How critical was air power in the failure of Operation Market Garden?

By Wg Cdr Dave Winstanley

"Market Garden, a plan based on air power, was the only battle of the entire campaign in North-West Europe fought with Allied air inferiority, a large part of it self-inflicted."[1]

Operation Market Garden, like so many other Operations during the Second World War, was supposed to shorten the course of the war and bring our boys home for Christmas. Without doubt Market Garden was one of the most daring, ambitious and ultimately controversial Operations of the Second World War. The volume of books, articles and research surrounding Market Garden is vast and numerous authors have endeavoured to capture the arguments as to why this allied Operation failed. When evaluating the factors that contributed to the failure of the Operation, the majority of authors appear to have concentrated on factors such as the single-lane carriageway, the poor selection of landing zones (LZs) by the British 1st Airborne, incompetent interpretation of intelligence and communications failure. However, few seemed to have concentrated specifically on air power and it's use during the Operation. Stephen Badsey's quote above provides a hint to the importance of air power and imparts an ideal spring board for this article.

General Dwight D Eisenhower, the Supreme Commander Allied Forces in Europe, was faced with the unusual problem that the Germans were retreating faster than the Allies could advance

"All the accumulated evidence confirms that, like Gallipoli, this was a British disaster where naked courage lacked the bodyguard of competent planning, competent intelligence, and competent technology. Yet war's object is victory, not Victoria Cross, and it was shameful that by the autumn of 1944 we could still be so amateur."[2]

The aim of this article is to assess how critical air power was in the failure of Operation Market Garden and to examine if a more effective application of air power could have resulted in Allied victory. This article will clearly view Market Garden as a failed operation and will not enter the debate as to the extent of its failure. Firstly, it is essential to put Market Garden into the historical context of 1944 to assess why it was undertaken before examining the fundamentals of Airborne Warfare, as they were perceived in 1944. With this foundation established, the article will outline the plan for Market Garden before concentrating on seven key areas within which air power's contribution to the operation can be examined in detail. The article will concentrate on the execution phase of the operation and will assess the following seven key areas of air power influence: control of the air; the selection of LZs; information exploitation; initial bombing campaign; troop transport aircraft; close air support; and sustainment.

The article will examine the employment of air power and, accepting the advantages of hindsight, will attempt to proffer alternative outcomes that could have resulted from a different application of air power. It will examine the conduct of senior air force officers during the planning stages and assess to what extent the operation was doomed to failure before the first aircraft had taken off. Key air power factors such as the shortage of transport aircraft, the role the RAF played in the selection of LZs and the lack of close air support, will be critically examined. The article will endeavour to highlight that the whole operation rested on foundations built from air power and, critically, that some of these foundations were fundamentally flawed. The article will not ignore many of the other factors that contributed to the failure of Operation Market Garden but it will critically assess if the application of available air power compounded rather than alleviated the problems. The article would not be complete if it did not examine the operation from the German perspective and their relative inability to combat Allied air power.

Historical context

"One powerful full-blooded thrust across the Rhine *and into the heart of Germany, backed by the whole of the resources of the Allied Armies, would be likely to achieve decisive results."*
(Field-Marshal Sir Bernard Montgomery[3])

It is essential to put Market Garden into its historical context within the European Theatre of 1944 to truly appreciate why it was considered as an appropriate course of action and why, if successful, it could have significantly shorted the war. The historical context is vital with regard to two critical factors: firstly, the conduct of the war in 1944 and the unexpected Allied progress, and, secondly, the creation of the 1st Allied Airborne Army and it's commanders desire to prove the organisation in battle.

The Second World War was in its fifth year and, after years of planning, the Allies eventually established a battlefront in North West Europe with the D-Day landings in Normandy. The speed of the eventual allied advance out of Normandy and the collapse of the German armies had taken both the allies and the Germans by surprise. General Dwight D Eisenhower, the Supreme Commander Allied Forces in Europe, was faced with the unusual problem that the Germans were retreating faster than the Allies could advance. The failure to secure a major port meant that supplies had to be transported by road from Normandy and the supply lines were becoming dangerously stretched.[4] By August 1944, there were 36 Allied divisions in France, together with 450,000 trucks, but fewer than 15,000 of these were long-distance load carriers.[5] The re-supply problem hindered Eisenhower's plan to advance on Berlin on a broad front, with the British 21st Army Group under General Bernard Montgomery on the left and the US 12th Army Group under General Omar Bradley on the right.[6] Montgomery fundamentally disagreed with Eisenhower's broad front concept and believed that there were not enough supplies to sustain both the British 21st Army Group and the US 12th Army Group. Montgomery believed

The strategic objective of Market Garden was to capitalise upon the German defeat in Normandy and bring the war to a close by the end of 1944

that the Germans were a spent force and all that was required was one decisive push to drive the enemy back and capture Berlin[7]. He believed the Germans had been shattered by the defeat in France and that, having lost most of its army in the West, was vulnerable to a knock out blow.[8] Montgomery was extremely forceful in his belief and pressed Eisenhower hard to afford him priority with regards to re-supply. Whether Montgomery believed the Germans were a spent force or whether he was driven by his desire to beat Patton to Berlin is open to conjecture. However, Alanbrooke was in no doubt and later observed that Montgomery was mistaken and gullible in believing that the Germans were finished.[9]

At first glance, the importance of the creation of 1st Allied Airborne Army and its commander's desire to prove the organisation in battle may not appear that relevant. The 1st Allied Airborne Army was formed in June 1944, under the command of Lieutenant General Lewis H Brereton and effectively unified all Allied Airborne forces. However, in the weeks that followed the Normandy landings, while the new command was forming, no fewer than 16 airborne operations were planned and subsequently cancelled.[10] Critically, most of these operations involved the British 1st Airborne Division, who were the strategic reserve during the Normandy landings, and were keen to see action before the end of the war. This feeling was admirably summed up by the words of its commander, Major General Roy Urquhart:[11]

"By September 1944 my division was battle-hungry to a degree which only those who have commanded large forces of trained soldiers can fully comprehend. In fact, there were already signs of that dangerous mixture of boredom and cynicism creeping into our daily lives. We were ready for anything . . ."

The Wehrmacht were quick to see the advantages of surprise and shock effect, the importance of close air support to offset the lack of heavy artillery and the ability of well-placed reserves to claw victory from defeat

German paratroops land in the Netherlands

This article is not suggesting that Urquhart was so keen to see his soldiers committed to battle that he was prepared to undertake any risk to prove their worth, on the contrary, his request for additional reconnaissance sorties suggest his enthusiasm was far from clouding his judgement. However, the general desire to see battle may have increased pressure, certainly on Browning and other decision makers, and created an environment where fundamental principles were ignored and critical errors were made.

Eventually, Montgomery and Eisenhower met in Brussels on 10 September 1944 when Montgomery finally persuaded Eisenhower to allow him to implement a narrow thrust into Holland to Arnhem.[12] Eisenhower agreed to afford Montgomery priority of re-supply and from this, combined with the approval to drive north as a prelude to an attack eastwards into the heart of Germany,[13] the origins of Operation Market Garden were born. The strategic objective of Market Garden was to capitalise upon the German defeat in Normandy and bring the war to a close by the end of 1944.[14] However, before highlighting the essential elements of the plan for Market Garden, it is important to grasp the fundamentals of air warfare, as they were perceived in 1944.

Nature of airborne warfare

"An operation involving the movement of combat forces and their logistic support into an objective area by air."[15]

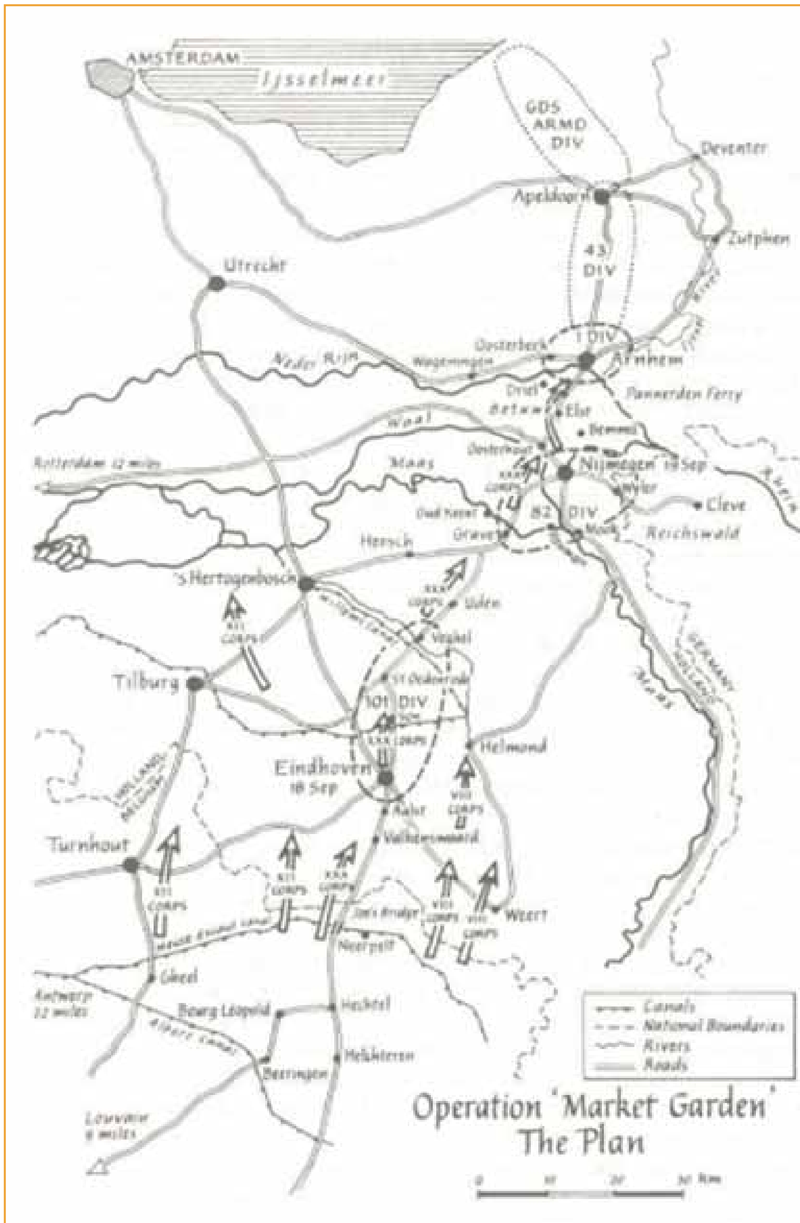
Before the start of the Second World War, both the USSR and Germany had experimented with the concept of military parachutists and Germany in particular had put considerable effort into developing gliders for use in airborne warfare.[16] It is the Russians who are credited with originating the concept and the Germans who are credited with developing its combat effectiveness.[17] However, it can be argued that AW was really a child of the Second World War[18] and like any child it needed to learn, grow, develop and, most importantly, it needed to mature. There were early examples of success, notably by the Wehrmacht in Norway, Holland and Crete that demonstrated fundamental principles that the planners of Market Garden would have done well to heed. With regard to airborne warfare, the Wehrmacht were quick to see the advantages of surprise and shock effect, the importance of close air support to offset the lack of heavy artillery and the ability of well-placed reserves to claw victory from defeat.[19]

"Little things going wrong can cause a great deal of confusion in combat, and a certain amount must be accepted as normal, but if 'little things' go wrong in an airborne operation, you really have confusion."
(Major General James Gavin[20])

The lessons of 1940/41 were clear enough[21] and it is surprising that some of the fundamentals of airborne warfare were ignored during the planning and implementation of Market Garden. The tactics of Airborne Warfare were neither complicated nor complex. However, success depended upon the exploitation of surprise, on close co-operation with air force components, the ability of the commander to influence the battle by the use of reserves and the fighting abilities of the troops committed.[22] Critically, given the nature of airborne warfare, when airborne troops come up against a determined enemy, in terrain where he could deploy tanks, the whole concept of Airborne Warfare becomes extremely hazardous.[23] The inherent weaknesses of airborne operations were apparent early in its development, the most fundamental of which was that transport aircraft were vulnerable and could be restricted by weather.[24] Furthermore, after landing, airborne forces have limited mobility, firepower and combat support, which made them vulnerable to a prolonged counter attack by the enemy.[25] Because airborne forces are lightly equipped, reinforcement and re-supply are critical and, given the fact that re-supply via air can be disrupted, a successful operation must include a link up with ground forces or an extraction.[26]

The fundamental aspect of airborne warfare in relation to air power does not stop simply with close air support and co-ordination between land and air forces. The relationship is far more fundamental as it can be argued that without every capability of air power you cannot conduct airborne warfare. As argued later in this article, the critical role played by AP during Market Garden, involved every core capability from information exploitation to strategic airlift. So, having

examined the principles, as understood in 1944, of airborne warfare, it is interesting to see if any of these were followed during the planning of Market Garden.



'Operation 'Market Garden' – The Plan [32a]

The plan

"It was a bad plan and so the failure of 'Market Garden' must be seen as a failure of the air forces."
(RAF Commander[27])

The plan was a high-risk venture, which, if it had paid off, might have shortened the war by several months.[28] Operation Market Garden constituted the largest airborne Operation ever mounted and significantly it was mounted as a daylight operation. There were to be over 35,000 men committed to the airborne element of the plan, nearly twice as many as had been involved in the airborne operations during the D-Day landings.[29] The plan called for First Allied Airborne Army, under the command of Lieutenant General Lewis Brereton, to assist the Second British Army, under the command of Lieutenant General Miles Dempsey, in a rapid advance into Holland and eventually the Ruhr Valley.[30] Market Garden had two main objectives: firstly, to secure a crossing point over the Rhine, and secondly, to capture or neutralise Germany's industrial heartland, the Ruhr Valley.[31] The importance of the role air power was to play in Market Garden was evident from its very conception. The amount of airlift alone, required to fly over 35,000 Allied airborne troops to Holland was staggering.

The 'Market' element consisted of three Allied Airborne Divisions dropped behind enemy lines in Holland to capture bridges over the major rivers and canals on a single carriageway stretching from Eindhoven, through Nijmegen and eventually Arnhem. The 101st US Airborne Division under the command of Major General Maxwell Taylor was to secure bridges from Eindhoven to Veghel; the 82nd US Airborne Division under the command of Major General Jim Gavin was to secure bridges from Grave to Nijmegen; and the 1st British Airborne Division under the command Major General Roy Urquhart was to secure all the bridges at Arnhem.[32] The 1st Polish Independent Parachute Brigade, under the command of Major General Stanislaw Sosabowski would be dropped with the 1st British Airborne Division at Arnhem.

The 'Market' element was under the command of Brereton's deputy Lieutenant General F A M Browning, commander of the British Airborne Corps.

The perception of the German soldiers was, that the Luftwaffe was impotent and grounded due to a lack of fuel and destroyed aircraft.

The 'Garden' element consisted of the Second British Army, specifically XXX Corps under the command of Lieutenant General Brian Horrocks, punching a hole in the German lines and driving the 64 miles to Arnhem, linking up with each Allied Airborne Division. The plan was based on the assumption that XXX Corps could travel the 64 miles to Arnhem in two to five days. This was a considerable drive behind enemy lines; however, this was not expected to be beyond the capabilities of XXX Corps, which had already proved capable of covering 50 miles in a day.[33] Once the bridgehead at Arnhem was secured, then XXX Corps would turn southeast and enter the Ruhr.

Success depended upon an absence of serious enemy resistance in the Arnhem area: the capture of the bridge before the Germans had time to blow it up or bring up reinforcements; successive waves of airborne reinforcements from England to back up the initial drop; and finally, the arrival at Arnhem of XXX Corps within 48 hrs of the drop.[34] This solely addresses success from the ground perspective but this was an operation based on air power and what bears examination is the criteria for success of Market Garden in the air.

Control of the air

"If we lose the war in the air, we lose the war and we lose it very quickly."
(Field Marshal Sir Bernard Montgomery[35])

Historical experience has proved that a degree of control of the air is crucially important not only to air operations but also to virtually all types of military operations.[36] A lesson that Montgomery learnt himself during the North African Campaign from whence the above quote originated. Control of the air cannot be achieved without dedicated operations to limit an enemy's ability to employ its air power and the degree of control will depend upon the operation being undertaken.[37] Control of the air allows friendly air assets to operate without serious interference from an enemies air assets and, even in a generally hostile air situation, it is usually possible to achieve a degree of air control.[38] One of the core capabilities of air power; therefore, is to achieve and maintain a degree of control of the air required to achieve mission success.

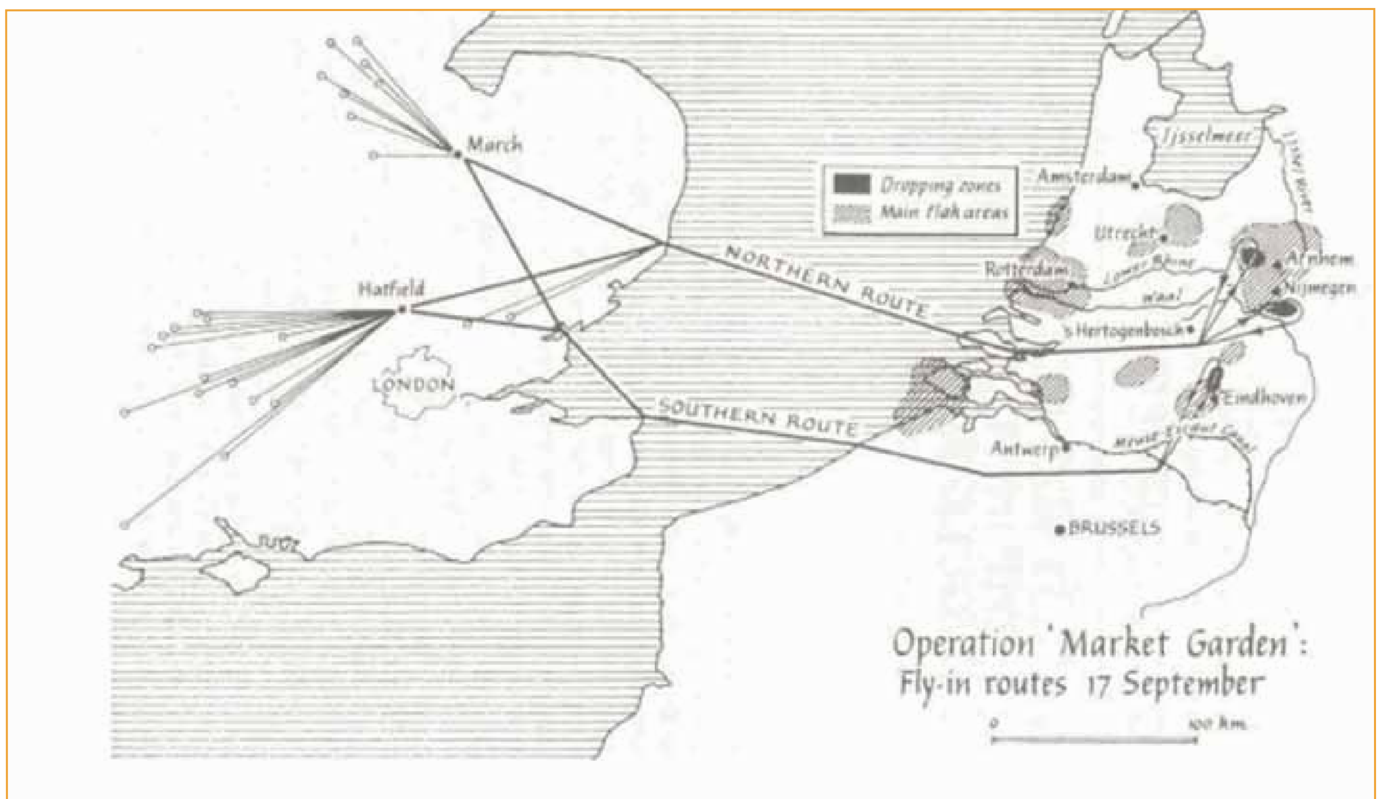
With regard to Market Garden, it is an indisputable fact, that without at least local air superiority, the Allies could not have even envisaged conducting a

British 1st Airborne Division — Landing Zones[38a]

large-scale daylight airborne operation. air superiority is defined as that degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea and air forces at a given time and place without prohibitive interference by the opposing force.[39] It could also be argued that this is somewhat of a moot point considering that the Allied landings at Normandy would not have been conducted without localised air superiority. However, it is debatable whether the Allies actually made best use of the air superiority they had achieved and, notwithstanding the limits of 1940s communications, whether their co-ordination of air assets was as effective as it could have been. The simple fact is that the Luftwaffe was able to interfere with the Allied operation but to what extent that interference was prohibitive, is hard to access. As Stephen Badsey hinted when suggesting that the allies fought Market Garden with *air inferiority, which was self-induced*, the Allies should have enjoyed the luxury of air superiority for Market Garden, but to a degree they failed to capitalise on the advantage. The weather did play its part in limiting the degree of dominance the Allied air forces enjoyed over the Luftwaffe; however, there were fundamental errors made with regard to liaison and coordination, discussed later in this article, that were to prove critical to the failure of Market Garden. That said, the Allied air forces claimed 160 enemy aircraft shot down, and rescued 205 men from the North Sea during the operation.[40]

From the German ground perspective, the Allied airborne landings at Arnhem, Nijmegen and Eindhoven initially provided further evidence of their growing awareness of Allied air superiority.[41] Reichsmarshall Hermann Goering had already lost credibility in 1940 having declared, “if ever an enemy plane flies over German soil, I shall henceforth be known by the name Hermann Meier” and the vast Allied airborne armadas of Market Garden only reinforced this.[42] The perception of the German soldiers was, with the exception of a number of close-air support sorties, that the Luftwaffe was impotent and grounded due to a lack of fuel and destroyed aircraft.[43] Evidence provided later in this article proves that this was not the case. Some Luftwaffe sorties were successful. However, this success was only apparent to the Allies.[44] In respect to the protection afforded to the Allied air armadas, air power did

Operation Market Garden — Air Routes [44a]



It was a clear example of how concern over limited airlift and enemy flak had constrained Market Garden before its first aircraft had taken off. There has been much conjecture about who should bear the responsibility for this fundamental error of judgement

fulfil its critical role of securing a degree of control of the air that enabled over 35,000 airborne troops to be dropped into Holland with relatively low casualties.

Impact of AP on selection of British LZs and DZs

"*Your hardest fighting, and heaviest casualties, will not be in defending Arnhem from the North, but in trying to get there.*"
(Brigadier Sir John Hackett[45])

The selection of LZs at Arnhem has been directly blamed for the failure of 1st British Airborne to secure both ends of Arnhem Bridge and their ability to defend the selected sites. The role of air power, or the role played by senior Allied air force officers in the selection of these sites is often overlooked. After the Sicily landings a joint War Office Air Ministry memorandum had decreed that "airborne operations are air operations and should be entirely controlled by the Air Commander-in-Chief"[46]. Thus, senior air force officers, free from the responsibility for the outcome of the ground campaign, could decide upon the air movement and marshalling plans. Whereas, Senior Officers of the parachute brigade, coming in on the second day, were well aware that to advance against opposition who were already aroused, to objectives eight miles from the DZ as the plan demanded, was quite impracticable.[47] So, if this were the case, why were these LZs selected, or is it more appropriate to ask, why were they suggested in the first place?

The responsibility to devise the airborne plan for the 1st Airborne Division, rested with its commanding officer Major General Roy Urquhart and his RAF opposite number, Air Vice-Marshal 'Holly' Hollinghurst who commanded the RAF troop carriers of 38 Group. Urquhart and Hollinghurst disagreed over the selection of LZs and the place of delivery,[48] which should have been driven by Urquhart's ground plan. Urquhart wanted to land his main force near the bridge, with the intention of emulating the successful capture of Pegasus Bridge over the Orne Canal, during the Normandy landings, and in accordance with best practice regarding airborne operations.[49] However, Urquhart's desire to select LZs close to his main objective were over ruled by Hollinghurst's insistence that the bridge was too well defended by heavy anti-aircraft guns and that RAF tug aircraft would be too vulnerable. Numerous authors point towards the pressure applied by Air Force commanders, concerned about the shortages of strategic airlift, who wanted LZs that afforded the best protection for their aircraft, once their drop was completed. Clearly, their main concern was the shortage of troop carrier aircraft for subsequent lifts and as a result, they were driven by the need to reduce the threat posed by flak. This fear of flak was totally understandable as the RAF was well aware of what German flak could do.[50] Large aircraft formations at 100-150 mph, at heights between 500 and 2,500 ft, in daylight, with no armour plating or self-sealing fuel tanks, seemed to the air force planners to represent an easy target for German flak.[51] That said, as General Sir John Hackett argues in his forward to Tugwell's book, Arnhem — A Case Study, Air Force commanders should have been prepared to accept a higher degree of risk from anti-aircraft defences in the vicinity of Arnhem and those protecting Deelen airfield, which turned out in the event, to be less formidable than was feared.[52] Deelen airfield had been extensively bombed during the build-up to Market Garden and it rightfully should be argued that the importance of securing both ends of Arnhem bridge, should have out weighed concerns over enemy anti-aircraft defences. Urquhart's plan had the support of the Commander Glider Pilots, Colonel George Chatterton, who recalled some years later:[53]

"I went to see General Browning and suggested to him that we were landing too far away but he said that it was out of our hands. It was an RAF decision . . . I nevertheless suggested that my pilots could land near the bridge and although there would be more casualties due to the size and unevenness of the enclosures, it would surely be preferable to landing miles away. When General Browning said that no doubt there would be more tugs shot down this way, I suggested that this could be avoided by a remote release, so allowing the tugs to turn back for home well before the bridge."

The reference made by Chatterton to 'the size and unevenness of the enclosures' was based on information received by both the Dutch Resistance and RAF intelligence that the LZs south of the bridge were unsuitable for either parachutists or gliders.[54] The ground consisted of low-lying

swampy 'polderland' interlaced with dykes, which it was assessed would significantly increase the chances of casualties during the initial drop. Ironically, the RAF agreed to drop the Polish Division south of the bridge during the third lift, because they assumed that the anti-aircraft guns would have been captured or neutralised by then.[55] Chatterton's point is crucial, surely the risk of flak should be weighed against the risk of landing eight miles from an objective, which if secured would ensure the success of the whole operation and possibly reduce the length of the war.

Urquhart was forced to select alternative LZs that were considerably further away from his main objective than he had wished. The selected LZs were just over eight miles away from Arnhem Bridge and consisted of large open expanses of heathland and farmland. The selection of LZs eight miles to the west of Arnhem bridge meant that Urquhart had to leave a significant element of his force, the Airlanding Brigade to protect the western LZs for the subsequent drops the following day. This was particularly significant as it left Urquhart with only the 1st Parachute Brigade, a quarter of his total force, to achieve the divisional objective on foot during the first 24 hrs.[56] In an attempt to address this, Urquhart planned for the 1st Airborne Reconnaissance Squadron, under the command of Major Freddie Gough, to race to the bridge in specially adapted jeeps to attempt a coup-de-main. Critically, this prevented the Reconnaissance Squadron from undertaking their primary role of probing enemy defences, a role which could have identified that the river-road provided access to reinforce the few troops that eventually reached Arnhem Bridge.[57] However, Kershaw in his book *It Never Snows in September* argues to the contrary and suggests that the disposition of II SS Corps around Arnhem would have negated any advantage in landing closer to the bridge.[58]

The selection of LZs eight miles away form the main objective was in total contradiction to the fundamentals of airborne warfare and flew in the face of all airborne experience to date. It was a clear example of how concern over limited airlift and enemy flak had constrained Market Garden before its first aircraft had taken off. There has been much conjecture about who should bear the responsibility for this fundamental error of judgement; however, the compelling evidence would suggest that the RAF's reluctance to accept risk, in what was already a very ambitious and risky operation, was extremely significant. It can be argued, that should the RAF have accepted the risks and if Browning had forced the issue with regard to LZs closer to the main objective, then a coup-de-main assault could have been undertaken to secure both ends of Arnhem Bridge. It is accepted that this would not have resulted in XXX Corps reaching Arnhem any earlier but it would have facilitated an easier link-up with the Polish Division landing in the third wave south of Arnhem Bridge. With both ends of Arnhem Bridge secure and with reinforcements in the form of the Polish Division, then there is a better chance that a link-up with XXX Corps would have taken place. The shortage of troop-carrying aircraft and the risk of heavy losses due to German flak had effectively resulted in a decision that ignored the shortage of one of the most important factors in airborne operations, namely to land close to the main objective.

Information exploitation/air reconnaissance

"*Intelligence told us we had nothing to worry about. There was no armour in the area and only second-rate line–of-communications troops and Luftwaffe personnel — a piece of cake in fact.*"
(Private James Sims, 2nd Para Battalion[59])

If modern warfare has taught military tacticians anything, it is that information exploitation is

The shortage of troop-carrying aircraft and the risk of heavy losses due to German flak had effectively resulted in a decision that ignored one of the most important factors in airborne operations, namely to land close to the main objective

More than 1,400 Allied bombers were used during the initial stages of the Operation and carried out raids on flak defences, troop positions and barracks within the three main airborne objective areas

everything. The modern commander, who can utilise intelligence assets to form and maintain an accurate picture of the battle space, secures a tremendous advantage over his adversary. The same could be argued during 1944, when air reconnaissance played a vital role in Market Garden and provided compelling evidence that, if interpreted correctly, should have resulted in at worst an amended plan and at best a cancelled operation. The advantages of air reconnaissance were well acknowledged and the RAF had significant air assets, even modified Spitfires, assigned to the reconnaissance role. Reconnaissance flights were able to obtain information regarding enemy dispositions, strengths, weaknesses and even geographical characteristics of a given area. Given that the Air Reconnaissance assets were available, in the form of 83 Group's 39 (Royal Canadian Air Force) Reconnaissance Wing, why was intelligence indicating the presence of at least the cadres of two Panzer Divisions in the Arnhem area ignored?[60] There is no doubt, that both General Browning and staff within the Headquarters of the 21st Army Group, had received air reconnaissance evidence of the presence of German armour in the Arnhem area. One such source was, Major Brian Urquhart (no relation to Roy Urquhart the commanding officer of the 1st British Airborne Division) who was the GSO 2 (intelligence) within Browning's headquarters. Brian Urquhart, concerned over reports from Dutch Resistance of German Armour in the Arnhem area, had requested additional low-level photographic reconnaissance missions.[61] One particular sortie, flown by the RAF on 12 September provided clear evidence of the presence of German armour near Arnhem.[62] On receiving the results some three days later, Urquhart showed the pictures to Browning who dismissed them as not being significant.[63] Urquhart recalled some 50 years after the Operation:[64]

"The photographs would already also have been sent to the higher headquarters, so I merely showed them to General Browning. As I recall it, General Browning's response was to show interest but generally to downplay the importance of the information. My job was to provide intelligence for my own commander, General Browning, whose responsibility it would be to pass on conclusions and any change in orders to 1st Airborne Division."

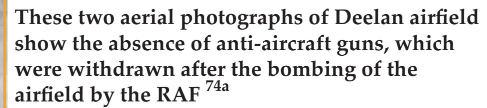
Critically, the air reconnaissance pictures not only showed the presence of German armour but also indications that the Germans were far more organised than had been expected. Furthermore, correct interpretation of air reconnaissance pictures would have provided sufficient battle damage assessment to permit an accurate picture of anti-aircraft capability at German airfields, specifically Deelen. That said, the speed at which this data could be interpreted in 1944 and be used to inform the decision-making process was limited. However, it would have provided a clear indication that the weight of effort devoted specifically to the destruction of German flak had been successful. The vital point to consider is that the intelligence data was unquestioningly available to all the critical decision makers within Market Garden and they were well aware of the capabilities provided by air reconnaissance. air power had fulfilled another core capability, which unfortunately had been woefully ignored. Air Reconnaissance had played a significant role; however, the intelligence provided is only of use if it is interpreted as being significant. As Cornelius Ryan argues in his book *A Bridge too Far*, all down the allied line of command the evaluation of intelligence on the Panzers in the Arnhem area was magnificently bungled.[65] If the Allies had interpreted the battle damage data and geographical information provided by the air reconnaissance sorties to their full extent, then they could have had a profound effect on the selection of LZs at Arnhem.

Initial bombing campaign

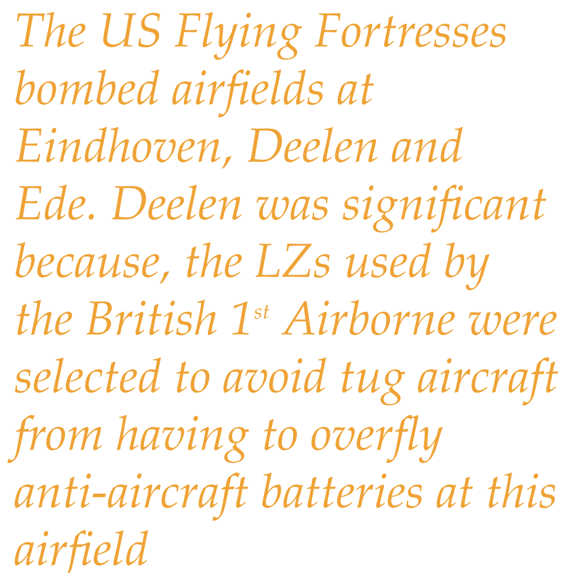
"Heavy softening-up attacks were carried out by the Allied air forces prior to the airborne operation."[66]

Air power played a significant role in shaping the battle space in terms of creating localised air superiority and the undertaking of, in modern terminology, an offensive counter air campaign to suppress the German air defence system. German airfields and German anti-aircraft positions, both along XXX Corps intended route and around key objectives, were targeted for maximum effect. Brereton's intention was to deliver ground troops safely to their objectives by suppressing the German defences.[67] The extent of the bombing campaign was significant given that the operation was planned at short notice and that allied bombers were busy elsewhere.[68] More than 1,400 Allied bombers were used during the initial stages of the operation and carried out raids on flak defences, troop positions and barracks within the three main airborne objective areas.[69]

The specific preparation of the battle space commenced during the night of 16-17 September when more than 200 Lancasters and 23 Mosquitos of RAF Bomber Command dropped 890 tons of bombs on four German fighter airfields, one of which was a Messerschmitt 262 jet fighter base.[70] The suppression of the German defences did not stop with the bombing of German airfields. Over the following 24 hours 1,395 bomber sorties were flown, which concentrated on the destruction of German light and heavy anti-aircraft guns.[71] Concurrently, more than 800 Flying Fortresses of the 8th US Air Force bombed a total of 117 German anti-aircraft positions along the Market Garden route, dropping in excess of 3,139 tons of bombs.[72] In addition to the anti-aircraft positions that were attacked, the US Flying Fortresses bombed airfields at Eindhoven, Deelen and Ede. Deelen was significant because, the LZs used by the British 1st Airborne were selected to avoid tug aircraft from having to overfly anti-aircraft batteries at this airfield. These raids were followed by 54 Lancasters and five Mosquitos, while another 85 Lancasters and 15 Mosquitos attacked anti-aircraft positions on Welcheren island.[73] Importantly, the allies enjoyed air superiority to the extent that these attacks scarcely registered as unusual with the Germans and, as a result, did not provide a clear indication of what was to come.[74] The suppression of German defences was not left purely to the bombers of RAF Bomber Command and the US 8th Air Force. Throughout the early stages of the operation, anti-aircraft positions along the Market Garden route were bombed and strafed



These two aerial photographs of Deelan airfield show the absence of anti-aircraft guns, which were withdrawn after the bombing of the airfield by the RAF [74a]



The US Flying Fortresses bombed airfields at Eindhoven, Deelen and Ede. Deelen was significant because, the LZs used by the British 1st Airborne were selected to avoid tug aircraft from having to overfly anti-aircraft batteries at this airfield

by 212 Thunderbolts of 9th US Air Force, while 50 Mosquitos, 48 Mitchells and 24 Bostons of RAF 2 Group bombed barracks and airfields at Nijmegen, Deelen, Ede and Kleve[75].

It is difficult to assess accurately the effectiveness of individual raids within the Allied Bombing campaign. However, the vital role the raids played in preparing the battle space along XXX Corps route and around the three main airborne objectives, cannot be discounted. Interestingly, there is some discrepancy as to the effectiveness of the Allied bombing when related to aircraft loses because it is difficult to the determine the specific cause of why an aircraft was lost. The success of the bombing against the anti aircraft positions is equally difficult to assess. On the one hand, only one Dakota was lost during the arrival of the second wave of the 1st British Airborne Division at Arnhem, whereas, the 101st Airborne lost 33 Dakotas around the Eindhoven area where German anti aircraft positions appeared least damaged.[76] Throughout the period 17-25 September, Allied Air Forces were to lose around

The sky trains were immense, both stretching for 94 miles in length and three miles in breadth

164 aircraft and 132 gliders, which accounted for 454 casualties from USAAF IX Troop Carrier Command and a further 294 casualties from RAF 38 and 46 Groups.[77] There is no doubt that these figures would have been significantly higher had the Allies not conducted the extensive bombing campaign in preparation and throughout the operation. Given the technology and aircraft available at the time, air power did all it could to achieve Brereton's plan to deliver the ground troops safely to their objectives.

Airlift: Troop carriers

"Oh, how I wish that I had ever had such powerful means at my disposal."
(Colonel-General Kurt Student, Commander German 1st Parachute Army[78])

The airlift of troops was conducted in two streams, with 101st Airborne Division on the southern route into Holland, and both the 82nd Airborne Division and 1st British Airborne Division on the northern route[79]. The sky trains were immense, both

stretching for 94 miles in length and three miles in breadth.[80]. The 101st Airborne was carried by 424 Dakotas and 70 glider/tug combinations and, on the northern route; the 82nd airborne travelled in 482 Dakotas and 50 glider/tug combinations and were followed by the 38 glider/tugs of I Airborne Corps Headquarters.[81] Significantly, the 38 glider/tugs used to drop Browning's HQ could, and arguably should, have been used to carry an entire infantry battalion.[82] The 1[st]Airborne travelled in a total of 1,051 troop carrier aircraft and 516 glider/tugs, which made the total number of troop carrier aircraft 2,083. Critically, there was insufficient airlift for the British 1st Airborne to be dropped in a single wave and consequently, the drop would have to be spread over three days. Of all the three Divisions, arguably the British 1st Airborne was the most dangerously exposed and had good claims to priority in airlift resources.[83] However, much of the troop transport aircraft supplied belonged to the US and it was argued that it was a priority to secure the bridges around Eindhoven and Nijmegen, without which XXX Corps would never reach Arnhem.

The air power contribution to Market Garden in terms of troop carrying capability was truly staggering. Throughout the course of the Operation, Allied Air Forces had dispatched 4,852 troop carrying aircraft

photograph courtesy AHB (RAF)

RAF Stirling glider tug takes off with troop-carrying Horsa in tow

"*If the weather had been good the operation would have been 100 per cent successful instead of 90 per cent*."
(Field Marshal Sir Bernard Montgomery[84])

The weather undoubtedly played its part in adversely affecting the delivery of reserve elements during the 18 September. The second airborne wave, due to depart at dawn, was delayed due to heavy fog in England but eventually got airborne at 10:00 hours. The wave consisted of 1,200 troop carrier aircraft escorted by 867 fighters and followed the same northern route flown the day before.[85] On Tuesday 19 September the weather continued to play a significant role as the fog again delayed the departure of the third wave of allied troops. The third wave eventually took off at 13:00 hours when the last battalion of 327th Glider Infantry and 101st Airborne's artillery travelled in 385 gliders, of which 189 were lost or turned back.[86] However, that was the good news, for the 428 gliders carrying 82nd Airborne's reinforcement and the 114 Dakotas of the 1st Polish Parachute Brigade, remained grounded all day.[87]

During the planning Urquhart was keen that there should be two lifts of troops into Arnhem on the first day of the operation.[88] Critically, Brereton listened to General Paul Williams, who was in overall command of the US and British Transport aircraft, which had insisted on a single drop per day.[89] Williams was concerned that to attempt two drops in daylight would leave insufficient time for proper maintenance and that crew fatigue might lead to an increase in accidents.[90] To counter this, the RAF suggested that the first lift could be flown prior to dawn. However, the standard of night flying and navigation amongst the US crews was inadequate for such a task.[91] There is no doubt that the dissolution of the delivery of the British 1st Airborne, with the subsequent loss of surprise, was a major factor in the whole operation's failure.[92] However, the fascinating issue centres on what might have happened if a second wave had been undertaken on the first day of Market Garden. If a second wave had been conducted and if troop carrier assets had been re-assigned from carrying 1st Airborne's HQ element to carry an infantry brigade, then there is a distinct possibility that both ends of the Arnhem Bridge could have been secured during the first day of the operation.

Urquhart had planned for the 1st Parachute Brigade to hold the bridge at Arnhem and for the 4th Parachute Brigade to hold the high ground to the north of Arnhem. This left the 1st Airlanding Brigade to secure the western approaches and the Polish Parachute Brigade to take up positions to the East. A second wave in the first 24 hours and the re-allocation of Browning's 1st Airborne HQ gliders to carry a brigade of infantry, would have provided Urquhart with the four Brigades he required for his plan. Urquhart's basic plan was fundamentally sound and there is sufficient evidence to suggest that had the force delivery been undertaken during 17 September, then British 1st Airborne could well have been successful at Arnhem. It can be argued, that the decision by Brereton to veto the second wave during the first 24 hours, effectively doomed Urquhart's plan to failure before he had left England.

The air power contribution to Market Garden in terms of troop carrying capability was truly staggering. Throughout the course of the operation, Allied Air Forces had dispatched 4,852 troop carrying aircraft to their destinations, of which 1,293 delivered paratroops and a further 2,277 towed gliders.[93] Some 39,620 troops were delivered by air to their targets (21,074 by parachute and 18,546 by glider) with 4,595 tons of stores.[94] Purely in terms of the number of troops dispatched, it was a remarkable achievement and an unquestionable success. However, as previously argued, this needs to be balanced against the critical impact of Brereton's decision to veto a second British wave on the first day of the operation.

Close air support

"*Although I was naturally disturbed by the non-arrival of Horrocks's Corps, I was much more annoyed at the disappointingly meagre offensive air support we were receiving. The re-supply boys' gallantry had been magnificent, but the fighters were rare friends*."
(Maj Gen R Urquhart[95])

Urquhart's criticism regarding the lack of close air support has a familiar ring to it compared to the criticism levelled at the RAF during the early stages of the North African campaign. It would be unfair to draw too many parallels between Market Garden and North Africa because the nature of providing close air support to airborne troops

presents some unique problems. This argument is not offered as a defence of the air force elements during Market Garden but is merely used to help put the close air support aspect into context. Unlike conventional close air support operations, airborne troops usually operate behind enemy lines and, as a result, it is extremely difficult for pilots to distinguish between their own and enemy troops operating beyond established front lines.[96] The only way to combat this was for the airborne troops to indicate their position by the use of pre-arranged signals or by radio, both of which were dangerous as they were open to enemy interference.[97] Furthermore, it was difficult, if not impossible, to provide airborne troops with air support when they were at their most vulnerable while dropping into their LZs.[98] The provision of close air support to advancing armour and ground troops was well practised by 1944 which makes the lack of effective and coordinated close air support during Market Garden worthy of debate.

Notwithstanding the difficulties of providing close air support for airborne troops, the arrangements for close air support during Market Garden were woefully inadequate.[99] No proper liaison was established with RAF 83 Group, air control teams were few, poorly trained, and equipped with radios that never worked. Furthermore, Browning acquiesced to an Air Force ruling which barred 83 Group from supporting his Corps whenever troop carriers and their escorts were due overhead the battle area.[100] This decision is understandable given the difficulties of de-conflicting the operations of two different air forces within the same airspace and the risks of errors in identification.[101] Notwithstanding the difficulties in predicting the movement of fog and the limited communications in 1944, the failure in communication and coordination proved critical when delays in the second wave on the 19 September were not passed to 2nd Tactical Air Force, which continued to fly support according to the original timetable.[102] The consequences were severe as the airborne troops in Holland received no close air support compared to 125 Luftwaffe fighter sorties.[103] The situation was further compounded by the fact that the 2nd Tactical Air Force turned down nearly 50% of close air support requests from the Airborne Corps. This refusal was based on insufficient target information to mount proper attacks and on experiences in Normandy where friendly troops had been bombed by Allied aircraft.[104] It could be argued that this was an over cautious approach, given the fact that the 1st Airborne were so desperate for support that they called down artillery support onto their own positions.[105] The poor target information could have been as a result of Browning's failure to arrange RAF and USAAF liaison officers with his own troops and to support the small number of air control teams. As Urquhart recalls, even when air support did arrive it was not effective:[106]

"At this time I called for offensive air support and Typhoons rocketed German positions; but there were not many of them and the volume of fire from enemy mortars was not noticeably affected. I wondered then why so few fighters came to our aid."

Urquhart's criticism must be balanced against the difficulties of providing close air support in urban areas. The 1st Airborne were involved in a bitter urban engagement, in which the identification of German positions from the air would have been extremely difficult.[107] This may well account for the limited impact upon German mortar positions.

Complaints regarding a lack of close air support were not the sole prerogative of the airborne element. With regard to XXX Corps, persistent haze and low cloud prevented aircraft from identifying and attacking targets on several days and this was compounded by the difficulties in establishing a satisfactory bomb line.[108] This is perfectly understandable given the situation where British tanks may be further north than German ones, and the latter may be heading southwards and the former north or eastwards.[109] Notwithstanding this, the progression of XXX Corps north of Nijmegen was hampered by a lack of air support as Lieutenant Colonel J O E Vanderleur of the Irish Guards recalled after the operation:[110]

"Our bitterest regret was that the air tentacle was not working, for with even moderate support from the Tiffies (Typhoons) we might have broken through to Elst, if not further".

The lack of provision of close air support can also be attributed to the weather and specifically

the fog. The fog effectively grounded the Allied aircraft in Belgium and northern France for the morning of the 18 September, which meant that only a few close air support sorties could be flown. However, for the Germans it was a different picture, as the fog cleared early enough for the Luftwaffe to launch their main effort.[111] As a result, the 82nd Airborne received only 97 close air support sorties from RAF 83 Group, and the 1st British Airborne received none, this was compared with the 190 Luftwaffe fighters committed to the area.[112]

In addition to the vast number of troop carrier and re-supply sorties flown during Market Garden, more than 6,172 air support sorties were flown, more than half of them by 8th Air Force, for the loss of 125 aircraft.[113] Significantly, the 2nd Tactical Air Force and 9th Air Force only flew 743 of the 6,172 air support sorties: this is no doubt a result of their refusal of 46 out of 95 requests for air support from I Airborne Headquarters.[114] The Allied troops should have enjoyed the protection afforded by air superiority. However, as in the early part of the North African campaign, the ground troops fighting in Arnhem and along XXX Corps approach route, were left wondering as to the whereabouts of their promised air cover. The lessons regarding close air support had been hard learnt in previous campaigns and, although a large number of sorties were flown in support of Market Garden, they were poorly coordinated and lacked impact. The airborne troops were lightly equipped, facing German Armour, and XXX Corps route was along a raised causeway affording little protection. Therefore, the importance of well-focused and coordinated air support could not have been more vital. It is pure conjecture with the benefit of hindsight, that suggests that, should XXX Corps have been provided with adequate air support north of Nijmegen, then they could have made the final push towards Arnhem. Furthermore, it could be argued that had the 1st British Airborne Division have received the close air support that they had the right to expect, they could have punched through the German lines and reinforced the northern end of Arnhem Bridge.

The fight to sustain

"*The sight of the Stirlings and Dakotas flying unhesitatingly into the German barrage where sometimes, although hit and on fire, they continued to circle above the German lines while the RASC Dispatchers threw out the supplies before the aircraft crashed into the earth, was so moving that for many of those who witnessed it no more poignant memory of Arnhem remains*."[115]

Because of the nature of Airborne Warfare and the necessity for troops to be dropped behind enemy lines, the issue of re-supply is always a critical one. Airborne troops, by necessity, are limited by the amounts of ammunition and supplies they can take into battle and re-supply by air is limited by the amount of aircraft available. Furthermore, transport aircraft are extremely vulnerable and a degree of control of the air is an essential element if re-supply by air is to be sustained or undertaken on a large scale. Other than for airborne operations, supply and maintenance by air, within the European Theatre, was planned only as emergency measure rather than as a routine part of normal operations.[116]

The extent of the airlift required for Market Garden was truly immense and although re-supply could be achieved via road once XXX Corps had linked up with each Airborne Division, the initial 24-48 hours of the airborne operation would have to be sustained via the air. In the case of the 1st British Airborne Division, this sustainment was to extend well beyond 48 hours. The concept of airborne logistics, as undertaken during Market Garden was fundamentally sound and its broad principles have survived to the present day.[117] The crews, both RAF and the air dispatchers, were highly motivated, well trained and, as the previous quote highlights, unquestioned in their bravery. As Frank Steer argues in his book, *Arnhem — The fight to Sustain*, there was nothing wrong with the overall concept for airborne logistic support or with the plan for logistic support at Arnhem.[118] So, if this were the case, then why during only the second day of the operation were the 1st British Airborne short of vital supplies and why were so many transport aircraft being lost? For example, on the 18 September 145 Stirlings and Dakotas of RAF 38 and 46 Group dropped re-supplies to 1st British Airborne Division, but unfortunately, of the 87 tons dropped only 12 tons reached the British troops

The success of the Luftwaffe is not easy to quantify. Allied aircraft were encountering enemy fighters and suffering losses that could not be sustained indefinitely

at a cost of 13 aircraft.[119] The Americans fared only marginally better when 135 Liberators of 8th Air force dropped re-supply to 82nd Airborne (80% of which was recovered) and a further 117 Liberators dropped re-supply to 101st Airborne (50% of which was recovered), losing 11 aircraft.[120]

The key factor that prevented what was an excellent logistical plan being executed to the same degree was the breakdown in communications and the inability of the Allies to adapt their plan when things went wrong. The German reaction to the Allied assault was both more capable and faster than the Allies had predicted and will be examined in detail in the following section. The implication for the fight to sustain the British troops at Arnhem was that the Germans quickly over ran their re-supply drop zones and the badly needed supplies fell into German hands. This alone was not the critical factor, what rendered this problem difficult to resolve was the poor communications between the 1st British Airborne and any unit outside Arnhem. Urquhart made every attempt to inform aircrews that the re-supply drop zones had been overrun via a BBC war correspondent's radio set and a Second Army 'Phantom' set linked to headquarters in Belgium.[121] Unfortunately, these messages were never passed on and pilots continued to make drops to scheduled drop zones because contingency zones had not been identified and they had been instructed to ignore signals from the ground. All these factors combined to effectively negate the extraordinary bravery and courage displayed by the Allied aircrews. Should supplies have reached the 1st Airborne according to the logistical plan, there is the distinct possibility that they could have sustained their fight for longer.

The German perspective

"*But the Germans, General, the Germans.*"
(Major General Stanislaw Sosabowski[122])

Although aspects of the German reaction have been included in previous sections of this article, no research into Operation Market Garden would be complete without a specific examination from the German perspective. Much is made of the fact that the 1st British Airborne Division landed on top of two German Panzer Divisions and the misconception that the German forces were made up of old men and boys. However, whenever Market Garden is studied in detail, the emphasis always appears to concentrate on Allied mistakes in planning and execution rather than, with the possible exclusion of Kershaw's '*It never snows in September*', the effective counter-measures employed by the Germans.[123] Kershaw provides compelling evidence of the speed of the German reaction and the success of the Wehmacht's ad-hoc army divisions. General Wilhelm Bittrich, the Commander of IISS Panzer Corps, took only 10 minutes to issue his first warning orders after receiving reports of the Allied landings, despatching 9SS Division to Arnhem and 10SS Division towards Nijmegen.[124]

Both Bittrich and later Field Marshall Walther Model, Commander Army Group B, were quick to realise the operational importance of Nijmegen and Arnhem and focused their counter measures on these 2 key objectives.[125] To what degree Model's actions were governed by captured orders or by his talents as a commander are open to some debate. What is not open to debate is the extent to which the German forces were well-organised, well lead and fierce combatants. Although it is only right to acknowledge the counter measures undertaken by German ground forces, this article's focus is on air power and the Germans' efforts to combat Allied air power is a key factor.

The Allies should have enjoyed the luxury of Air Superiority; however, the air-to-air combat during Market Garden was not always as one sided as the Allies might have expected. Far from being a spent force, the Luftwaffe reacted as quickly and were particularly adept at drawing on fighters as far afield as Dortmund, Guetersloh and Werl, all well within the Reich.[126] That said, these fighters were operating from airfields some distance from the conflict, which will have had an adverse effect on their sortie generation rate. Nevertheless, 300 fighters from the 'Reich' Jagdflieger (Fighter) Division 1, released from Wehrmacht Headquarters West, played a critical role in hampering Allied operations over Arnhem and accounted for 40 transport aircraft and 112 gliders.[127] The Luftwaffe response was far from being either negligible or uncoordinated. The Jagdflieger division was directed by 9SS headquarters using newly established communications, which permitted the

The Allies should have enjoyed the luxury of Air Superiority; however, some transport aircraft flew over Arnhem without fighter protection and paid a heavy price

headquarters to direct the division in the air. The success of the Luftwaffe is not easy to quantify. Allied aircraft were encountering enemy fighters and suffering losses that could not be sustained indefinitely. An RAF 38 Group report later recalled:[128]

"The result is reflected in the casualties. For the first time enemy fighters were in full evidence, and 10 Focke-Wulf 190s, in particular, took heavy toll, shooting down 7 out of 10 aircraft from one squadron in the third wave. A total of 23 aircraft (20% of the force) are unaccounted for; a further 7 were damaged by fighters and 31 by flak, which was more intense than ever along the route and in the target area. A total of 52% of the force was lost or damaged . . ."

The Luftwaffe only formed one part of the German air defences and the role of the anti-aircraft batteries, despite heavy allied bombing, cannot be ignored. Particularly around Arnhem, air defences were well coordinated and were reinforced by Lieutenant Colonel Swoboda's flak brigade. The brigade consisted of five battalion-size detachments of 88 m flak and heavy artillery, which the Germans claim accounted for more than 13 transport aircraft shot down and at least 97 damaged.[129] Further flak assets were redeployed from the Ruhr industrial basin and, when all flak in the Arnhem area was placed under the control of Swoboda's brigade Headquarters, they helped to form an effective air-defence umbrella around Arnhem. The reorganisation of Luftwaffe and anti aircraft defences was both rapid and effective and both played a significant role in combating Allied air power.

Conclusion

"Heavy risks were taken in the battle of Arnhem, but they were justified by the great prize so nearly within our grasp."
(Sir Winston Churchill[130])

History has ably demonstrated that the conduct of any successful airborne operation is dependant upon a number of factors but one of the most critical is close co-operation between the land and air components. In this respect, probably more than any other, there was a fundamental breakdown, which resulted in an inefficient use of a significant amount of Allied air power capability. The Allies should have enjoyed the luxury of Air Superiority; however, some transport aircraft flew over Arnhem without fighter protection and paid a heavy price. The price paid was in terms of both aircraft lost and the adverse effect on the morale of Allied troops on the ground.

Much is made of the selection of LZs for the 1st British Airborne Division at Arnhem and this article is no exception. The reluctance of Air Force commanders to accept risk, in what was already a very risky operation, resulted in the selection of inappropriate LZs that contradicted the fundamentals of successful Airborne Warfare. Furthermore, a more accurate interpretation of air reconnaissance data should have resulted in more informed decisions regarding the selection of LZs, the extent of German flak and the relative capabilities of German ground forces.

Probably the single most significant decision was Brereton's veto of a second British wave on the first day of the operation. Notwithstanding the selection of LZs eight miles west of Arnhem Bridge, a second wave would have provided Urquhart with all four of his Divisions and no requirement to leave the 1st Air Landing Brigade protecting LZs. There is a significant possibility that such a force would have succeeded in reaching Arnhem via the river road and secure both ends of the Bridge. This alone could have changed the course of the whole operation.

Given the lessons learnt much earlier in North Africa, the failure of Allied Air Forces to provide adequate levels of close air support, through poor communications and coordination, was particularly damaging to both the operation and Allied morale. The problems regarding the coordination of close air support sorties, target identification, position of own forces and the nature of the ground battle are acknowledged. However, should XXX Corps have received even moderate close air support when north of Nijmegen, then they could have pushed through Elst and may have even reached Arnhem.

The extraordinary bravery and courage displayed by Allied aircrews in the fight to sustain the battle at Arnhem deserves acknowledgement but was negated by the breakdown in communications and

inability of the Allies to adapt their plan. Had the supplies reached the 1st Airborne then they would have had sufficient ammunition, food and water, to maintain their defence against an enemy that was growing stronger by the day. Such supplies could have been sufficient for the British troops to hang on long enough for XXX Corps to have made the final push through Elst to Arnhem.

The Luftwaffe and German flak played a significant role in hampering Allied air power. That said, despite the flexibility shown in coordinating an effective air defence system around Arnhem and the ability of the Luftwaffe to draw upon additional resources, the Allies should have been able to employ sufficient air power to combat the German counter measures. As Stephen Badsey accurately assessed, Allied air inferiority was in a large part self-inflicted.

As with any historical study, hindsight and conjecture play their roles in formulating conclusions. However, there is clear evidence to suggest that air power played a critical role in contributing to the failure of Operation Market Garden and that a more effective use of air power would have resulted in a historically significant Allied victory. More importantly, Market Garden was not just a failure of air power, it was a failure of joint planning and execution.

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[103] id.
[104] Cox (1985), p.230
[105] id.
[106] Badsey (1993), p.136
[107] Cox (2004),p.4
[108] id.
[109] id.
[110] ibid, p.127
[111] ibid, p.45
[112] id.
[113] ibid, p.84
[114] id.
[115] Steer (2000), p.164
[116] ibid, p. 33
[117] Steer (2000), p.153
[118] id
[119] Badsey (1993), p.54
[120] id.
[121] ibid, p.122
[122] Hibbert (1998), p.34
[123] Baynes (1993), p.162
[124] Kershaw (1990), p.73
[125] ibid, p.76
[126] Kershaw (1990), p.230
[127] ibid, p.229
[128] Hibbert (1998), p.144
[129] Kershaw (1990), p.229
[130] Hibbert (1998), p.183

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