‘We Never Talk About That Now’: Air-Land Integration in the Western Desert 1940-42

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Abstract: Effective Air-Land Integration (ALI) has historically proven cyclical and difficult to achieve. This article examines how events in the Western Desert between late 1940 and 1942 allowed British Forces to develop an efficient and effective system of ALI. It examines how these ‘ALI principles’ evolved after calamitous failures in France during early 1940 to create a Joint approach to warfare. Using operational case studies from Operation COMPASS in 1940 through to the battle of Alam el Halfa in late 1942, it demonstrates how control of the air, willingness to cooperate, joint headquarters, effective communications and sound doctrine became the critical tenets of successful ALI.

Introduction

The achievement of effective Air-Land Integration (ALI) has been elusive and difficult to achieve. Whilst numerous examples of successful cooperation exist, the ability to project air power in support of ground forces has proven to be a major challenge for over 90 years.[1] Perhaps the greatest irony is that during the Great War, the British created an effective process of air support to ground operations and possessed what many people believed to be 'the finest tactical Air Force in the World'.[2] Due to inter-war cuts in annual defence budgets, the relationship between the Army and RAF in 1939 was burdened by friction and deep-rooted prejudices.[3] Certainly, the two Services had developed irreconcilable differences over the conceptual employment of air support to land operations and the lessons learnt from the Great War were forgotten. When war commenced in Europe in 1939, both Services were underequipped and unprepared for the cooperation necessary for Joint warfare. Indeed, in the early years of the War, air support was inadequate and the Army lost every campaign; it was held in some quarters that the RAF 'trained and equipped to fight a separate war, could not give much support to the Army and begrudged what it gave'.[4] This has inevitably coloured judgements about the delivery of ALI, but the importance of combining air and land power was widely recognised, perhaps best exemplified in 1943, when, in one of his regular observations about the importance of ALI, General Sir Bernard Montgomery noted:

> If you can knit the power of the Army on land and the power of the air in the sky, nothing will stand against you.[5]

Montgomery had been in command of 3rd Division (and briefly II Corps) in the British Expeditionary Force in France, and had seen at first-hand some of the problems in ALI during 1940. His appointment to command the Eighth Army in 1942 occurred as steps to correct many of the failings which had become apparent in 1940 were underway; although his relationship with his senior airmen was to collapse spectacularly in 1944, his part in the development of effective ALI was significant.[6]

Any understanding of the evolution of effective ALI in the Second World War requires a study of its development in the North African campaign. This article considers how fundamental weaknesses were overcome in the Western Desert between late 1940 and the Allied victory in 1943 to produce an efficient and effective system of ALI. It will examine how processes evolved after the 'calamitous Battle of France' to create a Joint approach to warfare.[7] First, it will consider initiatives developed in the UK and will show how these were learnt in parallel – and then eventually adopted – by the Joint forces in the Western Desert. Using operational case studies from Operation COMPASS in 1940 through to the battle of Alam el Halfa in late 1942, it demonstrates how control of the air, willingness to cooperate, joint planning and headquarters, effective communications and sound doctrine became the critical tenets of successful ALI. As John Terraine put it, the gradual adoption of these

principles 'ultimately provided a landmark in the development of air support organisation and technique during the war'.[8]

A way forward

Although the War provided an obvious distraction from the peacetime hostility between the two Services, the defeat in France demonstrated how woefully unprepared the Army and RAF were to meet the demands of Joint warfare. Indeed, the consensus of the War Cabinet and highest political office was that 'significant improvements… increasing the fighting potential of the Army, particularly in the air, must be made'.[9] The success of air support depended on requests from ground forces being forwarded to air units in a timely fashion, with targetting coordinated and de-conflicted with friendly fires and troop movements. This presented a considerable Command and Control (C2) problem which necessitated extensive Army-Air coordination and cooperation. During the campaign in France, Army requests for air support were passed along lengthy chains of command at separate headquarters. The system proved to be utterly inadequate to deal with rapid German operations and it broke down completely after the collapse of the Allied Front.[10] It proved impossible to carry out effective air support in a timely manner; indeed, there was no C2 process that successfully linked air power with the battlefront. Requests by Army commanders for air support would frequently take over 3 hours, often ensuring that all was lost as a consequence of disconnected and disjointed actions.[11] In contrast, German air support during the campaign proved to be sufficiently integrated to outmanoeuvre and outstrip the British model.[12] The Luftwaffe placed air signal liaison teams at headquarters and alongside advancing infantry and Panzer units. These controlled air strikes, whilst control teams acted as an important communications hub between requests and the Luftwaffe.[13] This resulted in effective air-ground liaison, enabling German forces to concentrate air power quickly in support of land forces.[14]

The British defeat in France in 1940 proved to be a pivotal moment in the exposure and recognition of weak air-land coordination doctrine.[15] Separate headquarters located miles apart hindered contact between RAF and Army planning staff – a problem magnified by unreliable communications and unwieldy C2 chains.[16] Certainly, early examples of air support were not successful and the two Services had no systems in place that could replicate the success demonstrated by the Germans.[17] Despite this, both agreed that 'air support was an essential prerequisite for success in a land campaign against a well-equipped and highly mobile enemy'.[18] The events in France had now created significant impetus to resolve the air support dilemma.

With the coordination of air support now firmly on the agenda, the Air Ministry and War Office sanctioned a series of Joint Army-RAF signals experiments in order to develop tactics and procedures for close cooperation. Gp Capt A H Wann and Lt Col J D Woodall were appointed to progress the experiment as both had first-hand experience of the nature of the failures in France. Their aim was to devise an air support system that could be as effective as the one utilised by the Germans, and sufficiently robust to adjust to the rapid pace of modern

military operations.[19] Prioritising flexibility, speed of response, target discrimination and communications, the output of these experiments became one of the most significant developments in the war.[20] When the report was released in September 1940, Wann and Woodall identified a system of 'unified command' that drew on the expertise of each Service. This was a critical first stage in creating 'Close Support Bomber Controls' (CSBC), a sophisticated signals network providing rapid and effective communications between controllers at the combined headquarters and signals operators attached to forward Army units.[21] This enabled Joint decisions to be taken in a timely manner, with requests for support passed directly to the nearest available airfield. Once airborne, the aircraft then received target information directly from the signals officer at the forward unit. Coningham later described it as:

> A plan that was far superior to anything possessed by the Germans then or thereafter, for coordinating the action of forward troops and supporting bombers. It was a signals network which sent out… "tentacles". Army officers…went forward to the leading troops and signalled back requests for support, by wireless links that avoided the normal channels, to a control centre where they were monitored by [Joint] Staff Officers sitting together. The Woodall plan, [or] what he called CSBC, was immediately adopted in principle, by both services…[and was] one of the outstanding successes of the war.[22]

An additional step improving effective ALI was made with the formation of Army Cooperation Command. This new RAF command centralised all Army cooperation squadrons and training establishments with a remit to develop all elements of air support to be used at home and abroad. Although the creation of this organisation originally proved promising, its inception created further mistrust as both Services developed different perceptions of its role. The Army considered it central to developing its air arm, whilst the RAF considered it as a training and tactics organisation equipped with understrength Lysander squadrons which had made significant progress with CSBC.[23] Certainly, the Army anticipated that the Command would be complemented with fighter aircraft and high performance bombers, with assets allocated to the Army as their primary function. These views were opposed by the Air Ministry, which maintained that the achievement of air superiority was central to effective air support. These practical and conceptual differences of how to employ air power in air support operations remained largely unresolved as operational priorities overtook events.[24] Army Cooperation Command was largely successful in improving and developing tactics and techniques, but it failed to address broader policy issues and optimum aircraft usage.[25]

One step forward, two steps back

Although it was still too early for the lessons identified between the Air Ministry and War Office to be properly evaluated, some success was still achieved during early air support operations in the Western Desert. Ironically, this coordination was necessitated through paucity of resources, rather than the introduction of astute foresight. The 'combined plan' required the Army and RAF to coordinate Joint effort in an attempt to overpower an Italian force of vastly superior numbers. Despite the absence of any standardised procedures, increased contact between

the Services was encouraged. This resulted in the co-location of headquarters, an act that immediately increased the effectiveness, if not the sophistication, of the in-theatre C2 system.[26] Army intelligence officers began to attach themselves to squadrons, whilst a direct signals network was created that linked headquarters and airfields. Perhaps the most significant step forward was the perceived willingness of both air and ground commanders to cooperate and work together towards a common objective. Terraine relates this to the 'stress of war,' where the pressures of conflict drew them together.[27] Whatever the reason, the rewards of this willing cooperation and combined approach delivered immediate results. In the first limited offensive along the Libyan front, air operations focussed on bombing air bases (to secure local air superiority), reconnaissance and attacks on enemy ground forces.[28] Although this air activity was independent and involved prosecution of pre-planned static targets, the level of cooperation was high and the RAF was able to provide full support to the Army.[29] The numerically superior Italian forces were contained and air superiority enabled air support operations to be conducted relatively unopposed.

In December 1940, Operation COMPASS became the first fully coordinated and cooperative Joint event of the campaign. From the commencement of planning operations, there appeared a determined willingness amongst both Services to plan and conduct operations together. Command headquarters were established on adjacent sites, whilst objectives were developed through Joint planning teams. Certainly, Bickers argues that from 'this cordial and perceptive planning grew the concept of modern tactical warfare and tactical air forces so critical to allied success'.[30] Most importantly, COMPASS demonstrated the necessity of achieving control of the air to enable air support operations. The principal perception was that without establishing air superiority, one could not hope to influence decisively the outcome of land conflict and retain key territory.[31] Although the British had learnt the importance of air superiority in the Great War, inter-Service rivalry had ensured these principles were forgotten in the inter-war years. The Blitzkrieg clearly demonstrated how local air superiority led to overwhelming success in ground operations and RAF commanders had drawn this conclusion from German success in Europe.[32] Initial RAF activity was focussed on seizing the initiative over a numerically superior Italian Air Force. By concentrating preliminary efforts on attacking airfields, the RAF was able to destroy large numbers of Italian aircraft, whilst forcing the remainder into a defensive posture. Within a week, Italian air operations all but ceased, providing the freedom of manoeuvre essential to conduct air support operations.[33] This was a critical development in effective support to land operations for two reasons. First, it enabled the ground commander to execute his offensive unimpeded by enemy air activity. Secondly, the RAF was able to focus effort on the delivery of vital and often decisive air support operations, rather than providing fighters in an umbrella against enemy air attack. Such was the success of this action that it drew praise from Army HQ:

> Since the war began you [RAF] have…attacked an air force between five and ten times your strength…until finally it was driven out of the sky. You cooperated to the

Hawker Hurricane IIC aircraft of 94 Squadron, North Africa, 1942

> full in carrying out…requests for [air support] and I would like to say how much this contributed to our success.[34]

Although COMPASS was an undoubted air-land success, cooperation was still at an embryonic stage, understandably generating caution of the value of ALI lessons that could be drawn.[35] [36] Whilst the necessity of air superiority to air support operations was demonstrably clear, RAF success on this occasion was partly due to the lack of effective opposition, rather than sound tactical doctrine. Against a more coordinated and capable enemy such as the German Luftwaffe, the degree to which 'control of the air' could be achieved would likely be reduced.[37] There were additional weaknesses identified that ensured air-ground cooperation remained imperfect. Several attacks were ordered on troop concentrations without coordination with Army headquarters, resulting in ineffective employment of air assets during the mobile phase of the ground battle.[38] Equally problematic was the difficulty distinguishing friendly forces from the enemy. This was often caused by forward Army echelons hindering effective cooperation through poor behaviour and bad practice. Units frequently went for long periods without identifying their positions, making it almost impossible at times for the RAF to make positive identifications.[39] At this stage of the Desert War, Army and RAF Liaison Officers were only just starting to receive communications equipment for vectoring aircraft onto targets and these technical shortcomings made it almost impossible for the RAF to coordinate with forward troops. Furthermore, RAF headquarters frequently lost (or had no direct communications with) newly established Forward Operating Bases. Signals arrangements were poor and the telephone lines were frequently congested or unavailable.[40] Despite this, not all lessons were negative. Post-battle analysis reports declared the 'significance of airmen and soldiers working

together in close cooperation with arms of the service other than their own'.[41] It also advocated the value of intelligence liaison officers with squadrons, able to provide pilots with the latest details of operational objectives and targets; a scheme that was recognised and developed by both Services.[42]

The arrival of German forces under the command of the then Generalleutnant Rommel placed a new dimension on the Western Desert, and provided the impetus for the development of a system of air support which would have decisive significance.[43] In May 1941, Operation BREVITY provided the first example of spectacular failure. There was little coordination between both Services and conflict over the correct utilisation of air power for close air support. Significantly, the problem of distinguishing friend from foe in close proximity remained a problem and the lack of working communications magnified this problem.[44] In response, Operation BATTLEAXE was carefully conceived and planned with a degree of equanimity between both Services; although it also ended in failure.

The failure of BREVITY contributed to the replacement of Air Chief Marshal Sir Arthur Longmore as Air Officer Commanding-in-Chief Middle East by his deputy, Air Marshal Arthur Tedder. It was at this point that personalities began to play an even more critical part in the inter-Service relationship. Progress was not without hurdles, and serious problems emerged as the early air-land coordination that had begun to develop during COMPASS was lost.[45] Thus, within less than a month of assuming command, the failure of BATTLEAXE led to Tedder facing recriminations over the recent disappointments. The Army and RAF preferred to blame the other party for the operational failure, an almost inevitable consequence given that one of the major problems was the fractious relationship caused by a profound disagreement over what constituted the best model for the effective use and ownership of air power. Although RAF attacks against enemy lines of communication and airfields had proven successful, the Army wanted fighters to be available overhead in a protective umbrella.[46] They also wanted bombers to be available at their call to provide close support at the forefront of the battle.[47]

Although Tedder was opposed to employing RAF assets in this manner, he had agreed to the proposal in an attempt to foster closer cooperation between the two Services. In retrospect, the use of an air umbrella had a negative impact on the outcome of the operation. Previous success had been based on quickly achieving air superiority through the aggressive and flexible use of the RAF's meagre resources; however, the defensive posture adopted in this battle by the RAF only served to aid the British defeat.[48] Of note, German reporting identified that RAF attacks on rear communications and supply columns had been very successful, but the ramifications would have been much worse had the RAF fighter force been released for offensive action.[49]

In a report to London, General Wavell (Commander-in-Chief, Middle East) placed some blame on the RAF for the failure of the recent operation. Citing poor close support procedures and an inability to completely protect his forces from air attack, he contended that the

RAF was not properly organised to provide the type of air support enjoyed by the Germans.[50] These comments brought an angry response from Tedder, who claimed that Wavell 'did not begin to understand the first principles of air warfare'. Indeed, Tedder went as far as claiming that although the model employed during BATTLEAXE was not a good example of air support, only one request had been made by the Army during the entire operation.[51] Interestingly, the Army put this down to the close proximity of enemy troops to friendly forces. This claim was refuted by Tedder who argued the fault was a consequence of poor communications procedure: in particular, the failure of the Army to respond to calls from the air to display recognition signals and the lack of friendly force positional data.[52] This made it difficult, if not impossible, for the RAF to assist the Army directly due to the risk of hitting friendly forces.[53] As a result, 'the air support the Army believed it desperately needed went unused'.[54] This disagreement clearly illustrated the gulf that existed between the two Services in their attempts to create an effective system of close support. The Army was adamant that success against a well-coordinated enemy required RAF assets to be under its direct command. This, they argued, should consist of a fighter aircraft for defence, and dive-bombers for intimate support.[55] Conversely, the RAF disagreed, citing the necessity of air superiority to enable effective air support operations. It was necessary, they argued, to enable an air situation where ground forces could operate freely, with air power capable of so much more than simply acting in intimate support of the Army.[56]

From a broader perspective, Tedder was concerned that the 'Services were not really working together and that [ALI] demanded a degree of coordination that was sadly lacking in the desert'.[57] He was supported by General Beresford Pierce, ground forces commander during BATTLEAXE, who believed that the position of his headquarters (some 80 miles away from the RAF headquarters) had been 'a grave drawback'.[58] It was apparent that commanders had little appreciation of the importance of the need to work together and this, in turn, resulted in a lack of willingness to do so. Desperate to make improvements to the process, Tedder advocated the importance of developing mutual training, with Army cooperation instructors brought forward from the UK to institute training based upon common lines.[59] The importance of air superiority as a prerequisite for air support operations was central to this, not least since it seemed evident that the persistent use of umbrella tactics by Army commanders was proving costly and ineffective. Furthermore, significant improvements to embryonic wireless communication systems, tactics and doctrine for air support and closer battlefield liaison were also urgently required.

Striding ahead

The failure of BATTLEAXE brought about almost immediate change. Wavell was replaced as C-in-C Middle East by General Sir Claude Auchinleck . Tedder and Auchinleck quickly found common ground, and their first and most important initiative was the creation of an inter-Service committee to rationalise a Joint system of cooperation.[60] In addition to this new committee, a series of trials was also initiated to improve communications, signalling and air support efforts. Supported by instructors who were familiar with the Wann-Woodall

experiments, amendments to existing communications and signals processes led to the rapid evolution of procedures already utilised within the Western Desert. The results of these trials were reviewed at a Joint air-land conference in Cairo on 4 September 1941, resulting in the production of an Air Support Directive that provided detailed doctrine on ALI concepts. In addition to defining air support operations as direct air support (close air support) and indirect air support (air interdiction) this directive also emphasised the significance of air superiority toward achieving effective ALI. The doctrine was widely published and subsequently underpinned the development of cooperation for the rest of the campaign.[61] This conference was quickly followed by a damning edict from Churchill about the use of air power:

> Nevermore must ground troops expect, as a matter of course, to be protected against the air by aircraft…the idea of keeping standing patrols of aircraft above moving columns should be abandoned…Upon announcing that a battle is in progress, the AOC-in-C will give him [the C-in-C] all possible aid irrespective of other targets, however attractive. The Army…will specify…the targets and tasks that he requires to be performed [and] it will be for the AOC-in-C to use his maximum force to these objectives…the sole objective being the success of the military operation.[62]

Additional tactics identified within the directive included the co-location of headquarters and requirement of closer working relationships between personnel at all levels.[63] This had already begun with the arrival of Air Vice-Marshal Arthur 'Mary' Coningham, whom Tedder had chosen to succeed Air Commodore Raymond Collishaw as the commander of 204 Group in the

ACM Sir Arthur Tedder and AVM Arthur 'Mary' Coningham, 1943

Western Desert. Collishaw had done well with his command, but, in Tedder's view, was a 'bull in a china shop', too willing to attempt to perform every task asked of him by the Army without appreciating the limitations of air power, and too enthusiastic in his attempts to run everything himself, causing 'frustration and misery' amongst his staff officers.[64]

In July 1941, shortly after his arrival, Coningham established a Joint Army-RAF Headquarters; an arrangement subsequently mirrored at Regional Command by Tedder and Auchinleck. Coningham later wrote that this decision 'was of fundamental importance and had a direct bearing on the combined fighting of the two services until the end of the war'.[65] The directive also provided a solution to one of the biggest problems that had faced effective air-land cooperation. Air Support Controls (ASC) closely mirrored the CSBC system developed in Ireland by Wann-Woodall to provide a communication system able to 'meet, modify or reject requests for air support in a timely fashion'.[66] An ASC was provided for each Army Corps and linked by a two-way wireless tentacle to the brigades in the field. Each brigade had an RAF liaison team, a Forward Air Support Link (FASL) equipped with a two-way radio to control the supporting aircraft and receive tactical reports. In this way, the Army was able to make timely requests for support that could be rapidly evaluated at the ASC. The ASC then had direct communication with the forward airfields to request immediate air support.[67] Sometimes, aircraft were given the precise location of the air support requirement on take-off, but often they would require target indication by the FASL. A recognition system based on lights and ground signs was also developed that enabled aircraft to identify friendly forces.[68] 'Army Liaison Officers also began to arrive in theatre, specially trained by Army Cooperation Command to explain air methods to soldiers… [and] to explain when things went wrong, how they could be put right'.[69] Figure 1 provides an overview of the C2 process for air support operations.[70]

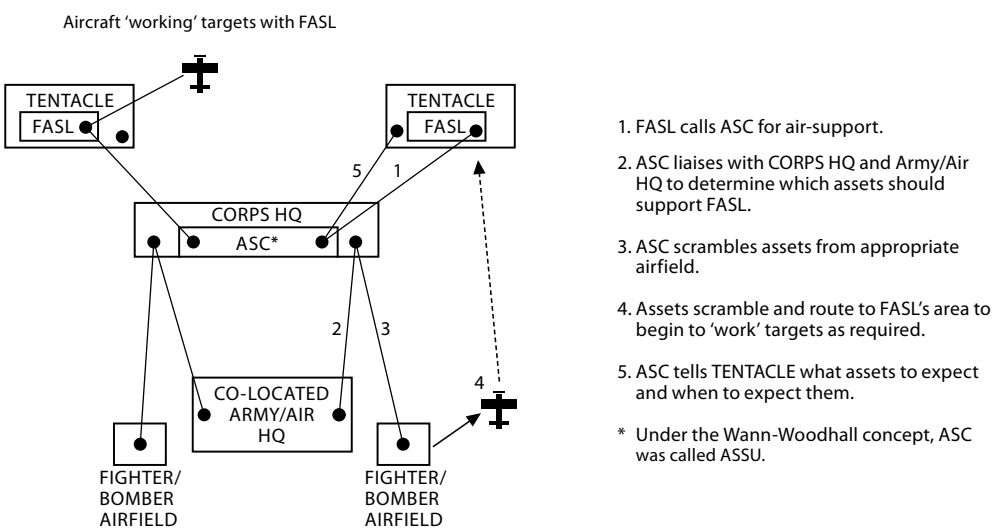

Figure 1

Operation CRUSADER in November 1941 provided the ideal testing ground for the changes that had been implemented as part of the directive. From the combined headquarters, senior officers were ideally placed to make rapid adjustments in response to operational requirements. The RAF supported land operations in three ways: first, air superiority was established and maintained throughout the battle. Secondly, indirect support isolated the battlefield through the targetting of communications, convoys and supply networks. Thirdly, direct support was allocated, albeit with difficulty at times, in support of forward troops.[71] The introduction of the ASC was central to this improved procedure, although the newly created system was not without fault. Air support operations were often taking over two hours before the aircraft arrived over the target and the whole process required streamlining. Messages were frequently relayed in an untimely fashion, whilst aircraft transiting over 200 miles to the targets often became 'lost' trying to find their targets in the featureless desert.[72] Perhaps the most significant issue remained the difficulty in identifying targets in close proximity to friendly forces. Despite unchallenged air superiority, the failure of Army communication processes meant that opportunities to conduct direct support against key targets were not exploited, particularly as friendly force positions could not be assured. This led Coningham to report an intense 'sense of frustration at Army ineptitude' and that he planned to focus efforts on indirect support until they [the Army] could get their act together.[73] Despite initial failings, CRUSADER was a victory for the new system. Nearly 8,000 sorties had been flown in direct support operations and cooperation between the services was at last beginning to work well.[74]

After analysing and considering ALI during CRUSADER, further lessons for improvement were incorporated into a combined Army-RAF Training Pamphlet No.3A, issued in March 1942. This focussed on centralising C2 by streamlining the ASC communications system to allow ASCs at the battlefront to communicate directly with a Joint Headquarters. It was hoped that this would help to simplify the process of calling for impromptu direct support and reduce aircraft response times. Further doctrinal improvements included target identification techniques and procedures to improve navigation.[75]

The battles of Gazala and El Alamein between May and July 1942 provided the first opportunity to test the procedures within the training pamphlet. With the British Army in retreat, similar themes continued to emerge. Due to the fluid nature of the battlespace, confusion regarding the position of friendly forces and poor communications continued to inhibit progress. A fundamental disregard to the arranged processes was evident, with the RAF dependent on its own reconnaissance to determine friendly positions. The Joint headquarters arrangement that had begun so well was severed with the Army relocating over 50 miles away from the nearest airfield, an action which Tedder stated defeated the most elementary principles of modern warfare.[76] Deep-rooted prejudices continued to emerge amongst the Army who naturally regarded themselves to be the senior parties on the battlefield. 'As Tedder and Coningham discovered, they were instinctively antagonistic to shared operational authority, especially with an airman… and held bias about aircraft being auxiliary weapons for the

Army'.[77] Despite this lack of coordination, air power was still able to isolate the battlefield through indirect support and provided a degree of air superiority that ensured total victory was beyond the enemy's capability. Auchinleck agreed, stating:

> The Air Force could not have done more than it did to help the 8th Army in its struggle. The effect on the enemy was tremendous…had it not been for their efforts…we should not have been able to stop the enemy at El Alamein.[78]

With fixed defensive positions finally established, the process slowly began to improve. Over 250 requests for direct support were made in July 1942 with 187 fed from the new tentacle system.[79] The time taken for aircraft to be over the target was also significantly reduced to around thirty minutes.[80] Indeed, ALI was beginning to see the benefits of doctrinal theory, cooperative training, experimentation and operational experience accrued in the desert.[81]

The arrival of Montgomery in August 1942 as Auchinleck's replacement set the conditions for ALI in the Western Desert to be perfected. With a philosophy of Joint operations, integration and cooperation at every level, Montgomery understood the need for air superiority to enable effective air support.[82] Acknowledging the reliance placed on the RAF by the Army, Montgomery believed that 'any officer who aspires to hold high command in war must understand the use of air power'. He also stated that 'concentrated use of the air striking force is a battle winning factor'.[83]

By immediately locating his headquarters with Coningham's, Montgomery encouraged liaison at all levels of planning and execution between land and air with Tedder observing that air cooperation was [Montgomery's] first priority.[84] The Battle of Alam el Halfa delivered a successful climax to ALI in the Western Desert. Providing a culmination to all the lessons learned, the battle 'exemplified the use of air power…when used in direct support of the Army'.[85] It began with the RAF providing indirect support several days before a German assault, targetting airfields, communications and supply chains which culminated in direct support right at the heart of the German Army. At the pinnacle of the operation, British bombs were being dropped every 40 seconds. Indeed, Montgomery believed that it was 'the tremendous power of the RAF in cooperation with the land battle that made the success possible'; the effect of ALI was proven.[86] By 2 September 1942, Rommel gave orders to retreat, largely due to the air superiority held by the RAF who were 'masters of the air'.[87] This was the first time Rommel had tried to fight a battle with absolute inferiority in the air and it was decisive.[88] In short, the battle at Alam El Halfa vindicated the newly constructed air support doctrine.

A considered evolution

One of the stark realities of the conflict in the Western Desert was the necessity of effective air power in successful land warfare. After the defeat in France, the Army and the RAF were finally forced to develop and refine the principles and procedures to ensure ALI was a success.

Despite the existence of deep-rooted prejudices within both Services and varying degrees of progress throughout the campaign, air and land activities became fully integrated. This resulted in the evolution of a coherent process that ultimately led to Germany's defeat in the desert. This paper has demonstrated that there are five significant tenets that must be achieved in order for the air and land battle to be truly synchronised. First and foremost is the requirement for air superiority, the essential pre-requisite for decisive air support operations.[89] Although the British experimented with the use of an air umbrella throughout the Desert Campaign, the great successes were only achieved after the RAF dominated the airspace by targeting airfields, enemy communications and directly engaging enemy fighters. Control of the air was necessary to enable ground forces to operate without interference and provided the conditions to develop air support operations. This is a sentiment that was echoed by Montgomery who claimed 'if we lose the war in the air, we lose the war and we lose it very quickly'.[90]

The second tenet is willingness to cooperate. Early setbacks in the desert were often followed with accusations and blame, and the culture ensured that both sides were often quick to attribute responsibility for failure upon the other. The Desert War consistently demonstrated that effective cooperation depends on how well the parties work together and the system, no matter how coherent, will fail if one party is unwilling. It is imperative that both air and land commanders work together to achieve common objectives, and only when this has been achieved can Joint cooperation be properly achieved.

Third is the necessity for joint planning and headquarters. A combined land and air plan was a prerequisite for success. Commanders must work together at all levels of planning and executing operations to ensure a unity of purpose of the two Services' respective actions. By positioning headquarters together, plans are conceived jointly, whilst integration and cooperation is exponentially increased through combined awareness. Under these conditions, common goals are more frequently shared and decision makers are often connected, meaning that tactical decisions can be understood, ultimately providing greater knowledge at all levels.

The fourth tenet is the necessity for effective and reliable communications. Effective C2 is central to positioning assets effectively within the battlespace and this proved to be decisive in providing air support operations to the Army in a timely manner. Certainly, the introduction of ASC provided a mechanism that successfully linked tactical war fighters at the battlefront to operational decision makers at headquarters and rear airfields. Direct communications between aircraft and FASL also enabled pilots to distinguish between friendly and enemy forces on the front line. The development of these effective communication systems made a fundamental difference in enabling direct support operations.

The fifth and final tenet was the need for robust and recognised doctrine. Events leading to the conference in Cairo demonstrated that an absence of common understanding was inhibiting effective cooperation. The Air Support Directive provided a Joint and coherent overview of how ALI should be achieved in theatre. Widely distributed amongst British

forces, this framework successfully captured previously identified lessons, whilst providing standardised procedures to be employed for greatest effect.

Conclusion

The importance of the Western Desert campaign to the establishment of effective principles of ALI is difficult to overstate. It also serves as a stark illustration of what can happen when key lessons are ignored or forgotten. In 1918, the RAF and British Army had developed what was possibly the best example of air-land cooperation seen during the First World War.[91] There were clear echoes of the experiences of 1914-1918 in the efforts of the various air and land commanders in the Middle East to establish a similarly effective system of ALI, and the key tenets adopted by Tedder and the various Army commanders have clear parallels with those seen in the British Expeditionary Force in 1918. During the inter-war period, the understanding of ALI which had developed was allowed to wither, culminating in the disasters in France in 1940. This disaster poisoned relationships as the Army felt that it had been let down, while the RAF contended that a lack of understanding of air power had been at the heart of the problems. Fortunately, a willingness to cooperate – in part imposed upon commanders by circumstance – developed on operations. Although the 'learning curve' was not smooth, by the time that Montgomery assumed command of the Eighth Army in August 1942, the foundations for an effective system of ALI had been created, and Montgomery and his airmen were to build upon them to telling effect. Montgomery observed:

> There used to be an accepted term of cooperation. We never talk about that now. The RAF and Army are one. We do not understand the meaning of cooperation. When you are one entity, you cannot cooperate.[92]

Although the personal relationship between Tedder, Coningham and Montgomery collapsed in 1944 as the Allies liberated Europe, the enduring ALI principles laid down in the Western Desert remained strong, with the campaign marking the point at which the air and land components became one, demonstrating the validity of Montgomery's contention that knitting the two together created a structure against which the German army could, indeed, not stand.

Notes

[1] Sir Clive Loader, "Is True Air-Land Integration Achievable," *RUSI Defence Systems*, (Feb 2009): 50.
[2] David Ian Hall, *Strategy for Victory – The development of British Tactical Air Power 1919-1943* (USA: Greenwood Publishing Group, 2008), xi.
[3] David Jordan and Gary Sheffield, "The British Army and Air Power", in PW Gray (ed) *British Air Power* (London: The Stationery Office, 2003), 67.
[4] Hall, *Strategy for Victory*, 15.
[5] John Terraine, *The Right of the Line* (London: Hodder and Stoughton Limited, 1985), 380.
[6] See, *inter alia*, Vincent Orange, *Tedder: Quietly in Command* (Abingdon: Frank Cass, 2004) 268-271 and the same author's *Coningham* (London: Methuen, 1990), 180-181.

[7] David Ian Hall, "Learning how to fight together – The British experience with Joint air-land warfare" (Air University Air Force Research Institute 2009-2), 11.
[8] Terraine, *The Right of the Line*, 383.
[9] Hall, *Strategy for Victory*, 56.
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