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BATTLE OF BRITAIN AND ITS IMPACT ON WORLD WAR II Bakalářská práce

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Prohlašuji, že jsem bakalářskou práci vypracoval samostatně a použil jen uvedených pramenů a literatury.

V Prostějově 18.4.

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Summary abstract

The main point of this bachelor project is to sum up every important thing which happened during the Battle of Britain. It starts with the circumstances which preceded the battle and continues with describing all the stages of the battle. At the end there is a summary of the result of the battle, its analysis and impact on Europe. Everything described extensively.

Introduction of the battle

The Battle of Britain is a name given to the one of the most important air campaigns which took place during The World War II on the Western Front. In the fact it was the first battle in the history of mankind where only air forces and nothing else was used. This battle continued almost four months in 1940, specifically since the 10th of July till the 31st of October 1940. The location where all the fights happened was United Kingdom airspace, especially the south of England and the English Channel, in the Czech Republic better known as La Manche. The two main belligerents were the United Kingdom and Germany. Nevertheless, the United Kingdom had many allies, including Czech Republic, Poland, Australia and many more. The German air forces were called Luftwaffe. To make it clear, in translation it stands for an air weapon. The English ones were called simply Royal Air Force. We can see the beginning of it all in Germans. Their effort was to make the British air forces weaker, in order to reach their goal, which was to become dominant in this part of Europe. That was the reason why they started offence against Great Britain. The main point of it was clearly to be strong enough to launch Operation Eagle Day which will be mentioned later. The Battle of Britain was the first purely aerial battle in the history of wars. Its whole course took place only in the air, where warriors also decided about the outcome of the battle. It was named according to Winston Churchill and one of his famous statements. However, it is important to note that the main role during the battle had the English Channel. To make it clear, Winston Churchill did not expect fights in the air, at least not to the same extent as it turned out. The Battle of Britain consisted of many air battles over Britain and the English Channel in the period from July to October 1940. The day of the Battle of Britain is considered to be the 15th of September. The task for Luftwaffe was to destroy RAF, which again tried to retain sufficient combat readiness and enough power to detain any invasion. After the conquest of France there remained in Western Europe the last enemy for Germany. German staff thought that the most important goal would be earning superiority in the air space. That was the start of the first large air battle.

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1. The beginning of The World War II and its influence on Great Britain

When Hitler came to power, he wanted nothing so powerfully as to be the winner on the battlefield. He wanted to repair the defeat and humiliation of Germans from the World War I and issued a massive campaign. British intelligence revealed the continuous growth of the German war industry and warned against situations that were about to come. In addition, British intelligence also knew well about German weaknesses as well as the French ones. British military and civilian officials wanted to take advantage of isolation from the rest of Europe, which was caused by the location of United Kingdom. Simply, isolated state consisting of islands. That was the reason why they started to design their strategy as defensive (BBC History, 2015).

The most positive thing about long-term planning was about being based on the role of science and modern technologies. This investment wholly paid dividends as defenders brought invaluable communication and guidance systems. It aroused great scientists to colossal and useful activities.

The battles in Poland and France, that preceded the Battle of Britain, examined Luftwaffe, which achieved an excellent form of short-term support for ground troops. They focused mainly on supporting the rapid progress of Wehrmacht. Luftwaffe had had there achievements and Göring was fully satisfied, despite the fact that the Battle of Britain would be absolutely different type of war, because of the United Kingdom isolation, as I mentioned before. Göring mostly relied on huge combat experience that Luftwaffe had and he firmly believed that Germans are invincible (Wikipedia, 2014). As Lake (2000) claims, Göring issued a general plan of the war against Britain which was supposed to be limited to the devastating attacks against Air Force and its industry which was weakly protected. That happened five days after the armistice with France. Attacks on enemy aircraft, its organization and its industry were necessary too. Also protection of the British territory, which was supposed to be occupied by the Wehrmacht, was needed (Lake, 2000).

According to Sturtivant (2007), Göring's plan thus had a plenty of points, which were supposed to be seamlessly achieved: to understand British defensive strategy; to throw all the power in order to destroy the RAF aerospace; to attack ports, shipping convoys and to cut off the foreign supply of England. In order to save time, Göring wanted to have all of this done in a few weeks. However, he miscalculated. Hitler, regardless of his prejudice, previously turned against Luftwaffe, went even further. He forced Göring to join more requirements to his plan: to attack British naval forces in their home ports, including the Scottish ones; to excite coastal defence; to break the resistance of British ground forces. Despite many voices against Hitler's demands, he remained stubborn and insisted that his plans were brilliant (Sturtivant, 2007).

With the outbreak of the Second World War, one of the most important leaders of RAF, Hugh Dowding (who will be mentioned later) calculated that he would need 52 fighter squadrons to defend the United Kingdom just in case Luftwaffe bombers would strike without fighters escort (Battle of Britain 1940, 2007).

In May 1940, after the Wehrmacht offensive penetrated with German armoured troops deep into France, Dowding had only 36 fighter squadrons. He was sure that the battle of France was already lost, so it would be useless to promote France anymore. It would be absolutely wasteful. If we look today at this Dowding's effort, we must admit it was wise and beneficial, although the Frenchmen felt a great disillusionment in that time. Nevertheless, it brought England great benefits during the evacuation of defeated British troop expedition in France at the outset of the battle of Britain. (Wikipedia, 2015)

When Prime Minister of United Kingdom, Winston Churchill, rejected Hitler's offer of a truce, Dowding expected nearby future would become problematic. He prophesied the threat of German invasion. Fortunately for him, Hitler's decisions affected a lot of situations. Instead of giving the command to chase the defeated British army and to eliminate them in the sea around Dunkirk, the Wehrmacht and Luftwaffe was allowed to have a vacation as a reward for the defeat of France.

That was great news not only for Dowding, but especially for the whole United Kingdom. He had more time for developing an activity at the highest levels, in order to tighten the construction of defences and to increase aircraft production, primarily Hurricanes and Spitfires, the most important air forces.

Another important man was Winston Churchill. He trusted in Dowding's abilities for a long period of time. He took each of his opinions very seriously. Dowding performed both, strategic and tactical decisions, in the shortest possible time and he was even able to monitor and check the progress of every thing that was happening around him. (Wikipedia, 2015)

2. Luftwaffe against RAF and its arms

It is nothing unknown that every battle outcome depends not only on good military leadership, but also on the technical possibilities of used weapons. It was especially the Battle of Britain which showed how small technical differences may play a big role and may affect the result.

As I mentioned before, Luftwaffe entered the Battle of Britain with many experienced soldiers, thanks to the struggles on the Western Front. In my opinion it was a great advantage for Luftwaffe. In addition, advanced fighter tactics were more efficient. One of the most important things affecting the result was the quality of aircraft machines. Many authors of scientific publications tried to judge whether Messerschmitt Bf 109 E or Supermarine Spitfire Mk I was better. Despite the fact that both of these types of fighters were almost equal, I will mention later why Spitfire showed better results. Every aircraft used in this battle had its own advantages and disadvantages. Nevertheless, both Messerschmitt and Spitfire belonged undoubtedly to the absolute peak in its time.

Green (1980) is convinced that German aircraft had greater availability and almost twice better rate of climb than his British rivals and it performed better performances even at higher altitudes. On the other hand, Supermarine Spitfire was better at lower altitudes. As you can clearly see, there existed some differences between these aircraft but the result was almost equal. When flowing at medium altitudes, both machines were losing their height advantage, because at these levels they reached the similar speed. Spitfires were known for their excellent manoeuvrability. The biggest disadvantage for Messerschmitt was its low range about 660 km (Green, 1980). Green (1980) even knows that Luftwaffe used during the Battle of Britain several types of bombers: Junkers Ju 87, Ju 88, Dornier Do 17, Heinkel He 111, each of them with a different success. Junkers Ju 87 unquestionably reached the peak of its career during the Battle of France. Nevertheless the Battle of Britain showed all its shortcomings. However, the next type of Junkers, with number 88, was regarded as the best of German bombers. Even British side claimed it. The rest of the German bombers had a similar destiny to Junkers 87. The remaining aircraft, Dornier and Heinkel, suffered on the bad distribution of defensive weaponry (Green, 1980).

3. The start of the battle

According to Lake (2000), it is not an easy task to determine when the Battle of Britain started and how to differ it into all the particular stages of the battle. There have always been speculations about it. Eventually, it was decided by the oldest independent air force in the world, known as The Royal Air Force (RAF, founded in 1918). It is the United Kingdom's aerial warfare force. The battle was started on the 10th of July 1940, because it was the day when Luftwaffe (The German Air Force) was more active than previous days. The final day of the battle was 31st of October 1940. That was the day when all hopes of Nazis became senseless. Nevertheless, I will start with the first day of the battle (Lake, 2000).

In the morning of the 10th of July, British radars detected an aircraft which was trying to ascertain what the weather was like. Later on that day there were seen more and more Luftwaffe aircraft, approaching Great Britain's shores. They were seen above Calais, a major ferry port in northern France. This aircraft was composed of Dornier and Messerschmitt and the British convoy, meant to be destroyed by Luftwaffe, was protected by Hurricanes. That was the first fight which began this battle. The casualties during this fight were almost equal, Germans even succeeded in sinking one British ship. In the meantime, other places in Britain were attacked, for example some ports, especially Falmouth and Swansea in Wales. Germans never fought as individuals but only in groups to escalate their chances of winning or surviving. During this stage of the battle, the Royal Air Force realized that there existed a plenty of insufficiencies that should have been eradicated (BBC History, 2015).

Especially changes in strategy were expected. A much more flexible and pro-active strategy was needed in order to become successful and to avoid useless losses. For

example, so-called line astern was cancelled. It means a formation in which a number of aircraft or ships follow one another in a line (Oxford Dictionary).

Pilots were supposed to be vigilant all the time of their fighting. There was even advised to use rear-view mirrors, although some of the pilots ignored these instructions which were meant to help pilot's protection. The fighters called Boulton Paul Defiant were seen as useless.

As Wheeler (1992) states, in practice, the Defiant aircraft was found to be reasonably effective as a bomber–destroyer, but vulnerable to the Luftwaffe's more agile, singleseat Messerschmitt Bf 109 fighters. Lack of forward armament was proved as the major weakness in a daylight combat and its potential was only realized when it switched to a night combat. Later on, Defiant was supplanted in the night fighter role by Bristol Beaufighter and de Havilland Mosquito. Defiant found use in gunnery training, target towing, electronic countermeasures (ECM) and air-sea rescue. It had the nickname "Daffy" among RAF pilots (Wheeler, 1992).

4. Hugh Dowding and his life in short

All the most important decisions were made by Hugh Dowding, the main commander of the Battle of Britain and especially RAF commissioned officer. He was born in Scotland, but he started his military career in Gibraltar, Ceylon and Hong-Kong, where he served since the start of the twentieth century, specifically in 1900. One of his greatest achievements was reached during World War I. During this period he served in France which concluded in his promotion to the rank of brigadier general. Nevertheless, his most influential accomplishment done by him was established during this battle. I mean the world's first wide-area ground-controlled interception network, controlling the airspace across the UK from northern Scotland to the southern coast of England used against Luftwaffe's attacks during The Battle of Britain, called simply Dowding system. I would like to mention all the awards which he reached as wikipedia claims: Knight Grand Cross of the Order of the Bath, Knight Grand Cross of the Royal Victorian Order, Companion of the Order of St Michael and St George, Mention in Despatches (Wikipedia, 2015).

5. German optimism

In the beginnings of German invasion, Germans thought that the invasion would continue seamlessly and without any crisis. They presupposed that they would become the kings of airspace, but it did not go as simple as they thought it would go. So while Germans were satisfied with their first minor success, RAF was trying to improve their system or organization, even the Dowding system was proved to be one of the possible solutions. In spite of this, RAF hopes and visions were not seen as optimistic as Luftwaffe ones. In my opinion, it could have been one of the important features of the consequences which led to the final victory of Great Britain. Nevertheless, the second stage of the battle started on the 8th of August 1940. In this case the goals of Luftwaffe by days were situated in Southern, Eastern and Central England, for example towns like Portland, Portsmouth or Southampton plus radar stations in these parts of England. The radar Ventnor situated on Isle of Wight was almost destroyed by Luftwaffe attacks as one of the 20 original Chain Home radar stations authorised in 1937. As www.subbrit.org claims, the station first became operational in temporary hutting in late 1938. Ventnor stayed important even after the World War II despite the fact that other Chain Home radar stations were not used anymore and were cancelled. Ventnor remained as one of only 26 operational radar stations in the United Kingdom (Subbrit, 2004)

It must be clear that it was not everything what Luftwaffe wanted to destroy. Other items in Luftwaffe possibilities to destroy were communications; ships and convoys, especially floating through The English Channel (also known as La Manche), separating southern England from northern France. The goals of Luftwaffe by nights were a bit different. Several places were bombarded, I would like to mention especially Central England again and Southern Wales, Bristol and Merseyside. Mine laying continued (Lake, 2000). Luftwaffe was more dangerous than RAF during this stage of the battle; it is clear when you see an amount of losses on both sides. The number of RAF losses was almost two times bigger than the Luftwaffe's number. Whole defending system needed to be more effective because the Germans were bloodthirsty and as I mentioned before, they were utterly optimistic. As the main character on RAF side was Hugh Dowding, the Luftwaffe's one was Hermann Göring.

According to Fellgiebel (2000), before the Battle of Britain, he was ranked by Adolf Hitler as Reichsmarschall (literal translation: Marshal of the Realm) of the Greater German Reich thanks to his previous achievements. Göring had already received the Knight's Cross of the Iron Cross on 30th of September 1939 as Commander in Chief of the Luftwaffe. He played as important role as Dowding during this stage of the battle (Fellgiebel, 2000).

Hermann Göring was waiting for better weather and was personally convinced that he would gain overwhelming superiority in the air within following four days. Smart Dowding was not to provoke sorties exclusively against German fighters and conserve forces and the main backup to the north from the 11th Fighter Group. Furthermore, he was more and more strenuously looking for other aircraft and pilots. In August he was pleased to discover that his martial means even increased. One interesting fact is that even the number of squadrons increased, thanks to Czech and Polish fighters. (Wheeler, 1992)

6. Adler Tag

Adler Tag (literal translation: Eagle Day) happened on the 13th of August. This operation was activated by Luftwaffe. The whole plan, which was created by Hermann Göring, had the objective of inflicting a mortal wound.

As Lake remarks (2000), it could have been the most important day of the battle for Göring and whole battle could have been won for Luftwaffe. The operation was supposed to be started in previous days or weeks. Nevertheless, the weather in this part of world is most of the time unpleasant, so that Luftwaffe had to wait for better conditions (Lake, 2000).

The attack was directed mainly at airports. It began with a heavy air raid against airports like Eastchurch, Portland, Southampton and other situated in Hampshire and Kent counties. On that day Luftwaffe performed around 1500 flights. Right in the morning, several enemy intelligence aircraft was downed by RAF pilots. This caused a carefully prepared plan. In addition, very fallible Intelligence service of Major Schmidt and his inaccurate assessment of the nature of airports caused that German raids were conducted against training units and coastal forces. It was not such a great problem for Hugh Dowding because he especially wanted to maintain the amount of combat fighters on the same level (BBC History, 2015).

As Lake (2000) claims, the Eagle Day had the misfortune actually from its beginning. When the first formation of German bombers with an escort of Messerschmitt 110 fighters launched, then came the command saying that the attack is cancelled. Nevertheless, the message was received only by the Messerschmitt 110 escort that immediately returned back. Now I think it is clear how it all continued. The German - 16 - bombers (Dornier) continued in a flight all alone without its protecting escort (Lake, 2000).

The same author even found that the German strike force was underestimated so there was the less number of RAF fighters sent. Although they managed to attack one group just as it emerged from the clouds, they let another one fly at the Eastchurch airport. Their intent mighty blow heavily damaged this airport. Twelve people were killed and forty people were injured. Only when the Germans were about to return back, RAF succeeded in a counter-strike when they managed to shoot down four Dornier aircraft and the same number of them was damaged (Lake, 2000).

Wheeler (1992) claims that further west the RAF fighters dispersed Junkers 88 aimed at Farnborough, the major air station. Enemy bombers retreated under a curtain of clouds. That was an absolute failure for Luftwaffe; they were dissatisfied with this situation. Another Luftwaffe raid, aimed at Portland, also met with failure. Messerschmitt 110 fighter escort, which was captured by the radar right at Cherbourg, was immediately attacked and destroyed (Wheeler, 1992).

A plenty of Messerschmitt aircraft were shot down immediately by the traditional RAF fighters, Hurricanes and Spitfires. So actually the true start of The Eagle Day began in the afternoon with mass raids from to Folkestone, Portland, Southampton, Kent, the Thames Estuary and many more. In the first flight Luftwaffe used fighter tactics outposts in which the Messerschmitt 109 and Messerschmitt 110 flew before bombers to clean up the area from the British fighters. That was the start of merciless fights. There happened one of the Luftwaffe achievements when they succeeded in attacking Southampton, a port situated in South East England in County Hampshire.

Wheeler (1992) points out that docks, warehouses and port facilities were burned by Luftwaffe bombs. Junkers 87 suffered the largest losses during these fights. Despite the fact that they succeeded in attacking Southampton, it was not without any loss and had a price to pay. Further east, heavy raid took place at the airports of Detling and Rochester (Wheeler, 1992).

However, Nazi bombers with strong fighter escort were not able to find Rochester due to thick clouds, so that they dropped their bombs at least on the city of Canterbury, instead of Rochester. There appeared losses on both sides of the barricade during the return back. Despite the fact that airports of Detling and Folkestone were almost destroyed, The Eagle Day was not seen as successful event for Luftwaffe. British air defenders showed extraordinary courage and will to win during the fights and it led to an optimistic outlook on outcoming situations (Wikipedia, 2015).

As Lake (2000) states, they shot down 45 enemy aircraft for the loss of 22. Marshal Göring was convinced that Luftwaffe's failure happened because of its lack of aggression, which was more seen at RAF fighters. Nevertheless, it is clear that Hurricane and Spitfire showed better quality than Messerschmitt and Junkers. (Lake, 2000)

7. Most intensive Luftwaffe attack

This event happened on the 15th of August. Actions, executed that day, were known as the most intensive so far. The front of the battle widened, which means that it became 750 kilometres long, from Plymouth harbour to the River Tyne, situated in Scotland. All three airlines of Luftwaffe and all British and Allied squadrons (which were available to help RAF) were deployed in the fight.

According to Wheeler (1992), number of flights reached the daily record on both sides. However, the loss was bigger on Luftwaffe side again. The most interesting event of that day was an attack of the 5th Luftwaffe Air Army. But what was the interesting fact about this? It was led from Norway, what was the unusual matter about this. Nevertheless, this tactical experiment of German air crew ended in a fiasco, unsurprisingly from my point of view, because German results were getting worse and worse for longer time. On the other hand, RAF seemed to take the matters of the battle in their own hands. The problem of that action was that it was assumed by Luftwaffe that no resistance would appear (Wheeler, 1992).

The whole action started around 1 P.M. Luftwaffe flew to different locations of the British coast in three waves. The first two were aimed at Sunderland and Tyne, third at Driffield airport. That squadron consisted of 157 aircrafts altogether. In the action naturally appeared Heinkel, Junkers and Messerschmitt. Luftwaffe was everywhere repulsed with heavy losses while RAF did not suffer a single loss. The only Luftwaffe outcome of the event was reflected in the damage of the Driffield airport (Yorkshire Aircraft). As Green (1980) claims, that was the day when Junkers 87 flew for the last time during The Battle of Britain. Its flaws became apparent: poor manoeuvrability and a lack of speed and defensive armament meant that the aircraft required heavy fighter escort to operate effectively. In spite of this, because there was no better replacement, the type continued to be produced until 1944. Then it was replaced by Focke-Wulf, but that has nothing in common with this battle. To sum it up, Junkers aircraft was shut down from this operation and appeared only in exceptions. (Green 1980)

8. End of the second stage of the battle

The last five days of the second stage of the daily operational activities of the Luftwaffe were weak, but the nightly operations increased. German Air Force, however, was far from being defeated, although their last efforts ended unsuccessfully. Their hopes still existed. Even so day after day the big battle engagements did not provide decisive results. In the British point of view, one day took place a conference of senior officers convened by Marshal Park. He stressed to sector commanders and supervisors that they must refer the protection of sector airports, of which controllers transmit squadron into battle. And secondly, it was necessary to avoid fights of fighters against fighters and to concentrate all the activities on shooting down enemy bombers. The main emphasis was on attacking Luftwaffe raids as soon and as much as possible. It was not necessary to create so-called "wings", which require too much time of the event and other manoeuvres. It also meant it would be important to divide squadrons for patrolling the airport sectors instead of being navigated towards enemies.

These opinions caused long-winded discussions, as Lake (2000) describes well. All the fighters lusted after fights. Exhausting and long patrolling seemed to be boring for them so they were not satisfied with some of these choices. It was proved that base commanders behaved at some airports too superior. Another fact was that accommodation conditions for the struggle tired pilots did not comply. At the headquarters of the Royal Air Force alternated optimistic mood with worries. Dowding hopefully watched vigorous activity of Lord Beaverbrook, who was able to steadily increase production of Hurricanes and Spitfires, the indispensable components of Royal Air Force (Lake, 2000).

At the end of August Dowding found that it was going to be available around 1100 serviceable fighters and another 500 in a promising repair. The biggest problem seemed -21 -

to be supplying more and more fighter pilots because their losses were in haunting numbers. Despite the fact that the majority of killed fighters was on Luftwaffe side, RAF had to solve this problem too. Some of skilled fighters died during the battle, although the number was not as high as you could imagine, and the new ones were supposed to get the needed skills. New pilots began a battle with barely ten hours spent in a pilot cockpit. On the 10th of August Dowding had to agree with operational training of pilots further shortened to just two weeks out of six. In addition, he suggested deploying into the battle even continuation schools OTU (Operational Training Units), as Sturtivant (2007) found (Sturtivant, 20007).

There is no doubt that the deployment of allied pilots into the battle, especially the ones from Czechoslovakia and Poland, who were forced to leave their homes because of Germans, meant for Dowding an important help which he and the British government very favourably commented on in newspapers and on the radio.

9. Göring's opinions

Also Marshal Göring convened a gathering of his commanders. He insisted on his belief that Luftwaffe could decide the battle on its own. According to Göring, It was necessary, however, to send more attacks against Bombardment of RAF and thus prevent Luftwaffe against British air counter-strikes. As I mentioned before, it was necessary to cancel Junkers aircraft. Göring admitted that these planes disappointed him as well as Messerschmitt 110. Also he admitted that the previous version (Messerschmitt 109) was better than 110. He strongly demanded from Luftwaffe fighters more responsibility and he threatened the fighters, which would not fight great, to be brought before a court-martial. Bombers were forced to hold tightly together all the time. It was clearly because of increasing their ability to protect themselves against RAF fighters.

10. The third stage of the battle

The Germans started to realize that they have so far failed to break the resistance of RAF. Despite the fact that the third stage of the battle is counted since 24th of August (BBC History, 2014), already on the 18th of the same month there happened some important facts which influenced next orientation of the battle. Göring, for example, decided that the fights must continue through the days and nights, 24 hours a day, seven days a week, no relief was possible in order to finally break through RAF. It was not important what the weather was or any other circumstances (BBC History, 2015).

As Lake (2000) points out, a new strategy against RAF radars was invented: throughout the days will be different aircrafts crossing Channel here and there, in order to confuse British defence system. In my opinion it was not bad idea, it could have helped Luftwaffe to increase their strength and especially chances to finally defeat RAF. Occasionally, these forces could carry out misleading attacks. Immediately on the first day of the battle Luftwaffe started attacks in big waves of a great number of aircraft. Germans finally achieved the best result so far, and the critical phase for defenders was actually started by this German strategy (Lake, 2000).

And what happened that time? Luftwaffe traditionally attacked British airports. For example Manston Airport was literally swept away due to German raids. Manston was used as a forward base by many squadrons, due its location close to the frontline, and it was frequently attacked and heavily bombed (Wikipedia, 2015).

Hawker Typhoon and Gloster Meteor squadrons were based at Manston during the Second World War. Naturally, many other places like Dover, Southampton or Portsmouth were attacked too. There were killed about 100 civilians in Portsmouth, - 24 -

despite the fact that Luftwaffe was focusing mostly on airports in southern England. That was the night when even London was hit for the first time. RAF fighters competed against night raids for many times, but they managed to shoot only one German aircraft (Wikipedia, 2015).

In the following days of this stage of the battle were Luftwaffe attacks focused mainly against fighter airfields in Kent and Essex. Number of RAF losses was dangerously growing higher. Encounters with the enemy failed more often than it should correspond to the amount of Allied fighters. Sometimes it happened, for example, that a large formation of the enemy attacked only one wing, or even smaller units. It was ordered to sectoral inspectors to make more flexible decisions (History Learning Site, 2014).

As this stage continued, more of larger cities were attacked. During one night, 150 bombers were thrown to Liverpool, as Ray (1996) claims (Ray, 1996).

On the 31st of August, RAF recorded the biggest amount of losses for the entire battle. 14 fighters were killed

(http://archive.iwm.org.uk/upload/package/27/battleofbritain/imp31aug.htm). This day the Germans attacked even radar stations. Looking at the results of RAF bombing airports, it could seem that all their life was paralyzed. However, it continued, and only thanks to the superhuman efforts of all its members, damages were corrected in the shortest time. Nevertheless, RAF pilots began to feel great fatigue and wear. In addition, aircraft factories were badly destroyed so that they had to be protected by special patrols.

11. Great RAF losses and new tactic

From the 24th of August Germans destroyed 295 fighters and 171 others damaged severely (http://www.raf.mod.uk/bbmf/theaircraft/hurricanemk1p3395.cfm). This huge loss could have been refilled only with new or repaired Hurricane and Spitfire aircraft. Relation between losses and crew replenishing were even more hopeless. Totally about 100 RAF pilots were killed and more of them injured. Especially the less experienced squadrons were decimated (Lake, 2000).

Dowding and other commanders were considering carefully how long they can withstand such activities. Communication systems and operational radar equipment suffered extraordinarily thanks to the German bombing. Dowding thought that if the enemy attacks on airports and aircraft factories would continue, there would exist a negative possibility that the airways to London would be free and German invasion on islands would be sure. Fortunately for Dowding, Göring and air commanders of armies contemplated completely differently. An interesting change was visible in the work of British inciters. They desisted from various devices during calculations. One of them tried to direct its own aircraft to enemy tentatively, only by his estimation. I would not expect that it would be successful. Nevertheless, it was. He and other inciters started to use this strategy more often and there were seen results in this coincidental tactic. It was surprisingly accurate and quick. This method was introduced in all operating theatres (Wheeler, 1992).

British hopes were alive again.

12. The fourth stage of the battle

This stage took place on the 7th of September and lasted until the end of this autumn month. Nothing important changed, goals of Luftwaffe were almost the same, and they were always attacking through days and nights. One of their main goals was to destroy London and other places, not only in England. Southern Wales was attacked too (BBC History, 2015).

It was considered for a long time by some experts in the management of the Luftwaffe that the most important goal should be London, as the largest city in England. It has its reason. Under the direct heavy blows, the morality of its inhabitants would have been broken and the British would have eventually asked for a truce or a ceasefire. More or less, such was the thinking of Luftwaffe. Adolf Hitler, who insisted to give the order to destroy the British capital city, personally agreed. Göring and his staff barely suspected that it would be the biggest mistake for the entire battle. On the other hand, Dowding could have been immensely relieved (Lake, 2000).

On the beginning of the fourth stage of the battle Luftwaffe started as usual with attacks on RAF airports. British radars captured a large group of aircrafts crossing the Calais airspace. The British had expected that, as usual, these aircrafts split, in order to attack different places. Soon they realized that it would probably be a completely different kind of raid.

As Holland (2011) states, over three hundred bombers and six hundred fighters flew over the coast in two waves. The first one went to the Thames Estuary, the second one an hour later to the middle of London. All the time they were together. When groups of RAF commanders and sectors inspectors realized the different kind of Luftwaffe attack, they diligently began their fighters to concentrate together for the defensive counterstrike. Unfortunately, it was too late for them. The two Luftwaffe mass attacks penetrated to the target without any loss and then they dropped their bombs on the surprised British capital city of London (Holland, 2011).

The massive overflow of London meant a great victory for Luftwaffe. Unexpectable change of the German tactics meant for the RAF fighters a great problem. They could not break through impregnable fortress of Luftwaffe bombers, which was formed by the amplified direct and indirect fighter escort. Dowding and his crew were frantically searching for solutions because that was one of the important parts of the battle and the RAF end was too near that time. The tactics were changed immediately. During the afternoon the German radio broadcasted the bombing. Göring triumphantly claimed that the victory was near and London was about to be destroyed and other optimistically sounding information. Nevertheless, none of the Nazis, but also the British had thought that the first mass attacking of London was also the last of its kind. The unbelievable came true. The interception system worked brilliantly. RAF fighters' bravery was absolutely boundless. The adapted tactics invented by the part of the headquarters of the British aviation bore fruit (Wheeler, 1992).

Nevertheless, German camp was always enthusiastic. Marshall Göring took command over the entire operation himself personally. The day after, as it was expected, there was another attack led against London. However, success did not repeat. The British fighters were prepared well and ready to protect the capital city of Britain without mercy. All the important places like airports and aircraft factories were protected utterly perfectly. Encounters with the British enemy were so successful that mass German bombers were divided earlier than they got to their goal. (Lake, 2000)

13. Wehrmacht invasion

On the 11th of September 1940, Hitler decided to use Wehrmacht for the invasion later on. In England it was expected a long time ago, but nothing was going on about it, so they waited, whether it would come or not. It must be clear that it could have been much easier for Germans to invade Islands more successfully with Wehrmacht (Battle of Britain, 2007).

The lower marshal Park released new instruction to the RAF controllers. He stressed that the enemy attacks in two or three massive raids in waves. It was necessarily to face these actions successfully so that squadrons were forced to fly in pairs. Emergency squadrons were supposed to attack the first Luftwaffe wave. Spitfires had an obligation to take care of the German fighters. In the meantime, Hurricanes had an obligation to attack Luftwaffe bombers and its direct escort. As you see, the roles were divided according to the type of aircraft. It was precisely planned to the last detail and British chances had a great chance to defend great thanks to these special tactics and new strategies developed by RAF marshals and other people engaged in the battle (Lake, 2000).

Unfortunately, there is not enough space for describing the whole strategy into deep and some things are difficult to understand properly. Nevertheless, if the enemy had attacked with the third wave, last squadron would connect together in pairs. Some squadrons were designed to protect factories, and to pursue the enemy approaching from the south to London. Following three days Luftwaffe sent to London only small forces. It looked like some kind of determination what the situation was like and whether RAF was prepared well for the approaching invasion, because next day it started (Battle of Britain 1940, 2007).

There was another huge attack on London. Fortunately for London, the entire event, however, was broken by the RAF fighters before Germans could harm the capital of England. Luftwaffe suffered the highest losses so far during this stage. Some pilots had to save their lives by an emergency landings or parachute jumps, but it is nothing special. Score of losses thus greatly turned during this event in favour of the RAF, despite the fact that Göring still believed that on this day the British Air Force would experience so-called coup de grace. However, the RAF fighters were still appearing, fighting against the Luftwaffe. Göring's returning crew team reported large amounts of fights, unfortunately for Luftwaffe, without any success (Wheeler, 1992).

Finally, the Reich Marshal also had to admit that his airmen are tired. Curiously, the German fighters complained the most. On that day, the fights took place along the whole British coast. The headquarters of the British Air Force recorded its highest percentage of engagement ever. 22 out of 24 engaged squadrons had to fight with the enemy. As you can see, the occupancy was almost maximal and that is the reason why German bombers found it absolutely impossible to attack accurately according to their plans (Lake, 2000).

Dowding and his two commanders of fighter groups gratefully recorded the achievements of their fighters and they praised them often for their courage as their goals were accomplished. Even further German raids that day were successfully liquidated by quality RAF pilots. There was also the excellent cooperation with antiaircraft artillery. To sum it up, that day there were no chances for Luftwaffe in

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succeeding their unconvincing effort to invade Great Britain. Remember the 15th of September as the most successful day of the battle, and therefore celebrated as the day of the Battle of Britain (claimed by a plenty of authors).

However, some minor shortcomings still existed. On the 18th of September, British radars deceived its own airmen when as a result of cloud sky they did not catch massive raid of 190 Luftwaffe aircraft. At least 60 of them leaked over to London, but they were immediately attacked and destroyed or broken up (BBC History, 2015).

Later on that day, radars reported 150 aircraft over Calais. Immediately by the British coast were caught and forced to retreat. Another two raids of 20 bombers with fighter escort were totally fractured. The outcome of the nervous German bombing equalled almost zero. Many German crews were returning back with planes that were heavily damaged due to great British work. Nevertheless, they deserved that. Even the German command began to worry about replenishing state of aircrafts and persons. They did not take into account the possibility of the turnover of the battle results (Wikipedia, 2015).

However, Luftwaffe continued feverishly in the preparations for the invasion. British Air Force intelligence brought every day the images of German ships prepared for the invasion from the Kingdom of Belgium, the Netherlands and France. Then these objects were bombarded by British Air Force bombers. Over a thousand vessels, sent by invading Germans, were under constant bombardment. On the 26th of September, a plenty of German aircraft, consisting of Heinkel, Junkers and Messerschmitt, attacked a factory, generating Spitfires, situated in Southampton. Luckily, only 3 aircraft were destroyed. More of them were damaged, but it was nothing difficult for repairing. Nevertheless, the heavily damaged factory had to be abandoned and there in Bromwich was built a new one, which started the production of Spitfires soon (Wikipedia, 2015).

The day after, Luftwaffe tried again to attack the capital city of England, London, in a massive way. The raids, however, were continuously disposed from the very coast to the suburbs of the capital city. No one got closer; the capital was protected constantly extremely well. Even the city of Bristol was attacked. I have to repeat myself, but Germans did not have any chance against British defenders. From the mass raid on London had the vast majority of bombers to drop the bombs over Kent and then they were forced to escape back to France. Another enemy raid was cancelled consistently and continuously (History Learning Site, 2014).

Admittedly, there was an excuse. Twenty Luftwaffe bombers managed to penetrate above the centre of London. However, it did not help them too much. They lost a total of 55 aircraft, including 22 bombers. Many other aircraft that returned home had to be cancelled due to a heavy damage. That day was one of the greatest victories for RAF during the whole battle (Lake, 2000).

The last day of this stage of the battle started with two morning attacks. Both of them were concluded immediately. Radars detected Messerschmitt aircraft, which was so fiercely attacked by Allied fighters that turned back before the British coast and drove home (Lake, 2000).

At noon sparked a big battle over Kent. That meant another loss for Luftwaffe. All the squadrons, trying to somehow attack Great Britain, had no chance. All the pressure was liquidated as soon as possible (Wikipedia, 2014).

Until the big raid, followed with more than 100 bombers and fighters, that met with some moderate success. London was penetrated by over 30 aircraft. The number of attacks was getting higher. The fights lasted until the dusk of the day (Lake, 2000).

Brave British and allied defenders forced the Germans to save their bombers. German staff calculated that the mass raids are disadvantageous and they needed to change their tactics. They decided that it would be better to send a small force of attack bombers with a mighty fighters escort. That was the time when Junkers squadron was used again, despite the fact, that they had been seen obsolete. And it was justly, because this tactics was not useful, so that it was not used anymore. So when that did not help, Luftwaffe returned again to bombing RAF airports. It is nicely seen how desperate Germans were. According to Göring, RAF was supposed to be destroyed in four days since that day. It was not for the first time when Göring insisted on something like this. (Wikipedia, 2015)

However, nothing changed.

14. The fifth and the last stage of the battle

Luftwaffe continued in its effort to destroy London as well as other British cities like Coventry, Liverpool, Manchester, Glasgow, Southampton, Portsmouth etc. To sum it up, its goals were the most important cities for British industry and for other branches of national economy. Nearly three months of the battle passed, but the Germans supremacy in the air still was not reached. Vice versa, their losses were bigger than gains. They were losing fights and hope to perform the invasion. In order to avoid further unbearable losses of their bombers, Göring ordered in this stage to send the bombers to attack only at night and during the day to use fighters as bombers. Messerschmitt was adjusted for this role. And this change was proved to be successful. This radical change of Luftwaffe fighting caused the British Air Force leadership a lot of trouble (Lake, 2000).

The immense operating height of German fighters was proven to be impossible for British radars to detect, especially in bad weather. These smaller groups of German fighters could exploit it perfectly. They often penetrated deep into inland of England without opposition of British defenders. Another reason was that quick aircraft bombers were not slowed by the real bombers, which were slower to these. Another fact was that RAF did not know which aircraft carry the load of bombs. They initially tried to solve the problem so that they used aired squadrons called Trackers, which had to find an enemy and just highlight it, but avoid fighting. Nevertheless, the British defenders were helpless in the air, especially during nights (Wikipedia, 2015).

In October, RAF possessed six squadrons of Blenheim and two squadrons of Defiant and just one squadron of Hurricanes. Onboard radar devices, operated by an operator in cafe of the two-seater aircraft, were still imperfect. Even reinforcements of daily fighters when flying hour before sunrise and one hour after sunset did not help a lot. It - 34 - was very difficult to detect an enemy only with eyes, while radars were not useful in these cases. And so the enemy at night practically competed only with the opposition composed of anti-aircraft artillery and floodlights, also quite a few effective and successful defensive strategy. Finally, Luftwaffe unleashed over London and several other cities terrible hell and committed unimaginable damage to material and human lives (Sturtivant, 2007).

With the start of the month of October, there appeared a squadron of Messerschmitt approaching the cities of Portsmouth and Southampton. The squadron took off from the French city of Caen, the historical centre of Norman dukedom, built on the rover Orne. About four years later there happened the battle of Caen (Wikipedia, 2015).

To continue, the Messerschmitt squadron met with stiff resistance of RAF fighters. During the whole day of the first of October, Luftwaffe fighter-bombers attacked various targets in southern England, but there barely happened some important losses or attacks, it was a weak attack in comparison to previous ones. The day after, radars and warning service recorded a total of seventeen groups of fifty aircraft. And two next days after, on the 4th of October, an increased activity was recorded. It seemed that Hitler kept the idea of invasion, despite the fact that commanders of ground forces and navy had recommended withdrawing it permanently. They also had argued that the troops gathered for this purpose by the coast and the ports are exposed to constant enemy air raids, especially at night. Their raids were causing huge losses of invading troops. On the 7th of October, Göring invented a new plan for Luftwaffe, consisting of five goals. He wanted to maintain superiority in the air over the Channel and English shores (in my opinion there existed no German superiority, but according to Göring, there was). Further he wanted a complete destruction of London with all its military facilities and industrial production; successive paralyzation of the British technical, commercial, industrial and private life; demoralization of the civilian population of

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London; progressive weakening of RAF units. Besides the obvious concealment of severe losses and defeats of the Germans, the Göring's plan actually admitted that the battle became part of a long term plan and not a short battle how Hitler and his Marshals had dreamed (Lake, 2000).

According to still switching tactics and inconsistency in the implementation of the master plan, it means the destruction of RAF fighters, even the British leaders understood that the German crew settled nervousness and there was big, unpleasant surprise. Still fighting continued. Wing Commanders and sectoral supervisors were forced to do everything in their power and to increase the combat effectiveness. The Luftwaffe pilots were flying at high altitudes, it was necessary for RAF to increase accountability of staff work at all levels, to guide own forces to the enemy as quickly and accurately as possible, to get from RAF pilots as maximum information as possible. There still remained the goal to preferentially attack bombers and make impossible for them throwing bombs and achieving their goals. This strategy had a beneficial effect on the course of the following days of the last stage of the battle (Lake, 2000).

Meanwhile, in the Luftwaffe's camp, embarrassment intruded into the discussions about the invasion. Hitler postponed the date of the final invasion many times. Nevertheless, the last stage of the battle represented the toughest test for the RAF fighters in many ways. Physical exertion at high altitudes was exhausting. The continuity of Luftwaffe attacks demanded greater vigilance and operational activity and bravery. German losses were relatively high. Another unpleasant surprise hit Germans, who found that neither the new tactic met with the expected success. On the contrary, RAF, although considerably decimated and very tired, was still not defeated.

15. The end of the battle

With the end of October, intelligence registered minimal combat operations. Two Luftwaffe air raids on London were easily disposed of. But nothing more happened. This calm seemed to symbolize the end of the battle because of the supreme peace for the entire period of the battle. On that day did not fall even one Luftwaffe aircraft. That was the end of a great air battle which was decided in favour of the RAF's especially thanks to day fighters. It was a battle, which was watched by the two warring parties on both sides of the Channel, but the Armies could not intervene in the battle. It was a significant sign of this battle (Lake, 2000).

In November Göring issued a new commandment for the bombing of major cities, industries and ports, exclusively at night. Daily raids were not as important as the time before, and they seemed to be completely ceased. Hitler had already declared the war against the Soviet Union (known as Operation Barbarossa) and the problem with Britain and the effort to destroy RAF was not dealt anymore. Since that time, Great Britain could be at rest (History Learning Site, 2014).

Conclusion - analysis of the result of the battle

There were a lot of reasons that caused the Luftwaffe loss or RAF victory. The important incidents did not have only military direction, but either political one. To defeat the Germans contributed most high moral and professional value of the fighter pilots of the British Royal Air Force and the excellent qualities of his commanders at all degrees. I must admit it is an undeniable fact that Luftwaffe did not have as great leaders as RAF. It was about making better decisions and strategic changes than the opponent. It is obvious who dealt with all the situations during the battle better. Göring and his commanders, in contrast with Dowding and his commanders, were not able to develop a positive plan of the battle strategies. Germans were mainly obsessed with bombing British areas, despite the fact it was not successful at all.

The immense role played the British uniform system of interception, consistent management and implementation of the strategic plan of a coherent defence. Superiority in the air, absolutely necessary for the invasion could be reached only thanks to fighter machines, whose production stagnated in favour of bombers. That was another mistake of Germans. Göring and Hitler's plans for war against Great Britain were weak. It was often detrimentally changed. On the other hand, Germans were underestimating the British Air Force and its organization. They also were not able to admit fire superiority of British fighter bombers against their machines. As I mentioned before, especially Junkers aircraft meant lack of satisfaction. Otherwise they would have paid far more attention to their bombers.

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Résumé

Hlavním bodem této bakalářské práce je shrnout všechny důležité věci, které se stalo během bitvy o Británii. Práce začíná okolnostmi, které předcházely bitvě a pokračuje popisem všech fází bitvy. Na závěr se zabývá obšírným shrnutím výsledku bitvy, jeho analýzou a dopadem na druhou světovou válku. Bylo zjištěno, jaké byly důvody prohry Luftwaffe.

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Anotace práce:	Hlavním bodem této bakalářské práce je shrnout všechny důležité věci, které se stalo během bitvy o Británii. Práce začíná okolnostmi, které předcházely bitvě a pokračuje popisem všech fází bitvy. Na závěr se zabývá obšírným shrnutím výsledku bitvy, jeho analýzou a dopadem na druhou světovou válku.
Klíčová slova:	Bitva o Británii, druhá světová válka, letectví, útoky
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