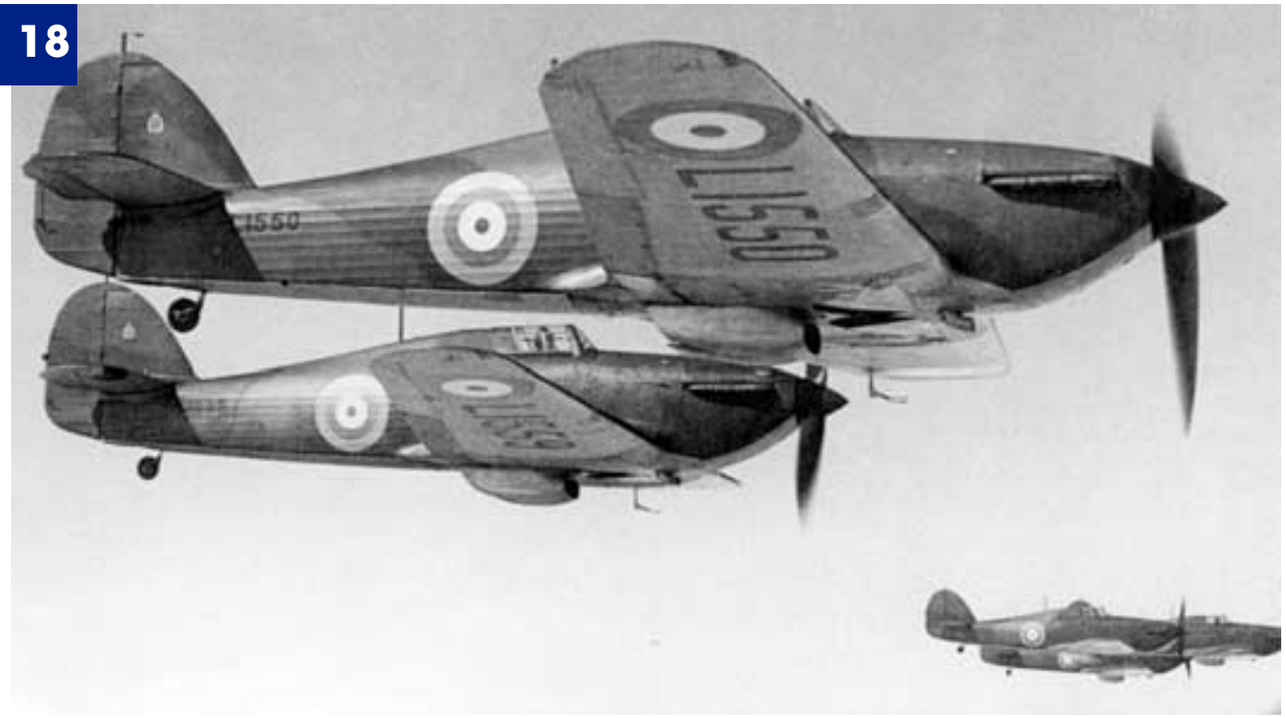
The Battle of Britain - so we already know the story?

'Never in the field of human conflict was so much owed by so many to so few'

Winston Spencer Churchill, 1940[1]

Churchill's 'clarion call to action in the nation's hour of danger'[2] exemplifies the standard perception of the heroic deeds of Fighter Command in 1940. The broader story is instantly familiar from the film,[3] the popular genre of paperback accounts[4] and 'books of the series' from television programmes, the latter often based on eyewitness accounts.[5] At first sight, it could therefore be argued that there is nothing new to say about the Battle of Britain. Without in any way suggesting that the conflict has been treated superficially by any of the works cited in this paper, it is undoubtedly true that myths, controversies and inaccuracies remain lurking behind the popular perceptions of the Battle – even in the year of its sixtieth anniversary. New research based on original papers continues to be published[6] and interest (market and historical) in the topic is still sufficiently high for the Air Historical Branch to be able to publish their Narratives[7] on the Battle.

This paper will briefly cover the narrative elements of the Battle of Britain – the story as we know it – and then highlight some of the misconceptions, myths and inaccuracies that still exist. The primary aim is to stimulate debate and interest in an area that was absolutely vital at the time and is still highly relevant to the study of modern air power.



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THE STORY AS WE KNOW IT

Stanley Baldwin, in the House of Commons in 1932, summed up the widespread belief stating that 'the bomber would always get through'.[8] Baldwin, in language that today seems 'politically incorrect' at best, went on to add that 'The only defence is offence, which means that you have to kill more women and children more quickly than the enemy'. This was the thinking of Trenchard, Douhet and Mitchell writ large. Strategic level thinking had solidified into a dogma that allowed no scope for the defence of a nation against the bomber.[9] It was not until the mid-thirties that such a revolutionary concept as effective fighter defence was considered worthy of serious discussion. Depending on the source, this was widely considered to be either the work of Thomas Inskip (who was made Minister for the Co-ordination of Defence in 1936);[10] or, more often, the quoted sea-change resulted directly from the appointment of Air Chief Marshal Sir Hugh Dowding as Commander-in-Chief of the newly formed Fighter Command in 1936. Dowding had had high hopes of becoming Chief of the Air Staff in 1937 and his retention as C-in-C Fighter Command was probably seen by many of his colleagues as him being sidelined – especially given the primacy then of the bomber.[11]

The frantic period of re-equipping the Royal Air Force continued through to the end of the decade and then through the so-called 'phoney war'. Squadrons were still under-manned and relatively short of aircraft when Hitler turned his war machine on the low-countries and France. The expectation that any bomber threat to the United Kingdom would come from the east or north-east, and would therefore be unescorted, was soon proved totally unfounded as the Pas de Calais area provided ample scope for airfields useable by fighters with just enough range to reach London and then have a combat reserve of approximately 10 minutes. That Britain had sufficient fighter aircraft to defend herself was down to Dowding's unique blend of farsightedness and stubbornness. His letter to the Air Ministry warning of the consequences of squandering resources in France is still held to be the epitome of an operational commander standing up to the distant bureaucracies in London.[12]

The fall of France in 1940 was met, virtually inconceivably, with an almost universal wave of relief; Britain was at last alone – without an ever-demanding ally to squander her precious resources. Hitler anticipated that such a predicament would cause Britain to sue for a separate peace. Instead he met with bellicose speeches from Churchill. On 16 July, Hitler issued Directive Number 16 (Operation SEALION) in which the aim was ‘to eliminate the English motherland as a base from which war against Germany can be continued, and, if necessary, to occupy completely’. He set an ambitious target date of four weeks hence. As with all military operations, the establishment and maintenance of air superiority was an essential precursor. Luftwaffe activity increased and what subsequently became famous as the Battle of Britain was underway.

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British sources consider the contest to have begun on 10 July and continued until 31 October. Those involved in the day-to-day fighting were certainly not aware that the Battle had started and finished in such a clear-cut way.[13] Dowding, as C-in-C Fighter Command, considered his prime mission to be defence of the United Kingdom against the so-called 'knock out blow'. He had configured his defences around 52 Squadrons in three Groups (11, 12 & 13 Groups were operational; 10 Group became so later in that month). Some 19 Sqns were equipped with the Spitfire, 25 with Hurricanes, 2 with Defiants and 6 with Blenheims.

German and British authors are in general agreement as to the rough shape of the ensuing Battle. (Some accounts do, however, vary somewhat.) The first phase ran from 10 July to 7 August and came as a shock to both belligerents. The Luftwaffe found that its Me 110s were virtually useless against the Spitfire and Hurricane opposition. Bomber crews clamoured for ever-closer escort which inevitably restricted the flexibility of the Me109 pilots. The RAF quickly found that its anti-bomber tactics, based on flying in very close vic formation, were ineffective and had to be hastily amended to a looser formation similar to that flown by their more experienced adversaries. The enemy tactics of this phase were based on fighter sweeps aimed at clearing hostile British fighters from the skies. This was attempted

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by mounting raids against allied shipping that was being convoyed through the Channel. Serious command and control decisions had to be taken as to which attacks would be countered and with what strength.

The second phase ran from 8 – 23 August and encompassed further fighter operations as well as attacks on related industrial targets and the ground supporting organisation (radar sites, airfields etc). In the third phase, from 24 August to 6 September, the Luftwaffe extended its attacks to include the London area. Fighter Command's success by day was partially offset by the change to night bombing where the fighters were effectively blind. In the fourth phase, the scope of targets was further increased to encompass a wider variety of economic targets. From the British perspective the Battle of Britain ended on 31 October with the next phase coming under the category of the 'Blitz'.[14]

No account of the Battle of Britain is complete without reference to the relationship between Dowding and two of his senior Group Commanders (Park and Leigh-Mallory). Similarly, the involvement of Air Vice-Marshal Sholto Douglas and the almost legendary presence of Squadron Leader Douglas Bader provides a backdrop of soap-opera proportions. The subsequent 'dismissal' of Dowding, following an unholy conspiracy, was crowned by the long-term ingratitude of a nation to a hero who had won a victory on the scale of Trafalgar. Dowding was not made a Marshal of the Royal Air Force nor was a statue erected in his honour until 1988.[15]

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STRATEGY

As has already been suggested, the prime strategy of the inter-war years was based on the strategic use of the bomber. The outline thought process was born in the First World War following German Zeppelin and Gotha bombing raids. The subsequent need to find (or eliminate depending on the colour of one's cloth) a definitive role for the newly formed Royal Air Force added a degree of momentum to all sides of the debate. The strategic bombing theory was then developed in the early twenties as Anglo-French relations became increasingly strained. In 1921, Britain was considered 'incapable of resisting an aerial invasion by the French'.[16] The formation of the strategic bomber force would utilise the inherent offensive nature of air power by taking

the war to the enemy population on such a scale that their will to continue a conflict would be rapidly reduced. This gave the RAF a distinctive role to play in national defence, and Trenchard's expectation, that in the coming duel of bomber fleets the stoicism of the British people would outmatch the French, struck a sympathetic chord. It was, however, politically unacceptable to leave the country with no fighter defence whatsoever – even though, doctrinally, such a force was considered to be doomed to ineffectiveness.

The result of the deliberations of the Steel Bartholomew Committee[17] in 1923 gave a third axis (after strategic bombing and imperial policing) to RAF strategy with the setting up of the Home Air Defence Force. Although the number of squadrons never reached the level that had been envisaged, the ratio of 17 fighter squadrons out of 52 strongly suggests that it was more than a mere sop to political or public sentiment. The balance between the requirements of numbers of fighters versus bombers remained controversial virtually up to the Battle of Britain itself. On 1 January 1925, Sir John Salmond took command of the newly-formed Air Defence of Great Britain Command. Considerable ground work then followed in a race to introduce a fighter that was not already obsolete before it reached squadron service. Other valuable work built on the basic framework for the defence of the London area that had been provided by Major General E B Ashmore.[18]

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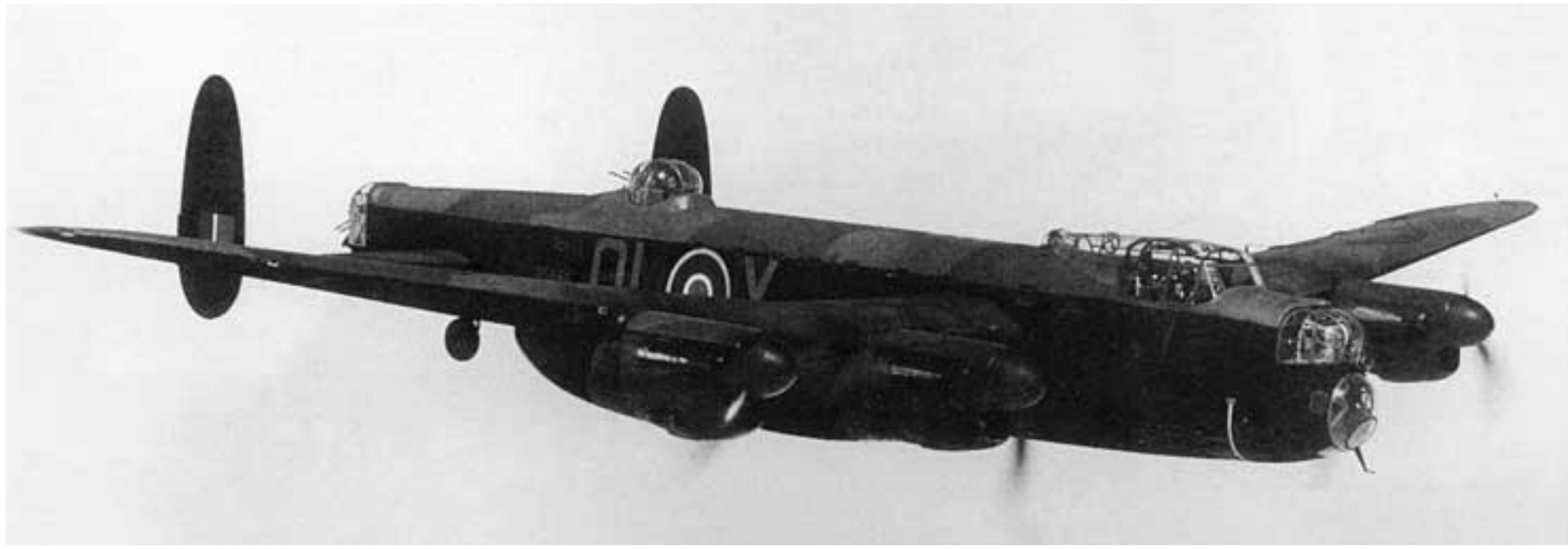
Much of the credit for the preparations on which the RAF was able to fight the Battle of Britain go back to the period in which Sir Edward Ellington was Chief of the Air Staff – i.e. 1933-1937. The extent to which Ellington was personally responsible for the impetus is still open to debate. Some consider that it occurred despite his presence, others commend his stewardship.[19] As John Terraine points out, Ellington is considered to be relatively 'unknown' as a Service Chief.[20] Terraine goes on to list the major achievements of Ellington's tenure: these include the operational requirement specifications for, *inter alia*, the Spitfire, Hurricane, Halifax and Manchester (from which the Lancaster was developed). Although these advances were not attributable to Ellington alone, the responsibility did lie with him. It is therefore evident that much work was already in hand before the arrival on the scene in 1936 of Inskip and Dowding – although the latter had been in charge of the Directorate of Supply and Research (1939-35) and then Air Member for Research and Development (1935-36).[21] Indeed, it could be argued that Inskip's motivation for increasing the size of the fighter force was based more on budgetary considerations (fighters were much cheaper to produce) than on inspired strategic insight. Whilst it may be true that some senior Air Marshals[22] were aghast at the heretical move away from the overwhelming primacy of the bomber, the scope for the development of fighter aircraft and radar systems did not occur in either a doctrinal or operational vacuum.[23]

BOMBER COMMAND

Had the doctrine of the primacy of the bomber remained extant throughout the period it would be useful to ask what Bomber Command was doing during the Battle of Britain. After all, the theory had been that the defence of the United Kingdom was best exercised by taking the war to the enemy – in their factories, in their homes and on their airfields. This use of air power as an overwhelmingly offensive weapon (at least in theory) extended to control of the air, with bombers undertaking offensive counter air missions. The reality of the situation was that Hitler had not had the courtesy to wait for technology to catch up with the aspirations of the Strategic Bomber theorists. Bomber Command aircraft did not have the range, bomb carrying capacity or bomb aiming technology to cope with the demands that it was to face. Nor were there sufficient airframes of any vintage to satisfy the multiplicity of targets that required the Command's attention. The resulting conflict of priorities was one that would tax the Service throughout the war.[24] Some bombers were sent to attack the industrial targets in Germany with oil as the priority. Others attacked Luftwaffe airfields and aircraft factories – even though finding the latter was far from easy. But Bomber Command's major contribution to the Battle of Britain was the prolonged series of attacks on German shipping and the barges in particular.



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THE FIGHTERS FOR FRANCE CORRESPONDENCE

Dowding's famous letter to the Under Secretary of State at the Air Ministry was dated 16 May 1940.[25] He requests 'as a matter of paramount urgency [that] the Air Ministry will consider and decide what level of strength is to be left to the Fighter Command for the Defence of this country, and will assure me that when this level has been reached, not one fighter will be sent across the Channel however urgent and insistent the appeals for help may be'. Dowding concludes with the warning that 'complete and irremediable defeat of this country' will be the result of draining away the Home Defence Force in vain attempts to bolster the situation in France. The letter does not, as is commonly supposed, attempt to block immediately the haemorrhaging of air defence fighters; rather he is formally reminding the Air Ministry that the ultimate responsibility for the redistribution of assets remains with them and their political masters. All commanders are responsible for protecting and husbanding their resources – the lengths to which they go obviously vary. Significantly, Dowding does not recommend the level below which his strength should not be taken.

It is therefore important to look, albeit briefly, at the follow-on staff action to Dowding's letter. Air Chief Marshal Sir Cyril Newall, Chief of the Air Staff, attached the letter to a Note[26] that he sent to his fellow Chiefs of Staff requesting their support in his approach to the War Cabinet. Newall addresses himself to the very examination question that Dowding had set. Newall points out that the pre-war estimate of the minimum number of squadrons required to defend the UK against the German bomber threat was 53. This had been based on the assumption that they were being flown from Germany and would therefore be unescorted. The reality was that Holland had already fallen and the assumption was that France would follow: the German

bombers would therefore be escorted and able to attack from bases from 'Norway to the Western Point in France'. Home defence strength had already been reduced to 37 squadrons. Newall goes on to advocate, very positively, that Britain had 'already reached the absolute limit of the assistance that we can afford to France'.

Dowding had therefore received full and unequivocal backing from his Command and Staff chain; the recommendation from Newall was endorsed by the Prime Minister that day in a note[27] to General Ismay (War Cabinet Secretary). The Air Council responded formally to Dowding on 23 May 1940. It is interesting also to note that in responding[28] to Churchill's request for various actions and information, Newall demonstrated considerable strategic awareness in correcting the Prime Minister's assertion that it would be better to shoot the Luftwaffe aircraft down over France. Newall pointed out that with radar (RDF) guidance, Fighter Command patrols were far more likely to make contact with the enemy than was possible over France where these advantages were available to the enemy. Furthermore, attrition would be less at home bases.

THE ANTI-DOWDING CONSPIRACY THEORY

'The only commander who won one of the few decisive battles in history and got sacked for his pains'.

Sir Arthur Harris.

Although Dowding enjoyed complete support over the fighters to France issue, his relationship with Newall and the Air Ministry was not always simple or straightforward. The debate has simmered over the years as to whether or not there was a deliberate conspiracy against Dowding. Conspiracy theories, particularly when they involve people such as the victor of the Battle of Britain, always make better copy.[29] But the random sequence of events theory may actually be more persuasive. Dowding was known as 'Stuffy' or 'Starched Shirt' by all who had worked with him. Nor were the nicknames particularly affectionate in their tone or usage. Dowding was nevertheless an eminently sensible choice to head Fighter Command on its formation in 1936. His work as Air Member for Research and Development had given him an intimate working knowledge of the RDF system and the development of the Spitfire and Hurricane.[30] Dowding was undoubtedly disappointed not have been made CAS in 1937,[31] not least because Newall was significantly junior to him.[32]

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In May 1939, Newall elected to replace Dowding with AVM Christopher Courtney. He was injured the next month in an air crash and by the time he was fit enough to take over Fighter Command, the war was underway and it was deemed inappropriate to replace Dowding.[33] The itch to replace him did not, however, disappear entirely and a lengthy interchange of correspondence followed with the issue only being resolved with Churchill's direction to Sir Archibald Sinclair (Secretary of State for Air) that Dowding must stay at the helm.[34] As the recognised Battle got underway in July 1940, Dowding had some security of tenure. As recently as March 1939, Trenchard had been expounding to the House of Lords[35] how only the fear of retaliation would deter the war-makers. His belief in the strategic bomber doctrine remained as tenacious as ever and Dowding's pursuit of a fighter solution cannot have endeared him to his erstwhile seniors.

A key element in the story, and for the conspiracy theorists in particular, was the differences of opinion over the operational tactics to be used. This increasingly public squabble between AVMs Keith Park (AOC 11 Gp) and Trafford Leigh-Mallory (AOC 12 Gp) was based on the latter's insistence that the 'big-wing' tactics, espoused by Squadron Leader Douglas Bader, should be applied in all situations. Park maintained that it took too long to gather the 'wing' together, by which time the bombers had turned for home. Leigh-Mallory suggested that this was immaterial as long as the Germans were shot down in large numbers. The dispute became increasingly acrimonious as 12 Group aircraft failed to

Much controversy remains over a meeting held in the Air Ministry on 17 October 1940 to discuss 'daylight tactics'

defend 11 Group stations because they were either still forming up, or, even worse, had gone in search of other prey in contravention of the Controllers' orders.[36] The nub of the matter is not which tactic was the more correct, but that Dowding should have sorted out his senior leaders. He claimed not to know about the dispute; but as Sir Maurice Dean points out 'Commanders-in-Chief have to know'.[37]

The impression that Fighter Command was 'drifting' was apparent in the Air Ministry. Air Vice-Marshal Sholto Douglas was Deputy Chief of the Air Staff at the time and was responsible for liaising with the operational commands. His sympathies lay with exponents of the Big Wing. Much controversy remains over a meeting held in the Air Ministry on 17 October 1940 to discuss 'daylight tactics'. In Newall's absence, Douglas chaired the meeting at which Portal (CAS designate), Slessor (then Director of Plans), Joubert, Stevenson (Director of Home Operations), Crowe, Dowding, Leigh-Mallory and Park were present; what was somewhat surprising was that Leigh-Mallory had taken Bader along with him.[38] Dowding appears to have been subdued at the meeting and Park's voice was heard in vain. News of the controversy reached Churchill, possibly through the kind offices of Flight Lieutenant Peter Macdonald MP who was Bader's adjutant on 242 Squadron. The demand for change at Fighter Command grew with Douglas eventually replacing Dowding in November 1940. Leigh-Mallory replaced Park the next month. Dowding was sent to America as part of a delegation seeking new aircraft. Park was sidelined into a training appointment.
That Douglas and Leigh-Mallory should benefit personally from Dowding's fall only adds to the conspiracy theory. Impetus is further added to this theory by the machinations of Marshals of the Royal Air Force Trenchard and Salmond who lobbied hard, and in concert, to have Dowding removed.[39]

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What is not normally covered in the conspiratorial accounts is the growing problem that Fighter Command was experiencing in dealing with the German night bombing offensive on the Home Counties. The Luftwaffe had

changed to night bombing to reduce the loss rates – Bomber Command had had to do the same. Radar development was sufficiently advanced to provide the Chain Home stations with the cover necessary for the Battle; but the technology had yet to be extended for airborne work. The Spitfires and Hurricanes were only suitable for day fighter operations; the Defiant was inadequate and the Blenheim too slow. The Beaufighter had yet to come into service because of technical teething troubles. Dowding was unable to bring about a significant improvement in night defence and this was probably the most critical factor in his removal, given the high degree of political visibility that the issue had attracted[40] – Churchill himself had become increasingly frustrated with the lack of a counter to the threat. That Douglas could do little but wait for the AI radar to improve and the development problems of the Beaufighter to be overcome was little solace for either Dowding or Park.

THE BATTLE

After conspiracy theories and high intrigue, the Battle of Britain itself is almost an anti-climax. There are nevertheless a number of aspects that are worthy of further discussion. The first of these goes back to the initial quotation from Churchill in praise of 'the few'. The actual number of crews and aircraft involved in the Battle is a complex algorithm as strengths varied throughout the conflict with deliveries and losses. Detailed figures are available in the Appendices to Wood and Dempster.[41] A snapshot taken in mid-August for example shows that the Luftwaffe had some 805 fighters, 998 bombers and 261 dive bombers (the Stuka was a sitting duck against the RAF fighters much to the chagrin of the Germans) serviceable against 749 RAF fighter aircraft available for operations. Fighter numbers had reached broad parity a month later. Notwithstanding Park's immortal words to Churchill that there were no remaining reserves, this was true within his own Group at that time; the lowest point reached of aircraft in reserve was in the week ending 13 September when 80 Hurricanes and 47 Spitfires were available in the

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storage units.[42] Trained aircrew were in short supply on both sides with experience levels falling markedly as the conflict wore on. It is also worth remembering that both sides started the Battle having suffered a number of losses; the RAF in the Battle of France and the Luftwaffe in the wider campaign. Murray makes the point that the Luftwaffe had been seriously weakened by this stage.[43]

No discussion on the role of the 'Few' is complete without acknowledgement of the rest of the team who were involved. On the greater scale of things, the very existence of the Royal Navy made the whole of Hitler's plan hazardous in the extreme. Although depleted, the army quickly reorganised themselves for what could have been a life and death struggle; in this they were ably supported by the Home Guard. The efforts of the civil defence forces were exemplary, particularly when the Battle turned on London. The technicians working for the Post Office kept the land line communications working that were vital to the Command network. The ground staffs, including the WAAF, supported the aircrew superbly throughout. Likewise the Civilian Repair Organisation did wonders in turning around wrecked aircraft and cannibalising the write-offs. Due tribute must also be paid to the scientists and engineers who designed and built the weapons of war without which the 'Few' would have stood little chance of success. In many ways, Churchill's speech on 18 June in which he referred to the 'their finest hour' summed up the collective contributions of a nation with its back against the wall.

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Most authors follow the four phases of the Battle originally used by Dowding and Park in their Dispatch and Reports respectively.[44] Wood and Dempster add a fifth phase to include October. The aim of the Luftwaffe was to destroy the Royal Air Force as a prelude to an invasion. Murray makes the valid point that this was to include the whole of the RAF, not just Fighter Command.[45] Their first phase was designed as a preliminary redeployment after the fall of France, the main assault coming in mid-August. Their one attempt to attack the flank of the UK from bases in Norway and Denmark was a disaster for the Luftwaffe and served to highlight the miscalculation that all of Dowding's assets would be in the South. The Luftwaffe then escalated their attacks, moving progressively inland to encompass production facilities and the Sector airfields. The switch from the Sector airfields to attacks on the capital was a deliberate move based on the assumption that Fighter Command would have to get airborne in strength to defend such a centre of gravity. This stands in contrast to the popularly held view that it was merely in retaliation for the efforts of Bomber Command. In a battle that had been designed to win air superiority, German strategic thinking was clearly flawed and it cost them dearly.

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At the more tactical level, Newall's comments in May 1940 over the desirability of fighting over England rather than France proved decisive against the Luftwaffe fighters who found themselves operating on the extremes of range with a very cold channel crossing awaiting their return. Dowding's system of Groups and Sectors also proved decisive in minimising the effects of a war of attrition.

Many battles end inconclusively. There can, however, be no doubt that not only did the Luftwaffe lose the Battle of Britain, the Royal Air Force, with the full support of the whole nation, emphatically won the contest. It is not therefore surprising that it has been placed on the same scale as Trafalgar and Waterloo. That much of the supporting rhetoric was born in the darkest hours of what was even then evidently going to be a long struggle is barely relevant. Victory in such circumstances is bound to attract historical analysis, revision and, unfortunately, sensationalism. There is always a risk in this process that the blandest, or the most spectacular, account will be the one that is best remembered depending upon the standpoint of the observer. The real story may become obscured and important debates left dormant. This article has sought to re-stimulate debate in the Battle of Britain and to encourage readers to re-examine all of the accounts – not just the most recent or most accessible.

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NOTES

1 Speech to the House of Commons on 20 August 1940.

2 Alfred Price, *The Hardest Day: The Battle of Britain, 18 August 1940*, Cassell, London 1998, (originally published by Jane's in 1979, page 31.

3 *Battle of Britain*, produced by Harry Salzman, Metro-Goldwyn-Mayer, 1969.

4 See for example, Len Deighton, *Fighter: The True Story of the Battle of Britain*, Pimlico edn. 1996.

5 For example, Tim Clayton and Phil Craig, *Finest Hour, The Book of the BBC TV Series*, Hodder and Stoughton, London, 1999.

6 See for example, John Ray, *The Battle of Britain New Perspectives: Behind the Scenes of the Great Air War*, Brockhampton Press, London, 1999. This account was based a doctoral thesis and contains much analysis of primary source material.

7 AHB Narratives, *The Air Defence of Great Britain: Volume I, The Growth of Fighter Command July 1936 - June 1940 and Volume II The Battle of Britain, July - October 1940.* These are due to be published in September 2000. The author is grateful to Mr Seb Cox, the Head of AHB, for access to the papers as well as comment on this and other work.

8 Stanley Baldwin, House of Commons, 10 November 1932. 270 Parliamentary Debates (House of Commons), Official report 5th Series, c632. Baldwin went on to add: 'The only defence is offence, which means that you have to kill more women and children more quickly than the enemy,'.

9 A. J. P. Taylor in the Introduction to Deighton, ibid, page xv. See also Malcolm Smith, *British Air Strategy Between the Wars*, Clarendon Press, Oxford, page 175.

10 Taylor, ibid, page xvi.

11 Taylor, ibid, page xvii

12 This letter is framed and displayed in the Joint Services Command and Staff College at Bracknell (formerly the Royal Air Force Staff College). Copies of this, and other correspondence, can be found in the AHB Narratives, ibid.

13 This led, inevitably, to dissatisfaction when campaign medals were not awarded to those of the few whose efforts had fallen outside of these dates.

14 For a detailed description of the 'Blitz' see John Ray, *The Night Blitz 1939-1941*, Arms and Armour Press, London, 1996.

15 For a provocative discussion on this area, see the Introduction to Ray, ibid, pages 7-10.

16 Cited by Neil Young, 'British Home Air Defence Planning in the 1920s', *Journal of Strategic Studies*, December 1998, page 494. The original discussion was taken from the papers of the Committee of Imperial Defence; CAB2/3, 145th Meeting, 14 Oct 1921. See also John Ferris, 'The Theory of a 'French Air Menace', Anglo-French Relations and the British Home Defence Air Programmes of 1921-25', *Journal of Strategic Studies*, 10 (1987), pages 63-83.

17 Created in 1923 under Air Commodore J M Steel and Colonel W B Bartholomew. See Derek Wood and Derek Dempster, *The Narrow Margin: The Battle of Britain and the Rise of Air Power 1930-40*, Hutchinson, London, 1961, page 69.

18 Derek Wood, 'The Dowding System', in Air Commodore Henry Probert and Sebastian Cox (eds), *The Battle Re-Thought*, RAF Historical Society Symposium papers, 25 June 1990, page 3.

19 Air Commodore Henry Probert in *High Commanders of the Royal Air Force*, Air Historical Branch, HMSO, gives Ellington the benefit of the doubt stating that 'if a man is to be judged by his achievements Ellington's place in RAF history is safe'; page 12. Probert goes on to allow that Ellington and some of his staff were sceptical about the practicalities of air defence, but still preside over important changes in the Service inventory, *ibid*, page 14.

20 John Terraine, *To the Right of the Line, The Royal Air Force in the European War 1939-1945*, Hodder and Stoughton, London, page 15.

21 Probert, *ibid*, page 109.
22 See Probert's comments on Newall in Air Commodore Henry Probert, *High Commanders of the Royal Air Force*, HMSO, London, page 16.
23 See Colin Synnott, *RAF Operational Requirements 1923-1939*, unpublished PhD thesis, University of London, June 1998.
24 Martin Middlebrook and Chris Everitt, *The Bomber Command War Diaries; An operational reference book 1939-1945*, Midland Publishing, Leicester, 1996 (first published by Viking in 1985), page 56. The subsequent pages detail the raids carried out by the Command.
25 Republished as Appendix 11 to the AHB Narrative, ibid. Note that the opening speech in the film has the addressee wrong and is considerably abbreviated.
26 Reproduced as Appendix 12 to AHB Narrative, ibid.
27 Reproduced as Appendix 13 to AHB Narrative, ibid.
28 Reproduced as Appendix 14 to AHB Narrative, ibid.
29 See Deighton, ibid, pages 271-273 and V Orange, *Sir Keith Park,* London, 1957, page 121.
30 Group Captain E B Haslam, 'How Dowding came to leave Fighter Command', *Journal of Strategic Studies*, 4, 2, 1981, page 176.
31 Ray, ibid, page 12.
32 Newall was three years younger: Probert ibid, page 15.
33 Haslam, ibid, page 178.
34 Ray, ibid, Chapter 1 covers this in detail.
35 Full reference cited in Ray, ibid, based on the text on page 21.
36 This debate has been covered in detail. See Ray, ibid, Chapters 4 & 5; Bill Newton Dunn, *Big Wing: The biography of Air Chief Marshal Sir Trafford Leigh-Mallory*, Airlife, Shrewsbury, Chapter 8; Probert and Cox, ibid, pages 59-63; and Sir Maurice Dean, *The Royal Air Force and Two World Wars*, Cassell, London, page 144.
37 Dean, ibid, page 144.
38 Ray, ibid, Chapter 7 for the full details.
39 Ray, ibid, page 139 and Haslam, ibid 183.
40 Haslam, ibid page 182.
41 Wood and Dempster, *The Narrow Margin*, ibid. pages 419 et seq.
42 Wood and Dempster, ibid, page 201.
43 Williamson Murray, *The Luftwaffe 1933-1945: Strategy for Defeat*, Brassey's London, page 39-40 and table III.
44 Dowding's is in AIR 20/5202 and Park's in 2/7281.
45 Murray, ibid, page 45.

An RAF Hawk T.MK1A. The aircraft can be equipped with wing-tip AIM-9L Sidewinder air-to-air missiles and a cannon pod beneath the fuselage.