Caen: the Norman city was reduced to a wilderness of ruins

Caen

the Martyred City

Many aspects of the air operations during World War II have attracted their share of myths and controversy. The efficacy of the strategic bombing campaign has been debated at length with considerable attention given to the primacy of targeting German morale and industrial capacity.[1] Individual raids on the Dams, attacking the *Tirpitz* and *Dresden* have also attracted much discussion.[2] It is, however, fair to say that this is not a new or even recent phenomenon; the various policies attracted debate and controversy both at the time and in the respective bombing surveys produced after the end of the War.[3] The ardent exponents of strategic bombing such as Air Chief Marshal Sir Arthur Harris and his United States counterpart, General Charles Spaatz, decried any deviation of their assets from the attacks on the German heartland. Harris, in particular, resisted fiercely wasting time on what he called 'panacea targets'.[4]

This debate reached a crescendo in the run up to, and immediate aftermath of, Operation OVERLORD – the Allied invasion of occupied Europe in June 1944. A relatively complicated command and control structure exacerbated the marked divergence of doctrinal (and dogmatic) priorities. The positions of senior airmen in the command chain may have been essential for pragmatic reasons, especially where specific assets, such as the heavy bombers, were kept separate from the force assigned to the Supreme Allied Commander. Nevertheless, these issues did little to harmonise relationships and will be discussed in greater depth below.

Of all of the various myths, legends and controversies that have arisen since the liberation of France and the eventual overthrow of Nazi tyranny, few have left such a long-standing scar on the psyche of a city than the allied bombing of Caen – the city that considers itself to have been martyred.[5] The strength of feeling is still evident today as any visitor to the Caen Memorial in the northern outskirts of the city is clearly able to see. In an area that is full of commemorations to the British, American and French forces, the poignancy of the Caen Memorial is most marked. Why should it be the exception? Any attempt to answer this question must include an examination of why Caen was subject to Allied aerial bombardment.

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The ruins of Caen

This paper will examine the various factors leading up to the bombing of Caen and the eventual capture of the city. The paper will therefore look at the planning for D-Day and the importance of Caen at the operational level of war. The planning will be set in the context of the air power strategy that pertained at the time with particular reference to the thinking on the support – direct

and indirect – of ground forces. The paper will also look at the command and control structures and examine some of the tensions therein. The decision-making process will then be set in the context of the progress of the air and ground war as it evolved. From this, it should be possible to show how events gathered momentum resulting in the requests for aerial bombardment, its actual execution and eventual effectiveness.

THE PLANNING FOR OVERLORD

The prospect of a serious invasion of mainland Europe seemed remote in the dark days of 1940 and 1941. France had fallen and, although the Battle of Britain had been won, the contest in the Atlantic showed how tenuous Britain's survival was. The German invasion of Russia made a second front necessary as pressure in the east had to be relieved. For many long months, Bomber Command was the Allies' only option.[6] The entry of the United States into the war following Pearl Harbor and the German declaration of war made a second front not only vital, but also inevitable. The key question, however, was where this front was going to be. The Americans accepted a policy of Germany first; but the demand for settling scores with Japan meant that this would have to be done quickly. Churchill and his senior advisers considered a cross-Channel invasion (Operation SLEDGEHAMMER) to be too risky in 1942.[7]

The German invasion of Russia made a second front necessary as pressure in the east had to be relieved

The decision was therefore taken to launch Operation TORCH in North Africa thereby delaying the return to the Continent. Nevertheless, planning for an eventual invasion began in April 1942 with the tasking by the British Chiefs of Staff of General Sir Bernard Paget (C-in-C Home Forces) and Captain Lord Louis Mountbatten (Head of Combined Operations) to begin planning for Operation ROUNDUP. This early planning showed the potential of Normandy as a viable alternative to the Pas de Calais region which had seemed the most obvious choice of landing area (to the Germans as well as to the Allies). The Casablanca Conference of January 1943 saw the British Chiefs of Staff prevail over their US colleagues with action remaining in the Mediterranean with Operation HUSKY – the invasion of Sicily. Partly to keep the cross-Channel option 'in play', Lieutenant General Frederick Morgan was appointed as Chief of Staff to the Supreme Allied Commander (Designate). The acronym COSSAC was obviously less of a mouthful for those involved in the planning which quickly gained momentum. By July 1943 the outline was in place for the invasion of Normandy with the target date of 1 May 1944.[8]

The Luftwaffe disguised some of their aircraft with water-soluble white distemper. Shown are JU 87Ds aircraft

The Casablanca Conference was followed by a similar event in Quebec in August 1943. OVERLORD was high on the agenda, with the choice of Supreme Commander an important topic. The initial speculation was that the Commander would be British and Churchill was keen for General Sir Alan Brooke (Chief of the Imperial General Staff and Chairman of the Chiefs of Staff Committee) to take on the role.[9] During the Quebec Conference, Churchill relented to American demands that their numerical superiority should guarantee them the key position. Underlying these discussions was a marked suspicion that neither Churchill nor Brooke was fully committed to OVERLORD. The almost automatic American nomination for the post was General George C Marshall, the United States Chief of Staff. But President Roosevelt was reluctant to allow his key strategy adviser out of arm's reach. General Dwight D Eisenhower became the default option. Churchill had let it be known that Eisenhower was the only acceptable alternative to Marshall and his appointment was formally announced on 6 December 1943.

Winston Churchill

Major General Omar N Bradley was selected to command United States ground forces. Competition for his British and Commonwealth counterpart was between Lieutenant General Bernard Montgomery and General Sir Harold Alexander. Churchill tended to favour 'Alex' while Brooke spoke strongly in favour of Montgomery. Brooke also doubted that Alexander had the strategic vision necessary to cope with OVERLORD. Eisenhower's marked preference was for Alexander – he considered Monty abrasive and difficult to control. The decision, in Montgomery's favour, was announced on 22 December 1943 with Alexander to remain in Italy where he provided much needed continuity. This removed any lingering barriers to the appointment of Air Chief Marshal Sir Arthur Tedder as Eisenhower's deputy: air was going to be critical to the success of the European adventure.

During the Quebec Conference, Churchill relented to American demands that their numerical superiority should guarantee them the key position

Eisenhower's first impression of the plan for OVERLORD was that the forces assigned were insufficient. Montgomery came to similar conclusions.[10] Popular myth has it that the latter was solely responsible for beefing up OVERLORD. While it is true that he became the architect for many of the changes, it is typical of the man that he claimed absolute credit. COSSAC was considerably expanded with many new faces and detailed planning entered a new phase. Montgomery envisaged the rapid

Lord Louis Mountbatten

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seizure of the main centres of road communication – Caen and Bayeux – and the high ground to the south and east of the former city. This area controlled the approaches and crossings of the Odon and Orne rivers and had to be captured early to prevent German reinforcement. This area would also provide vital land for the construction of airfields to reduce the flying times for close support aircraft. Montgomery also insisted on the use of airborne forces on both flanks to prevent German counter-attacks on the beachheads.

The other element of Montgomery's thinking was the simultaneous attack on Caen, the high ground around it *and* capture of Cherbourg by means of a Cotentin landing. Montgomery disregarded the risk of splitting his forces and not achieving sufficient concentration on Caen. Nevertheless, he believed that the battle would be lost or won in the British sector with considerable potential for the Allies to be repulsed by heavy panzer counterattacks. As the planning matured, the importance of the capture of Caen became abundantly clear. The Allies would have to capture Caen and its associated river crossings: it could not just be by-passed. With characteristic boldness, Montgomery saw the city being taken by speed and aggression on *D-Day* itself. There was no question of using the city as 'a hinge' or maintaining a defensive posture on the flank.[11]

AIR STRATEGY

The planning requirements for air forces generally and for those engaged in OVERLORD were set in place at the Casablanca and Quebec Conferences. COSSAC effectively saw the air campaign in four phases.[12] The first was the continued strategic bombing of Germany. The second or preparatory phase saw the addition of communications targets, coastal defence batteries and airfields. The priority in the third phase would be the direct support of the invasion fleet. The fourth phase would be more of the same with the requirement to prevent enemy movement and reinforcement.

The Luftwaffe was to be dispersed, harried and destroyed by all possible means

In flames after crash landing

The Casablanca Conference set the tone for the use of air power for the remainder of the war in a number of ways. The first of these was the understandable and laudable aim to achieve complete mastery of the air. The Luftwaffe was to be dispersed, harried and destroyed by all possible means.[13] The second requirement was for the formation of large tactical air forces able to assert mastery over the battlefield and wield the firepower first seen in the desert. There was, however, less agreement on the utilisation of the bomber forces. The Casablanca directive read:

> *'The primary objective will be the progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened'.*

As Biddle has pointed out, this contained something for everyone and gave the commanders a deal of latitude,[14] both in target sets and methodology. This allowed Air Chief Marshal Sir Arthur Harris (C-in-C Bomber Command) to pursue targets based on German industrial output and morale. The USAAF, under Lieutenant General Carl A Spaatz, was also allowed to attack key, or vital, centres such as oil manufacture and storage. Harris saw the diversion of his aircraft from Germany to gun emplacements and beach defences as a disservice to the army and potentially a disaster.[15]

Doctrinal issues were complicated by the appointment of Air Chief Marshal Sir Trafford Leigh-Mallory as Air Commander-in-Chief of the Allied Expeditionary Air Force. Neither Bomber force took kindly to direction from a person considered to have only fighter experience.[16] That Leigh-Mallory had written extensively in the inter-war years on the use of air power in support of armies only served to deepen the antagonism.[17] The matter was only resolved in practice by 'direction' from Tedder acting on behalf of the Supreme Commander.

To facilitate the second phase of pre-OVERLORD operations, Leigh-Mallory set up an AEAF Bombing Committee under the chairmanship of Air Commodore Kingston-McCloughry; its membership included Professor Solly Zuckerman. The latter argued

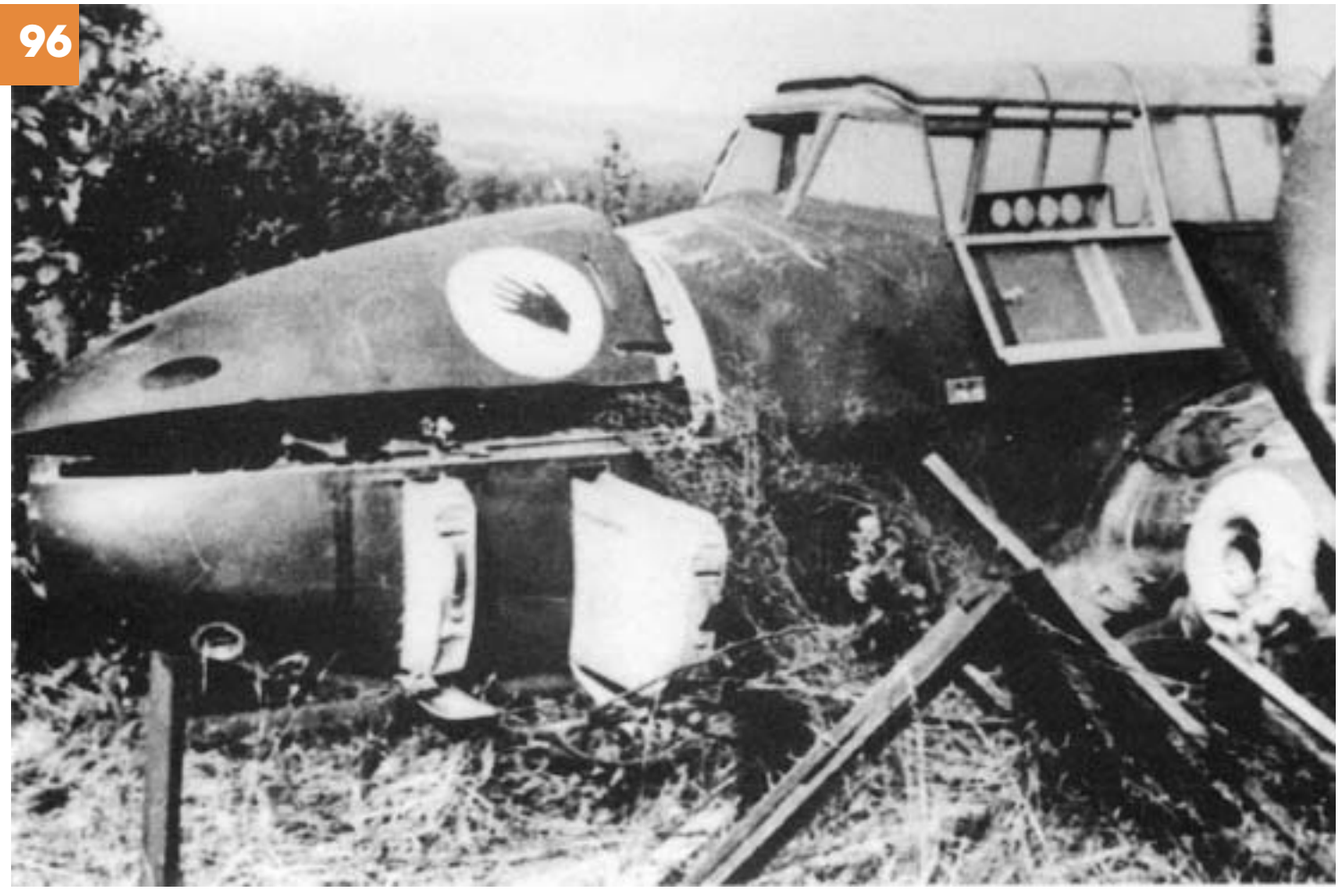
A marshalling yard outside Paris

Harris's objection that the necessary precision was beyond the capability of his crews was shattered on 6 March 1944 when 263 aircraft of Bomber Command dropped 1,258 tons of bombs on the railway centre at Trappes, southeast of Paris

that attacks on rail facilities would be the most efficacious means of disrupting German potential for reinforcement. Some 75 repair, servicing and similar targets were identified. Harris's objection that the necessary precision was beyond the capability of his crews was shattered on 6 March 1944 when 263 aircraft of Bomber Command dropped 1,258 tons of bombs on the railway centre at Trappes, southeast of Paris. The centre was so hard hit that it was out of action for over a month.[18]

The 'Transportation Plan' was formally adopted by the Chiefs of Staff and appropriate direction was issued to the strategic bomber commanders on 15 April 1944. Having had his objections swept aside, Harris put his Command to the task with a vengeance and the Plan was a considerable success.[19] By D-Day, Bomber Command and its American colleagues had flown 21,949 sorties dropping 66,517 tons of bombs on 80 targets.[20] Targets were deliberately chosen to minimise collateral damage with a maximum acceptable potential French casualty toll of 150. As the RAF official historian points out, the French were stoical about the need for these operations in marked contrast to the aftermath of Caen.

The third phase of the air campaign was conducted at the tactical level by aircraft under the command of Air Marshal Sir Arthur Coningham (Second Tactical Air Force) and General Louis Brereton of the US Ninth Air Force. A range of targets was attacked from the Pas



A crash-landed Bf 110C after being shot down by Allied aircraft

de Calais area down to the Cotentin peninsula. By this time the Luftwaffe had taken a pounding on all fronts. They were still able to operate on an occasional basis, but air superiority had been fought for, won, and then maintained primarily over the skies of the German heartland.

A range of targets was attacked from the Pas de Calais area down to the Cotentin peninsula. By this time the Luftwaffe had taken a pounding on all fronts

COMMAND AND CONTROL THE VEXED ISSUE OF PERSONALITIES

Supply of good wartime commanders is always limited. It is therefore no surprise that the same old list of 'usual suspects' keeps on reappearing; stalwarts such as Harris remain in post. With success an ego inevitably comes to match Montgomery as the *primus inter pares*. There was no love lost between Tedder and Montgomery following their experiences in the desert campaign. But the greatest dissension was between Coningham and Monty. In the desert the two men had worked together exceptionally well, proving to be the model of co-located component commanders. By the time Normandy came round, the airman considered that his erstwhile colleague had slighted him. Coningham was, however, one of the most capable and experienced senior commanders available and Tedder may also have felt that he could be used as a foil to Montgomery.

Both senior airmen considered that Montgomery had not made the best use of air power in the desert and that he needed a strong team.[21] The batting order was enhanced further by Air Vice-Marshal Harry Broadhurst who had fought with distinction in the Battle of Britain, North Africa, Sicily and Italy. He considered that the feud between Montgomery and Coningham was badly counter-productive and sought to minimise its impact. His sound relationship with Montgomery, whilst of considerable benefit to the conduct of the campaign, did little to improve his standing with Coningham and Tedder.

The battle of the egos found its culminating point in the need to capture ground suitable for the airfield sites necessary for the full exploitation of air power. This had been requested as a priority by Leigh-Mallory as early as 20 March. The tactical aircraft had relatively little combat task time over Normandy when operating from UK bases; this had been long recognised as a limitation to the choice of this region over the more logical Pas de Calais area. Leigh-Mallory saw tactical air as being key to the push to the Seine. During the planning phase, Montgomery refused to make promises that he could not guarantee keeping. Yet the airmen's demands for territory coincided neatly with Montgomery's own operational priorities. The eventual failure to take Caen and the surrounding area quickly provided the aviators with the ammunition with which to attack Montgomery.

The delay in capturing Caen also exasperated the Americans who began to suspect that Montgomery was overly cautious. The importance of the British sector had not changed, but by 30 June Montgomery had begun to talk of containment rather than breakthrough. The lack of progress led to increasingly strident calls for Montgomery's removal, particularly from those who opposed his appointment in the first place. Bradley for example thought that it was typical 'Monty' – over-cautious, promising much and delivering little.

D-DAY AND BEYOND

Tidal conditions in the English Channel gave the Allies a narrow window for invasion in June 1944. A full-blown storm wrecked any chance of invasion on the morning of 5 June. Group Captain J M Stagg provided the meteorological brief for 6 June 1944. In what was probably the most critical met brief in the history of that rather inexact science (or black art), Stagg offered a glimmer of hope that Eisenhower and Montgomery seized upon, albeit to the scepticism of their air marshals.[22] The essential surprise was achieved, not least because of the marginal nature of the weather. Indeed, Rommel was in Germany on the strength of the weather reporting!

On D-Day itself, Bomber Command flew over 1,000 sorties dropping more than 5,000 tons of bombs as well as copious quantities of window.

The third British Division in particular was tasked to 'capture Caen and secure a bridgehead over the River Orne at that place'… By nightfall, a combination between the fortifications and elements of the 21st Panzer had effectively blocked progress towards Caen

A 75 mm SP gun of 21 Panzer Division

The aerial armada was reinforced by waves of transport and glider tugs carrying out the airborne landings on the flanks. British Forces landed on their beaches at approximately 0700 with 1 Corps tasked to take Caen. The third British Division in particular was tasked to 'capture Caen and secure a bridgehead over the River Orne at that place'.[23] The move inland from Sword beach did not occur as rapidly as had been hoped with elements of the Division bogged down in front of the German fortification named 'Hillman'. By nightfall, a combination between the fortifications and elements of the 21st Panzer had effectively blocked progress towards Caen. Matters had not been helped by unusually high tides that restricted the amount of space on the beaches, which had in turn slowed the disembarkation of armour.

Hitler's prohibition to all commanders that they must not give up an inch of ground meant that they fought where they stood. Overwhelming allied air power ensured that there could be neither re-supply nor reinforcement in depth. Counter-attacks were essential German doctrine. Set piece battles were therefore the exception rather than the rule, with the war quickly degenerating into an attritional grind of vicious small unit engagements. Much of this was inevitably the province of the infantry – and they were in short supply.[24] Likewise, close co-ordination between armour and infantry was frequently absent. In the face of highly effective anti-tank guns, determined Panzer divisions and brutal determination, the British forces made slow going. Arguably, had the Germans had even air parity, matters could have been considerably worse. Recriminations over lack of progress surfaced quickly with an overwhelming sense that these latter-day citizen armies were reluctant to commit to the type of warfare. Commanders, from Montgomery downwards, were aware of the paucity of reinforcements. And most carried with them the legacy of the Somme and Passchendaele.[25]

In June, Montgomery made three major attempts to take Caen. The first of these was a direct assault as a continuation of D-Day operations on 7 and 8 June. He then tried to envelop the city in the Villers-Bocage operation of 13 June. Operation *Epsom* followed on 25 June. This was to be a direct penetration by a powerful force involving all three corps. *Epsom*, like its predecessors, was a dismal failure.[26] The best that can probably be said was that it prevented the Germans from mounting the expected counter-attack along the River Odon where much of the fighting took place.

By early July, Montgomery was running out of time and ideas. Caen was beginning to lose its strategic importance per se as the German reinforcements were tied down and the US Army was making progress to the west. However, the high ground to the southeast was still vital and as Caen could not be by-passed it would have to be taken – head-on if necessary. The planning for *Charnwood* gathered momentum and with it, the use of air power on the city.

THE BOMBING OF CAEN

The first suggestion that heavy bombers be used to break the logjam in front of Caen came as early as 14 June when Leigh-Mallory flew to Normandy to see Montgomery. Relations between the two were strained because the airman had refused to

sanction an airborne raid on the grounds of risk. Montgomery, according to Leigh-Mallory's papers,[27] found the counter-proposal very attractive. The core idea had again originated with Kingston-McCloughrey and Zuckerman and involved the use of the strategic bombers in direct support of the ground forces. This had only previously been done at Monte Cassino (15 February 1944) and Cassino (15 March 1944) in Italy.

The concept was discussed further in a schoolhouse in Bayeux that was being used as the headquarters for the Second Army under General Dempsey. Their meeting was short-lived due to the arrival of Tedder, Coningham and Broadhurst. Neither Bomber Command nor the United States Strategic Air Force favoured the plan. More importantly, the nature of the terrain prevented the identification of a bomb line and suitable aiming points with the attendant risk of killing one's own troops. Furthermore, the target concentration was too low to justify the diversion of bomber assets.[28]

The operation lasted for about an hour and featured 467 aircraft dropping some 2,276 tons of bombs

B-17Fs flying in box formation

The politics and flexing of egos may have been sufficient for the plan to die. In reality, the practical problems spoke for themselves. Tactical air continued to be used with extra tasking against particular strong points – admittedly with only limited success. What was more relevant was that the kernel of the idea remained dormant for later use.

As Montgomery was putting together his plans for Charnwood, he decided to try again for heavy bomber support. The German defences were known to be strong and intelligence suggested that they had recently been reinforced. The request envisaged the heavy bombers blasting a path through the defences in the northern suburbs of Caen. Leigh-Mallory and his staff considered the bid at their Stanmore Headquarters on 7 July. Tedder normally attended these meetings, but exceptionally, Eisenhower also attended this meeting – presumably to ensure that Montgomery received the full support that he had requested and coincidently would have no scapegoats should Charnwood fail. With little apparent debate, the meeting agreed to task 450 heavy bombers for that night.[29]

Bomber Command launched its first attacks at approximately 2200 on 7 July using 1,000 lb bombs. Most were fused to explode six hours later to coincide with the ground advance. The operation lasted for about an hour and featured 467 aircraft dropping some 2,276 tons of bombs. The concept had been almost identical to the plan rejected in June albeit with the aiming points reduced to two. Notwithstanding German reinforcement, the target density was no better than when the concept had been rejected in June. The target area was a box 4,000 yards wide by 1,500 yards deep and included the northern part of the city. Care was taken to avoid fratricide, but this left some of the strong points untouched.

THE AFTERMATH

Montgomery claimed that the heavy bombing had been a vital part in the subsequent capture of Caen…

Two days of heavy fighting then ensued with little evidence to suggest that the defenders had been affected by the air attacks; the northern half of Caen was eventually secured by 1 Corps. Montgomery's victory was somewhat pyrrhic in that he had captured a ruined city at high cost. The Germans had also suffered heavily, but had dug into new positions on the south side of the river. They also retained the high ground to the south and east. Many of the desired airfield sites had not been reached and those in the bridgehead remained within artillery range. The breakout into Normandy was as elusive as ever and, despite favourable press, the pressure on Montgomery remained.

An immediate by-product of the heavy bombing of Caen was that it was the first time that many of the soldiers had seen the full wrath of the heavy bomber force. General Dempsey was actually airborne with Broadhurst and watched the proceedings. Broadhurst recalled that his senior colleague had been shaken by the scale of the destruction – as well as by the damage done to their aircraft by anti-aircraft fire which necessitated a crash landing![30] Some reports suggest that this beneficial effect on morale extended down to those in the slit trenches facing Caen.[31] Montgomery claimed that the heavy bombing had been a vital part in the subsequent capture of Caen; he also praised Leigh-Mallory for his consistent support.[32] Later assessments of Montgomery's analysis range from fantasy to guilty conscience.[33]

Having been instrumental in the initial concept of using heavy bombers in support of the army, Kingston-McCloughry and Zuckerman conducted a survey immediately after the capture of Caen. They reported that there had been virtually no sign of enemy gun emplacements, tanks or casualties in the target area that the army had requested. This was in contrast with other areas close by that would definitely have been worthy of Bomber Command's efforts. The effect on friendly morale had been beneficial, but transitory. Kingston-McCloughry concluded that the air element of the operation was little more than a frill for a ground plan already made.[34]

The bombing created considerable quantities of rubble and impeded the advance into Caen. This restricted the access for armour, reduced the number of exits that the Germans had to defend and allowed extra scope for snipers against the exposed infantry. The obstructions also prevented the rapid seizure of the Orne bridges which were destroyed by the defenders.

The French population of Caen had been advised to evacuate the city by the Germans and their own prefect. About one quarter had taken this advice. Many of those who remained had expressed a rather fatalistic 'frying pan and fire' attitude, preferring to remain in their own homes.[35]

CONCLUSIONS

The military efficacy of Bomber Command's attack on Caen appears to have been somewhere between negligible and counter-productive. The effect on the residents was devastating. Any impact on the morale of either side was transitory with the Germans continuing to fight fiercely for two further days. The decision-making process was hasty and totally uncoordinated from the major land offensive. What had been decreed as being too barren in target density, suddenly became worth the effort. There are therefore no easy answers, from a straightforward effects-based approach, as to why Caen was bombed.

It is, however, less cut and dried if one attempts to analyse how Caen came to be bombed. Montgomery was under increasing pressure to break the stalemate that had persisted for a full month after D-Day – the original target date. There can be no doubt that his later claims that he had always planned a 'holding' operation while the Americans developed their campaign in the West are anything but fabrication. The balance of German forces in his sector may have made this reality into a slight virtue, but it was not pre-planned.

Tedder recalled in his diary on the day after the bombing that: 'The problem is Monty who can be neither moved nor moved to action'. There is no doubt that he was under considerable pressure from Eisenhower, not least because the Supreme Commander was conscious that his fellow countrymen were becoming increasingly strident in their views that the war was being fought exclusively at the cost of American lives. There is some speculation that Montgomery was under pressure directly from Churchill; Kingston-McCloughry has suggested that the Prime Minister wrote to Monty along the lines that he must make progress or be replaced. It is feasible, and in character, that Churchill would so threaten. But as D'Este points out, it is inconceivable that Monty could have been removed at that stage. The wider message proclaimed by such a move – in Moscow, with Roosevelt, the British public and among the Germans – would have been unthinkable.[36] Nevertheless, Montgomery was not the sort of character to risk future fame and fortune on such a gamble.

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The personalities involved on the air side make for somewhat unsavoury analysis. There was an unhealthy mix of egotism and ambition with many officers covertly looking forward to the appointments lists of the peacetime air forces. Kingston-McCloughry was an arch wheeler and dealer who had been involved in a number of backstairs controversies.[37] There was little

chance that he and Zuckerman would be prepared to take a back seat role. Likewise Leigh-Mallory was frustrated with having so little genuinely to *command* – especially with the heavy bombers remaining under their respective commanders. He was determined that he would make his mark on the war and his casting of straws for Montgomery to clutch was a key factor in the eventual destruction of Caen.

The early appointment of Montgomery can be considered to be the starting point as he was neither a visionary leader nor someone capable of improvisation when matters turned sour. Failure to take Caen on D-Day accelerated the series of events with the direct attacks on D+2 and D+3, through Villers-Bocage and *Epsom* to *Charnwood* itself, as the key milestones. That they developed a momentum of their own helps to show *how* Caen came to be bombed, but cannot satisfactorily answer the question *why*. This is why the normally stoic French response of 'it had to be done' is not held to apply to Caen – hence the martyred city.

NOTES

1. For authoritative accounts, see Richard Overy, *The Air War* 1939 –1945, Stein and Day, New York, and more recently, *Why the Allies Won*, Pimlico, London, 1996. See also Noble Frankland, *The Bombing Offensive Against Germany - Outlines and Perspectives*, Faber and Faber, London, 1965.
2. For an account on Dresden see Peter W Gray, 'Dresden 1945 – Just Another Raid?', *Royal Air Force Air Power Review*, Vol 4 No 1, Spring 2001, pages 1-14 and for the *Tirpitz* see John Sweetman, 'Barnes Wallis's other Bouncing Bomb: plans to sink the German Battleship *Tirpitz* in 1943', *Royal Air Force Air Power Review*, Vol 5 Nos 2 and 3, Summer and Autumn 2002.
3. For the American version see the Reports of the United States Strategic Bombing Survey and subsequent debates on the subject: Gian P Gentile, *How effective Is Strategic Bombing? Lessons Learned from World War II to Kosovo*, New York University Press, New York, 2001. The British equivalent is *The Strategic Air War against Germany 1939 –1945; Report of the British Bombing Survey Unit*, re-published by Frank Cass, London with introductory material by Sebastian Cox, 1998.
4. MRAF Sir Arthur Harris, *Bomber Offensive*, Collins, London, 1947, pages 220 et seq.
5. This remains the perception today – the martyrdom aspect is reflected in the City Memorial.
6. Discussions between Churchill and Stalin in August 1942 confirmed the Grand Strategic level direction for Bomber Command. The leaders agreed that not only should German industry be bombed, but also the population and its morale. Stalin stressed the importance of attacking Berlin and this cascaded down to Harris later that month. Stalin's appreciation of the efforts of Bomber Command was reinforced by Harris sending the Russian leader a book of aerial photographs of the damage wrought.
7. Carlo D'Este, *Decision in Normandy*, Robson, London, 2000, page 25.
8. D'Este, ibid, page 35.
9. D'Este, ibid, page 43 and David Fraser, *Alanbrooke*, Harper Collins, London, 1982, pages 332, 333.
10. D'Este, ibid, page 61.
11. D'Este, ibid, page 74.
12. Hilary St George Saunders, *Royal Air Force 1939 – 1945*, Vol III *The Fight is Won*, HMSO, London, 1954, page 84.
13. Overy, *The Air War 1939 –1945*, page 95.
14. Tami Davis Biddle, 'British and American Strategic Bombing', in John Gooch (ed), *Air Power Theory and Practice*, Cass, London, 1995, page 120.
15. Saunders, *The Fight is Won*, page 85.
16. Overy, *The Air War 1939 –1945*, page 97.
17. See for example the article by Wing Commander Trafford Leigh-Mallory in Vol 1 of *The RAF Quarterly*.
18. Saunders, *The Fight is Won*, page 87.

19. As confirmed by Professor Zuckerman in his private diary; cited by D'Este, *Decision in Normandy*, page 215.
20. Saunders, ibid, page 88. Harris records that Bomber Command, by the end of June 1944 had flown 13,349 sorties dropping 52,347 tons of bombs with a casualty rate of 2.6%. *Bomber Offensive*, page 204.
21. D'Este, *Decision in Normandy*, page 218 and 219.
22. D'Este, ibid, page 110.
23. D'Este, ibid, page 120.
24. D'Este, ibid page 252 et seq.
25. D'Este, ibid, page 301.
26. D'Este, ibid, page 245.
27. Reproduced in Bill Newton Dunn, *Big Wing, the Biography of Air Chief Marshal Sir Trafford Leigh-Mallory*, Airlife, Shrewsbury, 1992, page 131.
28. D'Este, ibid, page 228.
29. D'Este, ibid, page 310.
30. D'Este, ibid, pages 314 and 316.
31. D'Este, ibid, page 316.
32. Bill Newton Dunn, *Big Wing*, page 155.
33. Alexander McKee, *Caen, Anvil of Victory*, Souvenir Press, London, 1964, chapter 14.
34. Cited in Ian Gooderson, *Air Power at the Battlefront; Allied Close Air Support in Europe 1943 – 1945*, Frank Cass, London, 1998, page 136.
35. Max Hastings, *Overlord; D-Day and the Battle for Normandy* 1944, Pan, London, 1999, page 263,
36. D'Este, *Decision in Normandy*, page 311.
37. For a discussion on the political intrigue behind the downfall of Air Chief Marshal Sir Cyril Newall: see Sebastian Ritchie's article in *War and Society*, vol 16, No 1, May 1998, page 83.