A Comparative Analysis of RAF and Luftwaffe Intelligence in the Battle of Britain, 1940

In analysing the performance of RAF and Luftwaffe intelligence in the Battle of Britain it is perhaps best to start by describing the organization of intelligence in the two opposing arms, since this provides the key to understanding some of their shortcomings.

The Air Intelligence Branch of the Air Ministry was organized on a geographical basis whereby all material relating to a particular country was dealt with by a particular sub-section. Thus, AI3b was the sub-section that dealt with all information relating to Germany, including order of battle, aircraft, training and production. This geographically based structure was a relic of peacetime, when the origin of intelligence material, whether from open or clandestine sources, tended to relate to one particular country, and assessments were seldom required for more than one country at a time. For the first eight months of the war the geo-strategic situation remained relatively unchanged, but with the German offensive in the West, and the entry of Italy into the war, the situation was radically altered. The immediate crisis of the Battle of Britain and imminent invasion was obviously an inopportune moment for wholesale reorganization, but it is significant that once the threat had receded Air Intelligence underwent a long period of readjustment and reorganization between November 1940 and August 1941. The *de facto* disappearance of national frontiers

in Europe and the increasing need to deal effectively with operational intelligence of the utmost urgency led directly to the abandonment of geographical divisions in the handling of intelligence in the war against Germany. Thus AI3b eventually became responsible for studying orders of battle and organization for all air forces in northern Europe, while other sub-sections performed similar roles for airfields, production and training. These changes also reflected the shift in relative importance between Sigint and photographic reconnaissance on the one hand, and published and clandestine sources on the other. The latter were of particular value in the pre-war period, but became relatively less so as the need for operational intelligence assumed priority. As will become clear, some of the failures of British intelligence during the Battle of Britain were organizational.[1]

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Air Intelligence was, however, a separate Directorate within the Chief of the Air Staff's Department in the Air Ministry, and its Director was an Air Commodore equal in status to the Director of Plans. AI was thus able to produce independent assessments of aspects of the German war machine, which frequently criticised, implicitly or explicitly, the strategy of the Air Staff. Even when these appreciations were wide of the mark and influenced by pre-war doctrine and 'mirroring', there is no doubting the independence of the stance adopted.[2] Though some of the officers within AI at the start of the war were of moderate quality, good quality personnel were brought into the Directorate and intelligence officers were on the whole well regarded. Indeed, one of the strengths of AI was its ability to recruit from outside the Service in much the same way as Bletchley Park. In fact by the end of the war, of some 700 officers only 10, all in the rank of Group Captain or above, were regular officers.[3]

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By contrast the intelligence service of the Luftwaffe did not enjoy separate status. The Air Intelligence Department, or 5th *Abteilung*, within the Luftwaffe General Staff was subordinated to the operations department. A similar structure pertained in the Luftflotten so that it was frequently the operations officers who prepared intelligence assessments, 'because the basis for all evaluations of the situation were the Luftwaffe's own operational intentions, objectives or missions'.[4] The intelligence officer might be consulted before such appreciations were prepared, but as the position was held in low esteem, he frequently was not. Indeed the lowly status of Luftwaffe intelligence officers is well illustrated by the fact that they were regarded as 'maids of all work' and their duties included 'troop welfare, propaganda, and censorship'.[5] Equally indicative of the Luftwaffe's overall approach is the fact that 'in the Luftwaffe there were no representatives of the intelligence organisation stationed at units below the size of Fliegerkorps until 1944'.[6]

In addition, because of the political structure of the Third Reich, there was little co-ordination of intelligence in the British sense. Competing German intelligence bodies – and there were more than a dozen such agencies outside the armed services – were insular in their attitude to other parts of the intelligence community, because, as always in politics, knowledge was power.

Intelligence from difference sources thus came together only at the very highest level – Hitler – so that no organization such as the British Joint Intelligence Committee could exist because its members would have been surrendering knowledge, and with it political power, to rivals within the system. This attitude of insularity spread right down through the system, with competing departments jealously guarding their information, and resulted in information being disseminated largely vertically, and seldom horizontally. Since intelligence is a jigsaw in which a piece obtained, say, from radio intercepts can then be followed up by a POW interrogator, this was bound to weaken German intelligence. Thus, the Luftwaffe Signals and Cipher Intelligence Service was largely the personal fiefdom of the Chief of Luftwaffe Signals, General Martini,[7] and the friction and rivalry between this 3rd *Abteilung* of the Signals Service and the 5th *Abteilung* of the Luftwaffe General Staff led directly to erroneous assessments.

Insularity and empire-building, endemic in the Third Reich and encouraged by Hitler for political reasons, meant that, of some eight agencies collecting intelligence on air matters, only two were directly sub-ordinated to the 5th *Abteilung*. On the technical side 'information on radar was evaluated by ten different agencies'.[8] With such a plethora of players in the field co-ordination would have been difficult even given goodwill, but the Nazi psychology of rivalry and mistrust inevitably permeated the entire organization of intelligence and prevented vital cross-fertilization between agencies. To take one example, the German POW interrogation organization was not subordinated to the 5th *Abteilung*, whereas RAF interrogation was conducted by a sub-section AI1 (k), within the Intelligence Directorate. An interrogation report from AI1 (k) during the Battle of Britain would receive a wide distribution within the Air Ministry, and copies would be sent to operational commands and Naval and Military Intelligence

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automatically: altogether some forty copies would be produced. An item of particular interest to some organization would be copied to them, so that for example, a report on a new type of German tracer ammunition in July 1940 was copied to the Director of Armament Development in the Ministry of Aircraft Production.

As always in Nazi Germany, Hitler's personal attitude to a subject was of paramount importance in moulding the opinions of others. It comes as no surprise, therefore, that his personal dislike of unfavourable intelligence reports was shared by Goering and Jeschonnek.[9] The Head of the 5th Abetilung from 1938 was Major, later Colonel, 'Beppo' Schmid, who combined this duty for several years with that of working in Goering's ministerial office. He thus had ample opportunity to observe his master's prejudices at first hand, and as a shrewd and ambitious officer it is hardly surprising that he soon gained a reputation within the Luftwaffe for garnishing his reports to make them more palatable to Goering.[10]

After this brief outline of the organization of the rival intelligence directorates in mind we can consider the quality of the intelligence they produced, and the effect it had on the operational decisions made in the campaign. To take the British first there is no documentary evidence that intelligence affected British dispositions before the opening air battles in July. The basic infrastructure of Fighter Command had been laid down before the war and, once France fell, it was obvious that an attack was coming, and that it would be mounted from airfields extending from Brittany to Scandinavia. British air planners had in any case been postulating mass German air attacks since before the war, and Air Intelligence had tended to interpret any threatening German moves against the Low Countries as being part of a plan to seize airfields for an air assault on Britain, rather than an attempt to outflank the Maginot line and invade France. Thus Wing Commander Inglis of AI3 minuted on 2 May 1940:

> *The invasion of Holland, which now looks imminent, will represent the first 'plank' in the northern encirclement of the British Isles, and will provide Germany with those air bases from which she may hope to neutralise our Air Force and Fleet as a preliminary to invasion.*[11]

In an earlier minute of 2 February 1940 the same officer had written, of a report from Sweden, that Sweden and Norway would be invaded to act as a launching pad for air and seaborne assaults:

> *If Germany finds herself forced to take the offensive the plan outlined … fits in with Hitler's ambition – the overthrow of the British Empire, with the avoidance of a direct attack upon France.*[12]

Air Intelligence's predisposition to interpret German strategy always in relation to air power was evident even after the German invasion of the West had begun. On 15 May 1940 Group Captain Elmhirst, head of the German section, wrote:

> *We are of the opinion that the object of this advance is two-fold: (a) to occupy air bases in the Low Countries from which to attack England; (b) to enable Flak and Fighter Units to be established West of the Ruhr.*
> *When (a) and (b) are accomplished we consider that the whole weight of the GAF will be thrown against England. This may be followed by invasion.*[13]

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One doubts whether British military intelligence, or even the intelligence sections of British Air Forces in France, saw things in quite the same light. The effect of these erroneous appreciations of German intentions was probably not very great. Although Air Intelligence suggested both the reinforcement of fighters in France and the bombing of targets in Germany, the limited extent to which these measures were undertaken would probably have been adopted in any case. The precariousness of the situation on the Continent does not, however, appear to have impinged on the consciousness of Air Intelligence as early as it might have done. In a minute of 3 June 1940 a suggestion by Wing Commander Inglis that fighter strength in France be further reinforced was endorsed by both the Deputy Director of the German section and the Director of Intelligence. This despite the fact that some two weeks earlier the War Cabinet had made its famous decision not to send further fighter reinforcements to France. An unknown hand, presumably that of a senior member of the Air Staff, annotated: '… I strongly deprecate the proposal to move our Fighter Squadrons to France in appreciable numbers'.[14]

Once France collapsed, of course, there could be little doubt over Germany's future intentions, and at least some of the lessons of German operations in France do seem to have been absorbed, since Air Intelligence predicted on 28 June that the opening of the German offensive against Britain would take the form of attacks on aerodromes by fighters and bombers. The first indications of the expected air offensive came from reconnaissance photographs of extensions to French runways, and low grade Sigint indicating the arrival of Luftwaffe bomber units in northern France. From the end of June Enigma intelligence on the improved states of serviceability and readiness in German bomber units, and the arrival of dive-bomber units on airfields across the English Channel, indicated that the period of grace while Luftwaffe units refitted after the French campaign was drawing to a close.[15]

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Once the Battle started, which in British eyes means early July, intelligence contributed in two major areas: first in the provision of order of battle and organizational intelligence on the Luftwaffe, and secondly in more direct and immediate intelligence on Luftwaffe operations. Both forms of intelligence were heavily reliant on Sigint. German signals traffic was of four main types: high-grade cyphers encrypted by Enigma, low-grade W/T traffic, usually to and from aircraft, low-grade radio telephone traffic, and other signals traffic such as navigational beacons. Before the outbreak of war the RAF had set up an interception system consisting of one main interception station at Cheadle, and four subsidiary stations, and these had been intercepting and interpreting low-grade German W/T traffic since 1935. Luftwaffe signals security was relatively poor, and German bomber and transport aircraft used their unit markings as W/T call signs before the war, thus enabling the RAF radio intelligence service, or Y as it was known, to build up a reasonably accurate picture of German Air Force numbers and units. On the outbreak of war the codes were changed but, as so often in Sigint, the mass of knowledge already accumulated on units and airfields meant that by the end of 1939 most operational units had been re-identified. The increased amount of traffic intercepted in late June 1940 enabled Air Intelligence to build on its earlier solid base, and with its increased understanding of the organization and equipment of the German Air Force it made a very significant adjustment in early July in its estimate of frontline strength. In June Air Intelligence had estimated that the Luftwaffe disposed of 5,000 frontline aircraft, including 2,500 bombers capable of delivering 4,800 tons of bombs per day, and backed up by 7,000 aircraft in reserve. The actual figures were approximately 2,000 frontline aircraft with 1,000 in reserve.[16]

Professor Lindeman, Churchill's personal scientific adviser, was openly sceptical of the Air Ministry's figures and said so at a meeting with Group Captain Elmhirst on 5 July 1940. Lindeman queried in particular the figure of 4,800 tons of bombs per day. The explanation given by Elmhirst was:

> *… that this figure was based on 80 per cent of the German Bomber Force carrying full load and on a proportion of them making one or two sorties per day.*
> *Further it was explained that the figures was given with the following provisos –*
> *(a) the scale was for the initial day, and would diminish in accordance with unserviceability and casualties.*
> *(b) that this scale could only be achieved if Units were given a period of rest in order to maintain the maximum serviceability in squadrons.*
> *(c) that reserve crews were in readiness.*
> *(d) that a scale of one or more sorties per day might be maintained for the first week, but with diminishing numerical force.*[17]

These caveats had not of course been given in the JIC paper, an example of Air Intelligence continuing its pre-war tendency to make worst-case assumptions. In the light of the improved intelligence from Enigma Elmhirst revised his estimate of the Luftwaffe's likely capabilities on the basis that the number of bombers available could be reduced to 50 per cent averaging one sortie per day, which would give a bomblift of 1,800 tons. It is obvious from the comments which this minute engendered that the Enigma intelligence was of excellent quality, the Director of Intelligence referring to it as 'apparently sure evidence', and with unconscious accuracy 'heaven-sent'.[18]

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Equally interesting was the reaction of members of the Air Staff when the revised estimate was circulated. Slessor, then Director of Plans, wrote:

> *I think the revised estimate is very much nearer the mark than anything we have had before. I have always felt that we were loading the scales unduly against ourselves [and the] JPC [Joint Planning Committee] commented in that sense, on JIC's estimate of 4800.*[19]

The Deputy Chief of Air Staff, Douglas, also minuted: 'I am quite prepared to accept your revised estimate, which I think is much more reasonable than the old one, I said at the time that I thought you had put the German effort too high.'[20]

This indicates quite clearly that Air Intelligence's estimates of German strength were not accepted uncritically within the Air Staff, any more than they were outside it. Nevertheless, the tendency was still to over-estimate German strength, both frontline and reserve, and thus to ascribe greater staying power to the Luftwaffe during the Battle than it actually had, even though the

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defences were claiming two or three times the true scale of German loss. It is true to say, however, that continued overestimation of German strength did not adversely affect Dowding's conduct of the Battle, since it would presumably have confirmed him in his conviction that maximum conservation of his exiguous resources was essential to victory. The only document giving direct evidence of a link between a piece of Enigma intelligence and a strategic decision by Dowding tends to confirm this view. This was in early September when Enigma detected the move of some 160 heavy bombers from Scandinavia into Belgium and France, together with considerable reinforcement of dive-bomber units in the same area. Keith Park, commanding the Fighter Group in South-East England, asked Dowding for reinforcements of from two to six fighter squadrons, some at forward bases. Dowding's response was to move one Hurricane night fighter squadron out of Park's 11 Group, and give him two further day fighter squadrons at Hendon and Debden, airfields which were sufficiently far from Luftwaffe bases to have suffered only sporadic attack. This was typical Dowding parsimony, given the increased scale of threat implied by the intelligence.[21] Such other changes in strategy as Dowding introduced, as for example in his scheme to keep 11 Group squadrons up to strength in pilots at the expense of squadrons in other Groups, were largely forced on him by his own losses and not through any intelligence input. Had Air Intelligence been underestimating, instead of overestimating, German strength it is of course possible that Dowding's strategy would have been adversely affected. Since Enigma intelligence did not give any indications of the scale of German losses, however, it could not be used by Dowding in any calculation of ultimate victory or defeat (Air Intelligence's estimates of German losses are dealt with below). Air Intelligence's continuing overestimation did lead to a fundamental misappreciation of German strategy during August. Air Intelligence believed that the Luftwaffe was holding back a large proportion of its long-range bomber force, which would be unleashed only after air superiority had been won. In fact, of course, the Luftwaffe was more or less fully committed to the Battle from mid-August. Again, this erroneous conclusion probably had little effect on British strategy other than to reinforce the central tenet of maximum conservation.[22]

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This leads on to the vexed question of the extent to which Enigma intelligence was of operational value to Dowding. The official history of *British Intelligence in the Second World War* states categorically that 'the Enigma was of no help in forecasting shifts that occurred during the Battle in the GAF's methods and objectives.'[23] The reason was that the major strategic decisions were seldom transmitted by wireless. Thus, shifts in German strategy had to be deduced by Dowding and his Group Commanders purely from close observation of German operations, a skill at which they became remarkably adept. Occasional clues, such as odd references to Adler Tag, were too vague to indicate anything of value.[24]

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At a tactical level, however, the official historians' view that Enigma gave very little assistance is perhaps more contentious:

> *In the day-to-day fighting by giving notice of the time, the targets and the forces committed to individual raids, the Enigma provided an increasing amount of intelligence which was sometimes obtained too late to be of operational value. Moreover, the GAF made last minute alterations of plan which were not disclosed in the decrypts, or were not disclosed in good time.*[25]

This is true so far as it goes, and is perhaps a necessary corrective to the Winterbotham 'Ultra Won the Battle of Britain' school of thought. There is, however, at least some evidence to contradict the official historians' conclusion that Fighter Command received no advance warning of the pincer attacks against the north and south of England on 15 August 1940. The eminent British historian Ronald Lewin has stated, on the basis of decrypts available in the Public Record Office and on information from Group Captain Winterbotham, that Dowding knew, not only of the attacks on northern England by Luftflotte V, but also that the German plan involved a series of seven raids widely dispersed both geographically and chronologically.[26]

The issue is further complicated by contradictory evidence of exactly when Dowding was fully indoctrinated into the Ultra secret. According to Lewin, who appears to rely heavily on Winterbotham's memory, this took place in early August, when a Special Liaison Unit was set up in HQ Fighter Command.[27] However, Martin Gilbert, in his mammoth biography of Churchill, quotes a minute from the Prime Minister of 16 October asking that the Cs-in-C of Fighter and Bomber Commands be let in on the secret.[28] The latter would seem on the face of it a more reliable source that Group Captain Winterbotham's memory. A further indication is perhaps contained in the official history's comment that postponements of raids which were not decrypted, when Enigma had already given intelligence of the original date, led to the undermining of confidence in the source. It is difficult to see why the source should be undermined if its true nature were known.[29]

The official history does, however, make clear that organizational failings within Air Intelligence were a further contributory factor in reducing the value of Enigma's tactical intelligence. The exploitation of high-grade ciphers had never been expected to

produce intelligence of tactical value, and it was initially passed to the section of Air Intelligence tasked with long-term assessments of German order of battle and organization. This section 'was not organised or staffed for the exploitation of operational intelligence. The result was a separation of the tactical information obtained from the high-grade and low-grade sources, the former occasionally revealing the GAF's orders and intentions, the latter reporting them as they were carried out, which prevented both sources from being used to the full during 1940'.[30] One might add that if, as Lewin claims, Dowding and Park were both indoctrinated into the secret of Enigma in early August, then the organizational shortcomings in the Air Intelligence Directorate would have been irrelevant, since strategic and tactical intelligence could have been synthesized by the two commanders themselves.

The exploitation of the low-grade sources was nevertheless efficient because the organization had from the start been designed to extract operationally valuable information. The RAF wireless interception service centred at Cheadle already had much experience of intercepting German W/T traffic, and they were able to put this to good use. The medium-frequency traffic of the German air traffic control service gave early warning of the departure of aircraft, and direction-finding often revealed the bases involved. The high-frequency traffic was generated by German bombers on operations, and the wireless discipline of these units was poor, enabling Cheadle to make frequent early and accurate guesses of the units taking part in a raid. At the same time the arrival of German fighter units in north-eastern France and the Low Countries meant that the radio telephone transmissions of the fighters came within interception range for the first time. The equipment to monitor these transmissions was already in place, although it would appear that initially nobody had remembered to provide German linguists to interpret it.[31] The radio discipline of the Luftwaffe fighter units was no better than that of the bombers, and vitally important operational information was intercepted. The interception units 'could, on occasion, determine where enemy aircraft were forming up for a raid

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outside radar's detection range, give the altitude of the aircraft', and indicate the type of aircraft in the formation.[32] Direct telephone lines were established between the interception units and the local Group and Sector headquarters, as well as with Fighter Command, so that operationally important intelligence could be passed as rapidly as possible. The contribution of low-grade Sigint to the difficult task of assessing the enemy's intentions from the confused and conflicting radar tracks on the operations room table was obviously of great importance.

One area in which only tentative progress was made during the Battle was in the use of Sigint to help to establish the true rate of German losses. This is an area which has always been one of the most difficult for any air intelligence organization, yet at the same time one of the most important. The Falklands war demonstrated yet again that reliance on reconstructing air battles from eye-witness accounts after the event is fraught with difficulties. Air Intelligence, perhaps because of its relative inexperience in the field, was certainly too ready to accept RAF claims at face value. In the period 8 August to 16 August the defences claimed 501 enemy aircraft confirmed as destroyed, and a further 231 probably destroyed, when the actual scale of loss was only 283.[33] By the end of the Battle there were the first signs of doubt over the veracity of the claims. In a minute of 13 October Air Intelligence drew attention to the fact that anti-aircraft and fighter defences claimed 2,091 aircraft destroyed between 8 August and 2 October, but only 837 could definitely be identified as lost from wreckage or W/T intercepts, leaving a discrepancy of 1,254 aircraft.[34] The actual German loss for the period was 1,300 aircraft.[35] Instead of questioning the figures, however, Air Intelligence merely sought explanations for the discrepancy. The explanations concentrated on the shortcomings in sources, but at no time sought to question whether the defences were overclaiming, and there is no evidence to suggest that any action was taken over the discrepancy. This was to have serious consequences in 1941 when Fighter Command went over to the offensive, because instead of arriving at a

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realistic method of assessing claims based on analysing the real evidence of German losses available from the Battle of Britain, Fighter Command continued to accept exaggerated claims. As the air battles of 1941 took place over the Continent the problem of verifying such claims was far more difficult, and Fighter Command mistakenly believed it was winning a battle of attrition when it was in fact suffering severely.[36] Air Intelligence's minute of 13 October makes it clear that the first steps towards gleaning intelligence on losses of German multi-engined aircraft through W/T intercepts were made during the Battle of Britain, but there was apparently no comparable analysis of the R/T intercepts.[37] Here again, however, there is no evidence that such exaggerated claims had any adverse influence on Dowding's handling of the Battle. His assessment of the Luftwaffe's staying power probably owed more to his own analysis of German operations on a day-to-day basis than to any arithmetical calculation of losses.

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If this was the slightly uneven performance of a British intelligence service which was not hamstrung by political in-fighting, it is hardly surprising that the Luftwaffe's intelligence performance was grossly inadequate. In a report of 2 May 1939 Schmid had concluded that the Western powers could not 'catch up with the major advance in the expansion of the air forces achieved by Germany during the next 1-2 years.'[38] Within a year British production was exceeding that of Germany by 50 per cent. Schmid went on to conclude that the democracies could only match Germany in the field of technical development of fighters, and that because of the lead time required the Western powers were two to three years behind in fighter aircraft and even further in bombers. Within a year again the Luftwaff's pilots were to learn that the Spitfire was the equal of the Bf 109. Schmid also believed that the British defensive system was adequate only to defend London and that the rest of the country would be almost totally exposed to attack: this view was presumably based on Schmid's ignorance of British radar and a consequent calculation of defensive forces based on standing fighting patrols. The further conclusion that, because Britain was an island, the defenders' job was more difficult than the attackers' was again presumably based on the assumption that the only early warning available would be visual sighting of aircraft by ground observers. Schmid did, however, sound a warning note that the German lead in air armament might not be maintained indefinitely.[39]

The optimism in the Luftwaffe over the result of any air war with England was not general, however. General Felmy produced a report shortly after the

outbreak of war which revealed many of the shortcomings in Luftwaffe force structure which were to prove decisive in the Battle of Britain. Predictably Goering and Jeschonnek castigated the report and its author, and on Hitler's orders he was relieved of his post on a pretext.[40] Several studies done on the comparative air armament position of Germany and the Western Powers during 1939 concluded that Germany was definitely in a superior position, but that this superiority would eventually begin to fade. These views, of course, were in accord with Hitler's general desire to settle matters with the Western Powers in the shortest possible time. In the aftermath of the Battle of France the state of euphoria in the German High Command led predictably to even more optimistic assessments, fed in part by French declarations that Britain and the RAF could not survive for long.[41]

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The inadequacy of German intelligence is fully revealed in an appreciation prepared by the 5th *Abteilung* on 16 July 1940 right at the start of the Battle. A peculiarity of the report is that British strengths were identified as weaknesses and weaknesses as strengths. The report concluded that the British possessed approximately 900 fighters, an exaggeration of about 30 per cent, of which approximately 675 were serviceable, which was more accurate since Fighter Command had 622 serviceable aircraft. Schmid also characterized both Hurricanes and Spitfires as inferior to the Bf109. The Bf110 was considered superior to the Hurricane but inferior to skilfully handled Spitfires. This was almost certainly an example of Schmid garnishing an unpalatable truth for Goering who took great personal pride in the 110 units. The poor quality of the Hurricane and Spitfire had similarly been stressed by the Foreign Air Armament Department, probably for the same political reasons. The same Department may also have been responsible for the ridiculous assertion in Schmid's report that the Hampden was the best British bomber, when it was far and away the worst.[42]

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The 5th *Abteilung* report was as inaccurate over production and personnel as it was over technical matters. The British aircraft industry was believed to be capable of producing between 180 and 300 fighters a month, but it was predicted to decrease rather than increase because of the effects of air attack and problems over raw materials, In fact production had started to accelerate in April, and averaged between 450 and 500 fighters between July and September, which partly explains the perplexity on the part of the Luftwaffe High Command at Fighter Command's continued ability to mount an effective defence when German calculations showed that it should have been destroyed. Schmid was also totally unaware of the massive effort put into repairing damaged aircraft by the Civilian Repair Organization. In its assessment of the RAF's personnel the report was just as inaccurate. The shortage of trained pilots was Dowding's Achilles' heel, and Fighter Command had already asked for pilots from other operational commands and from the Fleet Air Arm, yet German intelligence believed that 'there were no difficulties regarding the supply of men.' Most inaccurate of all, however, was the assessment of the RAF's command structure and organization, and it is worth quoting in full:

> *The command at high level [i.e. Command/Air Staff] is inflexible in its organization and strategy. As formations are rigidly attached to their home bases, command at medium level [i.e. Group/station] suffers mainly from operations being controlled in most cases by officers no longer accustomed to flying (station commanders). Command at low level is generally energetic but lacks tactical skill.*

Only the last statement contained a germ of truth. In fact the criticisms of the higher commanders could more accurately have been applied to the Luftwaffe than the RAF, since most station commanders flew actively and Keith Park regularly visited his units in his own Hurricane, and had himself flown over Dunkirk to view the air battle at first hand.[43]

Schmid's conclusions concerning the rigidity of the RAF organization were probably based on the interception of Fighter Command's HF radio telephone traffic by General Martini's 3rd *Abteilung*. The assumption, however, that close control of

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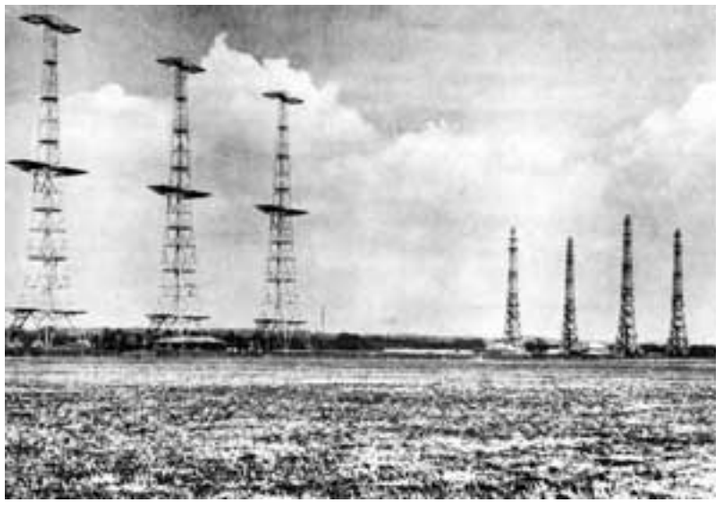
formations from the ground made the system inflexible was a costly error. Most incredible of all, perhaps, is the fact that nowhere in the report is any mention made of a radar. General Martini's Signals Intelligence organization was certainly aware that the British possessed radar, and had flown radio intelligence gathering missions just before the outbreak of war, using the airship *Graf Zeppelin* to try to discover the frequencies. Either because internal rivalry had meant that the Signals Service had not told the 5th *Abteilung* of its existence, or because Schmid's department was bereft of technical expertise capable of appreciating its significance, the eyes of the British defence were ignored.

Unlike British intelligence, however, Luftwaffe intelligence did not improve and learn from its mistakes as the Battle progressed, but merely perpetuated them. Thus, having established through the activities of General Martini's monitoring service that radar information was used to control the fighters using radio telephone, Schmid concluded that his earlier appreciation of British inflexibility was fundamentally correct. In a circular to Luftflotten and Fliegerkorps dated 8 August he stated:

> *As the British fighters are controlled from the ground by R/T their forces are tied to their respective ground stations and are thereby restricted in mobility … Consequently the assembly of strong fighter forces at determined points and at short notice is not to be expected.*
> *A massed German attack on a target area can therefore count on the same conditions of light fighter opposition as in attacks on widely scattered targets.*[44]

He concluded that mass attacks would swamp the system, whereas they were in fact easier to detect as they formed up over the Continent, and easier to track on their way to their targets, which made it easier to concentrate defending squadrons against them.

Martini's Signals Intelligence Service was apparently more efficient than Schmid's organization, but it failed to affect the Battle. It did detect British radar, and attempted some ineffectual jamming, but it was deceived into thinking that the bombing of radar stations which was undertaken early in the campaign was ineffective, by the British policy of continuing to transmit from damaged stations even when return signals could no longer be received. Reports from pilots indicating the apparent invulnerability of the lattice mast to blast damage led the Germans to conclude that the vitals of the radar stations were located in bombproof bunkers. In fact, several stations were put out of



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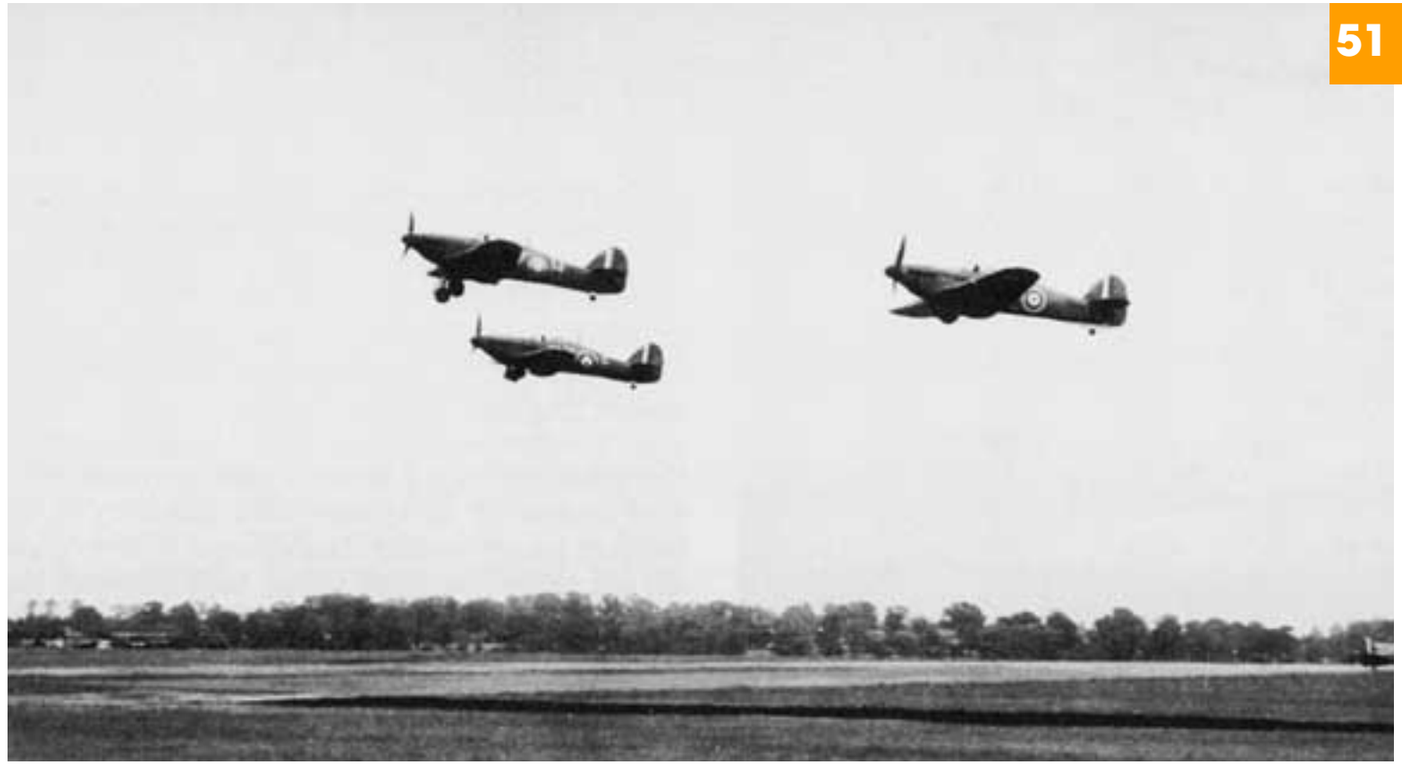
action, and had the attacks continued the defensive system would have been crippled. Martini's monitors should also have realized that RAF fighter squadrons were switched between Groups and Sectors as the situation demanded, and could be vectored on to raids some distance from their own bases. If this was detected the intelligence does not appear to have been passed to the 5th *Abteilung*. It may also have been due to the pinpointing of the sectors airfields through D/F fixes of fighter R/T by Martini's monitors that German targeting of airfields improved and became far more selective during the last two weeks of August.[45]

These weaknesses in intelligence both mirrored and contributed to a fatal over-confidence throughout the German High Command. Hitler's own conviction that the British were weak and would capitulate and accept overtures for peace, either before or after a short air offensive, was bound to affect Luftwaffe thinking given the nature of the Third Reich. Goering himself considered that four days would be sufficient to defeat Fighter Command, and a month would complete the destruction of the RAF and the aircraft industry throughout Britain. This outlook led to serious delays in Luftwaffe operations during which time Fighter Command repaired some of the ravages of the French Campaign. Most Luftwaffe units had been rested, re-equipped, and redeployed to bases in northern France and the Low Countries by the third week in July, yet the Luftwaffe did not launch a concerted offensive until 13 August. Until the end of July the prevarication was largely Hitler's, but his patience with the British and his savouring of his victory in France were exhausted by 31 July when he had decreed an all-out assault. Poor weather played some part in further delays, but the Luftwaffe's planners seem to have lacked all sense of urgency, continuing with a series of planning conferences to settle aspects which should have been confirmed during the long interim after the victory in France, particularly as the first outline orders were issued a month before the real offensive opened. This attitude must have stemmed from the over-confidence of the High Command, an unfounded optimism which inaccurate intelligence did nothing to dispel.

These two interrelated factors of over-confidence and poor intelligence led to an ill-directed campaign, which breached a fundamental principle of war – the maintenance of the aim. The Luftwaffe appears never to have decided which aim it was pursuing. Its attacks seem to have been aimed variously at defeating Fighter Command and attaining air superiority to facilitate

the invasion; defeating the whole of the RAF and destroying the aircraft industry simultaneously, with the same object; the strategic bombardment of cities to break morale and force Fighter Command to commit all its resources to defending one vital target – London.

During July its attacks can be seen as a sensible attempt to exert pressure on Fighter Command and the Royal Navy while units were redeployed and the political leadership sought a political settlement. The attacks in mid-August were aimed primarily at coastal airfields and radar stations, but the selection of the former was indiscriminate, partly because of faulty intelligence,[46] and partly because the Luftwaffe, perhaps through over-confidence, attempted to attack every part of the RAF instead of aiming to achieve air superiority by concentrating on Fighter Command. The assessments of the results of these raids were also generally far too optimistic: thus Luftwaffe intelligence was claiming that eleven airfields had been permanently destroyed and twelve severely damaged by 17 August,[47] when in fact all RAF airfields were fully operational on that day. The attacks on the radar chain were abandoned as soon as they began to bear fruit. Only in the last week in August and the first week in September did the Luftwaffe concentrate systematically on a target system vital to the defence: the sector airfields of 11 Group. It is no coincidence that Fighter Command came closest to defeat in this period. Six of the seven sector airfields were extensively damaged, the telecommunications links to and from the operations blocks proving especially vulnerable.



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At this point in the Battle the complete lack of reliable intelligence began to affect German strategy. The exaggerated claims of success against Fighter Command deceived some German commanders. In an assessment of 20 August German intelligence claimed 644 British aircraft destroyed in the period 12-19 August, when the true figure was only 141.[48]

The following table gives a brief indication of the scale of Luftwaffe claims against the true scale of British aircraft losses during the crucial period of the Battle:[49]

Date	*Luftwaffe Claim*	*RAF Actual Loss*
24 Aug. 1940	57	20
26 Aug. 1940	63	29
28 Aug. 1940	40	14
1 Sept. 1940	52	13
3 Sept. 1940	61	14
7 Sept. 1940	93	25
15 Sept. 1940	78	29

The Luftwaffe was therefore claiming between three and four times the true rate of loss throughout the crucial period. The scale of loss being suffered by the Luftwaffe was itself giving cause for concern, and a conference of all the major Luftwaffe commanders was convened in The Hague in early September. The confusion over intelligence was such that Kesselring claimed that Fighter Command had been destroyed, while Sperrle claimed it had 1,000 aircraft.[50] Kesselring's view prevailed – presumably he did not consult his pilots! – and the centre of gravity of the Luftwaffe's attack was switched to London. Kesselring presumably regarded this as the *coup de grace*, but it may be that some Luftwaffe commanders saw it as much in terms of reducing the rate of German casualties as of increasing those of Fighter Command.

The assault on London was apparently mounted partly in the belief that Fighter Command would be forced to commit all its strength including squadrons from the north, and that they could then be destroyed in a battle which would ensure air superiority and knock Britain out of the war at one stroke. Instead it effectively ensured that the Luftwaffe lost the daylight battle: first, it relieved the pressure on 11 Group's airfields, and enabled Fighter Command to patch up its sector stations and communications; and second, and just as important, it was a fatal miscalculation to believe that a greater number of fighter squadrons could be drawn into combat over London and destroyed.

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The sector airfields were so vital to the defence that 11 Group had already committed all its resources to defending them, and had also drawn on reinforcements from neighbouring groups. In attacking London the Luftwaffe did not draw in more fighter squadrons, but instead allowed the RAF to concentrate its defending forces more fully, while simultaneously increasing the problems of the attacking formations. The German attacks on London by mass formations were easier to see and track both visually and by radar, and their intentions became obvious at a very much earlier stage. The attackers had to penetrate further inland to their target, and as a result provided greater opportunities for attack to the defending squadrons, particularly those from north of the Thames. The German fighters were now operating at the extremity of their range, and, because of the heavy losses suffered by the bomber formations earlier in the Battle, were ordered by Goering to stay closer to the bombers. As a result they became far less effective at shooting down RAF fighters. The Luftwaffe's change in strategy, which stemmed from faulty intelligence, and thus simultaneously allowed Fighter Command to recover its balance, made the defending squadrons more effective, and made its own attacks less effective in achieving its strategic aim by switching to a target system both less vulnerable and less vital.

Many of the conclusions which can be drawn from this analysis are familiar ones. Both intelligence service suffered from faults in organization, but in the British case these were simply relics from the pre-war era, when intelligence had not been geared to operational needs. The lessons were largely learned on the British side, and the intelligence organization was overhauled and placed on a sound basis which was capable of producing reliable intelligence. On the German side the organizational shortcomings were so intimately bound up with the political structure of the Third Reich that only a change in regime could have made any fundamental difference. The predilection for accepting only good news is as old as man, and it should be an accepted axiom of intelligence that you should not shoot the messenger. In a situation where the consequences of telling the truth could be so unpleasant it is hardly surprising that reports were doctored to suit the prejudices of those receiving them. Less understandable was the prejudice against intelligence shown by the military hierarchy, and the inadequate provision of intelligence officers at lower levels in the Luftwaffe. The failings of German intelligence can nearly all be traced to the nature of the intelligence organization that had been created.

British intelligence before the Battle did suffer from a tendency to interpret German strategy to fit into a preconceived mould – that any hostile move was designed to facilitate an air offensive against Britain – but since the RAF was not actively engaged for much of this period this did not affect matters very much. The dangerous suggestion that more fighters should be sent to France had already been resisted by the Chief of the Air Staff before the Cabinet, which had agreed to send no further reinforcements to the Continent, and there was little prospect of this policy being reversed. On the whole the errors made by Air

On the whole the errors made by Air Intelligence were of far less importance than those of German intelligence, partly because they tended to reinforce an existing strategy which was fundamentally correct

Intelligence were of far less importance than those of German intelligence, partly because they tended to reinforce an existing strategy which was fundamentally correct. Had there been a less determined government in power after the fall of France, however, the exaggeration of German strength might have had serious political consequences, although there is some evidence that the Air Staff were themselves inclined to question the estimates of Luftwaffe strength.

Both sides suffered from inaccurate intelligence on enemy losses, and neither RAF nor Luftwaffe intelligence developed a proper scepticism about the claims of pilots. In this case there is less excuse for the British, who had at least some of the tools for a proper analysis at hand, and seemed at one point to be about to make use of them, but chose for whatever reason not to do so. The effect was nevertheless far more serious for the Germans, as their shortcomings in this area were in part responsible for a change in strategy which considerably reduced the effectiveness of their offensive. There is no doubt, however, that there was a widespread feeling in the German High Command that a blow aimed directly at London would win the Battle even before the meeting at The Hague in early September. Dowding, a shrewd judge of the situation, had forecast in June that 'The nearness of London to German airfields will lose them the war'.[51] Had the Luftwaffe possessed a more efficient intelligence service these mistakes might have been avoided, but the low esteem in which all intelligence was held meant that the personal prejudices of the operational commanders would still probably have counted for more than the accuracy of the intelligence.

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The obvious conclusion from this analysis is that the structure of the intelligence organization is perhaps equally as important as the quality of the sources, and that such structures are likely to mirror the bureaucratic forms of the relevant state. In the British case sources eventually came to dictate much of the organization of intelligence. Equally, one might conclude that poor intelligence does not automatically lead to poor strategy, but that it is more likely to do so in offensive air operations, where the need to direct the attack towards the weakest points is crucial, than in defensive ones where identifying the point of attack often devolves upon the operational commander rather than the intelligence organization.

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NOTES

1. Air Ministry, Air Historical Branch Narrative – Air Intelligence.
2. PRO AIR 40/2321 Summary of Minutes of DD13. See particularly the minutes on bombing policy in this file.
3. AHB, Air Intelligence Narrative.
4. Horst Boog, 'German Air Intelligence in World War II', *Aerospace Historian*, June 1986, p.122.
5. Ibid.
6. Derek Dempster and Derek Wood, *The Narrow Margin* (London, 1961), p.120.
7. Boog, op. cit., p.124.
8. Ibid.
9. Ibid., p.122.
10. Dempster and Wood, op. cit., p. 101, and Boog, op. cit., p.122.

11. AIR 40/2321 Minute 22.
12. Ibid., Minute 25.
13. Ibid., Minute 43.
14. Ibid., Minute 102.
15. F.H. Hinsley with E.E. Thomas, C.G.G. Ransom and R.C. Knight, *British Intelligence in the Second World War*, Vol. 1 (London, 1979),
pp. 173-4).
16. Ibid.
17. AIR 40/2321, Minute 77.
18. Ibid.
19. Ibid.
20. Ibid.
21. PRO AIR 16/330 Reinforcement of Number 11 Group.
22. Air Ministry Daily Telegraphic Intelligence Summary, 20 Aug. 1940, Air Ministry Weekly Intelligence Summaries Nos. 51 and 52, 22 and 29 Aug. 1940.
23. Hinsley , op. cit., p.177-8.
24. Ibid., p.175.
25. Ibid., p.179.
26. Ronald Lewin, *Ultra Goes To War* (London, 1978), pp.84-7.
27. Ibid., p.85.
28. Martin Gilbert, *Winston S. Churchill*, Vol. VI (London, 1983), p.849.
29. Hinsley, op. cit., p.179.
30. Ibid.
31. Dempster and Wood, op. cit., pp.121-2.
32. Hinsley, op. cit., p.181.
33. AIR 40.2321, Minute 64.
34. Ibid., Minute 65.
35. Winston G. Ramsey (ed.), *The Battle of Britain Then and Now* (London, 1980), loss tables on p.707. This is the most comprehensive work on the difficult subject of comparative losses and has been used throughout this paper to give the best approximation of actual losses. These are almost certainly accurate for the British, but less so for the Germans because of gaps and inconsistencies in the records.
36. AHB Narrative: The Air Defence of Great Britain, Vol. IV, Pt. V, para. 120 and Appendix V (F).
37. AIR 40/2321 Minute 65. See also Hinsley, op. cit., Vol. II, pp.271-3.
38. Horst Boog, 'German Air Intelligence in the Second World War', see above, pp.355.
39. All references from Schmid's report of 2 May 1939 from Ibid., pp.355-7.
40. Ibid., p.359.
41. Dempster and Wood, op. cit., p.106.
42. Ibid., pp.106-7. The report is reproduced in full on pp.106-10. British serviceability states from Air Ministry War Room Daily Strength Return for 0900 hrs 15 July 1940.
43. Dempster and Wood, op. cit., p.109.
44. Ibid., p.113.
45. Ibid., p.116.
46. AHB Translation VII/59 – German Report (undated c. 1945?) 'A Study of British Air Defences'. In interpreting German strategy I have drawn heavily on Karl Klee, 'The Battle of Britain' in Hans-Adolf Jacobsen and Jurgen Rohwer, *Decisive Battles of World War II: the German View* (English translation London, 1965), pp.73-94.
47. Ibid.
48. Ibid., and Dempster and Wood, op. cit., p.115.
49. Figures for claims taken from AHB Translation R,353 of Luftwaffe Fuhrungstab 1c Lagerberichte [Situation Reports], actual loss figures from Ramsey, op. cit., p.707. Ibid., p.116.
50. Dempster and Wood, p.116. See also Kenneth Macksey, *Kesselring: the Making of the Luftwaffe* (London, 1978), pp.82-4.
51. Dempster and Wood, p.116.