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"OPERATION ADLER"
THE FIRST STRATEGIC AIR OPERATION

by

John Clines

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Operational planners were tasked with developing a plan to systematically destroy Great Britain's ability to wage war. This strategic air offensive was only one part of the overall campaign for the eventual invasion of England. The first step in this operation would be attaining air superiority for the invading force.

Herman Goring, the Luftwaffe Commander, violated all seven "principles of war" as stated in U.S. Army Manual FM 100-5, but still came very close to defeating the RAF. The Luftwaffe's targeting of London was seen by the British as a fatal mistake.

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CHAPTER I STRATEGIC BACKGROUND

In late June of 1940 Hitler was faced with a dilemma. With the defeat of France, he had no real design on becoming the victorious conqueror of Great Britain. He could see no alternative left for Great Britain except cessation of hostilities. Mein Kampf and other German writings of the inter-war period showed a marked respect on Hitler's part for the British. England's intransigence in refusing Germany's peace offerings caught Hitler and the German war machine unprepared.

Hitler found himself at a crossroads without a map. The strategic problems facing Germany were daunting enough without the overconfidence that German leadership portrayed after the fall of France.

Hitler, basking in a mood of preening self-adulation, went on vacation. The high command structure, however, was such that without Hitler there was no one with either the drive or strategic vision to pick up the reins--a state of affairs precisely in accord with the Fuhrer's wishes.¹

Hitler had fallen prey to the German intelligence machine. The Abwehr under Admiral Canaris and the Sicherheitsdienst (SD) under Himmler provided Germany with her intelligence. There was little co-operation and no cross-check mechanism in place to verify the accuracy of their reports. Many of the Abwehr officers were unsuited to their

jobs and had little technical ability while the SD was often preoccupied with internal German affairs.'

Faulty intelligence reports on RAF capabilities coupled with conflicting political signals lulled Hitler into a false sense of security. One example of political misunderstanding was England's Under Secretary of State for Foreign Affairs "Rab" Butler's comments to the Swedish minister when he stated that "no opportunity would be neglected for concluding a compromise peace if the chance (were) offered on reasonable conditions."³ These sources led German leadership to believe that peace with Britain was only a matter of time.

German military leaders were planning their next moves even before France surrendered. Both Goring and the head of the German Kreismarine, Admiral Raeder, had their staffs working on future hostilities against England while the battle for France was still in progress. An amphibious invasion was first brought up by Admiral Raeder on the 21st of May. This unsolicited topic was presented, to Raeder's credit, in order to present the difficulties facing Germany should England continue to fight after France fell. Raeder stated, "...a landing in England cannot be ordered at short notice. Long preparation will be required. The basic preliminary is complete control in the air. Otherwise the risks would be unacceptably great." An eyewitness to this briefing stated in his journal that "Hitler listened without comment."⁴

During the French campaign, Hitler agreed to halting the

armor advance on Dunkirk and gave responsibility for annihilating the British forces trapped on the beaches to the Luftwaffe. Hitler's decision was seen by many as a reward for Luftwaffe performance. In the face of stiff resistance from Spitfires and inclement weather, the British were able to evacuate the vast majority of its manpower from the beaches. Moving rapidly from this effort, the Luftwaffe proceeded into Phase Two of the French operation in the destruction of the remainder of the French Air Force in and around Paris.

The failure at Dunkirk was largely misunderstood by the German leadership "...since the German attacks led to the rapid and complete collapse of the French Army, and the campaign ended gloriously in the armistice..."⁵ If anything, the Luftwaffe results were glorified by senior officers who viewed the destruction of British material on the beaches. British manpower, not equipment, was the real enemy vulnerability. But the mood of the times did not foster critical analysis. England simply had no options left.

By July it was becoming more evident that Britain would not acquiesce to German peace offerings. On 16 July, Hitler issued Directive No. 16, Operation Sealion, to set about operations for the proposed invasion of England. There continues to be debate on Hitler's true feelings about this operation. Even the wording in the opening lines is ambivalent..."I have decided to prepare a landing operation against England, and if necessary to carry it out..." and

"...if it should become necessary, to occupy (England) completely..." Invasion planning required the Luftwaffe to neutralize the RAF before the winter storms rendered a channel crossing impossible.

Three days after signing the Sealion directive, Hitler offered Britain its final peace settlement through a speech given at the Reichstag. Hitler stated, "I feel compelled by conscience once more to appeal to reason in England...I can see no reason why this war should go on." On July 31st, he discussed his wishes for invading Russia with his Army Commander in Chief. In this meeting, Hitler wished to proceed with a planned invasion "...the sooner the better and preferably this year. With Russia defeated, Britain's last hope will be gone." On August 5th, Hitler issued Directive No. 17 permitting unrestricted air and sea operations against England. (Appendix A) Hitler wished to study the effects of the air raids, and then "in eight to ten days" decide whether the landing should be carried out in mid-September (the earliest the Navy would agree to) or not.' This decision placed the onus of driving England to her knees on Goring's Luftwaffe. The first strategic air operation in modern warfare was set in motion.

CHAPTER II

OPERATIONAL/THEATER ORGANIZATION

The command structure of the Luftwaffe had undergone several changes during its rapid expansion in the 1930's. The organization in-place during the summer of 1940 was the result of reorganizations that occurred between 1938 and 1939. Significant emphasis was being placed on mobility, flexibility of operations, and close identity with the Army operational commands. A final reorganization on 1 April 1939, resulted in the establishment of four area commands each called a Luftflotte, or "Air Fleet."¹⁰

The Air Fleets were organized territorially and were a balanced, self-contained force with assigned bomber, fighter, ground attack, reconnaissance, and associated support units. This territorial organization was established to align each Air Fleet to areas associated with the Army units they were designed to support.¹¹

Each Air Fleet had its own organic administrative, logistic, training, and medical support. This was provided through the Luftgau, or Air District. The Fliegerkorps was the warfighting force, subdivided down to the individual Gruppe and Staffeln (Groups and Squadrons.) This organization was maximized for support of Army operations, and in that respect was very effective. During the Blitzkrieg offensives, Army commanders used their Air Fleets as cavalry, artillery,

and infantry. Bomber forces were used to protect the flanks of advancing units and strike supply, support, and communication targets behind the front lines. Dive bombers performed traditional close-air support. Airborne paratroops, who belonged to the Luftwaffe, were successfully used in Belgium, Norway, and France.

This organizational framework provided exceptional tactical application of airpower in support of Army operations. It would not perform as adequately in executing a strategic bombing operation. The principal of unity of command and unity of effort would plague this operation from the start. As the operation progressed, the unity of command problem would be resolved, but with dire consequences for the Luftwaffe. The unity of effort problem was never totally resolved. The Air Fleets did not act under a centralized daily operations order.

Three Air Fleets, separately located in France, the Low Countries, and Norway were ordered to submit their operational plans for offensive air operations against England. (Appendix B) Coordination between the three Air Fleets was haphazard at best. Only two of the Air Fleets were capable of attacking England. The Air Fleet in Norway was limited in range of both its bombers and fighters. Fighter aircraft in the other two Air Fleets were stationed in proximity to their bomber units. As a result of the limited range of mainstay Bf-109, only those groups located in the Calais area would be able to reach

decisive combat over London.¹²

During the initial planning and execution, these three Air Fleets worked toward a common objective in parallel. Much like the Norwegian campaign, this unity of effort was more a result of the professionalism of the separate commanders than it was of working within an established framework of command and control. Responsibility for attacking selected targets was deconflicted, but specific time over target was left up to the individual Air Fleet planning staffs. As the operation progressed, unity of command was established under Goring on 7 September--nearly three weeks after the flying operations had begun.

One of the failures during the Dunkirk operation was the limited time-over-target of its Stuka dive bomber. The offensive had progressed so rapidly that the airfields were located at the limits of the Stuka's combat radius. German planners realized that the limited range of her aircraft would require forward basing in France and the Low Countries. The individual Air District arm of both Air Fleets in France and the Low Countries performed admirably in establishing, equipping, and supplying their respective bases. It is interesting to note that many German fighter bases operated off of level farm fields. Dedicated maintenance, communication, and supply buildings were non-existent, or tailored to those farm buildings available. Aircraft were protected by camouflaged concealment in forests, or by

make-shift sand-bagged shelters. German intelligence estimates would overlook this fact in their analysis of the RAF's critical vulnerabilities.

A critical requirement of timely aerial reconnaissance provides air operational planners information on the status of proposed targets. The Luftwaffe had developed and fielded the first high-altitude reconnaissance capability in history with the first pressurized aircraft. This modified bomber was equipped with turbo-charged diesel engines and an enclosed pressurized crew compartment capable of flying at altitudes unreachable by British fighters. Unfortunately, the photographs could not provide the detail to differentiate the types of aircraft parked in the open.

The operational capability of Goring's Luftwaffe has been a topic of intense debate. Air power theorists were of two differing schools concerning the development of bomber forces. The Americans and British were developing four-engine bombers, capable of striking deep into enemy territory. To make up for lack of available fighter support, due to range limitations, the British focused on night bombing. The Americans were developing daylight tactics, relying on internal self-protection.

The Germans were faced with other difficulties. Her lack of resources and technology forced the development of twin-engine bombers. Germany's standard bombsight was inaccurate for level bombing. In 1938, even well-qualified

bomber crews could achieve only a two percent bombing accuracy in high level, horizontal attacks (up to 13,500 feet), and a twelve to twenty-five percent accuracy in low level attacks against targets of between 165 to 330 feet in radius.¹³ This was overcome by developing all of her bombers with dive bomb capability. Speed would be more effective than on-board self-protection, so Germany's bombers were not optimally protected.

In the final analysis, all three countries pursued strategic bombing campaigns with limited success. The lack of a four-engine bomber was not pivotal during the coming strategic offensive. Lack of both an adequate bombsight and fighter support for strikes deep within England would most probably have resulted in heavy bomber losses for daylight operations, or night operations which caused little substantive damage.

Germany's fighter force was not nearly as lethal as Goring believed. The single-engine Bf-109 was a superb fighter that continued in production throughout the war. Although not as maneuverable as the British Spitfire, its slight airspeed advantage and ability to climb or dive vertically gave it benefits not available to Spitfire pilots. Gravity feed carburization on British fighters would cause fuel starvation in near vertical climbs or dives.

The twin-engine Bf-110 never lived up to Goring's "Destroyer" nickname. Its lack of maneuverability and speed

provided little challenge for either the Spitfire or slightly less maneuverable Hurricane. "Destroyer" pilots soon learned they were no match for the much more maneuverable British fighters. This fighter could only safely be employed with Bf-109 escort.

All of these lessons were yet to be learned. Up to the summer of 1940, the Luftwaffe had destroyed all opposition. The operational planners had clear guidance in Hitler's Directive No. 17. The first step was to destroy the RAF.

CHAPTER III

PLANS AND PREPARATIONS

Planning for the upcoming operation was delegated to the individual Air Fleet level, then forwarded to the Luftwaffe Operations Staff for review. Although there was universal agreement that the RAF, its ground organization and the industry that fed it was the primary target, there was disagreement as to how to proceed.¹⁴ By 1 August, the Air Fleets submitted their revised plans. Goring released the directive "Preparations and Directives for Operation Adler" on 2 August.¹⁵

Hitler freed the Luftwaffe to proceed with its offensive plan any time after 5 August. Planning and preparation were not conducted during a lull in the hostilities. Offensive operations had been proceeding constantly. Units had been pulled out of action during the forward deployments for rest and recuperation. The losses suffered by the Luftwaffe in the spring and the extensive commitments of its aircraft and aircrews in the May-June battles demanded considerable time for rest and recuperation as well as for the integration of fresh crews into bomber and fighter units.¹⁶

Attacks on shipping in the Channel had been in progress since June. German bombers were escorted with large fighter escorts in their bombing raids. Standard operating procedure for the RAF during this period was to provide limited air

support for convoys. The official history of the RAF stated regarding these battles of July 1940:

"Over and over again a mere handful of Spitfires and Hurricanes found themselves fighting desperately with formations of a hundred or more German aircraft." The three Luftwaffe fighter Gruppen that took part in these operations had to be reinforced by a fourth one in order to retain operational strength.¹⁷

Although favorable kill ratios were being realized, the operating tempo would soon take its toll. The success German pilots gained in these encounters may have been misinterpreted by the Luftwaffe planners. The limited fighter opposition was neither a lack of available fighters nor a lack of resolve. Fighter Command was preciously guarding its resources for the oncoming battle.

Much debate has centered around the limited range capability of the Luftwaffe's single-engine Bf-109. It must be pointed out that American bombers would soon learn the high cost of attempting bomber operations without fighter support. After the development of jettisonable fuel tanks, American P-47 and P-51 escorts would finally provide the defensive cover required. One of the glaring weaknesses in German preparation for a strategic bomber offensive was the fact that these "drop tanks" had been developed and used by Bf-109s during the Spanish Civil War. The Condor Legion had successfully experimented in Spain with drop tanks that extended the Bf 109s range by upwards of 125 miles: surprisingly none were available for use in 1940.¹⁸ Whatever

the reason for this oversight, the importance of an operationally "collective memory" cannot be discounted. Many of the intelligence and staff positions being filled in the Luftwaffe at this time were staffed either with men who had never flown, or who had been out of the cockpit for some time. It is still interesting to ponder why no one in a senior position considered this proven capability.

Goring was responsible for violating two additional "principles of war"--objective and mass. According to the U.S. Army's FM-100-5, the first principle is a clearly defined objective which, "Directs every military operation toward a clearly defined, decisive, and attainable objective." Mass is defined as "...the effects of overwhelming combat power at the decisive place and time."¹⁹

According to one of the leading German aces of this period, Adolf Galland stated that initially the Luftwaffe had three objectives in their coming operation:

1. Blockade the British Isles in cooperation with the Navy--this included attacks on ports, shipping, and mining sea lanes and harbors.
2. Achievement of air superiority as a preliminary to the invasion.
3. Annihilation of England by total air warfare.²⁰

Neither the Luftwaffe nor the Kriegsmarine were capable of attaining number one. Air superiority could not be achieved over the entire country. A more suitable objective for number two would have been destruction of Fighter Command's capability to wage operations in southern England. The last objective was far beyond the realistic capabilities of any air force of this

war.

The principle of mass would be violated in both the planning and execution phases of the coming operation. Air Fleet 5, in Stavanger Norway would be operating at the very edge of its range capability. This bomber force only participated in one raid, suffering heavy losses due to their lack of Bf-109 escort. It is difficult to comprehend that no one seemed to question their location in the planning phase. Even after their one unsuccessful raid, it is even more incomprehensible that no attempt was made to transfer at least some of the bomber units to the other two Air Fleets.

CHAPTER IV

INTELLIGENCE

Intelligence collection and analysis contributed directly to the Luftwaffe's failure to successfully execute its operational plan. Major Josef "Beppo" Schmidt was head of the Luftwaffe General Staff Intelligence Division. He became a favorite of Goring's largely because he told the Luftwaffe chief what he wanted to hear. Schmidt was responsible for issuing a comparative survey of the RAF and Luftwaffe in July. (Appendix C) Comparison of actual RAF strength depends on the source used. Schmidt's numbers were actually quite close in July to the actual RAF front-line fighter strength. His underestimation of British war production rendered these numbers useless. A later German estimate of RAF fighter strength on 17 August put fighter strength at 340. On the evening of the 17th, Fighter Command could draw on 1,438 modern single-engine fighters--more than four times the number Schmidt had estimated.²¹

Schmidt's original comparison also draws misleading conclusions on the importance of permanent RAF airfields. Although there were several small airfields that fighters could recover to, the RAF had "little strategic flexibility in operations as ground personnel are usually permanently stationed at home bases." A closer examination of the Luftwaffe forward bases in France showed German ground

personnel were very adept at moving to where the planes were--so were the British.

Although there are several other misleading statements in this comparison, the Luftwaffe's improper analysis of British radar capability would prove crucial. No mention of this capability was mentioned in the analysis even though the Luftwaffe had been collecting information on suspected capabilities.

General Wolfgang Martini, head of the Luftwaffe signals organization, ordered probably the first electronic intelligence, or ELINT mission in history as early as 1939. Martini had been interested in discovering whether Britain possessed a workable radar for detecting aircraft. Only two missions were flown, using obsolete airships of the Graf Zeppelin class. Due to difficulties with their collection equipment, no information was obtained."

Aerial reconnaissance before hostilities broke out in Poland clearly showed the construction of a network of antennas. After the fall of Dunkirk, a captured transmitter was supplied to German scientists who were in the process of developing their own radar. To show that German overconfidence was not found only in military leadership positions, the scientists "...considered the set crude and on a wavelength which they felt did not give the best results...German radar was superior in performance..."

Martini doggedly continued pursuing any source available

in order to determine the extent of the British command and control system. By July he had gathered enough information through radio monitoring to conclude that RAF fighters were being controlled by ground stations. Schmidt issued a circular to the Air Fleets on 7 August, again drawing the wrong conclusions from the data collected. (Appendix D)

The U.S. Air Force has published a Joint Forces Air Component Commander (JFACC) Primer. Its stated role is to "...reflect the latest doctrine on joint operations." The importance of intelligence in both the planning and execution of a successful air operation is covered in detail. According to this Primer, "...intelligence assessments of enemy forces concerning strength, capabilities, availability, sustainability, composition, disposition, and movement of forces and weapon systems..." are of utmost importance in developing any air operation." The Luftwaffe General Staff Intelligence Division provided information that covered each of these points. Unfortunately, most of it was incorrect.

Luftwaffe planners were operating at a crucial disadvantage. It is to their credit that a close examination of the initial targeting plan will show they didn't buy everything Schmidt was professing as gospel truth.

CHAPTER V

OPERATIONAL EXECUTION

Adler Tag (Eagle Day) was the Goring designated code name for the first day of German offensive air operations aimed at destroying the RAF. Adler Tag would consist of massive bombing raids by Luftflotten 2 and 3 against the RAF fighter arm. The plan called for massive fighter escort to engage and destroy the Spitfires and Hurricanes in the air, while the bombers went after the fighter airfields, coastal radar stations, and the whole ground organization in southern England. The initial phase would entail three days of massive attacks, with the bombers attacking the airfields on the outskirts of London on days two and three."

The Luftwaffe's highest leadership had been convinced by the signals intelligence of General Martini that the "radio" antennas played a direct role in guiding the British fighters toward incoming German formations. The day prior to the first bombing raids against the RAF would be used to conduct history's first dedicated Suppression of Enemy Air Defense (SEAD) operations.

The Stukas had been conducting attacks against British shipping up to this point. As previously mentioned, RAF procedures provided minimum fighter support. With this "operational intelligence," additional Bf-109 escort was provided on 12 August as the Stukas went after the coastal

network of antennas. One additional unit was also in on this operation. A special unit of experimental Bf-109s and 110s had been formed. Their express mission was to test the feasibility of using fighter aircraft in an air-to-surface role as a "fighter-bomber." The RAF had not attempted to defend itself against formations of fighters. Fighter Command was still in the process of protecting its resources against the coming bomber operation. This test squadron had met with great success in its first month of existence going against shipping. The general theory was that these fighter-bombers, if attacked by the enemy, could form their own fighter defense.²⁶

These missions used operational deception in using certain groups to attack port and shipping targets first, while other aircraft proceeded onto their SEAD targets. One group of 15 Ju-88 bombers peeled off from its larger formation and attacked the radar station at Ventor. Eleven days uninterrupted labour were necessary before a new station could be constructed on the island and the gap in the chain closed.²⁷

These missions failed for the same reasons that German attacks against radio antennas in the Polish campaign failed. Stukas were used in those missions, and although the most accurate platform available at the time, the small bomb-loads were just unable to knock down the Polish antennas. The Ju-88 was a new bomber. Properly flown, it had proven to be the most accurate bomber in the Luftwaffe. The success of the

Ju-88s was totally missed by the operational intelligence analysts. Concentration of firepower, delivered accurately and in mass, could successfully break a hole in the RAF radar system.

The following day pointed out the weakness of the command structure in carrying out the operation. A forecast for low ceilings in the target area caused a last minute cancellation of the morning raid. One hapless group of Do 17 bombers arrived at their rendezvous point only to find a few Bf 110s performing bizarre climbing and diving maneuvers. The leader of the bomb group proceeded to their targets without fighter protection. Their target, the airfield of Eastchurch, suffered destruction of hangars, storage facilities, and the cratering of the runway. The bombers lost four aircraft, and the furious commander phoned headquarters to demand an explanation of the lack of fighter support. He found out that the bizarre antics of the Bf 110s was meant to signal the bombers of the cancellation.²⁸

Two interesting lessons could have been learned from this shortcoming in the Luftwaffe command, control, and communication network. Even though the weather was less than optimal, the RAF launched its fighters against the strike force. RAF fighter formations would have been most vulnerable to attack just as they broke out of the weather in their climb. The second lesson, the success of this small formation to get into the target area and cause a good deal of

destruction, was never appreciated. This success showed that the British radar system had its limitations. The German bombers were able to hit their targets before being intercepted.

Intelligence would be a crucial on-going detriment toward the successful execution of operation Adler. Post flight analysis of the destruction at Eastchurch led the Luftwaffe to believe that the base was a "write-off" for fighter command. Although the base was severely damaged, two glaring errors were never readdressed by intelligence analysts. Eastchurch was operational 10 hours after the raid. But much more importantly, Eastchurch was not a Fighter Command base. It belonged to Coastal Command, housing a few fighters and light bombers. The inability of operational planners to identify Fighter Command bases would squander many more Luftwaffe crews before this operation was over.

The Luftwaffe had entered a battle of attrition without ever contemplating the consequences. Intelligence estimates predicted Fighter Command would be destroyed in four days. Over-inflated "kill" estimates from post-mission debriefs was common on both sides. The kill-ratios claimed by German pilots, when coupled with the incorrect estimate of England's fighter production capability, let Goring to believe the RAF would soon collapse.

German planners grossly overestimated the capability of bomber attacks to neutralize an airfield. As the operation

continued, Goring became much more aware of the losses his Luftwaffe were suffering. Both the Stuka dive bomber and the Bf 110 had become more of a hindrance than help. The Stuka would be withdrawn and the Bf 110 could only escort the bombers if they themselves were escorted by the Bf 109s. The heavy bomber losses caused Goring to change the tactics of the fighters, tying them to close escort of bomber formations, thus giving up what superiority the German fighter pilots had.

The Luftwaffe would continue massed bombing raids against airfields until September. Goring held a meeting with his two Air Fleet commanders, Kesselring and Sperrle, to reassess the operation. Goring wanted to shift the bombing attacks to London. Sperrle believed that the airfield attacks should continue. Kesselring saw little future in continuing with these attacks, saying that the RAF could always withdraw their fighters beyond the Bf 109's range. He believed the only way to destroy the fighters was to force them into the air."

This shift in emphasis was seen by the British as the fundamental German mistake that saved the defenses from destruction.³⁰ Goring's decision was probably evenly divided between military and political motivation. RAF Bomber Command had begun its raids against German cities.

This shift violated several "principles of war" and sacrificed the effort already achieved. The U.S. Army's definition of the principle of maneuver states that this tenet "Place(s) the enemy in a position of disadvantage through the

flexible application of combat power."³¹ By shifting the primary focus to one geographic area, Fighter Command would not have to spread its forces out. If anything, this decision gave the maneuver edge to the RAF. The principle of economy of force dictates that effective combat power must be massed at the decisive point and time on the battlefield.³² Finally, the most important principle ignored in this switch was that of objective. If the ultimate strategic aim was to invade England, any effort that detracted from destroying the RAF's capability to defend itself was not working directly toward achieving the objective.

The German air offensive still maintained one driving principle, that of maintaining the offensive. Security and surprise, the only two principles not discussed so far, were ceded early-on to England. The German code system ULTRA had been compromised. Surprise was obviously mitigated by the use of the British early warning RADAR system. Even working against these odds, the Luftwaffe maintained the initiative right up to where large daylight raids against London were halted.

The last great battle of this campaign from the British perspective was fought over London on 15 September. On this day, Fighter Command had committed everything it had against the onslaught. Much of the "myth" of the Battle of Britain stems from the gravity of Fighter Command's tenuous position that day. Churchill, present at the Uxbridge underground

operations center, quietly asked Air Vice Marshall Park "What other reserves have we?" Park replied, "There are none."³³

With all the RAF fighters returning to refuel at roughly the same time, a second wave of German bombers could have reached their targets unmolested. The second wave did not come for two hours, giving the RAF time to refuel and rearm. It was indeed a closer battle than many realized at the time.

Goring once more reassessed the situation, but this time the finger-pointing had begun in earnest. Goring stated point-blank, "The fighters have let us down." The British had changed their tactics, disregarding the fighters and driving straight at the bombers. Although even a questionable tactic at the time, the German fighters who were tied to flying close escort could do little to counter the attacks. The prevailing mood of those Luftwaffe Air Corps chiefs present was "(Goring) had lost touch, to a disturbing degree, with operational problems. He dwelt in a world of illusions."³⁴

The main emphasis of the strategic air offensive shifted over to night raids against a variety of targets. For all purposes, the Battle of Britain was over. The bulk of this offensive machinery would be withdrawn from the western theater to support the invasion of Russia.

CHAPTER VI

CONCLUSION

The first strategic air operation in World War II suffered from two fatal flaws--lack of useful intelligence, and lack of a leader capable of skillfully conducting the operation.

The dearth of useful intelligence was not a problem found only within the Luftwaffe. Germany's inability to accurately assess the strengths and weakness of themselves and their enemies would continue throughout the war. The ability to collect and analyze intelligence was even more important to Goring in 1940 than it may be today. The limited accuracy, lethality, and survivability of his bomber forces required that they not be squandered attacking targets that did not support the objective.

Goring was powerless to change an intelligence system, but he did have control over the conduct of his operation. Smaller bomber formations, sequenced in waves, and protected with all available fighter escort stood a much better chance of surviving. The RAF fighters might well have been forced to withdraw to bases farther north had Goring focused on a more focused approach to "rolling back" the RAF fighters from the coast.

APPENDIX A

DIRECTIVE # 17 (Aug. 1940)

FOR THE CONDUCT OF AIR AND NAVAL WARFARE AGAINST ENGLAND

For the purpose of creating conditions for the final defeat of Britain I intend continuing air and naval warfare against the English motherland in a more severe form than hitherto.

For this purpose I order as follows:

1. The Luftwaffe will employ all forces available to eliminate the British air force as soon as possible. In the initial stages, attacks will be directed primarily against the hostile air forces and their ground service organization and supply installations, and against air armament industries, including factories producing AAA equipment.

2. Once temporary or local air superiority is achieved, operations will continue against ports, particularly against installations for the storage of food, and against food storage installations farther inland. In view of intended future German operations, against ports on the south coast of England will be restricted to a minimum.

3. Air operations against hostile naval and merchant ships will be considered a secondary mission during this phase unless particularly lucrative fleeting opportunities offer or

unless such action will achieve increased effects in the operations prescribed under Item 2, above, or in the case of operations serving to train aircraft crews for the continued conduct of air warfare.

4. The intensified air offensive will be so conducted that adequately strong air forces can be made available whenever required to support naval operations against favorable fleeting targets. In addition, the Luftwaffe will remain prepared to render effective support for Operation Sea Lion.

5. Terrorization attacks as retaliatory measures will be carried out only on orders from me.

6. Intensified air warfare can commence at any time from 5 August on. The Luftwaffe will itself determine the deadline after completion of its preparations and in accordance with weather conditions.³⁵

APPENDIX B

COMMAND STRUCTURE

LUFTWAFFE HIGH COMMAND (O.K.L.)

|
|

AIR FLEETS 2, 3, & 5

|
|

FLIEGERKORPS I, II, IV, V, VIII, IX, X

|
|

GESCHWADER

(Flying Unit by Function, i.e. Bomber, Fighter, etc.)

|
|

I	II	III	IV
GRUPPE	GRUPPE	GRUPPE	GRUPPE
STAFFELN	STAFFELN	STAFFELN	STAFFELN
1 to 3	4 to 6	7 to 9	10 to 12"

APPENDIX C

GERMAN INTELLIGENCE APPRECIATION OF THE RAF AND COMPARISON WITH CURRENT LUFTWAFFE STRENGTH

Oberkommando der Luftwaffe

Operations Staff

IC

16 July 1940

I. THE MILITARY VALUE OF THE RAF

A. Strength and Equipment

1. Fighter Formations with 50 fighter squadrons each having about 18 aircraft, there are 900 first line fighters available, of which about 675 (75 per cent) may be regarded as serviceable.

About 40 per cent of the fighters are Spitfires and about 60 per cent are Hurricanes. Of these types the Spitfire is regarded as the better.

In view of the combat performance and the fact that they are not yet equipped with cannon guns both types are inferior to the Bf 109, while the individual Bf 110 is inferior to skillfully handled Spitfires...

C. Airfields

In the ground organization there is a considerable number of airstrips in the southern part of the island and in some areas in the north. However, only a limited number can be

considered as operational airfields with modern maintenance and supply installations.

In general, the well-equipped operational airfields are used as takeoff and landing bases, while the numerous smaller airfields located in the vicinity serve as alternative landing grounds and rest bases. There is little strategic flexibility in operations as ground personnel are usually permanently stationed at home bases.

D. Supply Situation

At present the British aircraft industry produces about 180 to 300 first line fighters and 140 first line bombers a month. In view of the present conditions relating to production (the appearance of raw material difficulties, the disruption or breakdown of production at factories owing to air attacks, the increased vulnerability to air attack owing to the fundamental reorganization of the aircraft industry now in progress), it is believed that for the time being output will decrease rather than increase.

In the event of an intensification of air warfare it is expected that the present strength of the RAF will fall, and this decline will be aggravated by the continued decrease in production...

E. Command

The command at high level is inflexible in its organisation and strategy. As formations are rigidly attached to their home bases, command at medium level 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.

CONCLUSION

The Luftwaffe is clearly superior to the RAF as regards strength, training, command and location of bases. In the event of an intensification of air warfare the Luftwaffe, unlike the RAF, will be in a position in every respect to achieve a decisive effect this year if the time for the start of large-scale operations is set early enough to allow advantage to be taken of the months with relatively favorable weather conditions (July to the beginning of October)."

APPENDIX D

7 AUGUST CIRCULAR CONCERNING BRITISH RADIO CONTROL OF AIRCRAFT

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, even taking into consideration the probability that the ground stations are partly mobile. Consequently the assembly of strong fighter forces at determined points and at short notice is not 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. It can, indeed, be assumed that considerable confusion of the defensive networks will be unavoidable during mass attacks and that the effectiveness of the defences may thereby be reduced."

ENDNOTES

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5. Harold Faber, ed., Luftwaffe: A History (New York: Quadrangle/The New York Times Book Company, Inc., 1977), p. 188.
6. J. Noakes and G. Pridham. eds., Documents on Nazism, 1914-1945 (New York: Schocken, 1969), p. 581.
7. Ibid., p. 584.
8. Bekker, p. 150.
9. Ibid.
10. Joint Doctrine Air Campaign Course, The Battle of Britain A German Perspective (1992), p. 11.
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12. Faber, p. 191.
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14. Bekker, p. 148.
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16. Murray, p. 48.
17. Bekker, p. 131.
18. Murray, p. 52.
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20. Adolf Galland, The First and the Last: The Rise and Fall of the German Fighter Force, (New York: Holt and Co., 1954), p.

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22. Wood, p. 2.

23. Ibid., p. 46.

24. Headquarters United States Air Force, JFACC Primer 2nd ed., (Washington: 1994), p. 28.

25. Bekker, p. 145.

26. Ibid., p. 145.

27. Ibid., p. 146.

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29. Bekker, pp. 171-172.

30. Ibid.

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32. Ibid.

33. Bekker, p. 174.

34. Ibid., p. 176.

35. Karl Klee, Operation "Sea Lion" and the Role Planned for the Luftwaffe, Monograph 8-1115-5 (Maxwell AFB AL: 1955). pp. 66-73.

36. Joint Doctrine Air Campaign Course, p. 48.

37. Francis K. Mason, Battle Over Britain (Bourne End, UK: 1990), pp. 507-508.

38. Wood, p. 46.

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