

AU/ACSC/146/1999-04

AIR COMMAND AND STAFF COLLEGE

AIR UNIVERSITY

THE ROLE OF AIR POWER

IN THE

BATTLE OF THE BULGE

Donna C. Nicholas, Major, USAF
Albert H. Whitley, Major, USAFR

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

Advisor: Major Glenn W. Carlson

Maxwell Air Force Base, Alabama

April 1999

REPORT DOCUMENTATION PAGE

Form Approved OMB No.
0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY)		2. REPORT TYPE		3. DATES COVERED (FROM - TO)		
4. TITLE AND SUBTITLE			5a. CONTRACT NUMBER			
			5b. GRANT NUMBER			
			5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)			5d. PROJECT NUMBER			
			5e. TASK NUMBER			
			5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME AND ADDRESS			8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS			10. SPONSOR/MONITOR'S ACRONYM(S)			
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT						
15. SUBJECT TERMS						
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19. NAME OF RESPONSIBLE PERSON		
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number DSN	
				<small>Standard Form 298 (Rev. 8-98) Prescribed by ANSI Std Z39.18</small>		

Disclaimer

The views expressed in this academic research paper and technology project are those of the author(s) and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

Contents

	<i>Page</i>
DISCLAIMER	ii
PREFACE	iv
Technology Requirements	v
Hardware	v
Software	v
HTML Page Instructions.....	v
ABSTRACT	vi
INTRODUCTION.....	1
CHARACTERISTICS OF THE AREA OF OPERATIONS.....	3
Terrain and Geography	3
Weather	4
German Political Climate.....	4
Allied Political Climate.....	5
STRATEGIC CONSIDERATIONS	6
Logistical.....	6
German Combat Power.....	6
Allied Forces Combat Power.....	10
Tactical Air Operations.....	11
Strategic Air Operations	12
Results.....	13
CONCLUSION	15
Lessons Learned.....	16
Impact on Future Air Power Operations.....	16
BIBLIOGRAPHY	19

Preface

This project illustrates the role of air power during the Battle of the Bulge. We chose this topic to assist students to better understand air strategies and help illustrate how air operations and basic air doctrine were developed as a foundation for Air Force employment today. To facilitate covering this broad subject, an HTML page has been created. The page is divided into five modules. Module one provides an overview of the characteristics of the area of operations; module two looks at logistic factors; module three contains strategic considerations; module four reviews specific air strategy; and module five concludes with lessons learned and their impact on future air operations.

We would like to thank our faculty advisor, Major Glenn Carlson for his assistance in conducting this research project. We also greatly appreciate Squadron Leader Neil Hart's direction in Major Carlson's absence, and advising freely at other times as well. Special thanks also go to Airman Anthony North for his assistance with the video clips and to Major Mike Foster for his help with the web page development.

Special thanks go to Dr. Richard Muller for his assistance in translating German acronyms, providing guidance on the sequence of events, and for his endless patience in reviewing our project.

Technology Requirements

Hardware

486 or better PC computer with 16 MB of RAM and 50 MB of hard disk space

Software

Windows 95, and Microsoft Internet Explorer 4.0

HTML Page Instructions

Our technology project is divided into three subdirectories. The PICTURES subdirectory contains the pictures throughout the project. The VIDEO subdirectory contains the movie clips that are linked to various sections of the text. The WEBPAGES subdirectory has all of the icons and webpage files.

The program starts by activating the TE_INDEX.HTM file, which is the disclaimer statement. This is linked to the INSTRUCT.HTM that provides the key information on navigating through the project. This will take you to the INTROFRM.HTM file which opens the main part of the project. Additionally, the HOME button on the index is connected to this page.

Abstract

The Battle of the Bulge (Ardennes offensive) was the first time air power was used to halt a counter-offensive. The mission most often associated with air operations during the Ardennes offensive was the re-supply of the 101st Airborne Division at Bastogne. However, air power played a key role in Allied victory by effectively executing close air support, air interdiction and in the more traditional strategic bombing mission. This paper and technology project illustrate the air power contribution throughout, and even before, the Ardennes Offensive. The research findings are summarized, beginning with a synopsis of key issues surrounding the operation involving characteristics of the area of operation, and strategic considerations such as logistics and combat power. Next is a detailed analysis of the air strategy employed and the results it achieved. The discussion concludes with a look at lessons learned and the impact the decisive use of air power had on future air operations.

The technology project provides an in-depth analysis of air power in the Ardennes offensive. A multimedia format was used, incorporating actual video footage and photos from WWII documentaries and records. Sources include first-hand accounts relayed in prisoner of war interrogations and higher headquarters reports from the Air University Research Center archives. This is all presented in a user-friendly HTML format. The text contains several hot-links to video footage and photographs of what Britain's Prime Minister Winston Churchill called "the greatest American battle of the war."

Chapter 1

Introduction

The use of Allied air power against the German Ardennes Offensive was historic. Never before had air power blunted an enemy's surprise counter-offensive from the sky.

—Danny S. Parker, To Win the Winter Sky

On December 16, 1944, the largest German offensive operation since the Allied reconquest of Western Europe was launched. The Battle of the Bulge was carefully calculated and ingeniously devised to take the Allied forces by surprise by exploiting key elements such as speed of the operation, the adverse weather conditions, and the unique characteristics of the Belgian terrain. The plan called for a quick German breakthrough west and north to capture Antwerp and cut off Allied armies east of the Belgian Port. The German plan almost succeeded.

The Ardennes Offensive caught the Allied Forces completely by surprise. The Allies had been experiencing a successful momentum that was pushing them towards, what almost assured to be, a victorious conclusion to the war. Although Allied intelligence had detected the German force movement, all logical reasoning and speculation pointed to a readiness posturing to meet the next Allied offensive. This miscalculation would cost the Allies dearly in human lives and by prolonging the ultimate defeat of Adolph Hitler's Third Reich. The Battle of the Bulge was officially declared over by January 26,

1945.¹ Although the Germans would rally to defend their homeland, the Battle of the Bulge marked the last time the Third Reich would assemble its precious reserves of men and equipment of this magnitude.

The Ardennes Offensive dramatically illustrated the importance of air power. From the initial advantages derived because of the already established Allied air supremacy due to strategic bombing, to the successful tactical applications employed for this unique operation, air power proved vital in checking this grand-scale enemy offensive.

This paper and technology project focus on the critical role air power played in crushing this last German offensive of World War II. A brief discussion of the area of operations begins with an overview of major characteristics involving terrain, geography and weather. Other considerations are given to the German and Allied political climate. This is followed by an examination of pertinent strategic issues such as logistics, first by examining issues relevant to German combat power, and then by discussing Allied Forces and their counter-offensive measures. We next delve into the specific air strategy employed by the Allies, determining the impact air power had on this operation. The conclusion discusses lessons learned from the Battle of the Bulge and their impact on future air power operations.

Notes

¹ Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 75.

Chapter 2

Characteristics of the Area of Operations

This battle is to decide whether we shall live or die. I want all of my soldiers to fight hard and without pity. The battle must be fought with brutality, and all resistance must be broken in a wave of terror.

—Adolph Hitler

Terrain and Geography

The Ardennes was rough, wooded terrain, and considered by most unsuitable for tank warfare. German commanders knew the area well, including the vital roads that lead to their goal of breaking “through the thin shell of American defenders in the Ardennes to race across the Meuse River to capture the Belgian port of Antwerp.”¹ The success of the German advance was dependent on a quick offensive victory. Their failure to account for how terrain, weather and other obstacles would hinder their progress proved devastating. “The Meuse River bordering the Ardennes on the west and northwest constituted the main obstacle to a German advance beyond the Ardennes and conversely provided the Allies with an excellent final defense line. To the east of the Ardennes lay the Siegfried Line against which the Allied advance had halted in September and would mark the limit of counterattacks thrown against the German drive.”²

Weather

The most critical element for the Germans to undertake this operation was adverse weather. Extensive enemy build-up around the Ardennes was possible namely because Allied reconnaissance aircraft were grounded due to the severe winter conditions. Once the offensive was underway, inclement weather became even more of a factor by preventing Allied bombers and fighters from taking off in heavy snow and by further complicating infantry and tank maneuver. The entire operation had been planned to coincide with the worst winter weather. In fact, the target date for launching the offensive was completely dependent upon forecasted inclement weather to provide the cover for the German offensive against Allied air power.³

German Political Climate

As is apparent from this section's opening quote from Adolph Hitler to his few trusted advisors as he explained his offensive plan in detail on the night of December 12, 1944, German leadership was obsessed with victory even when facing almost assured defeat. After five years of war that brought on unimaginable destruction to Germany, millions of deaths, and reduced the proud Wehrmacht Panzers (tanks) and Luftwaffe (air force) to a shadow of what they had once been, Hitler had reached the point of desperation. In spite of these grim circumstances, Hitler's unfailing ability to elicit absolute loyalty from his subordinates remained intact. "Enemy morale was higher than at any time during the campaign. The individual soldier had been propagandized into the belief that this was the opportunity to destroy enemy aspirations in the West and to save Germany from a two-front disaster."⁴

Allied Political Climate

The unique aspect about the Ardennes offensive is how the operation took the Allies completely by surprise. All across the area of operations the Allies were gaining momentum toward a victorious conclusion to the war. On the Eastern front, the Russians had destroyed 25 German divisions and were overrunning Poland and Rumania; in Italy, the Allies were 155 miles north of Rome and attacking the last German defensive line before the Alps; the Normandy beach invasion witnessed virtual annihilation of two German armies by French, American, and British forces.⁵ Allied intelligence had noticed the withdrawal of Panzer divisions from the German front for refitting. “There was much speculation among intelligence officers as to whether the intention was merely to create a Panzer reserve in readiness to meet the next major Allied offensive, or whether some greater purpose was afoot. The overwhelming consensus was that the Germans neither intended, nor were capable of, anything more than a spoiling attack in advance of the next Allied thrust. But the root reason for the Allies’ failure to read the signs from the snow-laden forests beyond their front was that all military logic, even sanity, argued against a major German offensive.”⁶

Notes

¹ Time – Life Books, by the editors. (1989). *History of the Second World War*. New York: Prentice Hall Press.

² United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945.

³ Ibid, p. 63

⁴ Ibid, p. 70

⁵ Time – Life Books, by the editors. (1989). *History of the Second World War*. New York: Prentice Hall Press, p. 316.

⁶ Hastings, Max. (1985). *Victory in Europe: D-Day to VE-Day*. London: Artus Books, pp. 99-100.

Chapter 3

Strategic Considerations

Logistical

In addition to heavy reliance on adverse weather conditions, a key weakness in the German planning involved logistics. Evidence indicates that despite a vigorous conservation policy, fuel shortages were a problem from the start. Their plan, which called for re-supply from captured materiel, was thwarted by the counter-offensive mounted by the Allies. Additionally, their limited supplies were mostly interdicted by extensive attacks on transportation facilities. The expectation of a quick German victory caused them to woefully underestimate the stockpiles of other supplies such as food and ammunition, and the problems created from critical shortages in spare parts.

The offensive posed no significant threats to supply concentrations for the Allies, except at forward army installations. The German attack was directed away from Verdun, and would threaten the Liege supply area only if the Germans were successful in their push towards the Meuse River.¹

German Combat Power

The Germans started the Ardennes offensive with 22 Divisions and about 600 committed tanks, with more in reserve. More than one thousand various aircraft types were available to concentrate on airfields near the front.² The conversion of the entire

German aircraft industry production capability made approximately 2,000 single-engine fighters available for assisting with offensive operations. Indeed, more than 500 daily sorties were flown providing maximum assistance to the German ground forces during the first two days of their offensive drive.³

There were several decisive points during the German advance. December 16th marked the beginning of the invasion, when more than 250,000 Germans attacked 83,000 American troops deployed thinly along the Ardennes front.⁴ All along the 85-mile Allied front, from Echternach in the south to Elsenborn in the north, American units were awakened by the scream of shells and thunder of artillery. That night, an ambitious airborne operation was undertaken with nearly 1,000 troops being dropped in the Malmedy area. After that, the Germans used 10 to 15 transport aircraft on several nights for emergency re-supply operations of their forward elements. This was followed by “the biggest tactical fighter and ground attack effort since the Normandy campaign. It is estimated that 600 sorties were flown in support of the airborne landings and the armored breakthrough.”⁵ This was considered a substantial number of sorties for German air activity. However, this concentration of effort proved ineffective.

The Luftwaffe faced superior Allied aircraft, experienced personnel, and was overwhelmed by sheer numbers. Allied aircraft flew almost 74,000 sorties and dropped 111,000 tons of bombs in an all-out effort to stem the German drive, minimizing the German efforts at gaining air superiority.⁶ “The combat record of the Luftwaffe was extremely poor; Allied losses to enemy aircraft in the air were slight; and the enemy’s one all-out effort against airfields, which did destroy a considerable number of aircraft on the ground, cost in aircraft and pilots far more than was gained.”⁷ While the Germans

were capable of attaining air superiority at certain points in battle engagements, air supremacy alluded them. Conversely, air supremacy had been firmly established and maintained by the Allies. In fact, it is credited as being the key enabler that gave the Allies any hope of victory. For instance, the German Army was accustomed to the unopposed tactical support of the Luftwaffe. The role it played in early German victories and its independently organized status gave the Luftwaffe a prominent position in military operations. Yet, it was used almost exclusively in a tactical role, as an army weapon, and became a limitation over time. “It (the Luftwaffe) was never planned or equipped for truly independent operation on its own. Fully aware of the importance of the role of the Luftwaffe in all previous military operations of the Wehrmacht, both America and Britain realized that the first responsibility of air power was to destroy the Luftwaffe as a capable fighting force.”⁸

Other strategic efforts focused on the exploitation of key road junctions. Capturing St. Vith in the north-central sector of the Ardennes became paramount to the Germans because of its six paved roads radiating from its center. Its location made it the hub of the road network in the eastern Ardennes. All major roads in the area converged at this position from other major geographical locations such as Malmedy, Bitburg and Vielsalm. Control of St. Vith was considered critical by the Allies for a successful defense, and by the enemy for a successful offense, mainly because of its proximity in relation to ferrying supplies throughout the area of operations. The resolve of the Allies proved remarkably stalwart in defense of this location. By holding this key town until a defensive line could be established, the German push was forced to use side roads. “Although St. Vith was lost in the end, the 7th Armored division and its supporting units

had tied up an entire enemy corps for nearly a week, blocking crucial supply routes.”⁹ This bought the Allies enough time for reinforcements to begin flooding the area. The Americans retook this position one-month after they had withdrawn over the Salm River behind the safety of the lines of the 82nd Airborne.

While battered American troops were delaying the fall of St. Vith, thirty miles south the biggest and longest fight of the Battle of the Bulge was gathering around Bastogne. Seven roads radiated from Bastogne’s central square; including the main east-west highways that were vital to Hitler’s thrust towards Antwerp.¹⁰ The Germans attempted to storm the American-held positions for more than a week. The defense of Bastogne became an epic of the Americans, redeeming all the misfortunes of their shattered formations in the first days of the battle. “The 101st Airborne Division commanded by Brigadier-General Anthony G. McAuliffe, supported by tanks of the 9th Armored Division and two battalions of engineers, held out among the battered ruins of the town against repeated German assaults. A demand from the Germans to surrender on the 22nd was met with McAuliffe’s legendary reply ‘Nuts!’ The following day, air supply drops and fighter-bomber support improved the position along the sixteen-mile American perimeter.”¹¹ On December 26th, reinforcements from General George S. Patton’s 4th Armored Division raised the siege.

The heroic defensive stands of Allied ground forces at the two key road junctions of St. Vith and Bastogne were critical toward keeping the “bulge” of the German offensive from growing, and clearly represented positive turning points for the Allied victory in the Battle of the Bulge.

Allied Forces Combat Power

The first days of the German offensive were formidable for the Allies and proved a true test of their resolve. “Whole regiments of American troops had been swallowed. Communications were hopelessly scrambled. Nobody knew where the enemy was. The weather was atrocious, with the entire area socked in tight.”¹² On December 23rd, the skies cleared and a tremendous air attack started, marking the beginning of the end of the Third Reich’s ambitious drive to turn back the tide of victory the Allies had been riding.

The plan of the Allies was simple, to defend the front north and south of the Ardennes sector with minimum forces, to gather every possible reserve, and to launch counterattacks without delay against both flanks of the enemy penetration. This could only be done by destroying the enemy’s weapons of war – tanks, aircraft, motor transport, supplies and by smashing the facilities vital to the successful replenishment of German forces. Key to the operations would be to first push their railheads back to the Rhine; then to attack bridges, marshalling yards, supply dumps and communication centers.¹³ The most immediate concern was halting the German move westward. By December 19th, three divisions from the First and Ninth U.S. Armies had committed to the south shoulder and two airborne divisions (Supreme Headquarters Allied Expeditionary Forces reserves) had been placed directly in the path of the German drive. The combined British and American Air Forces were ready to launch powerful attacks against the enemy when the weather cleared. The operation would depend on air power as a force enabler, diverting air forces’ focus from the more traditional strategic bombing priority. “To apply the maximum Allied air effort close to the battlefield it was considered advisable to divert the strategic bombers from oil and aircraft plants to rail centers, bridges, marshalling yards, and forward fighter bases. Although such action

would give essential German war production a break, the blocking of enemy movement and neutralization of the enemy air force outweighed, for the moment, all strategic air considerations.”¹⁴

Tactical Air Operations

Once the weather permitted, all available Tactical Air Forces were focused on supporting the Allied counter-offensive in the Battle of the Bulge. Beginning December 23rd, and continuing through January 16th, Allied fighter-bombers targeted armored spearheads and supply lines. Medium and heavy bombers hit bridges and marshalling areas along the Rhine, bridges on the rail lines leading west from the Rhine, and key choke points in the road network.¹⁵

This change in primary focus from strategic to tactical operations brought on the first real test for the flexibility of air power. The challenge concerned how quickly and effectively tactical air power could be employed without prior planning and coordination in a particular area. The Ardennes battle marked the first time air power was being employed in a capacity other than a carefully constructed offensive. Additionally, the enemy was on its first offensive in three years, and was attempting this bold move without the assurance of air superiority.¹⁶

Fighters and fighter bombers concentrated on the battle areas and along supply lines close to the front, while medium and heavy bombers attacked rail and road communications farther behind the front lines.¹⁷ The highest priority targets were communication centers, bridges, rails, roads, moving vehicles, and troop concentrations. The weather permitted intensive tactical operations on eight of the first nineteen days, but visual bombing for the heavies on only three. Despite this, interdiction behind the enemy

lines seriously disrupted the German timetable. Adverse weather prevented the tactical operations from having an even more decisive outcome because it allowed time for some repairs. Attacks on vehicles and armored spearheads inside the Bulge proved of even greater importance. Aircraft destroyed material in use or in immediate reserve and forced a halt in the German offensive while materiel and troops were dispersed or concealed. “Here the fighter stole the show and became a truly decisive factor in tactical warfare.”¹⁸

“This combined effort had a great effect in turning the tide of battle, and by January 16th, the strategic air arm was returned to its usual primary missions.”¹⁹

Strategic Air Operations

Strategic operations from the onset were just as vital as tactical air operations in successfully reversing the German offensive in the Battle of the Bulge. Three key areas of concentration in the Allied strategic operations proved incapacitating to the enemy war machine, possibly before the Ardennes offensive ever began. One of the most important contributions was the attack on oil production. This caused a shortage of supplies at the outset. The effects were evidenced in abandoned tanks and motor vehicles of all kinds, and in engines burned out by inferior and inadequate fuel substitutes. Attacks of enemy aircraft factories completely disrupted German plans for a vast expansion of fighter production. Finally, attacks on armored and motor vehicles, although limited, caused the breakdown of factory new vehicles and others abandoned for the lack of spare parts. “During all of 1944, German war production had been subjected to constant air alerts and widespread damage.”²⁰

Results

The results of the air campaign heralded the transition of ground forces defensive operation to the offensive drive. The German exodus began, with troops attempting both escape and re-supply of units left for the rear guard. The Germans in full flight threw caution to the winds, moving by day, making the retreating columns easy prey for the constant air attacks.

The all-out German offensive had been crushed. All gains were erased while additional Allied advances were made on the lower Roer and in the Colmar area.²¹ By January 16th, the enemy had suffered 120,000 casualties, lost 600 tanks and assault guns and at least 1,600 planes. The Ardennes offensive had caused a serious reduction in enemy stocks and the state of German reserves precluded further offensive action on a scale comparable to the Ardennes. Possibly even more serious in the final analysis was the widespread disillusionment that ensued from the conspicuous failure of the operation.²²

Notes

¹ United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 71

² Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 73.

³ United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 71.

⁴ Time – Life Books, by the editors. (1989). *History of the Second World War*. New York: Prentice Hall Press, p. 319.

⁵ Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 7.

⁶ “To Win the Winter Sky: The Air War over the Ardennes 1944-1945”, Danny S. Parker, p. 9.

Notes

⁷ United States Strategic Air Forces in Europe: Office of the Director of Intelligence, *Allied Air Power and the Ardennes Offensive*, Summary, 15 December 1944 –16 January 1945, p. 4

⁸ *The Contribution of Air Power to the Defeat of Germany: Review of the Role and Accomplishments of Allied Air Power in the European War, Section One.*, 1945.

⁹ Time – Life Books, by the editors. (1989). *History of the Second World War*. New York: Prentice Hall Press, p. 324.

¹⁰ Ibid, p. 325.

¹¹ Hastings, Max. (1985). *Victory in Europe: D-Day to VE-Day*. London: Artus Books, pp. 110-111.

¹² Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 7, p. 74.

¹³ Ibid, p. 19.

¹⁴ United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 71.

¹⁵ Ibid, p. 68.

¹⁶ Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 76.

¹⁷ *Support of Ground Troop Advance Report*, Part Two, February, 1945.

¹⁸ IMPACT Magazine of Tactical Air Power, February 1945, pp. 1-73: *Another Tactical Air Triumph; The 8th Hits Airfields to Squelch Attacks on Our Fighters; Durin Breakthrough Bombing; B-26s vs Nazi Strongpoints; Here's what Halts the Hun*, p.5.

¹⁹ United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 72.

²⁰ Ibid., p. 6.

²¹ Ibid., p. 77.

²² United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 73.

Chapter 4

Conclusion

The Battle of the Ardennes was planned and carried out as a bad weather campaign. When the weather unexpectedly broke and allied aircraft swarmed over the battle area and to the rear, there was no longer any doubt as to the outcome.¹ The Ardennes offensive had failed to achieve any objective commensurate with the elaborate preparations and heavy losses it involved. It consumed the major portion of reserves in the West, it placed the German High Command in an awkward position to meet the Russian offensive or future Anglo-American drives to the Rhine. By January, it was estimated that the enemy had suffered 120,000 casualties and lost 600 tanks and assault guns. Equally severe were enemy air losses, which totaled approximately 1,600 planes. The offensive had caused a serious reduction in enemy stocks and the state of German reserves precluded further offensive action on a scale comparable to the Ardennes. Possibly even more serious in the final analysis was the widespread disillusionment likely to ensue from the conspicuous failure of the counteroffensive.²

The Allied forces paid a high price to regain the ground lost to the German offensive. “Americans suffered 81,000 casualties, including 15,000 captured and 19,000 killed. The British, who only entered the battle in its closing phase, lost 1,400.”³

Lessons Learned

By paving the way for landing operations, exploiting enemy retreats, crushing counter attacks, assaulting permanent fortifications, supporting airborne operations, conducting tactical reconnaissance and aiding in numerous other situations, air power proved critical to virtually every aspect of ground operations.⁴

The importance of air power in checking a grand-scale enemy offensive was proved conclusively in the Battle of the Bulge, from both a strategic and tactical level. It was the real test, where applying the doctrines already learned from previous operations was successful.⁵ “The ability of the Air Force to dominate the battle area completely and to aid so freely in the ground campaign is owing to the prior achievement of air power’s first responsibility: gaining and maintaining air supremacy far from the battle area.”⁶ Finally, the Battle of the Bulge illustrated, as never before, that an Army couldn’t launch an offensive without first establishing air superiority over an opponent. “Allied air forces attacked the German army at will and planned and carried out a program to interdict key enemy lines of supply. The German Air Force could not harm Allied ground forces to any extent though they were dedicated to do so; neither could the GAF prevent Allied aircraft from carrying out their appointed tasks. The Germans clearly did not have air superiority during the Battle of the Bulge. The Allies clearly did.”⁷

Impact on Future Air Power Operations

The Ardennes offensive presented a challenge to tactical air power, which is noteworthy in many aspects. It was a challenge to the flexibility of air power – just how fast and how hard could tactical power be employed without prior plans for a particular area? For the first time this was not the use of air power as part of an overall planned

offensive. “Something new, too, was that the Germans were on the offensive – their first in three years and it was the first time the Germans had launched an offensive without the assurance of complete air superiority.”⁸

The decisive use of air power in the Battle of the Bulge ushered in a new dimension to future air operations. It highlighted conclusively the importance of synchronized operations among the services. This operation emphasized the point that air power is most effectively used if employed using tactical and strategic air doctrine in synchronicity with other service operations, with a recognition that flexibility is the key to air power.

A 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, best summarized this: “The Battle of the Ardennes is long past. It rests now as a chapter, a phase in the Allied campaign to beat the Nazi armies from the coast of Normandy into the heart of the Reich. It was a victory not for any arm of service but for an Allied team, a team of infantry, tanks, artillery, services and air power. Certainly no better lesson can be learned from the Ardennes than that the superior team won the battle.”⁹

Notes

¹ *The Contribution of Air Power to the Defeat of Germany: Review of the Role and Accomplishments of Allied Air Power in the European War, Section One.*, 1945, p. 7.

² United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One and Four. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945, p. 73.

³ Hastings, Max. (1985). *Victory in Europe: D-Day to VE-Day*. London: Artus Books, pp. 113.

⁴ Support of Ground Troop Advance Report, Part Two, February, 1945, pp. 2-21.

⁵ IMPACT Magazine of Tactical Air Power, February 1945, pp. 1-73: *Another Tactical Air Triumph; The 8th Hits Airfields to Squelch Attacks on Our Fighters; Durin Breakthrough Bombing; B-26s vs Nazi Strongpoints; Here’s what Halts the Hun*, p. 3.

⁶Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 76.

Notes

⁷ Page 80, Ibid.

⁸ Page 73, Ibid.

⁹ Material in Response to Telephone Request of 28 September 1945 Concerning Allied Air Effort During the Battle of the Bulge, addressed to Brigadier General H.C. Candee by 9th Air Force Historian, Joseph A. Wyant, Lt. Col, AC, USA, p. 76.

Bibliography

Green, William. (1986). *Warplanes of the Third Reich*. New York: Galahad Books.
Hastings, Max. (1985). *Victory in Europe: D-Day to VE-Day*. London: Artus Books.
IMPACT Magazine of Tactical Air Power, February 1945, pp. 1-73: Another Tactical Air Triumph; The 8th Hits Airfields to Squelch Attacks on Our Fighters; Durin Breakthrough Bombing; B-26s vs Nazi Strongpoints; Here's what Halts the Hun
Military Intelligence Service, Air Prisoner of War Interrogation Detachment. (1945). *A Crack German Panzer Division and what Allied Air Power did D-Day - VE-Day*.

Parker, Danny S. (1994). *To Win the Winter Sky: The Air War Over the Ardennes 1944 - 1945*. Pennsylvania: Combined Books.

Support of Ground Troop Advance Report, Part Two, February, 1945.

The Contribution of Air Power to the Defeat of Germany: Review of the Role and Accomplishments of Allied Air Power in the European War, Section One., 1945, p. 7.

Time – Life Books, by the editors. (1989). *History of the Second World War*. New York: Prentice Hall Press.

United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Summary, Section One. *Review of the Role and Accomplishments of Allied Air Power in the European War*, 15 December 1944 –16 January 1945.

United States Strategic Air Forces in Europe: Office of the Director of Intelligence, Volume One, Section Four. *Allied Air Power and the Ardennes Offensive*, 15 December 1944 –16 January 1945.

VIDEOS

Against All Odds: Great Battles of WWII. Reader's Digest Video Series (1987).

A Fighter Pilot's Story. Edited by Thomas L. Myers in association with WETA-TV (public television), Washington D.C. (no date).

The Famous Third Army. Department of the Army (1960).

PHOTOS

Cole, Hugh M. and Charles B. MacDonald. *U.S. Army in WWII European Theater of Operations: The Battle of the Bulge*. Office of the Chief of Military History, Department of the Army. Government Printing Office (1965).

DISTRIBUTION A:

Approved for public release; distribution is unlimited.

Air Command and Staff College
Maxwell AFB, Al 36112