

4

— AIR BATTLE —

THE BATTLE OF BRITAIN

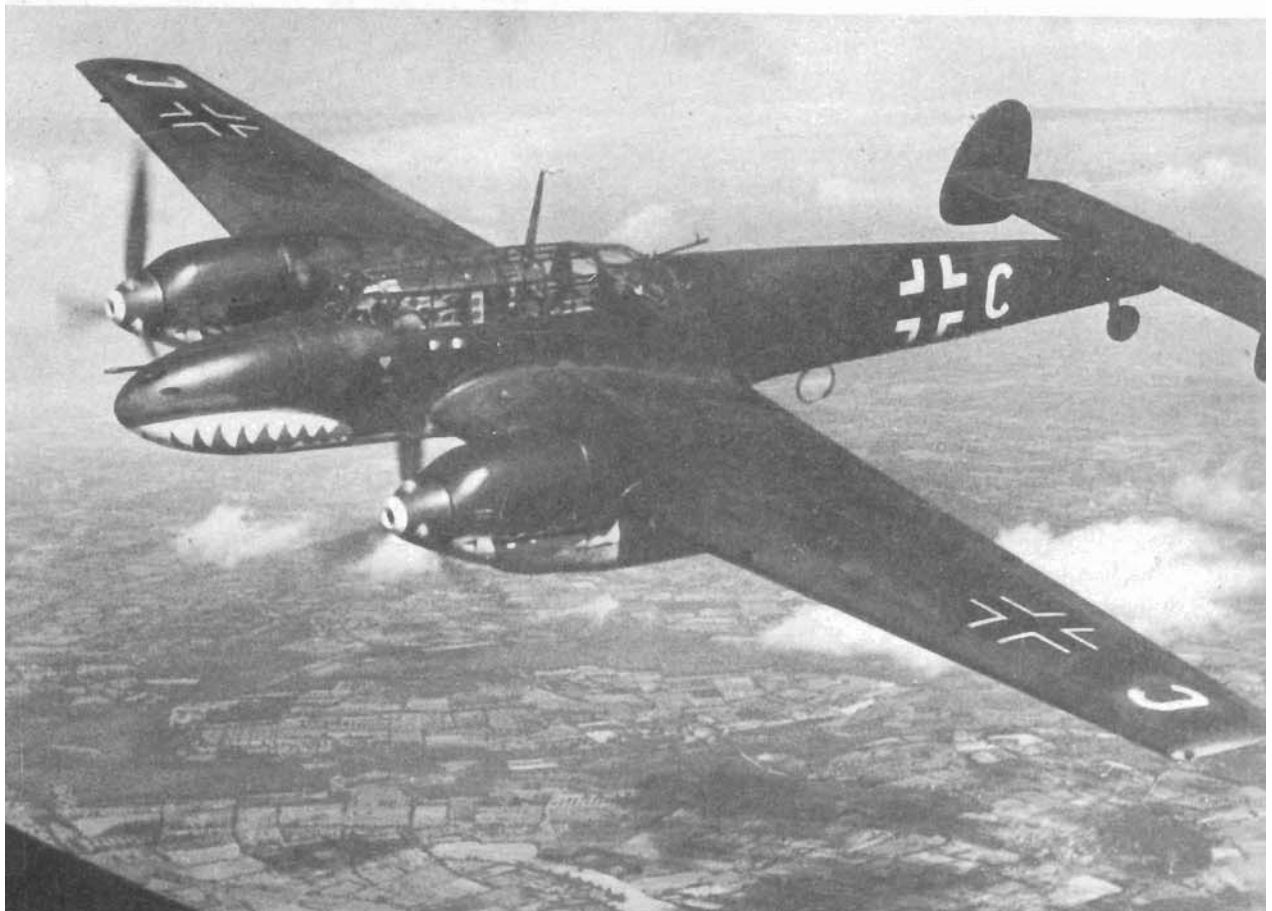
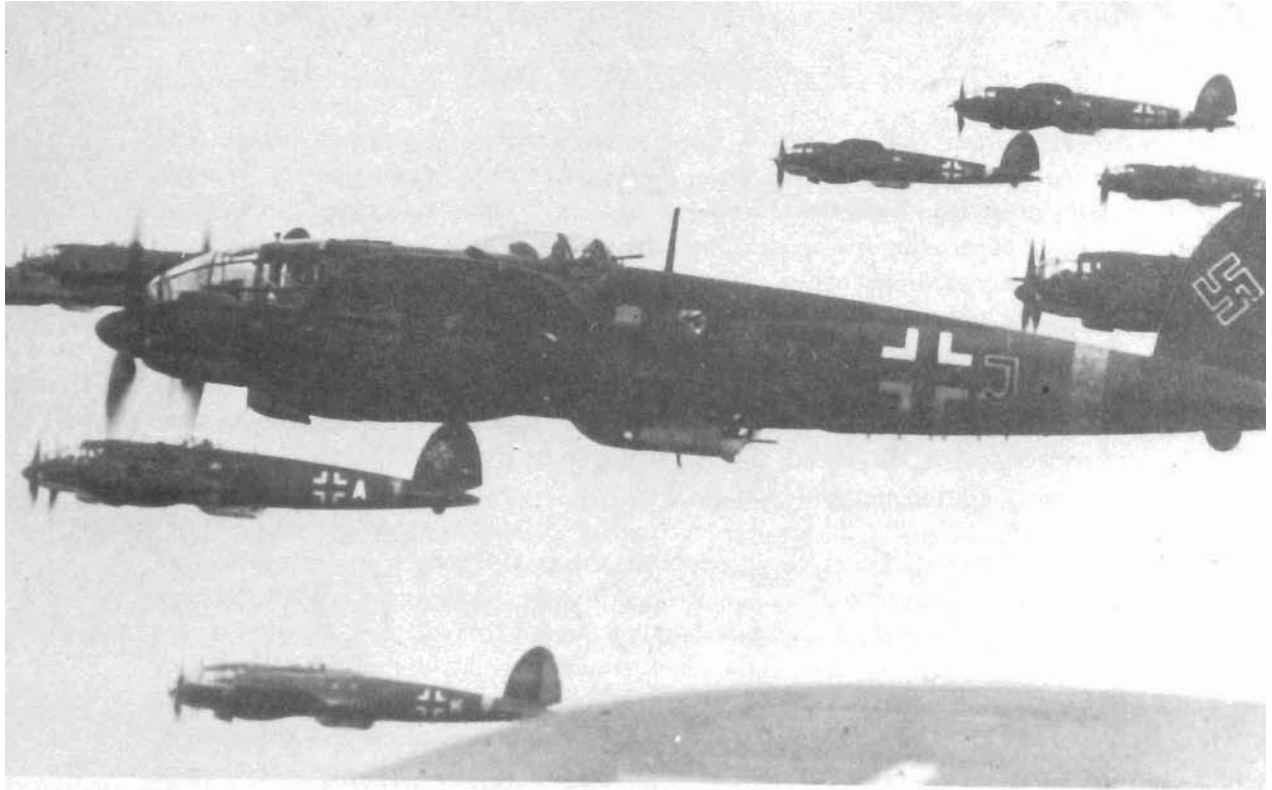
The Battle of France, though sensational by reason of its brevity and decisiveness, had been an otherwise conventional military operation. In their support of the German armoured spearheads, aircraft had played a major part in bringing victory; but neither they nor indeed the tanks they had overflown had wrought the Allied defeat. That defeat was the outcome of defects in strategy, military structure and readiness for war, psychological as well as material, which were buried deep in the Western democracies' reaction to the agony they had undergone in the First World War.

The Battle of Britain, by contrast, was to be a truly revolutionary conflict. For the first time since man had taken to the skies, aircraft were to be used as the instrument of a campaign designed to break the enemy's will and capacity to resist without the intervention or support of armies and navies. This development had long been foreseen. Aircraft had been used as weapon platforms – by the Italians in Libya in 1911 – almost as soon as they had become viable as vehicles. For much of the First World War they had served as auxiliaries to the ground and sea forces, but from 1915 onwards airships had been used intermittently as bomb-carriers against Britain by the Germans and, later, bombing aircraft were used by both Germany and Britain against each other's cities. By the 1930s bombers, drawing on the technology of the increasingly dependable and long-range civil airliner, had become instruments of strategic outreach; it was that development that in 1932 drew from Stanley Baldwin, then a member of the coalition government, the incautious (and inaccurate) forecast that 'the bomber will always get through'. The terror inflicted by German and Italian bombers on the Republican population of Spain in 1936–8 seemed to endorse his warning. As the air historian Dr Richard Overy writes:

By 1939 it was widely believed that the air weapon was coming of age. The experience of the First World War ... persuaded many, politicians and generals among them, that the next war would be an air war. This was founded partly on the uncritical expectation that Science was now harnessed sufficiently closely to military life to produce a stream of new weapons; of secret devices from the air whose nature could only be guessed at. It was founded too on the more critical scrutiny of what aircraft had actually done in the First World War. In reconnaissance work, in the support of troops on the ground, in co-operation with the navy on the first clumsy aircraft carriers and primarily in the carrying out of bombing campaigns independent of surface forces, the aircraft threatened to dwarf the contribution of the other services or even to supplant it altogether.

The belief that air forces might supplant armies and navies as war-winning instruments of power took root earliest and deepest in three countries with widely disparate strategic needs: the United States, Britain and Italy. In the United States, isolationist after 1918 and vulnerable only to transoceanic attack, it was the ability of the aircraft to destroy battle fleets which commanded attention. Successful experiments in the aerial bombing of captured German battleships prompted the foremost American exponent of independent airpower, General William Mitchell, to agitate for the creation of an independent air force, with such insubordinate vigour that he was obliged in 1925 to defend his stand at court martial. Britain, committed to the defence of both the Empire and the home base, and experienced in 'strategic' bombing against Germany at the end of the First World War, had created an autonomous air force in 1918 which thereafter formulated its own empirical concept of broad deterrence of attack by independent air operations. Curiously it was in Italy that a comprehensive theory of air strategy emerged in its most developed form. Giulio Douhet, universally recognised as the Mahan (if not the Clausewitz) of airpower, seems to have arrived at his vision of 'victory through airpower' by a recognition of the futility of First World War artillery tactics. In his book *Command of the Air* (1921) he argued that, rather than bombarding the periphery of enemy territory with high explosive, where it could destroy only such war material as an adversary deployed there, the logic of the air age required that it be flown to the centres of enemy war production and targeted against the factories, and workmen, that made the guns. Douhet's perception was conditioned by Italy's experience of the First World War, which it had fought on narrow fronts dominated by artillery that was supplied from factories located chiefly in modern Czechoslovakia, at no great distance from its own airfields.

Douhet's theory extended to a belief that the bomber would prove immune to defensive counter-measures, whether mounted by fighters or guns, and that a bomber offensive would achieve its effect so quickly that the outcome of a future war would be decided before the mobilisation of the combatants' armies and navies was complete. In that respect, he was a true visionary, since he foresaw the logic of the nuclear 'first strike'.



However, he insisted that the long-range bomber, carrying free-fall high explosive, could deliver the disabling blow – and there few would follow him. The United States Army Air Force, when it entered the Second World War *en masse* in 1942, believed that its advanced Flying Fortress bombers, built to embody the Douhet ideal, were instruments of 'victory through airpower'; the unlearning of that misconception in its deep-penetration raids of 1943 was to be painful. The Royal Air Force, whose commitment to strategic bombing was pragmatic rather than doctrinaire, expected less of its early offensive against Germany (and achieved even less than it expected). The Luftwaffe of 1939–40 did not espouse any strategic bombing theory at all; in 1933 it had examined Germany's capacity to build and operate a long-range bomber fleet and concluded that the effort required exceeded its industrial capacity even in the medium term. Its chiefs, most of whom were ex-army officers, therefore devoted themselves to building the Luftwaffe into a ground-support arm, and this was still its role at the end of the Battle of France, despite the reputation it had won as an instrument of mass destruction in the attacks on Warsaw and Rotterdam.

When on 16 July 1940, therefore, Hitler issued his next Führer Directive (No. 16) on 'Preparations for a landing operation against England', the Luftwaffe's professional chiefs were perturbed by the scope of the tasks allotted to them: to 'prevent all air attacks', engage 'approaching naval vessels' and 'destroy coastal defences ... break the initial resistance of the enemy land forces and annihilate reserves behind the front.' Here was a demand for nothing less than the achievement of the preconditions of victory before the army and navy had been committed. Hermann Goering, Air Minister and chief of the Luftwaffe, who at heart was still the fighter ace he had made himself in the First World War, made light of the difficulties. On 1 August, when the preliminaries of the Battle of Britain were already in progress, he predicted to his generals: 'The Führer has ordered me to crush Britain with my Luftwaffe. By means of hard blows I plan to have this enemy, who has already suffered a crushing moral defeat, down on his knees in the nearest future, so that an occupation of the island by our troops can proceed without any risk!' To Milch, Kesselring and Sperrle, professional commanders respectively of the Luftwaffe itself and the two air fleets (2 and 3) committed to support Operation Sealion (as the plan for the invasion of Britain was codenamed), the difficulties and risks of the air offensive Goering had so lightly agreed to undertake loomed larger than he had given any hint of perceiving.

First among the difficulties was the improvised nature of the Luftwaffe's operational base. Air Fleets 2 and 3, hastily redeployed to the coasts of Belgium, northern France and Normandy in the weeks after the French armistice, were making use of captured enemy airfields; every local facility – of supply, repair, signals – had to be adjusted to their needs. The Royal Air Force, by contrast, was operating from home bases it had occupied for

Above: He111 medium bombers crossing the Channel from France during the Battle of Britain. **Below:** A Messerschmitt 110 of the Destroyer Group ZG76 in 1940. The Me110 was a failure as a bomber escort but later proved a superb night-fighter.

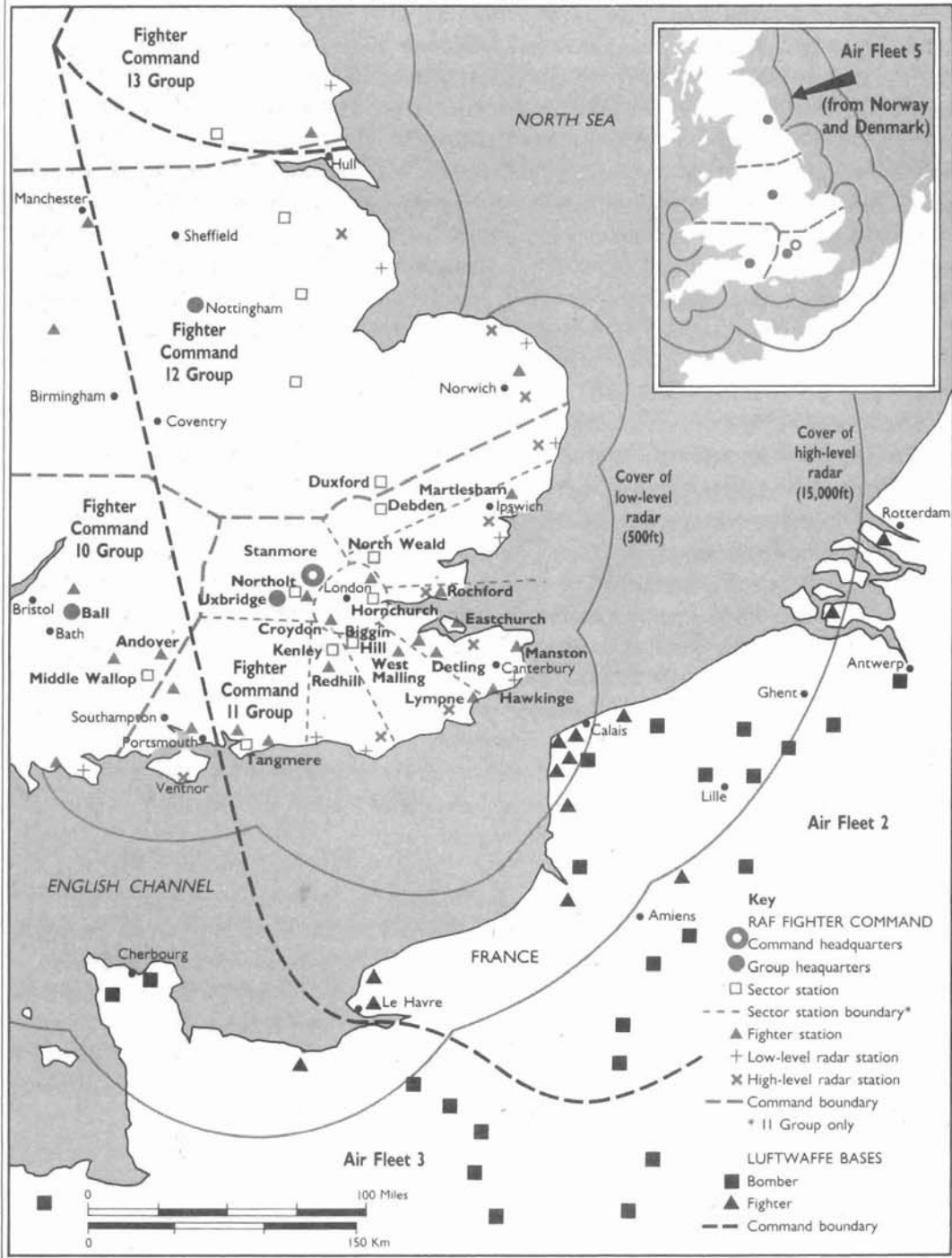
decades. Another advantage RAF's Fighter Command enjoyed was that of defending its own territory. While the Luftwaffe at the very least would have twenty and more generally fifty or a hundred miles to fly before coming to grips with its enemy, Fighter Command could engage as soon as its aircraft reached operational height. That conserved not only fuel – crucial when a Messerschmitt 109's operational range was a mere 125 miles – but also ensured that the pilots of damaged aircraft could bale out over friendly soil or, on occasion, bring them to earth. The Luftwaffe's parachuting pilots or crashlanded aircraft would, by contrast, be lost for good; many German pilots, parachuting into the Channel, would be doomed to drown.

Fighter Command, besides operating close to its own bases, had the use of a highly trained and integrated control and warning system. Its four groups, 13 (Northern), 12 (Midlands), 11 (South-Eastern), and 10 (South-Western), were under the control of a central headquarters located at Uxbridge, west of London, by which the hardest-pressed groups (usually No. 11 Group protecting London and nearest northern France) could be reinforced from those temporarily unengaged. Fighter Command headquarters, moreover, could draw on information from a wide variety of sources – the ground Observer Corps and its own pilots – to 'scramble' and 'vector' (direct) squadrons against a developing threat; but it depended most of all on the 'Chain Home' line of fifty radar warning stations with which the Air Ministry had lined the coast from the Orkneys to Land's End since 1937. Radar worked by transmitting a radio beam and measuring the delay and direction of the pulse reflected from the approaching target aircraft – a sequence which established distance, bearing, height and speed. It was a British invention, credit for which belongs to Robert Watson-Watt of the National Physical Laboratory. By 1940 the Germans had also produced radar devices of their own, but their Würzburg and Freya stations were few in number, inferior to their British counterparts and no help to the Luftwaffe in conducting offensive operations. Radar conferred on Fighter Command a most critical advantage.

Fighter Command enjoyed one more advantage over the Luftwaffe: higher output of fighter aircraft from the factories. In the summer of 1940 Vickers and Hawker were producing 500 Spitfires and Hurricanes each month, while Messerschmitt was producing only 140 Me 109s and 90 Me 110s. The Germans had a larger force of trained pilots on which to call, with an overall military figure of 10,000 in 1939, while Fighter Command could add only 50 each week to its complement of 1450. This was to confront the RAF, at the height of the battle, with the paradoxical crisis of a lack of pilots to man aircraft; but at no stage of the coming battle was it to lack aircraft themselves. Indeed, despite Churchill's magnificent rhetoric, Fighter Command fought the Battle of Britain on something like equal terms. It would manage throughout to keep 600 Spitfires and Hurricanes serviceable daily; the Luft-

The location of the Air Commands of the Royal Air Force (in the south-east) and the Luftwaffe in the summer of 1940.

THE BATTLE OF BRITAIN



waffe would never succeed in concentrating more than 800 Messerschmitt 109s against them. These fighters, evenly matched in speed (about 350 mph) and firepower, were the cardinal weapons of the battle by which victory was to be decided.

Nevertheless the Luftwaffe might have established the air superiority by which its powerful force of bombers – 1000 Dornier 17s, Heinkel 111s and Junkers 88s and 300 Junkers 87s – could have devastated Britain's defences, had it operated from the outset to the same sort of coldly logical plan by which the German army had attacked France in 1940. On the contrary, it had no considered strategy, no equivalent of 'Sickle Stroke', and fought Fighter Command instead by a series of improvisations, all posited on Goering's arrogant belief that Britain could be brought 'down on its knees' by any simulacrum of a 'hard blow' that he directed against it.

— Aerial stalemate —

The Battle of Britain, historians would agree in retrospect, was to fall into five phases of German improvisation: first the 'Channel Battle' (*Kanalkampf*) from 10 July to early August; then 'Operation Eagle', beginning on 'Eagle Day' (*Adlertag*), 13 August, the 'classic' phase of aerial combat between the Luftwaffe and the Royal Air Force, which lasted until 18 August; next the Luftwaffe's switch of offensive effort against Fighter Command's airfields from 24 August to 6 September; then the Battle of London, from 7 to 30 September, when the Luftwaffe's fighters escorted its bombers in daily, daylight and increasingly costly raids against the British capital, and finally a series of minor raids until the Battle's 'official' end on 30 October. Thereafter the badly mauled German bomber squadrons were switched to destructive but strategically ineffective night operations, a phase that Londoners would come to call 'the Blitz', in a homely adaptation of the term coined by the world's press to denote Hitler's overwhelming ground offensives against Poland and France.

The *Kanalkampf*, which opened on 10 July, began with German bomber raids, in a strength of twenty to thirty aircraft, against English south coast towns – Plymouth, Weymouth, Falmouth, Portsmouth and Dover – and on convoys when intercepted. Later it was extended to the mouth of the Thames. Some material damage was inflicted and about 40,000 tons of shipping sunk; but the Royal Navy, which had to be beaten if the fleet of tugs and barges Hitler was having assembled in the Dutch and Belgian estuaries for the Channel crossing was to be passed safely across the Narrows, remained untouched. During the period 10–31 July about 180 German aircraft were shot down, for the loss of 70 British fighters; a hundred of the German aircraft destroyed were bombers, so the 'exchange rate' in fighters, on which decision in the Battle of Britain would turn, stood even.

Hitler was becoming impatient with the aerial stalemate. He had persuaded himself that the British were already beaten, if only they would recognise it, shrank from unleashing the invasion – because of both its risks and his own hope that they would shortly concede defeat – but was now determined that, since no other means were

available, the Luftwaffe must force Britain to accept the necessity of treating with Germany. He still insisted to his generals that he had no desire to humiliate Britain (as he had France), let alone to destroy her (as he had Poland). He clung to the illusion that his new European empire and Britain's old empire of the oceans might not merely coexist but even co-operate, to each other's advantage. 'After making one proposal after another to the British on the reorganisation of Europe', he told Vidkun Quisling, his Norwegian puppet, on 18 August, 'I now find myself forced against my will to fight this war against Britain. I find myself in the same position as Martin Luther, who had just as little desire to fight Rome but was left with no alternative.'

On 1 August he issued Führer Directive No. 17, ordering the Luftwaffe to 'overpower the English air force with all the forces at its command in the shortest possible time'. The objectives were to be 'flying units, their ground installations and their supply organisations, but also ... the aircraft industry including that manufacturing anti-aircraft equipment'. On the same day Goering assembled his subordinates at The Hague to harangue them on the outcome he expected from Adler (Operation Eagle). Theo Osterkamp, a Great War ace already made cautious by his experience in the Channel Battle, expressed reservations: 'I explained to him that during the time when I alone was in combat over England with my Wing I counted ... about 500 to 700 British fighters ... concentrated in the area around London. Their numbers had increased considerably [since] the beginning of the battle. All new units were equipped with Spitfires, which I considered of a quality equal to our own fighters.' Goering was angry and dismissive. He claimed that the British were cowardly, that their numbers were much depleted and that the Luftwaffe's superiority in bombers made the British defences of no consequence. *Adlertag* (Eagle Day) was shortly afterwards fixed for 7 August.

In fact Operation Eagle, beset by bad weather, stuttered into life on 8 August; eventually 13 August was declared Eagle Day. By then, however, the Luftwaffe had already experienced setbacks, largely through spreading its effort too wide. On 12 August, a typical day of the operation, it attacked RAF airfields, Portsmouth harbour, shipping in the Thames and – inexplicably for the only time throughout the Battle of Britain – the 'Chain Home' radars. It lost 31 aircraft, the RAF 22. On Eagle Day itself it also attacked, in darkness, a Spitfire factory near Birmingham, losing 45 aircraft to the RAF's 13 (from which six pilots, the key element in Britain's air defences, were saved). On 15 August it lost 75, the RAF 34. Throughout the week it persuaded itself that the 'exchange ratio' was in its favour (in fairness it must be said that the RAF grossly exaggerated its estimate of German aircraft destroyed). On 14 August the Luftwaffe reported to Halder: 'Ratio of fighter losses 1:5 in our favour. ... We have no difficulty in making good our losses. British will probably not be able to replace theirs.'

German losses, particularly in dive-bombers, were running so high, however, that on 15 August Goering was already beginning to institute a change of plan, and of commanders. Doubters like Osterkamp were promoted out of front-line responsibility,

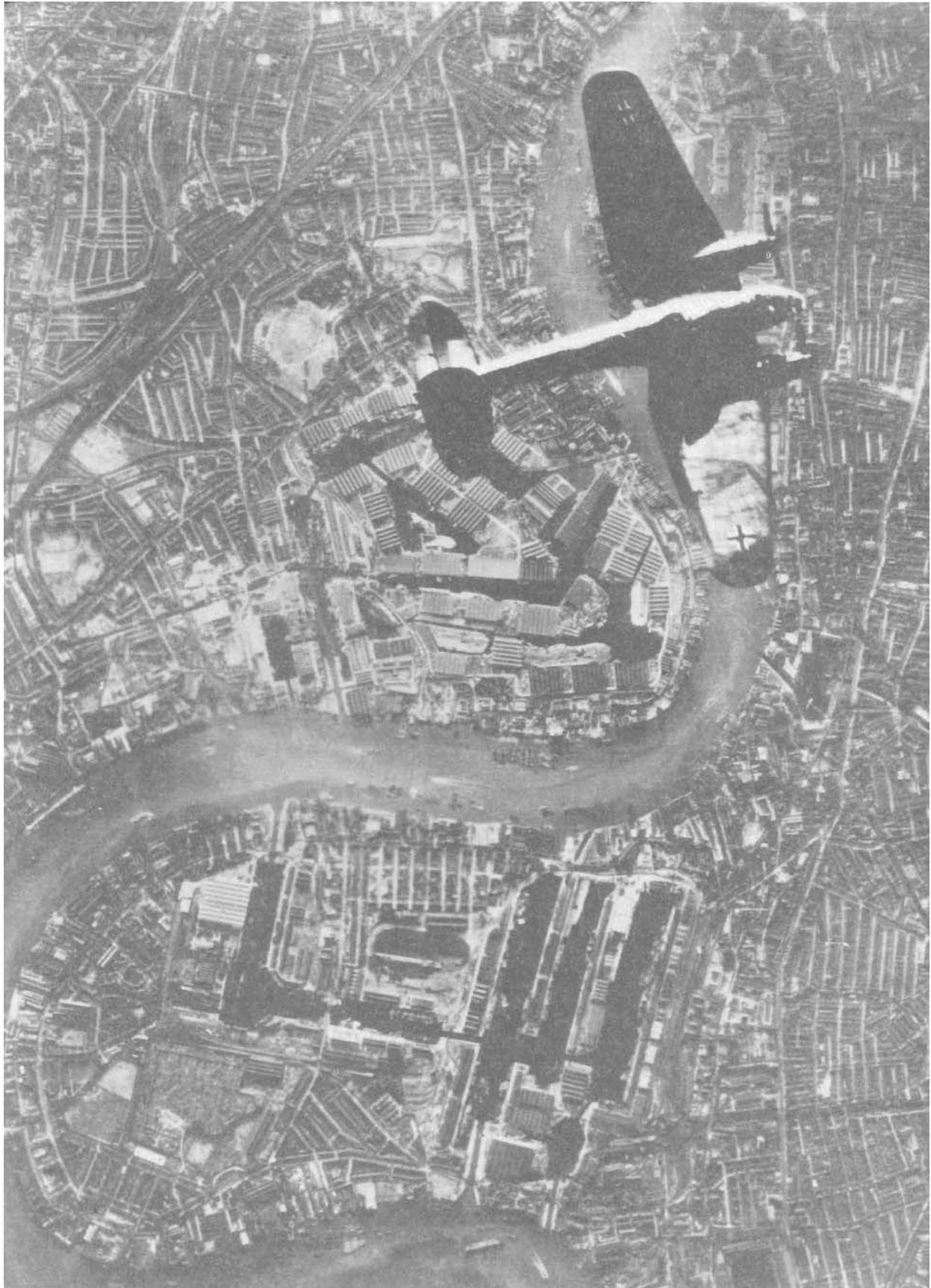
and aggressive young leaders (like Adolf Galland, who would shortly be decorated with the Knight's Cross by Hitler – reluctantly, since he 'looked Jewish') were promoted into their place. Goering outlined to them the objectives of the third stage in the Battle of Britain: the RAF fighter airfields. Bad weather averted the inception of this effort, the first genuine concentration of force that OKL (the Luftwaffe high command) had ordered since the battle was undertaken. Not until 24 August did the RAF feel its effect, but then with alarm. Manston, the most forward of its fighter stations, was put out of action by a determined strike, and North Weald, in the north-east London suburbs, was badly damaged. At Manston the ground staff were demoralised, taking to the air-raid shelters and refusing to emerge. The Luftwaffe flew 1000 sorties that day and destroyed 22 RAF fighters for the loss of 38 of its own aircraft. There was worse to come: on 30 August and 4 September serious damage was inflicted on aircraft factories, while Biggin Hill, a main fighter station covering London, was attacked six times in three days, the operations room destroyed and seventy ground staff killed or wounded. Between 24 August and 6 September Fighter Command lost 290 aircraft in constant defensive engagements; the Luftwaffe lost 380 aircraft, but only half of those were fighters.

— The crunch —

The Luftwaffe had begun to win the battle – but not fast enough for Hitler's and Goering's patience. The autumnal gales threatened. If the invasion barges were to be got across the Channel Narrows in 1940 Britain's resistance would have to be broken in the next few weeks: Fighter Command would have to be beaten in the air so that the Royal Navy could be bombed out of the Channel. On 31 August OKL decided that on 7 September the *Schwerpunkt* (focus of attack) would be shifted from the airfields to London. Thitherto it had been spared; as an OKW order of 24 August stated: 'Attacks against the London area and terror attacks are reserved for the Führer's decision.' He had withheld it because he had still hoped to bring Churchill to the conference table – and also to avert retaliation against German cities. Now he was driven to the calculation that only by an attack on London would 'the English fighters leave their dens and be forced to give us open battle', as the ace Adolf Galland put it.

Thus the Battle of Britain reached its climax: the assault by dense formations of Heinkel, Dornier and Junkers bombers protected by phalanxes of Messerschmitt 109s and 110s, against (Galland's description) 'the seven-million-people city on the Thames . . . brain and nerve centre of the British High Command'. It was an assault that had to brave a ring of 1500 barrage balloons, 2000 heavy and light anti-aircraft guns and the constantly maintained

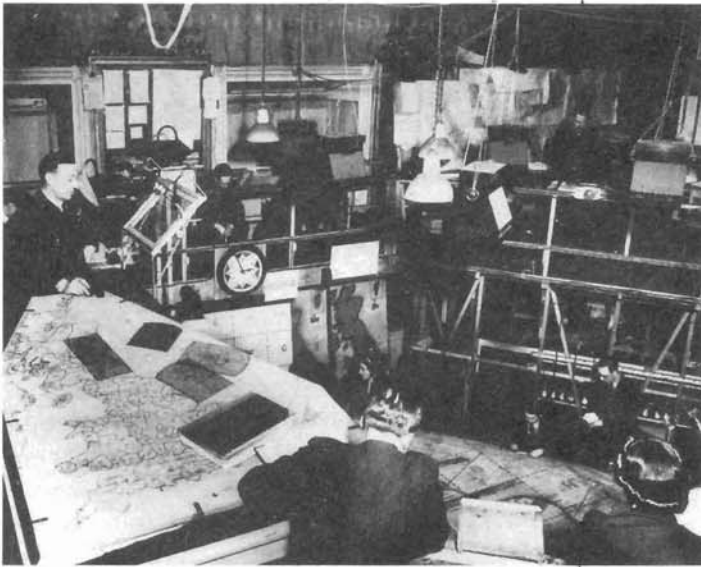
An He111 over the London docks, September 1940. The He111's success against second-rate opposition during the Spanish Civil War encouraged the Luftwaffe to underestimate the threat posed by the RAF's eight-gun fighters.



RAF FIGHTER COMMAND

Right: Supermarine Spitfires of No.610 Squadron, which ended the Battle of Britain with 71 confirmed kills. **Far right, top:** A Hawker Hurricane of No.71 'Eagle' Squadron, photographed in 1941. **Far right, centre:** An RAF armourer prepares a Spitfire for another mission; each fighter had a ground crew of three – a rigger, fitter and armourer. **Far right, bottom:** The Filter Room at Fighter Command HQ at Bentley Priory. Plots from The Royal Observer Corps and the 'Chain Home' stations were passed to Bentley Priory and transferred to the Filter Table. The Filter Officer and his staff became expert at estimating the mean of different radar plots. Filtered plots were then relayed to the gridded plotting tables at Command, Group and Sector. **Below:** Architect of victory, Air Chief Marshal Sir Hugh Dowding, AOC-in-C Fighter Command, 1936-40. His support for the development of radar in the late 1930s, and his careful husbanding of scant resources during the Battle of France, when he was under great pressure to commit vital squadrons to a lost cause, ensured that Fighter Command enjoyed the narrowest of margins over the enemy in the summer of 1940.







The human face of the Blitz. A Heavy Rescue Squad gently pulls a survivor from the rubble in November 1940. Some 40,000 civilians were killed in the Blitz.

ranks of 'the Few', 750 Spitfires and Hurricanes. For ten days in mid-September, days of blue sky and brilliant sun remembered by all witnesses, the skies of south-eastern England were filled each morning by German raiders in hundreds proceeding towards London to be intercepted by British fighters rising to meet them and to disperse, sometimes to reform, sometimes not, as the battle engulfed them. Desmond Flower, a young conscript of the Middlesex Regiment, recalls the spectacle:

Sunday in Sevenoaks was the same as Sunday throughout Kent, Surrey, Sussex and

Essex. The hot summer air throbbed with the steady beat of the engines of bombers which one could not see in the dazzling blue. Then the RAF would arrive; the monotonous drone would be broken by the snarl of a fighter turning at speed, and the vapour trails would start to form in huge circles. I lay on my back in the rose garden and watched the trails forming; as they broadened and dispersed a fresh set would be superimposed upon them. Then, no bigger than a pin's head, a white parachute would open and come down, growing slowly larger; I counted eight in the air at one time.

Some of the parachutes may have been British, for on 9, 11 and 14 September Fighter Command lost heavily in repelling the German formations. However, its success in sparing London damage – it was not true, as the German military attaché was reporting from Washington, that 'the effect in the heart of London resembles an earthquake' – now prompted the Luftwaffe to maximise its effort. On 15 September the largest bomber force yet dispatched, 200 aircraft with a heavy fighter escort, approached London. Fighter Command had early warning: its forward airfields had been repaired since the opening of the assault on the capital, and Air Chief Marshal Sir Hugh Dowding, commander-in-chief of Fighter Command, gave permission for the Midlands Group, No. 12, to lend its squadrons to the defence. Visiting No. 11 Group's headquarters at Uxbridge that morning, Churchill asked Air Vice-Marshal Keith Park, the group commander, 'What other reserves have we?', and got the answer he had heard from Gamelin in Paris three months before: 'There are none.' But Dowding's plunge was a considered decision, not a miscalculation. It measured means against ends with discrimination, and the decision was justified by results. Some 250 Spitfires and Hurricanes intercepted the German bombers well east of London and by the end of the day when a second wave had been met and turned back, had shot down nearly sixty. It was the Luftwaffe's most spectacular defeat in the battle (though not the costliest) and decisive in its deterrent effect. Hopes that Britain's resistance could be broken while the invading season held collapsed: on 17 September Hitler announced the postponement of Operation Sealion until further notice.

Postponement of Sealion did not evoke a termination of Eagle. For one thing, Goering had always regarded the two operations as quite separate and clung to the hope that this personal offensive against Britain could achieve a strategic result independent of the efforts of the army and navy. For another, Hitler wished to sustain the pressure on Churchill's government, which he had persuaded himself must perceive the inevitability of an accommodation as clearly he did himself. Daylight attacks on London and other targets were therefore maintained throughout September and on some days inflicted heavy damage; on 26 September, for example, a surprise raid on the Spitfire factory in Southampton stopped production for some time. The equation of aerial effort, however, was speaking for itself. As Galland explained to a resistant Goering at the Reichsmarschall's hunting

lodge, whither Galland had been bidden to shoot a stag in reward for his fortieth victory, on 27 September, 'British plane wastage was far lower and production far higher than the German intelligence staff estimated and now events were exposing the error so plainly that it had to be acknowledged.'

Acknowledgement was conceded slowly: daylight raids continued, at mounting cost, into October; but night raids – inaccurate though they were, besides inviting both retaliation and the accusation of 'terror tactics' which Hitler eschewed – began to become the norm. During October six times the tonnage of bombs was dropped by night as by day; and after November, in 'the Blitz' proper, night bombing supplanted daylight operations altogether. By then the Battle of Britain could be said to be over. It had been a heroic episode. 'The Few' deserved their epitaph: some 2500 young pilots had alone been responsible for preserving Britain from invasion. The majority were citizens; but significant numbers were Canadians, Australians, New Zealanders and South Africans (including the icy 'Sailor' Malan, who tried to send German bomber pilots home with a dead crew, as a warning to the rest). A few were aliens, Irishmen and Americans, impatient at their countries' neutrality, and a vital minority were refugees, Czechs and Poles; the latter, who formed 5 per cent of 'the Few', were responsible for 15 per cent of the losses claimed to have been inflicted on the Luftwaffe.

The victory of 'the Few' was narrow. During the critical months of August and September, when the Battle of Britain was at its height, Fighter Command lost 832 fighters, the Luftwaffe only 668. It was the loss of nearly 600 German bombers which made the balance sheet read so disfavouredly to the attacker. Had Hitler and Goering been privy to the extent of their success during the height of the battle, when a quarter of Fighter Command's pilots became casualties and fighter losses for a period (11 August to 7 September) exceeded production, they would undoubtedly have surpassed their effort. Had they done so, the Luftwaffe might then have made itself the first air force to achieve a decisive victory in combat as an independent strategic arm, thus fulfilling the vision that Douhet and Mitchell had glimpsed in the dawn of military aviation. As it was, the pragmatism of Dowding and his Fighter Command staff, the self-sacrifice of their pilots and the innovation of radar inflicted on Nazi Germany its first defeat. The legacy of that defeat would be long delayed in its effects; but the survival of an independent Britain which it assured was the event that most certainly determined the downfall of Hitler's Germany.