

**STRATEGY
RESEARCH
PROJECT**

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**THE ANGLO-AMERICAN COMBINED BOMBER OFFENSIVE IN
EUROPE DURING WORLD WAR II, 1942-1945**

BY

**LIEUTENANT COLONEL SON M. LE
United States Air Force**

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Lieutenant Colonel SON M. LE
United States Air Force

Phillip Pattee, Commander, United States Navy
Project Advisor

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U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

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ABSTRACT

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This paper will focus on an air campaign called the Combined Bomber Offensive (CBO) which took place in Europe between 1942 and 1945. This combined effort of the United States and Great Britain aimed at defeating the German war waging capability. The strategy used heavy bombers to destroy German industrial capabilities, military production facilities, supply lines and communication network, and to alter the German people's will to fight. This campaign was considered as a preliminary step for the D-Day invasion of Normandy. This case study will present the CBO as a campaign in which political factors were carefully examined and received consensus from coalition leadership before its commencement. In addition, the campaign's effectiveness will be evaluated against the principles of war to show the relevancy of these principles in a major theater operation.

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THE ANGLO-AMERICAN COMBINED BOMBER OFFENSIVE IN EUROPE DURING WORLD WAR II, 1942-1945

CHAPTER 1

After World War I, the Treaty of Versailles had caused the German people a great deal of resentment that became the cause for the start of World War II. Although air power was a new combat capability at this time, and strategic bombardment in particular, it was an operational strategy that effectively helped curtail the German war aggression and eventually brought World War II to a successful end.

This paper will focus on an air campaign called the Combined Bomber Offensive (CBO) which took place in Europe between 1942 and 1945. This campaign marked the beginning of a combined offensive effort of the allies, specifically from the United States and England, using strategic air assets aimed at destroying the German war making machine. It was a strategy to exclusively use heavy bombers to target the German industrial capabilities, military production facilities, supply lines, and communication network carried out to effect the will to fight, and the moral of the German people. One of the CBO's primary goals was to gain air superiority by defeating the German air power on the ground through the destruction of air fields, aircraft manufacturing facilities, and military forces. This campaign was seen as a preparatory step for the D-Day invasion of Normandy, paving way for the eventual defeat of Germany. This case study will present the CBO as a campaign in which political factors were carefully examined and received consensus from coalition leadership before its commencement. In addition, the campaign's effectiveness will be evaluated against the principles of war to show the relevancy of these principles in a major theater operation.

Chapter 2 presents the background of the conflict and discusses events leading to the execution of the campaign. Chapter 3 contains a strategic analysis based on asking a series of questions to determine how the campaign was conceived and whether it met the national political objectives. Chapter 4 provides an overview of the air campaign execution to include various aspects of the campaign such as phases, key dates, targets, and results. The nine principles of war are used to evaluate the campaign in Chapter 5. The CBO is examined against each element of the Principles of War for adherence or non-adherence and how that effected the overall outcome of the campaign. Lastly, Chapter 6 will summarize the key points that provide the rationale that led to the decision to commence the CBO and lessons learned from the campaign.

CHAPTER 2

CONFLICT AND CAMPAIGN BACKGROUND

Causes of Conflict.

In the aftermath of World War I, as a result of the Paris Peace Conference (1919 and 1920), many treaties were created to recognize new geographical boundaries of European nations that were under German occupation. Out of this conference, the Treaty of Versailles was created. It severely punished Germany for causing the War and forced them to give up territories to Belgium, Czechoslovakia, Denmark, France, and Poland. In addition to the territorial losses, Germany was humiliated by several stipulations including paying for an allied military force intended to keep them in check. While the German Government had little choice in signing the treaty, most German citizens at the time did not support their Government's acceptance of its harsh restrictions. The Treaty of Versailles, while strictly diminishing the role of the German Government, created resentment among the German people that soon developed into a strong nationalist movement led by Adolf Hitler.¹ In 1936, Germany joined the Axis, an alliance made up of three nations - Germany, Italy, and Japan, to stand against the powers of the Allies.

Events Leading to the Conflict.

World War II began on September 1, 1939 when Hitler's army invaded Poland. Shortly thereafter, Germany expanded westward into Denmark, Luxembourg, the Netherlands, Belgium, Norway, and France. By June 1940, Great Britain was the only nation that had not been invaded by the German war machine. In June 1941, Germany again expanded its scope of domination into the Soviet Union. Up to this point, the United States has been reluctant to enter the war. On December 7, 1941, Japan carried out a surprise attack on Pearl Harbor drawing the United States into the war.²

Political and Military Leadership.

The major Allied powers consisted of the United States, Great Britain, and the Soviet Union. The political leaders were President Franklin Roosevelt of the United States, Prime Minister Winston Churchill of Great Britain, and Premier Joseph Stalin of the Soviet Union.³ The strategic air campaign waged against Germany was a joint effort between the US and Great Britain. The Soviet Union did not favor an air campaign strategy decided to pursue a separate combat front.⁴ The top of American military leadership were General George C. Marshall, the

U.S. Army Chief of Staff, who strongly advocated the creation of a viable air force, and General Henry H. Arnold, Commander of the U.S. Army Air Forces, who was responsible for the establishment of the Army aviation policies and plans.⁵ He tasked General Ira Eaker, Commander of the Eighth Air Force (8th AF), to assemble the U.S. strategic bomber force. General Carl Spaatz who led the American bomber force in Britain later commanded the 8th AF.⁶ For Great Britain, Sir Hugh Trenchard created the Royal Air Force's (RAF) Bomber Command. Sir Trenchard believed that a bombing offensive was the key to victory. It was under the leadership of Air Chief Marshall Sir Arthur Harris, Commander of the British Bomber Command, where responsibility for execution the bombing offensive rested.⁷

Events Leading to the Development of the Air Campaign.

On December 29, 1940, in a radio address, President Roosevelt conveyed to the American people the threat of the Axis and appealed for support of a war effort against the its threat.⁸ From January 29 to March 27, 1941, American and British military leaders met in a series of meetings in Washington known as American-British Staff Conversations (ABC). The primary purpose was to find a way to defeat Germany, should the U.S. be compelled to go to war. The key strategic concepts agreed to were documented in the conference report called ABC-1. It included applications of economic pressure by naval, land, and air forces and a sustained air offensive against Germany.⁹ The U.S. Army Air Force and RAF bombardment units would strike Germany deep at its source. This concept of strategic bombardment was further refined into a strategy called "RAINBOW No. 5", documented in the U.S. Joint Army and Navy War Plan.¹⁰ In the summer 1941, in response to President Roosevelt's request for an estimate of the overall production requirements to defeat Germany, a group of officers within the Air War Plan Division (AWPD) of the Army Air Corps developed an overall plan for strategic air operations in Europe known as the AWPD-1. This plan outlined a bombing offensive strategy designed to weaken Germany's military capability in preparation for an invasion, should one be necessary.¹¹ AWPD-1 was later revised into AWPD-42 as submitted by General Arnold, and proposed the size of a bomber force necessary to attain air supremacy over Germany. This plan was approved by the President in November 1942 and became the blueprint for the Combined Bomber Offensive (CBO).¹² In January 1943, the Combined Chief of Staff (CCS) met at Casablanca to determine an overall strategy to defeat Germany. At this meeting, it was confirmed that an invasion on the Western European continent could not be launched until at least the spring of 1944. To prepare for such an invasion, it directed the 8th AF and the RAF Bomber Command to launch a combined "sustained bomber offensive" - CBO, from bases in

the United Kingdom.¹³ This conference was followed by the development of sets of targets aimed at the German submarine industry, aircraft and transportation systems, and oil refineries. The German submarine capability gained the highest attention because of its successes in disrupting Allies shipping in the Atlantic. By neutralizing German submarines warfare, the Allies would gain control of the sea and permit the uninterrupted supplies of arms and equipment to Britain from the United States. Although the submarine industry ranked first on the CBO's target prioritization, the 8th AF's top priority would be to smash Germany's aircraft industry. General Eaker firmly believed that air supremacy would be the top priority for an invasion, and that it could only be attained through the destruction of the Luftwaffe. Eaker and the 8th AF would set out to, in Eaker's own word, "defang" the Luftwaffe's first line of defense, its fighters. As he put it: *"Should the Luftwaffe remain as vigorous as it plainly was in early 1943, the cross-Channel invasion forces stood a good chance of being slaughtered before reaching Normandy."*¹⁴

CHAPTER 3

STRATEGIC ANALYSIS

Phillip A. Crowl, a World War II Naval Officer and Military Historian, in a speech to the U.S. Naval War College, and in his 1973 memoir titled "The Strategist's Short Catechism: Six Questions Without Answers" proposed a number of questions that must be answered as political conditions to initiate actions for war. These are known as Crowl's six questions. They represent a series of analytical discussions that political and military leaders should examine before reaching conclusions to take actions which might lead to war or to commence the use of American military to resolve a conflict.¹⁵ We will look at the decision process for the CBO using these questions as the foundation for examination to see if or how the decisions to implement the air campaign applied.

What is it about?

From the onset of the conflict, U.S. national interests and political objectives were clearly defined and every effort was made to develop an acceptable military strategy to defeat Germany. The Allies, particularly the United States and Great Britain, were unified in the pursuit of a single objective, and that was to defeat Germany. When Germany, Italy, and Japan formed the Axis alliance, not only would they impose threat, but they would also act against the United States if it were to interfere with the expansion effort of these nations.¹⁶ Great Britain was the only nation left in Europe that had not succumbed to the expansion of Germany. President Roosevelt called on the American people to enter the conflict to support Great Britain:

*"We should enter upon a new and terrible era in which the whole world, ours included, would be run by threats of brute force. To survive in such a world, we should have to convert ourselves permanently into a militaristic power on the basis of war economy."*¹⁷

The fear was that if Great Britain fell, the Axis power would control the continents of Europe, Asia, Africa, and Australia, leaving the United States to defend its coast by itself.¹⁸ In his December 1940 radio address, President Roosevelt established the arms buildup against the Axis as a national policy. As he put it, this policy was meant *"not to direct toward war, but it would keep war away from the United States"* and its people.¹⁹ The policy was transformed into a military objective in March 1941 at the Washington Staff Conversations - ABC. Here, military leaders issued the ABC-1 report adopting a broad military objective to defeat Germany and her Axis allies.²⁰ It further outlined the top-level strategy for a strategic air offensive: "United States Army air bombardment units will operate offensively in collaboration with the Royal Air Force, primarily against German Military power at its source."²¹

Is the National Military Strategy Tailored to Meet the National Political Objective?

President Roosevelt from the start had set the ultimate goal for the nation to bring about all efforts for the defeat of the Axis nations. In a speech to Congress in January 1942 after the Pearl Harbor attack, Roosevelt said:

*"Our own objectives are clear: The objective of smashing the militarism imposed by war lords upon their enslaved peoples; the objective of liberating the subjugated nations; the objective of establishing and securing freedom of speech, freedom of religion, freedom from want, and freedom from fear everywhere in the world."*²²

As the political goal was set to defeat the German war machine, it was translated into the planning of a military campaign comprised of a cross channel invasion into Europe and to engage the enemy with all necessary force. The first step in preparation for the invasion would be to decapitate German air and sea power through the attainment of air supremacy by destroying its industrial and war making capability. To do this, a strong bomber force must be built. As part of this speech, he asked Congress to support funding increase in 1942 for production of military capabilities to include 60,000 planes, of which 45,000 made up of heavy bombers, dive-bombers, and pursuit aircraft; and for 1943, he asked for an additional 125,000 planes comprising mostly of bombers.²³ Based on firm national objectives, in January 1943, the Allied militaries planned a joint strategy to accomplish these goals of progressively destroy and dislocate the enemy's war industrial and economic system. They were to undermine Germany's morale to a point where its capacity for armed resistance would be critically weakened.²⁴ By

destroying Germany's defensive capability, in particular bring the German Air Force, the Luftwaffe, to its knees, in addition, attack its military war industries at its source; the Allies believed it would pave way for a swift land invasion. In a speech to his commanders during the planning phase, General Arnold said: "It is a conceded fact, that Overlord and Anvil will not be possible unless the German Air Force is destroyed."²⁵

What is the Limit of Military Power?

Based on British experience in strategic bombing, the Allies had anticipated two issues. The first concern was the lack of long-range fighter escort. The RAF had performed night raids on targets deep inside Germany since 1940 when they knew they did not have to deal with the Luftwaffe. One of the key issues for a nighttime bombing scheme was that the same darkness that protected the bombers also obscured the targets. This required them to hit a wider area with saturation bombs for increased chance of destroying the targets. Saturation bombs were indiscriminate because they destroyed not only military and war industry; they also caused annihilation of the civilian population.²⁶ The second concern for conducting the air campaign would be the unpredictability of the weather over Europe. Thick cloud cover, fog, and rainy weather substantially reduced visibility and caused significant limitations for precision bombing. Delays to any sustained offensive could allow the enemy to rebuild, regroup or relocate its defensive assets.²⁷

What are the Alternatives?

At the beginning of the War, other options were evaluated outside of a cross-channel invasion. There were many disagreements among the allies as to where and when to offensively act against Germany. The British wanted to invade the Balkans and keep Russia out of Eastern Europe. The Americans were more interested in building up arms to squash Germany quickly so it could move on to defeating Japan. Roosevelt preferred a direct offensive at the heart of Germany while Churchill favored a flank assault through the Mediterranean. Through a series of meetings between the leaders, agreements eventually were reached to adopt strategy consisting of options including major offenses in North Africa and a cross-Channel invasion of France.²⁸

How Strong is the Home Front?

Although America was plagued by deep economic depression in the early 1930's, the sentiment against the fascism of Italy's Mussolini and of Germany's Hitler's was very strong. As terrifying and unforgiving as the Depression was, it united Americans more than pulled them

apart.²⁹ Throughout the 1930's, America remained neutral to the conflict in Europe. But as the Axis formed, the United States edged ever closer to war. In September 1940, Congress passed the first peacetime draft law in US history, authorizing the registration of 17 million men. In March 1941, the Lend-Lease Act was passed authorizing shipment of war equipment to nations whose defense was vital to the United States security – Great Britain, China, and USSR. Immediately after Pearl Harbor, President Roosevelt asked Congress for a declaration of war, calling December 7, 1941, a “day which will live in infamy”. What was seen in America was the Depression of the 1930's replaced by a motivated work force and an abundance of jobs. Newspaper across U.S. reported “headlong rush of young men into the armed forces and of others, men as well as women, into the nation's factories. Industries now tooled up to serve as the ‘arsenal of democracy’”³⁰. Americans pursued a single purpose, a “struggle for good against evil”, and that was to defeat the evil of the Axis. The majority of Americans supported the war effort. Everyone pitched in to produce war materials; women joined the work force in unprecedented numbers as men were inducted into the armed forces.³¹

Does the Strategy Overlook Point of Difference and Exaggerate Points of Likeness Between Past and Present?

The question looks to see if the concerns arose from past successes or failures may have become so complex that overshadow the strategist to the changed circumstances to come up with new and different response. During the development of AWPD-1, and eventual AWPD-42, there was no reference of fighter escort. The plan placed strong emphasis on the use of heavy bombers flying at high altitudes, thus avoiding confrontation with enemy fighters. As AWPD-42 put it: “It is perfectly feasible to conduct precise bombing operations against selected targets from altitudes 20,000 to 25,000 feet, in the face of anti-aircraft and fighter defenses. Our Bombers are far superior in fire power and capacity to absorb punishment to the bombers used by the Germans”³². The CBO was the first major bombing raids of its kind in aviation history. Points of likeness may have been the use of heavy bombers to attack the enemy's strategic infrastructures as previous night time raids demonstrated by the British have been effective. The above question may have never been asked and we can't conclude if air power leaders may have compared the CBO to past experiences. But we can see at the time that they may have overestimated the survivability of heavy bombers and underestimated the importance of fighter cover. It may be even seen the arrogance in the thinking that heavy bombers could be built to absorb severe punishment from enemy fighters and ground fires. The B-17 Flying Fortress for example is one of the most famous airplanes ever built. It was named to imply a

sanctuary - fortress - that could protect the crew from harm. The aircraft served in every World War II combat zone, including the Pacific Theater. Here, it is known for used during daylight strategic bombing against German industrial targets without fighter escorts. The result of this strategy, as apparent in the early losses of bombers, may have been prevented should the strategy taken into consideration of escort fighters.

If the question is asked today, then the points of difference, in our mind, were the will of the German people. We felt that the will of German citizens at this time was different from that of World War I. Allied leadership may have disregarded the willingness of the German people to carry on a prolonged war. Allies' thinking was the people of Germany, although are the same people devastated by the loss in World War I, would not have the sustained will to support the building of a superior war machine. It was demonstrated that the German morale was strong and remained strong despite seeing their cities severely attacked by Allies' bombing.

CHAPTER 4

THE AIR CAMPAIGN

Preparation Phase

At the Casablanca meeting in January 1943, the CCS issued orders to Allied commanders to implement the CBO. On March 8, 1943, members of the Committee of Operations Analysts submitted to General Arnold a report identifying a series of industrial targets with the German aircraft industry among the top priorities.³³ In detail the report listed six vulnerable target systems comprised of 76 targets. The six systems were 1) German submarine construction yards and bases, 2) German aircraft industry, 3) ball bearing manufacture, 4) oil production, 5) synthetic rubber and tires, and 6) military transport vehicle production.³⁴ In June 1943, General Eaker vigorously put in place bases north of London, 127 in all, comprised of airfields, supply depots, and repair facilities to accommodate about 3,500 bombers and fighters. In addition to airfields, Eaker established special services such as the Meteorological Office to provide advice on target condition and an Intelligence branch to pin point Germany's most vital industrial plants.³⁵ On 10 Jun 1943, the CCS issued a directive marking official the beginning of the CBO. The directive ordered the RAF to bomb strategic target cities at night, and American forces to conduct precision bombing during daylight.³⁶

Execution Phase

*July 24 to Aug 2, 1943, Hamburg.*³⁷ The first of a series of raids by the RAF took place against targets at the Hamburg port city. Major targets included the Hamburg shipyard and U-boat bases at Kiel. Here, only 19 out of 750 British heavy bombers were lost. However, the weather played an adverse role on the city of Bergen where target areas were completely obscured by clouds.³⁸ Another series of daylight attacks by American bombers brought the submarine infrastructure and the harboring city to its knee. By August 3, it was estimated some 41,800 people had died in Hamburg, and two thirds of the city's inhabitants had fled.³⁹

August 1 – Ploesti Oil Refineries. Allied economic analysts had long favored a strike on Ploesti, the center of Rumania's oil industry. Although the target was not on German soil, the German war machine depended heavily on petroleum products. If Ploesti refineries were destroyed, it would force the German to depend on synthetic fuel extracted from coal, which would take longer to process and produce. Because Ploesti was too far for the 8th AF to strike directly, the 9th AF was called to support.⁴⁰ This strike was costly to the Americans, 54 B-24's out of 177 were lost.⁴¹ Heavy losses were due to faulty intelligence, which had reported that Ploesti was poorly defended and were manned by Rumanians who were not enthusiastic to fight for the Germans. The situation was a complete reverse, where Ploesti was heavily fortified and manned by 50,000 well trained Germans.⁴² Anti-air artilleries in concert with German fighter aircraft engaged the unescorted bombers caused significant losses to the American force.

August 17 – Schweinfurt Ball-Bearing Factories. 315 B-17's launched a two-pronged attack into Germany. The critical targets were the Messerschmitt factory at Regensburg and the anti-friction-bearing factories at Schweinfurt.⁴³ The Schweinfurt plants were severely damaged by this raid. Dense fog had become a major factor in getting the bombers off on time to rendezvous the P-47's escort support. As a result, 230 B-17's of the Schweinfurt group went without fighter escort. In this raid, 60 of the B-17's were lost in one of the most intense air battles of the war. German fighters picked them apart even before they had reached the target area.⁴⁴ The neighboring city of Regensburg also suffered heavy damage from the raid. Virtually every important building in the Messerschmitt production line was either destroyed or severely damaged.⁴⁵

October 14 – The Second Schweinfurt Raid. The second attack on Schweinfurt caused great damage and interfered with the German ball bearing production. However, again as a result of lack of fighter escort, the bombers went into Schweinfurt alone and were fiercely

pursued by German Luftwaffe. The raid cost the Americans 62 bombers lost, with 138 others damaged in varying degree, some beyond repair. As a result of the heavy losses, attacks on Schweinfurt were suspended, daylight bombing without fighter escort deep in Germany was also put on hold until long range fighters became available.⁴⁶

November 1943 – Battle of Berlin. Winston Churchill had wanted “Berliners to suffer as Londoners” had suffered. He ordered the RAF to plan for successive strikes at the heart of the Nazi. By mid November 1943, the RAF had conducted a series of raids on Berlin that became known as the Battle of Berlin. 948 heavy bombers were called into action against the city. After six raids, 46 factories had been laid in ruins, an additional 259 facilities were damaged, and thousands of houses were wrecked.⁴⁷ This battle illustrated the very point of the Allies to bring the war to the enemy's back yard; to effectively tilt the enemy's morale and affected Germany's will to fight.

December 1943 – February 1944. Deliveries of the new long-range fighters P-51 *Mustangs* provided the 8th AF the ability to resume deep penetration inside Germany. By December 13, some 500 fighters escorted 637 bombers on a three-pronged attack on Bremen, Kiel and Hamburg. This was the first time in the campaign that the bombers were successfully defended in a 40 minute raid over the targets.⁴⁸

February - March 1944. This period marked the beginning of the end of the German Air Force. During a series of raids on February 13th, thirty three hundred planes from the 8th AF and 500 from the 15th AF confronted enemy fighters and dropped over 10,000 tons of bombs on the Luftwaffe factories in central Germany. Over 500 enemy fighters were lost in this raid. On March 4, six hundred sixty planes attacked Berlin to draw out and destroy the Luftwaffe.⁴⁹ The number of German fighters lost in combat averaged above 1,100 aircraft per month, during the months of January to March 1944. The losses in planes were accompanied by losses in pilots. This coupled by the disorganization within the German ranks, diminished the Luftwaffe's combat strength. By the spring of 1944, the Luftwaffe's opposition to Allied bombers ceased to be effective.⁵⁰

June 6, 1944 –Invasion of Normandy. Operation Overlord commenced with massive Allied invading forces landing on the coast of Normandy.

July – August, 1944 –Prior to this period, forces from both sides engaged heavily exchanged between Allied offensive and German counter attacks. In July, the American 1st Army launched Operation Cobra from St. Lo area to make a breakthrough allowing Allied forces to begin advancing eastward. In August, US 3rd Army crossed the Seine and together with French troops liberated Paris.

July 1944 – Second attack on Hamburg. This represents the second raid on the port city by the RAF. The city was poorly defended and the result was 100,000 Germans killed, 300,000 buildings burned, and 750,000 civilians homeless.⁵¹

September – December 1944 – Allied forces continued to dominate and began liberating many other western European countries including Belgium, Luxembourg, and the Netherlands. By November, U.S. 1st and 3rd Army reached the Rhine river. In December, the German mounted the last all-out counter attack in the Ardennes and encircled U.S. forces at Bastogne. The 3rd Army under General Patton mounted a break through to relief besieged forces at Bastogne and continued on toward Berlin.

February 13-14, 1945. Dresden, the final offensive. Dresden was a city known as the cultural and art center of Germany. It was also home to the rail center and hub of the telephone and telegraph systems in eastern Germany. The suburbs of Dresden were concentrated by light industry manufacturing optics, radar components and fuses for shells fired by the German Navy. On February 13, 773 Lancasters of RAF Bomber Command and 450 B-17's of the American 8th AF dumped nearly 3,500 tons of high explosive and incendiary bombs on the center of Dresden.⁵² The city was left burning for a week with 35,000 killed, 1600 acres of facilities destroyed.

April 16, 1945. The strategic air campaign officially came to an end. By now the Allies air forces had destroyed 100% of Germany's coke and ferroalloy industries; 95% of its fuel, hard coal, and synthetic rubber capacity; 90% of its steel capacity; 75% of its truck manufacturing; 70% of its tire production; and 55% of its tank manufacturing. The 8th AF alone had recorded 5,222 Luftwaffe planes destroyed.⁵³

May 9, 1945 – German High Command surrendered unconditionally all land, sea, and air forces.⁵⁴

CHAPTER 5

AIR CAMPAIGN EVALUATION

The conduct of a military campaign and the performance of leadership are evaluated based on a set of fundamental "truths" referred to as the "nine principles of war".⁵⁵ The nine principles are seen as standards governing the execution of military strategy and tactics. They had been used since ancient China, but in modern time, were adopted by the U.S. Army as early as in the Civil War.⁵⁶ Discussion below is to determine the effectiveness of the CBO and how relevant it adhered to the war principles.

Objective.

This principle asks the question: Did the leadership *"Direct all efforts toward a decisive, obtainable goal"*.⁵⁷ From the very start of the conflict, the Allies had drawn a unified objective that had strong support from both the American and British people. Allied military leaders were committed to the objective of destroying the German war machine. It would be conducted through a combined bombing campaign to decimate the German air power and gain the advantage for the invasion of Europe thus lead to the defeat of Germany. The ABC-1 Report began as a series of documented goals. The report prescribed various measures and called out the need for attainment of "superiority of air strength.... particularly in long-range striking force" and that it must be done through a "sustained air offensive". The concept of strategic bombardment was further refined in the RAINBOW No. 5, then validated and approved into the form of war plans, AWPD-1 and AWPD-42.⁵⁸ President Roosevelt asked Congress to fund for the air power buildup to implement the plans. Efforts by both British and Americans were committed to building a formidable Bomber force.

Simplicity.

Military leaders must *"prepare uncomplicated plans and concise orders to insure thorough understanding and execution."*⁵⁹ With any effort of this magnitude, it would be extremely difficult to keep all aspects of the military effort from planning to execution at a simplistic level. During the planning phase, there were disagreements between British and American over the tactics to use for the campaign. The British, having more experience with strategic bombing, had wanted to perform nighttime area bombing, while American favored daylight precision bombing. A compromise was reached to allow the tactics be carried out in accordance with the Allies' experience. This resulted in the American bomber force conducting precision daylight bombing and British performing nighttime raids.

Unity of Command.

*"For every task there should be unity of effort under one responsible commander"*⁶⁰. Efforts undertaken by the Allies were conducted under the leadership of responsible leaders, General Eaker, known for building up the American 8th AF bomber force, and Air Marshall Sir Arthur Harris for the British Bomber Command.⁶¹ The CBO was intended as a preparatory step for the invasion of Normandy and the leadership of the air forces was divided between two leaders. But when the main event was about to take place, all efforts were concerted under one chain of command, streamlined to respond to one leader. In 1944, General Eisenhower

became the Supreme Commander, taking over the overall responsibility for the invasion of Normandy.⁶² He proved to be an outstanding coalition leader.⁶³

The Offensive.

The operation must set out to *"seize, retain, and exploit the initiatives"*.⁶⁴ From the beginning the strategic bombing campaign had been pursued relentlessly despite heavy losses in the beginning, due to a combination of lack of fighter escort and bad weather. The CBO took the offensive deep into the heart of the enemy. It reinforced the belief of that winning air supremacy was a necessary condition for the invasion. General Arnold had directed his commanders to concentrate the available resources and efforts toward the defeat of the enemy's air forces. He said; *"My personal message to you is – this is a MUST – is to destroy the Enemy Air Force wherever you find them, in the air, on the ground, and in the factories."*⁶⁵ Indeed all-available capabilities were committed to prepare for the surface campaign. The offensive initiatives were conducted on all fronts intended to completely destroy the enemy's war machine. The Allied had demonstrated the offensive concentration to ensure complete destruction of intended targets. It was adequately planned to optimize resources on all targets. While the primary targets of the bombing offensive were submarine and aircraft production facilities, ball bearing industries, oil production, and steel, targets of opportunity were pursued which included tanks and trucks assembly plants, railways and waterways, electric power, and even civilian.⁶⁶

Maneuver.

This principle requires that leadership should *"position military resources to favor the accomplishment of the mission."*⁶⁷ Maneuverability is the key advantage of air power. It could bring the destruction to the enemy's back yard. To pursue the strategic bombing campaign, the Lancasters, B-17 Flying Fortress, and B-24 Liberators had demonstrated their usefulness as workhorse to provide long range bombing raids deep inside Germany.⁶⁸ The apparent disadvantage in the use of heavy bombers is its lack of speed and can be a detriment to the maneuverability. In addition to the lack of speed, the campaign began without fighter escort and suffered severe losses early on. To compensate for the lack of maneuverability and escorts, Allied bombers flew in tight formation to concentrate defensive fire power against German fighters. As fighter escorts became available, bombers were more effective in the bombing offensive. They accomplished the objectives of softening the German defense lines leading to

the invasion and its most noted contribution was the elimination of the Luftwaffe as an effective fighting force.⁶⁹

Mass.

This principle stipulates that leader must “*achieve military superiority at the decisive place and time*”.⁷⁰ The CBO was a demonstration of the domination of air power over the enemy and was the key element in preparation for the invasion. To achieve this objective, Allied leaders had concentrated their efforts in building the necessary bomber forces to completely demolish Germany economic and military infrastructure. At a given time when all the necessary tactical conditions were adequate, the operation would be carried out in mass to inflict significant damages in order to achieve the stated objective. Representations of efforts made in prioritizing resources in mass included attacks on Hamburg where formations of 740 Lancasters were used; Schweinfurt raids with the employment of 376 B-17's. The “Big Week” between February 13-26, 1945, comprised of 3,300 planes from the Eighth Air Force and 500 from the 15th AF dropped 10,000 tons of bombs to destroy Luftwaffe factories in Germany.⁷¹ The weakness as part of this effort was again due to the lack of escort fighters. Although the Allied had gained air superiority, it had suffered heavy losses due to the massing of bombers over heavily defended areas. The problem was helped by massing defensive fire power against enemy fighters and eventually corrected with the support of escorts.

Economy of Force.

This principle pertains to the secondary efforts. “*Allocate to secondary efforts minimum essential combat power*”.⁷² During the course of the air campaign, efforts were made to ensure that all targets of priority would be destroyed. Military strategists had allocated the bombing capabilities against submarines and aircraft manufacturing facilities, oil refineries and other industrial capacities. No efforts or resources were wasted on secondary targets although there were a number of secondary targets for attacks. The secondary targets were target sets that were a part of the over plan should the primary objectives not accomplished due to weather, time, or resources allow. These are targets of opportunity. These secondary raids were after plants that produced tanks and armored vehicles, attacks on waterways and railways, and electric power.⁷³ The results from these efforts proved to be significant contributions to the successful land invasion where the enemy's communication and transportation were devastated and bridges connecting major supply lines and reinforcement were destroyed.

Surprise.

This principle calls for the "*accomplishment of purpose before the enemy can effectively react*".⁷⁴ The surprise element did not play a significant role in the CBO. It simply was not feasible to be evasive with bombing raids consisting of hundreds or thousands of airplanes. The only "surprise", and it was against the Allies, was the initial underestimation of the importance of fighter escort. This issue was later corrected with the deliveries of the P-51 Mustangs. To remedy this deficiency, bombers could have applied several tactics including performing night raids – until escort fighters become available, operated under strict radio silence, or possibly flew at a higher altitude to avoid surface to air attacks.

Security.

"*Never permit the enemy to acquire an unpredicted advantage*".⁷⁵ The bomber force was based in Britain at secure locations for protection.⁷⁶ Information protection about missions was treated with great care. Unfortunately, it was impossible to mask a formation of bombers from German radar. Just the necessary radio tests warned that the bombers were coming.⁷⁷ German reaction to Allied bombing was immediate. Allied planning and capabilities were closely guarded through rigorous security measures.⁷⁸ From a force protection view point, Allied bombers were inflicted with heavy losses due to the lack of fighter escorts. Similar to the element of surprise, night raids, use of altitude and radio silence could have helped preventing early losses.

CHAPTER 6

SUMMARY

As the Axis power became a true threat for the free world and Germany's expansion had spread well into Western Europe, the Allies came together in joint force with a single objective in mind and that was to gather all efforts to defeat the German war machine. In doing so, the Allies had architected a plan that would strike hard in the heart of Germany to demolish the German economic and military infrastructure. The plan called for a combined American and British bombing offensive, CBO, against industrial targets to weaken Germany's ability to fight in preparation for an Allied cross-Channel invasion. It was the very result of the CBO that terminated the Luftwaffe's fighting edge, demolished German war industries, and thus a key

preparatory step in allowing the Allies to mount the successful D-Day landing on the European continent.

Allied leaders believed that strategic bombing was the key to victory. Allied leaders had adopted the doctrinal views of strategic bombardment from strategists such as Douhet and Mitchell. By destroying the enemy's industrial sources, it would disrupt the production of German war materials; diminish the necessary resources to run its equipment; and further demoralize its citizens and neutralize its will to fight. The CBO commenced in July 1943 and ended in April 1945 with the RAF attacking strategic targets at night while American bombers performed precision strike during daylight. The targets were against submarine industry, aircraft industry, oil refineries, ball-bearing factories, transportation systems, and many other secondary objectives including waterways, railways and supply lines. The lack of long-range fighter support and poor weather were major factors in the Allies' early losses. If we were to apply the nine principles of war to this campaign as way to evaluate its effectiveness, the CBO demonstrated adherence to most of the principles. The major factor that caused some war principles – element of surprise and security – to be less relevant was also due to the lack of fighter escorts. Although the CBO managed to inflict severe damage to Germany's factories and production capabilities, the bomber force also suffered heavy losses in the early stage of the offensive. Not until mid way through the air campaign when long-range fighter escorts became available that the Allies began to collect successes without paying a heavy price. With the support of long-range escort fighters, bombers were allowed to resume the offensive and eventually brought the German war machine to its knees.

From the start of the conflict, national policy was defined and military strategy was developed to meet its established objectives. Supports from the home front were also crucial to the war effort. It allowed the funding support to create a formidable bomber force with the needed capabilities. All things considered, from a doctrinal viewpoint, the CBO was a decisive factor in destroying Germany military capability; it demolished industrial and economic systems, and definitely a critical aspect in paving the way for a successful land invasion. The United States Bombing Survey did conclude that Allied air power was decisive in the war in Western Europe.⁷⁹ Its power and superiority was the key to the success of the invasion. The domination of air power cut off the enemy from accessing the basic yet necessary resources such as fuel and aircraft equipment. As the air offensive gained in tempo, the Germans were unable to prevent the decline and eventual collapse of their economy. Although one of the tenets of the CBO was to demoralize the will of the German people, the survey noted that the German morale remained strong despite severe air attacks: "Their morale, their belief in ultimate

victories or satisfactory compromise, and their confidence in their leaders declined, but they continued to work efficiently as long as the physical means of production remains."⁸⁰ This raised a critical issue in forming strategies for future conflicts. Attacks against civilian targets, based on this experience did not register a conclusive factor in turning the tide of war. This strategy was used in Vietnam and had proved to be quite ineffective while caused great resentment to the American public. Strategists will need to reconsider this theory as weapons technology would allow greater capabilities to defeat an enemy's will to fight without having to decimate its people.

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ENDNOTES

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⁵ Edward Jablonski, *America in the Air War*, Alexandria, Virginia, Time-Life Books, 1982, p. 23.

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⁷ Ralph Barker, *The RAF at War*, Alexandria, Virginia, Time-Life Books, 1981, p. 83.

⁸ Hans-Adolf Jacobsen and Arthur L. Smith, Jr., *World War II, Policy and Strategy, Selected Documents with Commentary*, Santa Barbara, California, Oxford, England, Clio Books, 1979, pp. 132-134.

⁹ Ibid., pp. 141-143.

¹⁰ Horst Boog, Editor, *The Conduct of the Air War in the Second World War*, New York, Oxford, Berg Publishers Limited, 1992, p. 665.

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¹² Kit C. Carter and Robert Mueller, Compilers, *The Army Air Forces in World War II, Combat Chronology, 1941-1945*, Albert Simpson Historical Research Center, Air University and Office of Air Force History Headquarters, 1973, pp. 39.

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¹⁴ Jablonski, p. 66.

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¹⁶ Hans-Adolf Jacobsen and Arthur L. Smith, Jr., *World War II, Policy and Strategy, Selected Documents with Commentary*, Santa Barbara, California, Oxford, England, Clio Books, 1979, p. 133.

¹⁷ Ibid., p. 134.

¹⁸ Ibid., p. 134.

¹⁹ Ibid., p. 136.

²⁰ Ibid., p. 142.

²¹ Ibid., p. 144.

²² Ibid., p. 189.

²³ Ibid., p. 190.

²⁴ Ibid., p. 245.

²⁵ Robert Frank Futrell, *Ideas, Concept, Doctrine*, New York, Arno Press, 1980, p. 78.

²⁶ C.L. Sulzberger, *The American Heritage, Picture History of World War II*, New York - Avenel, New Jersey, American Heritage/Wings Books, 1966, p. 423.

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²⁸ C.L. Sulzberger, p. 306.

²⁹ Alan Axelrod, *The Complete IDIOT'S Guide to 20th-Century History*, New York, New York, Alpha Books, 1999, p. 205.

³⁰ Alan Axelrod, *The Complete IDIOT'S Guide to American History*, New York, New York, Alpha Books, 1999, p. 248.

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³² Boog, p. 667.

³³ Kit C. Carter and Robert Mueller, pp. 103-104.

³⁴ McIsaac, p. 15.

³⁵ Jablonski, pp. 53-54.

³⁶ Carter and Mueller, p. 144.

³⁷ From "Combined Bomber Offensive". Retrieved December 12, 2000, from the World Wide Web: <http://www.history.acusd.edu/gen/ww2Timeline/Europe06.html>, p. 1 of 3.

³⁸ Ibid., p. 163.

³⁹ Barker, p. 141.

⁴⁰ Jablonski, p. 72.

⁴¹ Carter and Mueller, p. 168.

⁴² Jablonski, p. 72.

⁴³ Carter and Mueller, p. 176.

⁴⁴ Jablonski, p. 76.

⁴⁵ "Combined Bomber Offensive", p 1 of 3.

⁴⁶ From "United States Strategic Bombing Survey: Summary Report". Retrieved December 21, 2000, from the World Wide Web: <http://www.anesi.com/ussbs02.html>, p. 9 of 26.

⁴⁷ Barker., p. 142.

⁴⁸ Jablonski, p. 100.

⁴⁹ "Combined Bomber Offensive", p 2 of 3.

⁵⁰ "United States Strategic Bombing Survey: Summary Report", p. 11 of 26.

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⁵³ Jablonski, p. 142.

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⁵⁶ Ibid., p. 1 of 2.

⁵⁷ Ibid., p. 1 of 2.

⁵⁸ Boog, p. 665.

⁵⁹ "The Principles of War", p. 1 of 2.

⁶⁰ "The Principles of War", p. 1 of 2.

⁶¹ Boog, p. 691.

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⁶³ Boog, p. 493.

⁶⁴ "The Principles of War", p. 1 of 2.

⁶⁵ Futrell, p. 78.

⁶⁶ *"United States Strategic Bombing Survey: Summary Report"*, pp. 11-22.

⁶⁷ *"The Principles of War"*, p. 1 of 2.

⁶⁸ Jablonski, p. 19.

⁶⁹ Futrell, p.91.

⁷⁰ *"The Principles of War"*, p. 2 of 2.

⁷¹ *"Combined Bomber Offensive"*, p. 2 of 3.

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⁷⁵ *Ibid.*, p. 2 of 2.

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