective ALI?

**THE NEED FOR NEW PRACTICES AND CONCEPTS**

There are many factors that drive the continual need for fresh thinking on ALI. The challenges of ALI have been something of a moving feast as the experience of conflicts large and small and the introduction of new technologies have continuously created the need for new approaches on how armies and air forces collaborate on the battlefield. This evolving need for change is challenging enough in a national context but acquires another layer of complications when ALI is practiced between allies and partners. Moreover, as armed forces have shrunk in the post-Cold War period and the ability to afford and field a wide range of capabilities has diminished, collaboration between allies and partners in ALI has become more necessary. ‘Coalition ALI’, however, is an area that is conceptually underdeveloped. The few historical examples of ALI in a conventional coalition warfighting environment only highlight the lack of progress in acquiring new ideas and practices. Historical examples indicate that coalition ALI has been conducted either as parallel national efforts or that lesser coalition partners moved in the direction of ALI practices of the dominant coalition member. The Korean War 1950-1953 saw an amalgam of these two approaches.

The outbreak of the Korean War in June 1950 with an invasion of South Korea by the communist Korean Peoples’ Army (KPA) triggered a three-year conflict that ended in a military stalemate at the 38th Parallel. The war was fought between a United States-led United Nations’ Coalition and the KPA supported by a Chinese military intervention. The scale of numbers in the United States’ contingent and the



“IN THE CONTEXT OF KOREA, COMMONWEALTH COALITION PARTNERS OPERATED MOSTLY AUTONOMOUSLY RATHER THAN WITHIN A DISTINCTIVE COALITION AIR-LAND INTEGRATION ORGANISATION WITH THEIR AMERICAN ALLY.”

military capabilities it deployed meant that the conduct of ALI was dominated by US decisions and organisation. What is extraordinary is the degree to which the US approach to ALI had little moved on from the Second World War debates of close air support versus interdiction. From the onset of the Korean War, the American command structures established in the Korean conflict effectively put the US Army in control of air priorities. This made close air support the priority even when the United States Air Force (USAF) believed it was not a sound use of air power in aid of land forces. USAF efforts to create a more joint approach and organisation made slow progress.<sup>10</sup> Not until 1952 did a more joint command structure emerge but the USAF still believed that a ‘desired unity of air operations’ was not achieved.<sup>11</sup> Reflecting on air operations in Korea, General Otto P. Weyland, Commander Far East Air Forces, pointed to the consequences on ALI: “There is a tendency among many to regard all such air operations against ground forces merely as support of the army. This generates misguided concepts of organisation, control, and employment which tend to affect adversely a smoothly functioning team. But more basically it prevents us from

seeing the possibilities of employing both air and surface forces in the most effective combined strategy.”<sup>12</sup>

Only late in the Korean War did the US-led coalition adopt an ‘Air-Pressure’ strategy targeting electrical generation capacity in North Korea to force a negotiated end to the conflict. The emergence of a coherent strategy was more in the realm of a strategic bombing campaign than ALI as by this point in the war the contending armies faced each other on a static line. Within the massive dominance of the US air campaign and its inter-service failures to develop a coherent approach and command structures for ALI, the limited Commonwealth air contribution was instructive on the limited options available for coalition members regarding ALI. Royal Navy carrier aircraft provided the largest contribution to British and Commonwealth tactical air operations off the west coast of Korea.<sup>13</sup> The remaining Commonwealth air contribution consisted of a South African Air Force squadron and a Royal Australian Air Force squadron. Both squadrons flew through most of the war in American F-51 Mustangs (pictured above).<sup>14</sup> While the land-based Commonwealth air contribution was tiny in comparison to

the number of USAF aircraft deployed it nevertheless also dwarfed the more substantial Royal Navy air contribution. Air-land integration of the Commonwealth air contribution had tenuous connection to the dysfunctional United States command structures that plagued the effectiveness of American air and land integration in Korea.<sup>15</sup> In the context of US air operations in Korea, Commonwealth coalition partners operated mostly autonomously rather than within a distinctive coalition air-land integration organisation with their American ally.

Although the Korean War might seem to offer little in the way of lessons for ALI in conventional coalition warfighting, it does in fact point to the central problem if coalition ALI is to be achieved. As the Australian official history of the Korean War stated: “The experience of the war emphasised the importance of a comprehensive system for controlling the air activities of all nations and services taking part. Despite the obvious gains which would have resulted, it took over two and a half years of combat before a proper joint headquarters for air operations

<sup>10</sup> Lt Col Price T. Bingham, ‘The US Air Force and Army in the Korean War: How Army Decisions Limited Air Power’s Effectiveness’, *The Mitchell Forum*, No. 23, (December 2018), pp. 3-4 and Robert F. Futrell, *The United States Air Force In Korea 1950-1953*, (Washington D.C., Office of Air Force History United States Air Force, 1983), pp. 44-55.

<sup>11</sup> Futrell, *The United States Air Force In Korea 1950-1953*, p. 491.

<sup>12</sup> General Otto P. Weyland, ‘The Air Campaign in Korea’, Vol. VI, No. 8, (Fall 1953), p. 17.

<sup>13</sup> David Hobbs, *The British Carrier Strike Fleet after 1945*, (Barnsley: Seaforth Publishing, 2015), p. 89.

<sup>14</sup> Anthony Farrar-Hockley, *The British Part in the Korean War, Volume II An Honourable Discharge*, (London: HMSO, 1995), pp. 318-319.

<sup>15</sup> *Ibid.*, p. 315.

was established by the United Nations Command.<sup>16</sup>

Korea emphasised two options for achieving coalition ALI. The first is to simply adopt the practices of the dominant coalition partner, which in the case of Korea was the United States. Such a solution, however, requires coalition members to adopt in entirety American military doctrine and organisation. Given that junior coalition member integration potentially reduces the junior coalition member into an appendage of the US military, national political perspectives and military practices can be formidable obstacles in the attainment of coalition ALI. In turn, the dominant coalition partner must have its ALI house in order. In Korea, the US clearly did not. The second option is to accept diversity in coalition members' approach to ALI and aim for compatibility rather than uniformity of approach. Both options need to be underpinned by doctrine that supports either

full integration or supports seamless collaboration where it most matters. Thus, the key question to be addressed is: What new ALI concepts and doctrine are necessary for alliance or coalition conventional warfighting?

**FIGHTING TOGETHER OR FIGHTING SEPARATELY? CAPABILITY OWNERSHIP AND PRIORITY**

There is a natural proclivity of a particular branch of armed forces to seek to 'own' capability that gives it the ultimate decision on its employment. This tendency can be reinforced by a single service belief that another service has failed to deliver to its requirements. As discussed earlier, the failed campaign in France 1940 led the British Army to argue that it needed to have fighters, reconnaissance and bomber aircraft (even if flown by the RAF) directly under its control.<sup>17</sup> In the end, the RAF retained control of its assets notwithstanding the inter-service arguments that followed the

disastrous campaign in France. However, other factors rather than perceived operational failures in collaboration are more important in driving issues regarding capability ownership.

For much of the long century's experience with ALI, there has been a structural imbalance of what each service could do in delivering firepower in the close and deep battle. For armies, the range of artillery determined that fires could be delivered little beyond the close battlespace while air forces with the inherent flexibility of aircraft could deliver firepower seamlessly from the close to the deep battlespace. This structural imbalance has been a centrifugal force insofar as it has favoured divestiture of air capabilities that are seen in a single service context as a lesser priority. In RAF terms, the decision to retire in 2007 the Sepecat Jaguar GR.1 ground support aircraft illustrates this paradigm. Although the Harrier GR9 took on the maintained role of the Jaguar, it too was

retired four years later in 2011.<sup>18</sup> Driving these decisions was less the desire of the RAF to get out of the close air support business than the availability of resources for defence.<sup>19</sup> The decision to streamline the fast jet fleet to two platforms consisting of the Typhoon and the then future Joint Strike Fighter was a rational one as no role was lost insofar as both aircraft are multi-role platforms. Moreover, the RAF was disposing of legacy capabilities to enable resources to be available for its future consolidated fast jet fleet.<sup>20</sup>

The changes to the RAF fast jet fleet could also be justified by the fact that the British Army acquired between 1998 and 2001 the Apache AH1 attack helicopter. With the divestiture of Jaguar and Harrier from RAF service, the British Army now owned its own close air support capability. More recently, the USAF has for a number of years sought to retire its dedicated close air support platform the A-10 Thunderbolt II but this effort has



<sup>16</sup>Robert O'Neill, *Australia in the Korean War 1950-1953, Volume II Combat Operations*, (Canberra: 1985), p. 406.

<sup>17</sup>David Ian Hall, *Strategy for Victory: The Development of British Tactical Air Power, 1919-1943*, (Westport, Connecticut: Praeger, 2008), pp. 60-61.

<sup>18</sup>*Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review, Cm 7948, October 2010*, p. 26.

<sup>19</sup>Jamie Hunter, 'The Inside Story of How the UK Culled Its Entire Harrier Jet Force in Just Two Months', *The War Zone*, 30 July 2020, Web URL: [thedrive.com/the-war-zone/35199/the-inside-story-of-how-the-uk-culled-its-entire-harrier-jet-force-in-just-two-months](http://thedrive.com/the-war-zone/35199/the-inside-story-of-how-the-uk-culled-its-entire-harrier-jet-force-in-just-two-months). Accessed 13 July 2023.

<sup>20</sup>*Securing Britain in an Age of Uncertainty*, p. 26.

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been blocked by the US Congress. While a desire to shift resources and personnel has shaped this desire to retire the A-10, the central argument advanced by the USAF has been that the A-10 is no longer survivable in anything but an uncontested environment.<sup>21</sup> The trend in western air forces to eliminate dedicated close air support aircraft in favour of multi-role platforms undoubtedly brings benefits in terms of investment and costs. The downside in ALI terms is that the many roles they can perform face greater competing priorities. A multi-role aircraft cannot be in two places at the same time performing two different roles. One historical point of continuity is the primacy of the role in obtaining control of the air as an essential prerequisite and enabler to the conduct of air-land operations. This can be seen in USAAF doctrine from July 1943 that made its first priority ‘to gain the necessary degree of air superiority’.<sup>22</sup> Fast forward to 2016 and the RAF’s Air and Space Warfare doctrine states “control of the air is the most important air power role because it secures our freedom of manoeuvre”.<sup>23</sup> The structural changes to aircraft fleets of air forces mean that a major question to be resolved going forward is: How do you reconcile single service priorities and control of capabilities to facilitate ALI rather than inhibit it?

### ONE-WAY STREET OR TWO-WAY STREET? BALANCE OF CONTRIBUTION

Many post-Cold War conflicts from the First Gulf War 1990-1991 onwards have seen air forces play a major if not dominant role as a tool of intervention.<sup>24</sup> This in turn has fostered a debate as to whether air power has become a predominant in bringing decision in armed conflict. The first Gulf War Air Power Survey observing this then emerging debate concluded that it “ought to focus more on the relationship



between air and ground forces than on whether air forces alone can defeat armies”.<sup>25</sup> In contrast, throughout the history of ALI, land forces have held the view that they are the ‘supported service’ and thus effectively the dominant partner in the air-land relationship.<sup>26</sup> This outlook is less the product of army hubris than a recognition that ultimately conflict still requires the capture and occupation of territory. The implied question from the land perspective as the ‘supported service’ historically has been ‘what can air power deliver in aid of the land campaign?’.

Certainly, the balance of contribution has been mostly one way. Air power has supported land power thereby contributing to its success over the span of ALI history. This largely one-way direction, however, may be coming to an end. The ongoing conflict in Ukraine points to many of the reasons why ALI is moving to more of an interdependency. The effectiveness of layered air defence has resulted in both the Ukrainian and Russian air forces playing a limited role in support of land operations.<sup>27</sup> The availability of imagery from both commercial and military satellites and the proliferation of unmanned aircraft systems (drones) of all sizes and types has made the battlefield increasingly transparent, facilitating targeting from the close to the deep of the battlespace.<sup>28</sup> This reality playing out in the Ukraine conflict also points to the need to integrate into the ALI mix ‘cyberspace’ and ‘space’, with these new domains having an ubiquitous

“THE PROLIFERATION OF UNMANNED AIRCRAFT SYSTEMS OF ALL SIZES AND TYPES HAS MADE THE BATTLEFIELD INCREASINGLY TRANSPARENT.”

role in supporting both the air and land domains. Changes in the ability of land forces to strike deep in the battlespace are also shaping how the balance in ALI will evolve. The traditional limitations of the land force to deliver firepower in the close battlespace disappears with the greater ranges and availability of long-range rocket artillery. With this capability, the land component now can strike in the depth of the battlespace, a role that had hitherto been the monopoly of air forces. Long-range rocket artillery and drones capable of striking targets provide the means of suppressing air defence and hence facilitating the ALI role of air forces. With layered air defence providing a major threat to the freedom of aircraft to operate across the battlespace, the balance in ALI is shifting with a more relevant question being ‘what can land forces do to enable air forces to operate to their mutual benefit?’.

### CONCLUSION: IMPERATIVE FOR INTEGRATION

Historically the core challenge in achieving air-land integration resides in bringing together the military efforts of two armed services. Air forces and armies operate in distinctive physical environments, have deeply rooted service cultures, and utilise dissimilar capabilities and conceptual approaches to warfighting. These differences have posed persistent dilemmas in realising effective air-land integration. Moreover, if this is not enough of a challenge, then in more contemporary conflict, the problem now extends to including allies and

coalition partners in the air-land integration mix. The factor of changing technology that introduces new capabilities in air and land forces has now had an even wider impact, even if it offers opportunities in taking ALI to new levels of effectiveness. The multi-domain construct now adopted by many armed forces postulates that the traditional operational domains of land, sea and air are now joined by ‘space’ and ‘cyberspace’. Whether including allies and partners or accommodating new domains, ALI is at something of a turning point. It will require answers to the questions posed in this paper as ALI is facing an imperative for integration as challenging as any time in its history.

<sup>21</sup>Michael Marroux, *Air Force Seeks More A-10 Cuts, Wants Them All retired in 5-6 Years*, *Breaking Defence*, 9 March 2023, [Web: breakingdefense.com/2023/03/air-force-seeks-more-a-10-cuts-wants-them-all-retired-in-5-6-years](http://Web: breakingdefense.com/2023/03/air-force-seeks-more-a-10-cuts-wants-them-all-retired-in-5-6-years). Accessed 13 July 2023.

<sup>22</sup>*Field Service Regulations, Command and Employment of Air Power*, p.10.

<sup>23</sup>AP3002 *Air and Space Warfare*, 3rd Edition, Air Warfare Centre, February 2016, p. 6.2

<sup>24</sup>Phil M. Hain, *Air Power in the Age of Primacy: Air Warfare since the Cold War*, in: Phil M. Hain, Colin F. Jackson and Timothy P. Schultz (eds.), *Air Power in the Age of Primacy: Air Warfare since the Cold War*, (Cambridge: Cambridge University Press, 2022), p. 2.

<sup>25</sup>*Gulf War Air Power Survey, Volume II, Operations and Effects and Effectiveness*, (Washington D.C., 1993) - Part II p. 376.

<sup>26</sup>Jody Jacobs et al., *Enhancing Fires and Maneuver Capability Through Greater Air-Ground Joint Interdependence*, (RAND 2009), p. 11.

<sup>27</sup>Jack Watling and Nick Reynolds, *Meatgrinder: Russian Tactics in the Second Year of Its Invasion of Ukraine*, RUSI Special Report, 19 May 2023, pp. 20-23 and Justin Bronk with Nick Reynolds and Jack Watling, *The Russian Air War and Ukrainian Requirements for Air Defence*, RUSI Special Report, 7 November 2022.

<sup>28</sup>Ben Barrie, *Russia’s War in Ukraine: What are the Emerging Military Lessons?*, IISS, *Strategic Survey 2022*, pp. 39-40. [Website: iiss.org/globalassets/media-library--content--migration/files/publications/strategic-survey-2022/strategic-survey-2022\\_military-lessons-russia-war-in-ukraine.pdf](http://Website: iiss.org/globalassets/media-library--content--migration/files/publications/strategic-survey-2022/strategic-survey-2022_military-lessons-russia-war-in-ukraine.pdf). Accessed 25 May 2023.