THE HISTORY OF THE 389TH BOMBARDMENT GROUP(H): A STUDY OF THE USE AND MISUSE OF STRATEGIC BOMBERS IN THE SECOND WORLD WAR.

THESIS

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

Patrick B. Simpson, B. A.
Denton, Texas
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This thesis describes and evaluates the successes and failures of the use of strategic bombers through the abilities of one heavy bombardment group, the 389th. It examines the different missions that determined the effectiveness of the Group. When employed in a strategic bombing role, the 389th contributed significantly to the destruction of the German war industries and transportation system. When used as a tactical bomber, a mission for which it had neither proper training nor equipment, the 389th was generally a failure.

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CHAPTER I

INTRODUCTION

On 17 December 1903 at Kitty Hawk, North Carolina, Orville and Wilbur Wright made the first controlled and powered flight in an aircraft and thus launched a new era of technology that would have far reaching effect in both military and civilian use. Long before airplanes other forms of flight had already existed. Military establishments already used balloons and dirigibles primarily for reconnaissance, so when the airplane was first used by the military, it was employed in the same role.

The airplane first saw combat during the Italian invasion of Libya in 1911-12. Although used primarily for reconnaissance, it also assumed other missions including bombardment, which was nothing more than dropping a few light weight bombs that did little damage.[1]

In the early years of World War I the airplane was used only for reconnaissance and artillery observations, because most military and political leaders believed the airplane was good for little else. However, as the war progressed and aircraft technology improved, the role of the aircraft changed. The Germans had already used Zeppelins to bomb England. Therefore, use of the airplane as a bomber was the next logical step in taking the war to the enemy. By the

end of 1915 the Allies regularly used airplanes to bomb German and Austrian targets. Most countries by the end of the war had some kind of air force.

After the war air forces struggled for survival as most countries, including the United States, were reducing the size of their military and the military budget. In order to justify their existence, leaders of the air forces had to find something that would differentiate their branch from the other armed services. That answer was strategic bombing. In the 1920s several men, in their respective countries, began to push for a greater role for the airplane and worked to prove that airpower would be the decisive weapon in future wars.

In the United States General Billy Mitchell, who was commander of the U.S. Air Services of the AEF in World War I, was the leading advocate for airpower and strategic bombing. Mitchell wrote several papers on the future role of airpower, which included strategic bombing. The Army High Command and the politicians largely ignored his ideas, for this was a time of reduced military budgets and personnel. Mitchell kept up the pressure, however, and as a result incurred the wrath of the high command and was court-martialed.

Many of Mitchell's supporters, who later became leaders in the air service, kept up the fight, for they were convinced that strategic bombing would be the main facet of

airpower in the next war. They continued to develop theories and methods for the use of aerial bombardment. The Air Corps Tactical School between 1931 and 1935 developed the doctrines of airpower which formed the basis of the strategy used in World War II. Their concepts all depended on the one basic premise that bombers could reach their target and destroy it.

When the United States entered the war in Europe, its military and political leaders realized that aircraft and strategic bombing were going be a major factor in the war. Plans for aerial warfare, which had been drawn up by Air Corps personnel prior the United States entering the war, were implemented. Some of the objectives of the Air War Plan were to wage a sustained air offensive against German military power and to destroy the industrial and economic structure of Germany.[2] General Carl ("Tooey") Spaatz stated, "Strategic bombing is ... the first instrument in history capable of stopping the heart mechanism of a great industrialized enemy. It paralyzes his military power at the core."[3]

The Army Air Corps decided that the best way to carry out this objective was through daylight and high-altitude precision bombing with a large number of bombers in a tight combat formation. The service developed two types of airplanes for that purpose. They were the B-17 "Flying Fortress" and the B-24 "Liberator," which were four-engine

heavy bombers that could purportedly fly at high altitudes deep into Germany with enough armament to defend themselves against enemy fighters and, equipped with the Norden Bombsight, bomb specific military targets.

To accomplish this mission the Eighth Air Force was created specifically as a strategic bomber unit to operate out of bases in England. The Eighth Air Force first arrived in England in May 1942, the first units being primarily headquarters and support personnel. The first bomber groups arrived in June and flew their first combat mission in August.[4] Other bomber groups followed as men and aircraft became available. One such group was the 389th Bombardment Group.

The development of airpower and strategic bombing in World War II is well known as well as the arguments on its effectiveness. Strategic bombing has been examined in many different ways. But it has not been specifically analyzed by studying individual bombardment groups. The purpose of this thesis is to evaluate the use and misuse of strategic bombers by documenting the missions of one unit, the 389th Bombardment Group.

ENDNOTES

[1]James L. Stokesbury, A Short History of Air Power (New York: William Morrow and Company, Inc., 1986), 16; Martin Van Creveld, Technology and War: From 2000 B.C. to the Present (New York: The Free Press, 1989), 184.

[2]Haywood S. Hansell, Jr., The Strategic Air War Against Germany and Japan (Washington, D.C.: Office of Air Force History, United States Air Force, 1986), 33-34.

[3]James Parton, "Air Force Spoken Here" General Ira Eaker and the Command of the Air (Bethesda, MD: Adler and Adler Publishers, Inc., 1986), 444.

[4]Roger Freeman, The Mighty Eighth: A History of the U. S. Eighth Army Air Force (Garden City, NY: Doubleday and Company, Inc., 1970), 4, 11-12

CHAPTER II

THE TRAINING PHASE: PREPARATION FOR STRATEGIC BOMBING IN EUROPE

Immediately after the attack on Pearl Harbor there was a pressing need for combat units. The Army Air Forces (AAF) quickly implemented unit training programs. One was the operational unit training program. By the end of 1943 the AAF had formed most of the units. Personnel of the four existing Air Forces in the United States were utilized to form the Heavy Bombardment Group and new graduates of the flying and technical schools were added to supplement the Group's experienced men. Ground and flying personnel were trained together so that the group would be capable of administering, feeding, clothing, and housing itself. Through this program the 389th Bomb Group trained as a strategic bomber group.[1]

The 389th Bombardment Group (Heavy) was organized on 30 November 1942 at Davis-Monthan Field, Tucson, Arizona, and was originally known as the 385th Bombardment Group (Heavy), consisting of the 548th, 549th, 550th, and the 551st Bombardment Squadrons. The Group's first commanding officer was Major David B. Lancaster, Jr., a veteran pilot who had graduated from the United States Army Flying School in San Antonio, Texas, in July 1931.[2]

The 385th did not train at Davis-Monthan Field, for the group had not been assigned any aircraft. This field had been established principally to assemble newly commissioned officers and enlisted men who had just completed their courses at the Technical Training School and to organize squadrons into a group. Once these preliminaries had been completed by the end of December 1942, the 385th transferred to Biggs Field, El Paso, Texas.[3]

The reception at El Paso was cool. Base officials claimed that the group was a month early, and the group already training there was not ready to move out. With two groups at the base, the accommodations were limited, and training was subsequently difficult during January. The first month was not, however, a total loss. On 6 January the Group received its first planes, two old "beaten up" B-24 Liberators, and from then on the group was always known as a "Liberator outfit."[4]

The Liberator was a four-engine heavy bomber that was built by Consolidated Aircraft Corporation of San Diego. It was to be superior to the B-17 "Flying Fortress" already in production. The Air Corps wanted a bomber capable of a top speed in excess of 300 mph, with a range of 3,000 miles, and a ceiling of 35,000 feet. Like the B-17, the B-24 underwent many modifications. The first major modification was the B-24D, which the 389th first flew into combat. Among the changes to the "Model D" were the Pratt and Whitney Twin

Wasp turbo supercharged engines, additional armor, self-sealing fuel tanks, power-operated gun turrets, improved flight equipment, and ten .50-caliber machine guns.[5]

Even though the crews eventually flew most of the different models of the Liberator, the models D, H, and J were the ones mainly flown by the 389th. The majority praised the airplane. The most common impression was how "big" it was. To Bill Crum, a gunner in the 566th Squadron, and to many of the others it was "love at first sight." Even though the Liberator was not a sleek aircraft on the ground, it had a grace all its own in the air. N. N. ("Geb") Gebhard, a pilot for the 565th Squadron, stated that the B-24 was "a good airplane, you just had to learn how to fly it." To Dan Raymond, a flight engineer for the 566th Squadron, the plane was just "cold and windy." Some of the men seemed to prefer one type over the other. Gebhard believed the Model D was the best he had flown. Dan Raymond stated that the H model was far superior to the J model. Gebhard probably expressed his comrades' sentiments when he said, "It got us there and back."[6]

On 1 February 1943 the Group's name was changed from the 385th to the 389th Bombardment Group (Heavy) and the 548th, 549th, 550th, and 551st Bombardment Squadrons were redesignated the 564th, 565th, 566th, and 567th Bombardment Squadrons.[7] Throughout January, February, and March the Group grew as more personnel were assigned to it. The

majority of the combat crews still came from David-Monthan Field, while most of the ground personnel were from the 18th Replacement Wing at Salt Lake City, Utah. This was a period of intense administrative paperwork since several hundred more men were assigned to each squadron. Each new man had to be placed in the job for which he was qualified, assigned to his work group, and taught teamwork. Men who had never flown together were formed into flight crews for flight training. Ground maintenance personnel were placed in maintenance crews and trained to keep a B-24 in the air and combat ready. Biggs Field thus became a center of intense activity as the Group was trained into a cohesive unit. Each ground unit squadron was molded into a support operating organization which offered complete cooperation with all phases and elements for combat duty.[8]

The first phase of training, individual proficiency, was completed at various technical and flying schools before men were assigned to the Group. Pilot training consisted of various flying courses that lasted about ten weeks for each one. After an introductory course, pilots went to pre-flight school for physical and academic training. After pre-flight they went to primary flight school, then to basic flight school, and finally to advanced flying school. Those slated for bombers took another ten-week course on the four-engine bomber.[9]

Each navigator and the bombardier received ten weeks of pre-flight training and six weeks of gunnery school.

Navigators then spent twenty weeks at navigation school and received instruction in pilotage, instruments, radio navigation aids, meteorology, dead reckoning, codes, and signals; and they received training in different forms of navigation devices, most of which were developed during the war. One of the most widely used devices was "Gee," which required a special radio receiver working on signals pulsated by three ground stations. Used by the Eighth Air Force initially in helping with blind bombing, "Gee" later became the main navigational aid for the Eighth Air Force. Prospective bombardiers were sent to bombardier school for twenty weeks, where they received training on the Norden bombsight and instruction in meteorology, radar aids, codes and target recognition. The most secretive piece of equipment aboard the B-24 was the Norden bombsight. Originally designed for the Navy by inventor Carl L. Norden, it became the standard bombsight for all heavy bombers. The Norden bombsight was used in high-altitude precision attacks.[10]

The rest of the crew consisted of enlisted men. After a five-week introductory training course, they were sent to various schools for more specialized training. The gunners took a six-week course at gunnery school, which covered the use of weapons and their operations, ballistics, turret operation, maintenance, and aircraft and ship recognition. The practical training included ground firing of flexible

guns and turret operation both at both stationary and moving targets. The standard defensive weapon on all AAF bombers was the .50-caliber Browning machine gun, and the standard ammunitions were armour-piercing, incendiary and tracers. The radio operators, after introductory training, received a twenty-week course in radio operation and repair, followed by a six-week gunnery course. The flight engineer, who also served as top-turret gunner, took a twenty-seven-week course in aircraft maintenance and inspection at the flight engineering school followed by a six-week gunnery course.[11]

The second phase of crew training began in March 1943 at Biggs Field. As crews formed, they came under the supervision of model crews, which had been part of the original cadre. Each squadron had three flights, each flight having three crews. At no time did any squadron have more than four planes, all of which were "pass-me-downs" from other groups in a more advanced stage of training, and the aircraft were in constant need of repair. Practice bombing and gunnery missions were conducted both day and night on the dry, dusty West Texas bombing ranges and at nearby Alamogordo, New Mexico, bombing range. The air echelon flew regularly to prepare itself for combat. Formation flying, high altitude flights, and bombardment practice, were combined with ground schooling, gunnery practice, and lectures on enemy tactics and equipment by operations and intelligence personnel. High-altitude

training primarily stressed formation flying. Pilots also received practice in "hitting the deck," or they hedge-hopped over sand dunes and mesquite trees and learned to fly and land with only three engines and other emergency land procedures. A major difficulty, however, was keeping enough planes available for training. When there were enough planes, there was either a gasoline shortage, or a shortage of practice bombs, or not enough co-pilots.[12]

While the air echelon trained, the ground units were formed. Operations personnel, intelligence, armament, engineering, communications, and ordnance all joined the Group, along with air crews, mechanics, clerks, typists, and cooks. As the different departments organized, the Group began to come together as a cohesive unit.[13]

Training also included making practice emergency landings with only three engines. A few crash landings occurred, but they were executed with skill and resulted in no serious injuries. This type of learning experience helped train the crews for survival in emergencies which they might encounter under combat conditions.[14]

When the men were not flying, they went to ground school. Synthetic trainers were used extensively. Intelligence personnel taught aircraft and naval identification, escape procedures, and map reading. The amount of material that was taught was almost more than the men could absorb. This intensive training was necessary because the Group's

theater of operations was unknown. Therefore, preparations had to be made for all theaters.[15]

While the air crews engaged in this activity, maintenance men worked on making the planes ready for combat as well as loading and unloading bombs and servicing other armaments. Other ground personnel also received training in their specialties. For example, the armament, engineering, and aircraft ground crews spent much of their time working on the airplanes. The supply department issued new equipment such as steel helmets, respirators, and identification tags. The medical department was busy inoculating the entire personnel with a "seemingly endless" series of immunizations shots. Training courses in chemical warfare and first-aid were added to the routine features of training films on the Articles of War and sex hygiene.[16]

By April the Group was fairly well set. The third and final phase of training began 1 April. This training involved eight-hour-long cross-country trips, which was to be the principal work of a heavy bombardment unit in combat. Navigation was made more complicated and formation flying was more emphasized. Meanwhile, the ground echelon was busy preparing the Group for its expected move to another base.[17]

On 13 April 1943 the Group transferred from Biggs Field to Lowry Field in Denver, Colorado. The ground echelon was the first to leave and departed by rail for Lowry Field,

arriving two days later. The air echelon began its move the next day by air. Since sufficient Liberators were not available to take all of the air echelon at one time, those that were available made frequent trips back and forth until 20 April when the last of the Group arrived at Lowry Field.[18]

The third phase of training started at Biggs Field and ended at Lowry. For the remainder of April and during May, intensive training took place. Longer flights were made; more time was spent at higher altitudes; and more careful navigation was required as more Liberators arrived. The planes flew in Group formation whenever possible. Practice bombing and gunnery were not neglected, and each crew had to make at least one long overland navigational flight to March Field in California, Kelly Field in Texas, or to other places. The group also undertook night flying, which led to missions over water and air-to-air gunnery conducted from Kelly Field out over the Gulf of Mexico or out of March Field over the Pacific. For submarine patrol work out over the Pacific many members of the group earned the Asiatic Theater Medal.

When the men were not flying, they went to ground school. Several members of the 389th Bombardment Group, who were stationed in Australia, gave lectures about their experiences in combat. The crews were more receptive in this sort of lecture, for they knew that their own baptism

by fire was close at hand. The men also trained at the firing range, where the enlisted men qualified on the 1903 Spring field rifle and the officers qualified on their side arms, which were normally Cold .45-caliber pistols.[19]

The ground echelon was kept busy. The armament and ordnance sections loaded bombs on the airplanes for practice missions; the engineering and supply sections worked to ensure that they had the necessary equipment for an overseas shipment. Medical personnel gave everyone his last physical examination before leaving for overseas and updated immunization shots. All of the personnel records also had to be checked and updated.[20]

During the months of training high ranking officers made many inspections, and the Group held numerous reviews for visiting dignitaries. On 24 April, President Franklin D. Roosevelt visited Lowry Field and inspected all the troops stationed there.[21]

While the Group was stationed at Lowry Field, Colonel Lancaster became ill and was put into the base hospital where he was temporarily physically incapacitated for overseas duties. On 4 May, Lancaster left the Group he had prepared for combat, and Colonel Jack W. Wood succeeded him and assumed command of the Group on 16 May 1943. Wood was a veteran pilot and had considerable experience with B-24s, having been the commander of the 30th Bombardment Group. Gebhard remembered that Wood was a quiet and efficient leader.[22]

In May the new B-24s, which were to be flown in combat, began to arrive and were assigned to the different crews. The Group personnel had become tense and expectant, for there was evidence everywhere that preparations were being made for the big push overseas. Everybody started working overtime. Packing boxes began to arrive at the base. Bed rolls, blankets, and other items were issued to the men. All personal and immunization records were checked, and the men had another physical examination. Meetings were held to discuss rules and regulations and other issues regarding the movement overseas. The men received a six-day furlough to visit their families one last time, and upon returning to base all personnel were restricted to base.[23] During this time the ultimate theater of operations remained unknown.

After many months of training the Group was ready to be sent overseas. The morale of the 389th was excellent. Aside from the usual gripes, very few disciplinary cases occurred, minimal AWOL problems arose, and only two summary court-martial cases took place during their training, a good indication of the high morale.[24] On 1 June 1943, Colonel Wood and part of his staff left Lowry Field for England to report to the Commanding General of the Eighth Air Force in London. After reporting they went to AAF Station 114 (Hethel) and took command of the field on 11 June.[25]

The air echelon began departures from Lowry Field on 1 June. Their destination was Lincoln, Nebraska, and the 6th

Heavy Bombardment Processing Group, where all records and men were thoroughly inspected one last time before going overseas. Here many of the crews received their brand-new B-24s.[26]

The ground echelon began leaving Lowry on 5 and 6 June by troop trains. The 566th and 567th Squadrons went through Canada, while the 564th and 565th Squadrons went via Chicago. Their destination was Camp Kilmer, New Brunswick, New Jersey, for processing for overseas. At Camp Kilmer they went through the same processing as the air echelon.

After three weeks of drilling, hiking, playing, and speculating on the reliability of rumors, the day to leave finally arrived. The ground crews of the 389th left Camp Kilmer with secret orders on 30 June. Late in the afternoon the Group, fully equipped with field packs and weapons, marched to the railway siding of Camp Kilmer for Jersey City, where they transferred to a ferry that took them to their ship, the Queen Elizabeth. While the men transferred from the ferry to the ship, the Red Cross offered refreshments and a military band boosted morale. On the morning 1 July the Queen Elizabeth set sail across the Atlantic Ocean.

Life aboard the huge ship was a new experience for most of the men. The ship was crowded, so not all the troops could get inside cabins. They slept on deck or took turns using the bunks below decks. Two meals were served each day. On deck, the men interrupted their poker games now and

then to go to the canteen to buy cigarettes and chocolate bars at a low price, or stood by the railing looking for submarines or watching the aircraft which accompanied the ship. Though conditions were not too comfortable, the five days of zig-zagging across the ocean passed quickly, and the sea was so calm that no one got seasick. The ship dropped anchor in the Firth of Clyde, Scotland on the night of 6 July.

The men left the next day by ferry to Greenock, Scotland, where they boarded a train for Wymondham, England. Arriving on the evening of 8 July, they transferred to trucks, which, after groping around during the British blackout, finally arrived at Hethel, their operational home for the duration of the war.[27]

At Lincoln excitement ran high among the air crews, for the climax of the previous months of intensive training was at hand. As soon as the final processing was accomplished, the men readied for their flight overseas. The 566th Squadron departed on 1 June, soon to be followed by the other squadrons. Each squadron consisted of ten to twelve bombers. The planes took off individually for the East Coast, and the majority landed at Dow Field, Bangor, Maine, at various times and by different routes, to start their trip overseas. The North Atlantic route took the planes from Dow Field to Goose Bay, Labrador or Gorder Lake, Newfoundland, to Weeks Field in Iceland, to Prestwick

Airport in Scotland. For most of the crews the trip across the Atlantic was fairly routine. Some, however, had to make emergency landings in Greenland or Northern Ireland due to trouble with the airplane or because of bad weather.[28]

How well the 389th was trained and whether or not it was adequate for combat was a matter of opinion. Many of the men believed they were adequately trained and that their training was a major factor in their survival and return home. Others believed that certain aspects of their training did proved to be helpful, but overall the training did not and could not prepare them for the challenge they would face in combat because it was impossible to duplicate actual combat conditions. Some felt that the training was not adequate and did not prepare them for combat.[29]

ENDNOTES

[1]AAF: The Official World War II Guide to the Army Air Forces (New York: Simon and Schuster, 1944; reprint. New York: Bonanza, 1988), 109-110.

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[3]Ibid.

[4]Ibid.

[5]Steve Birdsall, Log of the Liberators: An Illustrated History of the B-24 (Garden City, NY: Doubleday and Company, Inc., 1973), 41; Martin Bowman, B-24 Liberator 1939-1945 (Wellingborough, Northhamptonshire, England: Patrick Stephens LTD., 1989), 8; Larry Davis, B-24 Liberator in Action (Carrollton, TX: Squadron/Signal Publications, 1987), 4; Roger Freeman, The U. S. Strategic Bomber (London: Macdonald and Jane's, 1975), 123-124; William Holder and Clifford Glassmeyer "B-24: The Liberator," Aviation Quarterly 5 (Fall 1979), 295; Philip St. John, The Liberator Legend: The Plane and the People (Paducah, KY: Turner Publishing Company, 1990), 7.

[6]Robert D. Brient, interview by author, tape recording, Dallas, Texas, 2 March 1993; W. L. Crum, letter to author, 2 November 1992; N. N. Gebhard, interview by author, tape recording, Alvarado, Texas, 16 February 1993; Gene Hartley, letter to author, 13 October 1992; Cecil Martin, interview by author, tape recording, Fort Worth, Texas, 5 April 1993; Dan Raymond, letter to author, 30 November 1992; Howard Reichley, interview by author, tape recording, Fort Worth, Texas 12 April 1993; Lester Tarrent, interview by author, tape recording, Dallas, Texas, 3 March 1993.

[7]History of the 389th Bombardment Group, microfilm roll B0418.

[8]Ibid.

[9]AAF, 104-105; Freeman, U. S. Strategic Bomber, 143.

[10]Ibid., 105-106; Ibid., 136-138, 144.

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[12]History of the 389th Bombardment Group, microfilm roll BO418.

[13]Ibid.

[14]Phillip Ardrey, Bomber Pilot: A Memoir of World War II (Lexington: The University Press of Kentucky, 1978), 54-55.

[15]History of the 389th Bombardment Group, microfilm roll B)418.

[16]Ibid.

[17]Ibid.

[18]Ibid.

[19]Ibid.; Gebhard, interview by author.

[20]History of the 389th Bombardment Group, microfilm roll BO418.

[21]Ibid.

[22]Ibid.; Ardrey, Bomber Pilot, 57; N. N. Gebhard, interview by author.

[23]History of the 389th Bombardment Group, microfilm roll BO418.

[24]Ibid.

[25]Ibid.

[26]Ibid.

[27]Ibid.

[28]Ibid.

[29]John T. Blackis, letter to author, 17 November 1992; Brient, interview by author; Crum, letter to author; Gebhard, interview by author; Martin, interview by author; Raymond, letter to author; Reichley, interview by author; Tarrent, interview by author.

CHAPTER III

NORTH AFRICA AND ITALY: A PRELUDE TO PLOESTI

The Group flew its first few missions out of North Africa. The majority of these were flown as tactical missions in support of the invasion of Sicily and were not part of the strategic doctrine created before the war. The use of strategic bombers in a tactical role would occur many times throughout the war, and numerous missions would be in support of ground operations as was the case in North Africa. These raids provided invaluable experience in preparing later for something more critical, Ploesti.

In June 1943 the crews began arriving at Hethel. After the entire Group had arrived, they received a five day orientation course for the European Theater of Operations (ETO) that emphasized formation flying. The Group also started practicing formation flying at a very low altitude. This activity was responsible for starting many rumors, including one that had the 389th being sent to North Africa, because no one ever flew low altitude formation in heavy bombers in daylight over Europe. This rumor proved to be true.[1]

By the end of June preparations were in process to send three Eighth Air Force bomber groups to North Africa. By special order of the Commanding General of the Eighth Air

Force on 20 June 1943, the 389th Bomb Group prepared to move as soon as possible after 25 June 1943. On 1 July, the crews were briefed and departed for North Africa. With the Group were some of the ground personnel of the 44th and 93rd Bombardment Groups, assigned on detached service to the 389th.[2]

The 389th was assigned, along with the 44th and 93th Bombardment Group, to the 201st Provisional Combat Wing, on detached service to the Ninth Air Force. The three groups were sent to North Africa for two reasons. One was to attack the oil refineries at Ploesti, and the other was to support the invasion of Sicily (Operation Husky) as requested by General Dwight Eisenhower.[3] The majority of the missions eventually flown by the 389th during Operation Husky were more tactical than strategic.

The Group left about noon on 1 July and flew to Portreath near Newquay on the coast of Cornwall in southwest England. In addition to the normal ten crew members, each aircraft carried maintenance personnel and their equipment. The next morning the contingent flew to the La Senia Field in Oran, Algeria. The route took them over the Strait of Gibraltar. Along the route some of the men reported being fired upon by antiaircraft artillery from the coast of Spanish Morocco.[4] Also, Lieutenant David Wilhite and his crew, from the 566th, were reported missing, but later information revealed that his aircraft had made a forced

landing in Lisbon, Portugal and was interned for a short time.[5]

The next day the men arrived at their new base, called Site 10, just outside Benghazi in Libya. The airfield was still being built when they arrived. One runway had been leveled out of the desert for a three-plane take-off, and two others were under construction. The field and the surrounding area reminded many of the men of Biggs Field in West Texas. It was hot, dry, dusty, and flat as far as the eye could see. Unlike Biggs Field, however, the new base had no buildings with the exception of a few tents set up for a mess hall and other facilities. After the men arrived they immediately pitched tents and turned the area into a combat base. The enlisted men and officers worked side by side, and after a few days of work and after all the crews had arrived, the base became operational.[6]

The living conditions at Benghazi were poor, but the men adjusted. The biggest problem was the dust, for it got into everything: tents, clothes, food, and the airplanes, especially the engines. In the meantime, the air crews had to repair their own planes and ready them for flight. The engines almost always needed work because of the dust, and many of the Pratt and Whitney engines had to be rebuilt at the local desert depot. These engines became known by the personnel as Pratt and Wogs (Wogs was a term used to describe Wiley Oriental Gentlemen).[7]

There were other problems. Scorpions infested the area and several men were stung. Snakes also caused some incidents, and a "million" huge locusts, like the dust, seemed to get into everything. Dysentery also broke out. Most of the food, which the men did not like, consisted of C-rations, water trucked from a well nearby and then hung in rubberized Lister bags in the sun after being heavily chlorinated, and powdered eggs mixed with dust.[8]

Even with these hardships troop morale remained high, and the men tried to make their living conditions better. Some attempted to make the tents more habitable, for example, by obtaining sheets of marble in Benghazi and using them as flooring in the tent. Other things also helped improve living conditions. Some men of the 565th found an oven and some flour and baked bread, which they served to the other members of their squadron.[9]

The crews did not have a lot of time for entertainment and recreation, and when they did there was not much to do. Besides the usual card and crap games, they played some touch football games and saw a few movies. Another favorite pastime was to make a paddle and see who could swat the most locusts. The main form of activity, however, was to go swimming in the Mediterranean Sea. The men from all the bomb groups based nearby took advantage of this as often as possible.[10]

In the meantime, the preparations for combat continued. Three days after the 389th's arrival, the Group operations officer and the squadron commanders along with squadron operations officers went on their first combat mission by flying with one of the other groups in an attack on the Gerbini airdrome in Sicily. On that same day the rest of the Group began its first practice mission in North Africa. After only six days of training the day came for the 389th to go into combat. The men were anxious and impatient to get their first mission completed.[11]

Missions prior to Ploesti were flown in support of the invasion of Sicily. On the morning of 9 July 1943, the men took off on the first of many missions. The target, approximately 300 miles from their base, was the Maleme Airdrome on Crete. The Germans used this base for all types of aircraft, so its destruction would seriously hamper their defense of the Mediterranean area. More important, however, this target was chosen as a feint to divert attention from the imminent invasion of Sicily. Much had already been done to make the Germans believe that the Allies were going to attack Crete, and this raid was intended to reinforce that belief.[12]

The 566th flew lead for the Group with Colonel Wood as command pilot on the plane of Lieutenant Melvin E. Neef. Five hours were required to accomplish the mission. Of the twenty-five aircraft that took off, two aborted. Bombing

was done from an average altitude of 20,000 feet with 500 pound general purpose bombs. Although some hits were scored on the eastern side of the target, most of the bombs overshot the airdrome. The weather was fair, and the flak which was light and inaccurate, did not affect the bombing results. Strong fighter opposition came from approximately fifteen enemy planes, and the Group lost its first bomber to combat. Fighters hit First Lieutenant Arthur J. Scates's plane off the southwestern end of Crete, and his plane was seen losing altitude and burning in the waist when it exploded. Various observers saw parachutes leaving the plane, the highest number claimed being eight, with one man being seen to slip through the harness of his chute. At the same time the Group received credit for six aircraft destroyed and five damaged. Also a gunner from the 565th received credit for destroying an unidentified aircraft.[13]

Now operational, the Group geared itself for its second mission. Weather was never a factor at the base, although the occasional sand storm did become a problem with the aircraft trying to take off and land. No missions were cancelled, however, because of sand storms. With the shortage of ground personnel, crew members had to help maintain their own airplanes. They had to load their own bombs and ammunition and help repair damage to the airplane.[14]

While the Group prepared for its second mission, the Allies invaded Sicily on 10 July. The next day the 389th continued its missions in support of the invasion. The Ninth Air Force's objective was to gain air superiority over Sicily and the Mediterranean and to destroy enemy supply lines. The 389th's mission on 11 July was the Reggio Di Calabria airdrome on the toe of Italy. It was a seven-hour, 1,000-mile roundtrip mission with the 567th in lead position. Twenty-two airplanes bombed the target with 500-pound general purpose demolition bombs. The results were excellent. Photo reconnaissance showed a heavy concentration of hits on the runways and dispersal areas. Several enemy aircraft were reported damaged or burning. The Group reported intense but inaccurate flak, and several enemy fighters attacked without success. One fighter was alleged destroyed. All the Liberators returned to base.[15]

After the success of the this raid, the men gained confidence in their abilities and were eager to continue that success on the next mission. On the morning of 12 July, the Group returned to Calabria to bomb ferry slips and marshalling yards. With the Sicilian invasion in progress, this target was considered important since it was part of the main Axis supply lines. Twenty-two aircraft dropped bombs, but none hit the target. The weather was not a factor, and no Axis fighters were encountered, but the flak was intense and accurate. Several of the planes were

damaged. One from the 564th, crash-landed in a Sicilian vineyard which had recently been taken by the Canadians.[16]

On 14 July the Group bombed marshalling yards and dock installations in Messina, Sicily, a vital transportation and supply center. The 389th again experienced difficulty in hitting the target. The majority of the bombs fell short and into the sea or beyond the target. The Group again did not encounter enemy aircraft, but the flak was the worst they had encountered, and the 389th's after battle reports described it as "terrifying." Several planes were hit, including Wood's plane, which made an emergency landing in Malta. One plane from the 566th crashed and exploded with three to six chutes seen leaving the plane.

After the mission, the main topic of conversation was the intense and heavy flak encountered. Many men were also upset about the Group's inability to hit the targets. Lieutenant William Selvidge, of the 565th, sarcastically noted: "We made a lot of widows and orphans that day and then killed the fish that feed them."[17]

After a day of repairing the battle damage caused by the Messina flak, the Group prepared for its fifth mission. The target was the Bari airdrome in Italy. With ideal weather and only meager and inaccurate flak, most of the bombs found their target, hitting the hangar dispersal area and the runways. The Group encountered approximately twelve enemy fighters, and the crews claimed five destroyed, four

probably destroyed, and two damaged with no 389th aircraft lost.[18]

The Group received a few days off to recuperate from its first missions, and the crews were grateful for the respite. Some were not completely prepared for what they had encountered in combat, and others were not sure how they would react to it. The early missions from Benghazi had been comparatively easy and helped get the men accustomed to combat. With the first missions behind them most crews no longer had to worry about how they would react under fire. Even so they still were scared and anxious during missions. Captain Philip Ardrey, 564th Squadron Commanding Officer, wrote about his fear during missions, and to alleviate it he tried "to force himself to relax." He continued to experience fear on succeeding missions, but on the easier runs he did not "feel much more than a pleasant exhilaration." But, when the flak started or enemy fighters attacked he felt "icy fingers ...reach around [his] heart," and he had to force himself to relax.[19] The majority of the men experienced the same feelings as Ardrey.

Despite all the hardships the men faced at Benghazi and some disappointment in the Group's performance, morale remained high. According to First Lieutenant John Blackis, 564th Squadron, this attitude prevailed because the weather never turned bad, and because of the informality between the enlisted men and officers in having to share the mess tents and other facilities.[20]

One person who contributed greatly to morale was Father Gerald Beck. Father Beck was a great help to many of the men in the Group, and they all have a story to tell about him. He arrived unexpectedly at the 389th base at Benghazi. Gebhard remembered that "He just seemed to appear out of the desert one day." Father Beck became the Group's chaplain for the remainder of the war.[21]

Since the Group's arrival in North Africa, the missions they flew had been tactical operations, flying support for Operation Husky, rather than strategic. The sixth mission that the Group would fly was their first strategic sortie. On the evening of 18 June, Colonel Wood told the men, "We're making history tomorrow, we're going to bomb Rome."[22] There was a great deal of concern among the Allied High Command about bombing Rome because of Vatican City, which was the center of world Catholicism, and any destruction of religious shrines would bring universal condemnation. Rome also had many historical sites and priceless art treasures, which, if destroyed, would provide the Germans a propaganda advantage. The Allied High Command decided, however, that the mission was necessary. All the German and Italian supplies, reinforcements, and other war materials from the north passed through the city's two great marshalling yards on their way to Southern Italy and Sicily.

The raid was unique in aviation history. The enemy was forewarned of the coming raid by Allied radio the day before

and again the next day when the bombers were enroute. Also, thousands of leaflets were dropped over the city warning the civilians of the upcoming raid and advising them to find shelter. The mission was an all-out effort by the Army Air Forces in Africa. The Twelfth Air Force attacked the San Lorenzo marshalling yards and the Campino airdromes, while the 389th along with the rest of the B-24 groups bombed the Litternio marshalling yard, the newest and largest in Italy.

The Littorio marshalling yards were four miles north of the center of Rome and well away from Vatican City. Nevertheless, every crew studied and carried a special map on which all shrines, monuments, and historic buildings were outlined in red, and written across them were the words "must not to be harmed." The bombardiers were instructed that if their bombs, for whatever reason, could not be dropped on the briefed target, they were to be brought back. Routes in and out of the target were plotted, not with reference to ground defenses, but to insure that none of the bombers would fly over any of the important church or historical monuments.[23]

On the morning of the 19 July, the Group took off on its ten-hour mission to Rome. What was expected to have been a difficult mission turned out to be fairly easy. With ceiling and visibility unlimited, many in the Group observed their bombs hitting the target. The flak and fighter

opposition was weak and ineffectual, and all but one bomber returned to base.[24]

The post mission reconnaissance showed extensive damage to the Littorio marshalling yard with direct hits on the tracks, rolling, stock and buildings. The 201st Combat Wing reported the best work had been done by the 389th. After some early problems with bombing accuracy the Group was rapidly gaining the experience needed for strategic bombing. Operation Husky served as an intensive proving ground for a Group that ten days early had completely missed the Melene airdrome. But the Rome raid demonstrated their ability to master the difficulty of high-level bombardment under fire.[25]

ENDNOTES

[1]History of the 389th Bombardment Group, microfilm roll B0418; Ardrey, Bomber Pilot, 68.

[2]History of the 389th Bombardment Group, microfilm roll B0418; Orders from the Eight Air Force Headquarters to Commanding General Eight Bomber Command, microflim roll B0418.

[3]History of the 389th Bombardment Group, microflim roll B0418.

[4]Ardery, Bomber Pilot, 72-73; Gene Hartley, "389th Green Dragon Flares," Second Air Division Journal 32, No. 2 (Summer 1993): 24-25; Andy Opsata, "Flight Over Ploesti, Part I," 389th Bomb Group Newsletter 6, No. 2 (Spring 1993): 6.

[5]History of the 389th Bombardment Group, microflim roll B0418; Hartley, "389th Green Dragon Flares," 24.

[6]History of the 389th Bombardment Group, microflim roll B0418; Ardrey, Bomber Pilot, 76-77; Opsata, "Flight Over Ploesti," 6.

[7]Ardrey, Bomber Pilot, 78; Jack Cox, "Red Rooster of Bengasi", 389th Bomb Group Newsletter 5, No. 3 (Summer 1992): 3.

[8]Ardrey, Bomber Pilot, 76; Gebhard, interview by author; Opsata, "Flight Over Ploesti," 6; Hartley, "389th Green Dragon Flares," 24-25.

[9]Gebhard, interview by author.

[10]Ardrey, Bomber Pilot, 77; Blackis, letter to author; Hartley, "389th Green Dragon Flares," 24.

[11]History of the 389th Bombardment Group, microflim roll B0418; Ardrey, Bomber Pilot, 78-79.

[12]Ibid.; Ibid., 84-88.

[13]Ibid.; Ibid.

[14]History of the 389th Bombardment Group, microflim roll B0418.

[15]Ibid.

[16]Ibid.; Ardrey, Bomber Pilot, 87-90.

[17]Ibid.; Ibid., 91-92; Blackis, letter to the author; Gebhard, interview by author.

[18]History of the 389th Bombardment Group, microflim roll B0418.

[19]Ardrey, Bomber Pilot, 90-91.

[20]Blackis, letter to author.

[21]Ibid., 93; Gebhard, interview by author.

[22]History of the 389th Bombardment Group, microflim roll B0418.

[23]Ibid.; Gebhard, interview by author; Lewis H. Brereton, The Brereton Diaries: The War in the Air in the Pacific, Middle East, and Europe 3 October 1941-8 May 1945 (New York: William Morrow and Company, 1946), 194-195; Lowell Thomas and Edward Jablonski, Doolittle: A Biography (Garden City, NY: Doubleday and Company, Inc., 1976), 245.

[24]History of the 389th Bombardment Group, microflim roll B0418.

[25]Ibid.

CHAPTER IV

OPERATION TIDAL WAVE: A TEST FOR THE STRATEGIC DOCTRINE

The Ploesti mission in most ways adhered to the strategic doctrine created before the war. The oil refineries were considered to be a vital target, for the destruction of German oil facilities would shorten the war. The raid was carried out by a formation of heavily-armed B-24 Liberators. Where the mission did not adhere to the doctrine was that it was carried out at a very low altitude, instead of a high altitude. Another variation from the doctrine was the fact that each bomber was assigned a specific target. This tactic could not be done at the higher altitude. Also, during the mission one group, the 389th, would leave the formation and bomb the target away from the other groups.

For the rest of July, the 389th along with four other B-24 groups was removed from combat for special training for the Ploesti mission. This training consisted mostly of low-level flying across the desert. They started training in three-plane formations and worked up to the entire Group flying in formation. Eventually, all five groups were brought together to train.[1]

Ploesti, located in Romania, was an oil boomtown at the foot of the Translyvanian Alps about thirty-five miles north

of Bucharest. It was surrounded by several oil fields owned or partly owned by different foreign interests before the war.[2] In September 1940 German troops entered Romania at the request of the pro-fascist prime minister. Thus, Romania was occupied without a shot being fired, and her oil industry was quickly put under German control. This bonanza provided the Axis with much needed fuel, for Germany produced virtually no domestic oil. The Ploesti refineries provided one-third of the oil Germany needed for its military, civilian, and economic use during the war. The refineries at Ploesti also produced an exceptionally high-quality fuel, especially aviation gasoline, which the Luftwaffe needed.[3]

The Allied High Command considered the bombing of the Ploesti refineries a necessity, and attempts had previously been made against them. The first American effort occurred on 12 June 1942 when a small group of B-24s inflicted minimal damage to the refineries. The Russians also launched one or two night raids that also resulted in little or no damage. After the Allies had taken North Africa and the Army Air Force had established operational bases in the Benghazi area, during the spring of 1943 the idea of bombing Ploesti was revived.[4] An attack plan of unprecedented daring and precision was drawn up principally by Colonel Jacob Smart, a member of General Henry Arnold's Advisory Council. Both General Arnold and General George Marshall

endorsed the plan, and the Allied High Command approved it at the Casablanca Conference. It was one of the few instances in the war in which the High Command handed down a major task to a theater commander without asking him if it was feasible.[5]

Colonel Smart and his staff devised a radical plan that called for a mass simultaneous attack by heavy bombers at a low altitude. There were good reasons why Smart decided on the low-altitude approach. Since the refineries were on the outskirts of Ploesti and each was spread out for normal fire protection, Smart believed that the targets could not be seriously damaged by one high-level strike. Since no follow up raid was planned for Ploesti in the immediate future, the plan called for dropping as many bombs as possible on the targets during this one raid. Smart and his staff also thought that the German defenders would not expect a low-level assault, that the Germans heavy flak guns and fighters would be less effective hitting a bomber at a low altitude, and the bombers would be able to fly under the radar field and achieve surprise. Also, the turret gunners could open fire on the flak crews, each bomber could be given a specific target, and crippled bombers would have a better chance to crash land than those who were hit high in the air.[6]

Smart first submitted the low-level proposal to the Allied chiefs at the Trident Conference in Washington. The

meeting mainly dealt with the invasion of Sicily, and little attention was paid to his proposal. Some debate on whether the mission should be carried out did take place, however, and by the end of the conference the chiefs decided in favor of the raid and assigned implementation to the Ninth Air Force under the command of Major General Lewis Brereton and the Ninth Bomber Command under Brigadier General Uzel Ent.[7]

The raid, whose code name was initially Statesman, then Soapsuds, and finally Tidal Wave, was one of the most extensively prepared raids of the war. The crews prepared by using a variety of training aids devised for the mission. A large plaster cast model of Ploesti and surrounding area was created down to the smallest detail of every boiler house, distilling unit, and cracking plant within each refinery, along with every landmark in the area. Each crew had precise information concerning targets and the routes leading to them based on sketches of the targets as well as fifteen large-scale photographs of the models.[8]

Used for the first time in preparation for a mission was an narrated film titled Soapsuds. It was a forty-five-minute movie that was divided into three sections. An introductory section presented general information for all crew members, the second section was information for the pilots and navigators, and the third section was for the bombardiers. The film also showed the table-top model at

different speeds to give crews the feeling of coming into the target at various speeds. The main purpose of the film was to ensure uniformity in briefing the crews and to be certain that no important information was omitted. To supplement the film oil engineers lectured the men about oil and how it is refined. Also, former employees of the Ploesti refineries spoke about the targets and how to identify them.[9]

Several miles south of Benghazi, a replica of Ploesti that covered an area of over forty miles was constructed. This included the refinery at Brazi and the one at Campina, the 389th's target.[10] All five groups began to work together, and flew numerous practice bomb runs over the fake Ploesti. For two weeks the Liberators bombed the mock targets until crews grew accustomed to flying very low and fast in a tight formation. The crews were apprehensive at first but soon enjoyed the sensation of speed. Gebhard recalled that as the crews became more accustomed to the routine, they often "tried to knock Arabs off their camels and tried to blow their tents down." Blackis stated that the best part about the training for the mission was the low-level flying. Ardrey wrote this was the type of flying that every hot pilot dreamed of all his life: "It was a thrill because when you fly that low you get a sense of speed which you lose at a few hundred feet altitude. When

you go 200 miles a hour at an altitude of eight feet, you really know you are going 200 miles an hour."[11]

On 28 and 29 July all five groups using live bombs conducted the final two practice raids on the fake Ploesti. Brereton wrote in his diary about the rehearsal: "They reached the target on a split-second schedule and bombed with deadly accuracy, destroying the desert Ploesti." The mock raid lasted only a couple of minutes.[12]

The last two days before the raid, ground crews prepared the Liberators. The Liberator was chosen because it was the only heavy bomber that had the range to reach the target and return to base. To help increase the range of the bombers, an auxiliary bomb bay tank was installed to provide an extra 3,100 gallons of fuel. Also, all of the old engines were replaced with new ones. The Liberator went through other modifications for the raid. The Norden bombsights were replaced with low-level bombsights. Extra armour plating was placed beneath the stations of the crewmen to protect them against small-arms ground fire. In the lead planes the top-turrent guns were altered so that they could fire forward, and an extra .50-caliber gun was mounted in the nose. These steps allowed the bombers to attack ground positions ahead of the planes.[13]

The airmen spent the last two days going over the final details of the mission. The intelligence reports turned out to be vastly inaccurate, for they underestimated the Ploesti

defenses. There were more antiaircraft guns and fighters than intelligence believed. Moreover, intelligence reported that the flak guns were concentrated on the east side toward Russia, but they were actually on the south and west sides toward Africa. Intelligence also believed the majority of the guns and most of the fighters were manned by Romanians, who were not expected to offer much resistance. Instead, almost all of the guns and fighters were manned by skilled and experienced Germans.[14]

Tidal Wave called for the task force to fly 2,700 miles roundtrip across the Mediterranean Sea, up the Adriatic Sea to Corfu, then northeast across Yugoslavia and Bulgaria into Romania, and take the same route back.[15] The plan called for the destruction of nine major refineries in or near Ploesti. More than forty distilling units, cracking plants, and boiler houses were selected and grouped into seven general targets. The 389th was assigned target Red One and flew in the last position in the formation. Red One was the Steaua-Romana Refinery at Campina, about twenty miles north of Ploesti. This refinery was one of the largest and most modern in Romania. Its monthly output of 125,000 tons made it the second largest oil producer in the Romanian complex. About one-fifth of its capacity produced high-quality aviation fuel. In addition to the large cracking installations, it had the only important paraffin plant in the area. The 389th was assigned Campina for specific reasons.

The Group had less experience than the other groups involved, but they were flying new Liberators with a slightly greater range, and their target was the farthest. The Group was to fly with the formation until reaching the town of Pitesti and then leave the formation to bomb Red Target.[16]

The Group accepted the assignment with great determination, and the more they learned about it the more it became the only topic of discussion. The men understood that their chances of survival were less than that for their usual missions, and some on the planning staff thought that more than 50 percent of the task force would be lost. In addition, once the bombs hit the refineries, there would be burning infernos, and a danger to the heavy gasoline-laden bombers.

As the big day approached the strain on the men increased. To make things worse an epidemic of dysentery broke out among all five groups. The majority came down with the illness, and some had to be hospitalized. The 389th successfully coped, however, and the majority were able to fly on the mission. Nevertheless, not all the groups recovered in time. In order to achieve the maximum effect needed for the raid, those short of personnel received men from other groups that could spare them. The 389th provided the 98th Bombardment Group with six complete crews and sixteen individual replacements.

The night before the mission, anxiety among the crews continued to mount. Special religious services were held for the Protestant, Catholic, and Jewish faiths, and many men wrote one more letter home to their loved ones. The men also went through some last minute personal preparations. Since they had been told that a large number of Liberators could go down, several men put together their own escape kits and made plans for possible escape routes out of Romania. Some men had trouble sleeping, some preferred to be alone, and others talked with friends. While it was still dark the alarms went off waking the men from their sleep. Men in jeeps went from tent to tent shouting for the bomb crews to get up, for it was time for the raid to commence.[17]

On 1 August 1943 the 389th, on only its seventh mission, participated in probably its biggest raid of the war. The men got dressed, went to the mess hall and ate hurriedly and quietly. Then they went to the briefing room for last-minute instructions and were informed of some possible bad weather over the target. The crews then went to their bombers and got ready to fly. Father Beck, in his jeep, gave final blessings and picked up last-minute mail. Soon afterwards the engines came to life, and planes taxied out to the runway. At 0400 hours the first plane took off. In all, twenty-nine planes left for Red Target. The Group was divided into two formations, the first having four

elements of three bombers and the second with six elements of three bombers. Colonel Wood flew as command pilot with Captain Kenneth Caldwell and the 565th Squadron, which was the lead squadron.[18]

Soon after the task force had assembled and was over the Mediterranean Sea, problems began to occur. Once over the water a bomber, from the 376th Bombardment Group, with the task force's lead navigator, suddenly crashed into the sea, and the bomber with the deputy lead navigator was forced to return to base. Due to some heavy cloud cover the two lead groups soon become separated from the rest of the task force. The first two lead groups also turned too soon and flew past Ploesti almost to Bucharest before realizing their mistake. Then they had to fly to Ploesti from an unfamiliar direction. Some of their mistakes might have been corrected if not for the order of strict radio silence believed to be needed for the element of surprise, which had already been lost. These mistakes, however, did not effect the 389th since its target was away from Ploesti, nor did they learn what happened until after they returned to base.[19]

The 389th stayed with the task force until it had reached Pitesti. Then it turned a few degrees northeast to climb the foothills above Red Target. There were several valleys in the area, with the refinery in one of them. To help find the correct valley, the Group was to use a

monastery as a reference point for the target, which would be in the next valley. But, owing to clouds over the area, the monastery was not visible, and they then turned down the wrong valley. Colonel Wood realized his mistake and corrected the error. He turned the Group around and backtracked to the previous valley. Then the Group went over the next ridge, and by this time the weather had cleared up, and the monastery was visible. The planes then turned on the correct course, hopped another ridge, and started their bomb run toward Red Target.[20]

The Group had created its own bombing plan, which had been approved. The refinery was only 400 feet wide, and its four vital buildings lay in a diamond pattern. The plan called for the Group to cross in three waves, hitting each objective three times. The first wave would fly straight over the diamond, hitting the lowest and side aiming points with overages into the top points. A second wave would cross obliquely, hitting the bottom and side aiming point with overages hitting the remaining two. The third wave would then repeat the tactic from the opposite angle. The planes carried 1,000 and 500-pound high-explosive bombs with delay fuses and cluster-type incendiary bombs to be tossed out of the bomber by hand.[21]

The Group bombed the target at around 200 feet. Ardrey, who was in the second wave, described the attack:

> There in the center of the target was the big boiler house, just as the pictures we

> had seen. As the first ships approached the the target we could see them flying through a mass of ground fire. It was mostly coming from ground-placed 20 mm. automatic weapons, and it was as thick as hail. The first ships dropped their bombs squarely on the boiler house and immediately a series of explosions took place. They weren't the explosions of thousand pound bombs, but of boilers blowing up and fires of split-open firebanks touching off the volatile gases of the cracking plant. . . . We had gauged ourselves to clear the tallest chimney in the plant by a few feet. Now there was a mass of flame and black smoke reaching much higher, and there were intermittent explosions lighting up the black pall . . . We found ourselves at the moment running a gauntlet of tracers and cannon fire of all types that made me despair of ever covering those last few hundred yards to the point where we could let the bombs go. The anti-aircraft defenses were literally throwing up a curtain of steel. From the target grew the column of flames, smoke and explosions, and we were headed straight into it . . . Bombs were away. Everything was black for a few seconds. We must have cleared the chimneys by inches . . . We were through impenetrable wall . . .[22]

Upon leaving the target Ardrey continued:

> The sky was a bedlam of bombers flying in all directions, some on fire, many with smoking engines, some with great gaping holes in them or huge chunks of wing or rudder gone. Many were so riddled it was obvious their insides must have presented starkly tragic pictures of dead and dying, of men grievously wounded who would bleed to death before could be brought any aid; pilots facing the horrible decision about what to do -- whether to make a quick sacrifice of the unhurt in order to save the life of the dying man or to fly the ship home and let some crew member pay with his life for the freedom of the rest.[23]

A lieutenant of the Group later wrote:

> We came in wide open at house top level with all guns firing . . . after the bombs were away, we went lower and flew for 40 minutes. In the fields and villages that we passed over people

> just stood in the streets and villages and waved. Very few people ran for cover.
>
> High altitude bombing is much better. At one hundred feet you see too damn much and besides being hard on your nerves...it scares the hell out of you. We were in the air fourteen hours.[24]

The heavy antiaircraft guns were ineffective against the low-flying Liberators. The machine gun fire, however, was accurate, and many of the bombers suffered heavy damage. Only a few enemy fighters attacked the 389th, and only two claims of fighters were accepted, one credited to a radioman from the 564th.[25]

Around 1800 hours the bombers returned to base, fourteen hours after they had taken off. Only seventeen planes returned to Site 10, while another three landed at fields near Benghazi and three more on Cyprus. Of the twenty-nine bombers that bombed the target six were lost. Two went down at the target, two more crashed-landed in Romania and the crews taken prisoner, and final two flew to Turkey and were interned.[26]

As a result of the raid, honors and commendations were heaped on the participants. The 389th received a unit citation for this mission, as did all the groups. They also received letters of commendation from President Roosevelt, members of the Joint Chiefs of Staff, high-ranking American and British generals, and from the commander of the Soviet Air Force. All the men received a Distinguished Flying Cross (DFC) or a higher medal. Three hundred fourteen men

received the DFC, fourteen received the Silver Star, twenty-nine the Distinguished Service Cross (DSC), and one man, Lieutenant Lloyd Hughes, received the Congressional Medal of Honor.[27]

There were several witnesses to the fate of Hughes and his crew. Hughes was in the last formation to hit the target. Approaching through heavy ground fire, his bomber received several direct hits, which caused a steady stream of gasoline to pour from the left wing and bomb bay. The damage was inflicted before reaching the target, so he could have crashed-landed in the grain fields below. The refinery was already burning, and explosives were sending walls of flames higher than the bomber was flying. Hughes entered the inferno still in formation and dropped his bombs. The aircraft left the area with his left wing aflame. Only then did he attempt to land on a dry river bed. Before he could land, he had to pull up to fly over a bridge, and as he descended the left wing either burned off or struck the ground, causing the bomber to cartwheel. Miraculously, two of the men survived. For his actions Hughes was post-humously awarded the nation's highest honor, and the rest of the crew received the DSC.[28]

Overall, the mission was not as successful as had been hoped. As a result of mistakes, some targets were not bombed, and the Germans were much better prepared to handle such an emergency than the Allies believed. Had the mission

been executed as planned, it probably would have reached the success hoped for, and the combat losses would have been lower. Final reports estimated that about 40 percent of refining capacity and 40 percent of cracking capacity was destroyed for a period of four to six months. Only two of the refineries were completely destroyed, one of which was Red Target. The Campina refinery was so badly damaged that the Germans decided against repairing it. It would be six years before the plant again become fully operational. Even though the overall damage was extensive, the raid did not destroy Ploesti's oil-refining capacity. The Germans made up for lost refining capacity by activating idle units and quickly repairing the damaged plants.[29]

Even though the damage was not decisive, it did cause some problems. With the Allies ready to invade Italy and the Soviet Union on the offensive, the German military was in need of oil, and the Ploesti cushion was now gone. The raid also had an influential propaganda impact as well. The mission helped hasten the collapse of Romanian morale and resulted in it being the first Axis country to fall, only a year after the mission.[30]

Whether or not the attack should have been carried out at low-level is still debated. Blackis believed that it should have been low-level, but only once, because the Germans would have been better prepared next time and Allied losses too high. Most men thought that since this was a

one-shot mission with no follow-up mission for many months, the low-level approach was the right choice. The crews also agreed that they were properly prepared and trained for the mission.[31]

The Ploesti raid established several precedents. Among them was the first large-scale low-level attack by heavy bombers on a heavily defended target. It was also the longest mission in terms of distance from base to target undertaken up to that time. Five Medals of Honor were bestowed, the most ever for a single mission.[32]

With the Ploesti mission completed, the crews received several days to recuperate. Many spent their free time on the beaches or swimming in the Mediterranean. Touring shows also came by the base during this time, including one with Jack Benny. Despite all of the inconveniences and the physical hardships of the desert, morale remained excellent, and the visiting shows helped a great deal.[33]

The next mission for the Group was not scheduled until 13 August. The target was an ME-109 factory at Wiener-Neustadt in Austria. This mission, Operation Juggler, was originally planned as a simultaneous attack with the VIII Bomber Command striking Regensburg. The Allied High Command considered this operation to be very important, and at one time there was a possibility that "Tidal Wave" might be postponed in its favor. Instead, officials decided to undertake the mission after the Ploesti raid. First

scheduled for the 7th, it was postponed by bad weather at Regensburg, and by the 10th the coordinated attack was abandoned, each command selecting the first possible date for its own effort.

Juggler also required some long-range planning. The route decided upon was longer than the one used for Ploesti. The plan called for the bombers to leave from the bases in Benghazi and fly over the Adriatic Sea instead of over Italy. By using this route the bombers did not have enough fuel to return to Benghazi; instead, they were to land at bases in the Tunis area, a roundtrip of about 2,400 miles.[34]

On 13 August the 389th flew as lead group for this mission. The Germans were taken by surprise, and the Group did not encounter any antiaircraft fire or enemy fighters. Since the bombers encountered no opposition and had clear weather, the factory was an easy target. Damage was extensive with one section completely destroyed. Considerable damage was also done to fighter aircraft parked outside the factory. Also, several bombs hit an adjacent tank plant causing some damage.

The attack, overshadowed by the previous raid, remains one of the most notable achievements in the war. It demonstrated that no part of the enemy's territory was immune to air attacks. The Germans had moved many factories into Austria, believing them to be out of bomber range. The B-24s, however, had flown an unprecedented distance and

penetrated Axis territory from Africa, something the Germans considered impossible.[35]

The Group flew three more missions before returning to England. Two were to Foggia, Italy. The one to an airfield and the second to a marshalling yard used to supply the airfields around the city. Their final mission from Benghazi was flown against an air depot at Cancello, Italy. On all three missions they did an excellent job in bombing the target. The Groups lost no bombers, and enemy resistance was almost nonexistent in both fighters and flak.[36]

The men of the 389th had come a long way since the first mission over Crete, and they had obtained some valuable experience to take back to England. Their bombing ability had greatly improved, and they were more accustomed to operating under fire. Bombing, however, was much more difficult when flying from England than from Africa. In France and Germany enemy resistance was stronger; fighter attacks were more determined and antiaircraft flak was more intense and accurate, something the Group encountered only a few times in flying out of Africa. The bombing missions would also be carried out at a higher altitude, thereby decreasing bombing accuracy.

The 389th did not fly many strategic bombing missions out of Africa. Most of their missions were in support of the Allied landings in Sicily. Only in three instances did

it fly missions that could be considered to be part of the Air Force's strategic doctrine, and of those Ploesti was carried out at low-level that was not part of the doctrine. The only two raids fitting the criteria were the raids to Rome and Wiener-Neustadt. Even so, the 389th gained some valuable experience in North Africa that would be helpful in the skies over Germany.

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CHAPTER V

HETHEL: PREPARATIONS FOR BOMBING FORTRESS EUROPE

While the air crews were in North Africa, the ground echelon arrived to find an empty base at Hethel. Little operational work had to be done, so most of the work consisted of getting the base organized and ready for the air crews. Base facilities such as housing, maintenance shops, and recreational outlets had a direct impact on the ability of the Group to carry out its mission.

At the beginning of 1941 Hethel was a large, flat, and sparsely populated area, which made it suitable for bombers. It was four miles east of Wymondham and seven miles from Norwich. The RAF in early 1941 authorized construction of the base, which was completed the following year. The base was expanded in early 1943 to match the specifications needed to operate the heavy bombers of the Eighth Air Force. Hethel was a typical heavy bomber airfield in England.[1] All U.S. heavy bomber bases there were constructed much the same way. The Class A type airfield consisted of three intersecting runways, with the main runway being 2,000 yards long and the other two 1,400 yards long. The main runway was also the instrument landing runway and was aligned to the prevailing wind. The width of the runways was standardized at fifty yards, and a fifty-foot-wide perimeter track or

taxiway encircled the runway and joined the end of each. Branching off the taxiways were fifty hardstands and dispersal points for the bombers.[2]

Along the outside of the perimeter were the buildings used by the men. One side of the base was the storage area where bombs and other flammable or explosive materials were kept. On the opposite side, stretching into the woods, were the living areas and work stations. Near the runways were the technical sites where the hangars and maintenance buildings were located. Situated near the technical site were communal and living areas, which mainly consisted of several Nissen buildings. The communal area consisted of three large mess halls, grocery store, a post exchange, barber shop, tailor shop, gymnasium, library, and movie theater. Also in the area were the officer's and enlisted men's club, showers, latrines, and several other buildings.

Nearby was the headquarters site and the operational block, a brick and concrete, windowless building that housed the intelligence and operations rooms. Adjoining the building was the station headquarters. These included quarters for the senior staff officers and a nearby building for the crews' briefing rooms. Also, the base had a small medical ward, medical staff quarters, and a small mortuary.

Near the communal area were the living quarters. The usual accommodations for the men were Nissen huts, and those for the enlisted personnel could house up to twenty. The

huts for officers were smaller and normally held six to eight persons. All quarters were heated by a "Tortoise" coke stove, which the men disliked, for it did not heat the entire hut. Each hut received a scuttle of coal a day which was not enough to provide sufficient heat. The men decorated the huts with pin-up posters, pictures, and other items to try to make them as comfortable as possible.[3]

The 389th, as well as the other groups, was made up of many different units besides the four bombardment squadrons. Each group had an ordnance unit which was responsible for the storage, arming, and handling of all bombs. An armament unit, which helped load the bombs, was responsible for setting up the bomb bays for the bomb load, making sure that the bomb release mechanism worked and that the bomb bay doors opened properly. They were also responsible for the maintenance of the .50-caliber guns and ammunition.

Other support units also served the base. An engineer battalion was responsible for the fire fighting and rescue unit and a sub-depot Squadron repaired damaged aircraft. The group also has its own military police unit, a small medical detachment, a quartermaster company, a station complement squadron, and other units with various responsibilities. The total number of personnel on the base was approximately 2,500 men.[4]

The men did not always have a lot of time for rest and relaxation, but there were places to go and things to do if

they so chose. The base had an Officers Club, movie house, gymnasium, library, and other facilities for their use.[5] Occasional dances were held, and women were invited onto the base. Also, a few of the United Services Organization shows were held at the base. The USO shows included celebrities such as Jack Benny, James Cagney, and Bob Hope. On one occasion the Glenn Miller Band gave a concert. The men played sports; football, baseball, and basketball tournaments were held among the units on the base and with units from other bases. One time the 564th Squadron won the championship of the Second Bombardment Divison for baseball. The men also liked to gamble, and many card and dice games were played. Most of the airmen seemed to spend much of their off time on the base trying to relax after several days flying missions. They spent much of their time writing letters and catching up on some much needed sleep.[6]

The men visited two nearby towns, Wymondham and Norwich, both within a few miles of the base, where they generally visited the pubs. In Norwich, the largest of the two, they frequented the dance hall, restaurants, movie theater, and other places to help pass the time. On the occasions when the men had a three-day pass, they generally traveled to London. While there they went sightseeing, saw the various shows, and visited the dance halls and other places. Some of the other places the men visited were Scotland, Brighton, Southport, and Liverpool, or they

traveled around the English countryside. Despite all the contact with the English people, there were no reports of problems with them. The men of the 389th described their hosts as friendly, helpful, and grateful that they were there.[7]

Group morale never seemed much of a problem. There were the usual complaints about living conditions, food, and being far from loved ones, but such grousing was never bad enough to affect the Group's bombing results. The USO shows, movies, and three-day passes were some of the things used to help maintain morale.

One man credited with helping keep up morale was Father Beck, a Catholic priest of the Franciscan Order. Father Beck joined the Group while it was stationed in Benghazi and stowed away on one of the bombers when the Group returned to Hethel. Men of all religions praised him. He not only presided over Mass but also conducted Jewish and Protestant services and did them with dignity. Father Beck was not an ordinary priest. He gambled with the men and usually won so often that some of the men refused to play against him. Often he stowed away on missions until the Group's commander found out and permanently grounded him. Father Beck slept in the barracks with the enlisted men. They carried his cot and bedding from one barrack to the next, each group waiting for his time to visit them. There was a superstition that a crew would not be shot down as long as Father Beck slept in

their barrack. He was known to some as "White Flak" because of his white hair and to others as "the Desert Rat" from his time spent in Africa. He drove a jeep called "Hellza-poppen." George La Prath, of the sub depot unit, stated that Father Beck "spoke the language of his boys, those he was there to serve, and never let them down. He would be at the end of the runway to bless every aircraft that took off on a mission and was there to see them home again. He lived as his men did and did many of the things they did. Most men loved this priest . . . ."[8]

While the ground echelon prepared the base for the return of the air crews from Africa, the air crews in Africa were ready to return to England. Many were still suffering from dysentery, and they had grown tired of life in the desert. Soon after their last raid on Italy, orders to move arrived. The men quickly packed and departed for Marrakesh, French Morocco, on 25 August. The following morning the Group left for England.

The men followed the route back to England that they took when they left, and the majority arrived two days later. The reunion of the air and ground echelon was cause for an informal celebration which lasted for several days. With the return to Hethel, the morale of those who came out of the desert improved. They had encountered some of the worst kind of flak over Messina, had battled enemy fighters, without escorts, and had overcome many navigational

obstacles during long and hazardous flights. The 389th had some of the best bombing results of any group that had operated in the desert, and it was ready to continue that success against targets in France and Germany.[9]

The maintenance personnel repaired the battle-damaged Liberators. In addition to the repaired Liberators the group received brand-new B-24Js with power-operated nose turrets and new radar modifications.[10] Once the planes had been checked out for combat, several practice missions were flown over England. On 6 September a diversion mission was flown over the North Sea with the Second Bombardment Division. The Group was then ready for combat, and the following day flew its first combat mission from Hethel.[11]

The target was the Leewarden airdrome in Holland. Heavy cloud cover obscured the target as well as their secondary target. While returning to the base, the Group sighted a convoy off the coast of Holland, bombed it and reported several hits. This was the first time the Group received fighter escort, a group of P-47 Thunderbolts. Another first was the use of pattern bombing by squadrons. Pattern bombing was something new and was used to increase bombing accuracy. Unlike the earlier missions, where each bombardier made his own bomb run on the target, pattern bombing relied on the bombardier in the lead aircraft. When the lead bombardier dropped, the other bombardiers dropped with him creating a pattern of bombs on the target depending on the formation that was being flown.[12]

The Group flew two more missions before it was sent back to Africa. On 9 and 15 September the bombers hit German airfields in France. On the first raid to Longueness, bombing results were poor because flak had injured the lead bombardier while on the bomb run and the deputy lead failed to take over. A second run was made, and the lead navigator did the bombing. Since the pattern bombing technique was still a novelty, when most of the other bombers dropped with the leader, they missed the target. The next mission went to the Chateaudun airfield, a secondary target, because of cloud cover over the primary one. Even with fighter escort, the Group encountered German fighters, which attacked on the withdrawal for about twenty-five minutes. The Group did not lose any bombers and claimed two enemy planes destroyed.[13]

On 16 September secret orders sent the Group back to North Africa. The invasion of Italy had already begun. General Mark Clark had made his landings at Salerno and at this time was struggling to hold the beachhead. With an all-out commitment to aid the ground forces, few bombers were left to fly missions into northern and central Italy. General Eisenhower, the overall Allied commander of the invasion, requested the return to the Mediterranean theater of the 389th, along with the 93rd and 44th Bombardment Groups, which had already operated out of Africa. The CCS approved the request, and the groups were transferred to the Northwest African Air Forces.[14]

The crews did not welcome another tour of duty in the desert, but this time most of the ground personnel went along to help make things easier. Twenty-four Liberators took off on the 17th, carrying the ground crews. Some bombers were left behind in case they were needed by the Eighth Air Force. They made one stop overnight in French Morocco and arrived at their new base next day.

The base of operations this time was Massacault, Tunisia, about twelve miles northwest of Tunis. The field was already occupied by a B-17 group. The facilities, although better than they had used at Benghazi, had to be shared and the result was overcrowded conditions. Although there was a big rivalry between the B-24 and the B-17 groups, they were able to get along, and the B-17 men did their best to share what they had.[15]

According to their orders all three B-24 groups were to begin combat operations on 21 September and continue to fly throughout October. Most of the missions were against communication and supply centers in north and central Italy.[16] On the morning of the 21st, the 389th flew its first mission from Massacault. The primary target was Leghorn, a port in Italy, with a secondary target at Bastia, Corsica. Bastia was Corsica's principal port, which the Germans were using to evacuate troops and equipment from the island. Finding the primary target obscured by cloud cover, the formation bombed the secondary target from an altitude

of about 20,000 to 25,000 feet. The bombing was fairly accurate, the target was well covered, and several ships at the docks received direct hits. There was some ground fire reported over Leghorn and moderate and accurate flak at Bastia, causing damage to eleven bombers. Although the formation had no fighter escort, enemy fighters failed to show. This would be the case for most of the missions flown at this time. Soon after a raid on 24 September against the marshalling yards at Pisa, Italy, bad weather shut down the base and made it impossible to carry out any missions.[17]

The Group undertook one more mission. On 1 October the Group flew to Wiener-Nesutadt for the second time to bomb fighter aircraft assembly plant. The raid, originally scheduled for 28 September, had been postponed because of bad weather. On 1 October the weather was still far from satisfactory, there was time because Eighth Air Force units were being sent back to England and the urgency of attacking the target necessitated going through with the mission. Five groups of B-24s, led by the 389th, flew the 1,800-mile, ten-hour flight. Unlike their first time to this target, the crews found that the Germans were much better prepared. Flak over the target was intense and accurate, and one bomber was lost, but the crew was able to bail out. The Group did not encounter any enemy fighters. Post reconnaissance reports stated that the factory was hit repeatedly and that there was damage to the assembly shops, storage areas, hangars, and nearby rail lines.[18]

The Group left Massacaut on the 3rd and returned to Hethel the next day. The second transfer to North Africa was the last time the Group left England. The 389th remained at Hethel, bombing mostly German and French targets, for the rest of the war in Europe. It was assigned to the Second Bombardment Division of the Eighth Air Force. This unit consisted exclusively of B-24 Groups.[19]

After the Group returned from its North African mission, it received replacement crews and personnel. The training of replacement air personnel was, for the most part, the same as the training of the original Group. These men went through the Replacement Unit Training (RTU) program that provided replacements for overseas air crews lost in battle or returned home for reassignment. The individual training was still the same as before. After basic training all airmen attended pre-flight ground school. After pre-flight the pilots went on to flying school and the bombardiers, navigators, and other airmen went to their respective schools. Once the individual training was completed the men were assigned to groups within the four Air Forces in the United States. The difference between the training programs was at this level. They were assigned to a bomber crew, and this crew stayed together throughout the rest of their training and into combat. They were no longer trained as part of a newly created bomb group. They were trained by instructor crews, many of them with combat

experience. The trainees underwent a ninety-day course divided into three overlapping phases. The first phase was to increase their individual skills, to learn to work as a team, and to become familiar with the equipment and techniques. The second phase consisted mainly of formation flying and the third phase was supposed to simulate combat conditions which had the crews fly long formation bombing missions by day and night, and learn to live, work, and fight under those conditions.[20]

After training the men were sent to a distribution center where they were issued the proper clothing and equipment. Then they were sent to the appropriate debarkation centers. Some of the crews were sent to the ETO by ship, while other crews were allowed to fly on bombers that flew across the ocean by the North or South Atlantic routes. Upon arriving in England the men were immediately sent to a base in Northern Ireland. This base was used as a replacement center for heavy bomber groups. Additional training was conducted at this base, along with instruction in the proper procedures and rules for the ETO. From here air crews were sent to a combat unit.[21]

Soon after their arrival the new crews went into combat. To the men who flew for the 389th, most of the missions were virtually the same. The Group usually received its first notification of a mission in the late afternoon or early evening the day before. As more

information came in, the Group operations personnel began to notify the proper sections. This information contained the number of aircraft needed, the type of bombs to be used, and the bomb and fuel loads.

A copy of the initial teletype message went to the Group's intelligence section, with the next day's target listed by a coded number. The duty officer next obtained the cipher book and decoded the target reference. He then withdrew the target folder from about 1,500 that had been amassed by most bomber groups. The folders contained maps, photos, charts, and all relevant information for the navigators and bombardiers. They provided information on flak batteries and other defenses and the best route to and from the target. Throughout most of the night more information was received, including updates on the weather, the times for takeoff and assembly for the mission, and other flight information. In Operations the route was plotted on a wall map with consideration given to air speed, wind data, and altitude. All other materials were calculated and checked against the times set up by headquarters.[22]

Through the night maintenance, armament, and ordnance personnel prepared the bombers for the mission. While all this activity went on the air crews slept in their barracks until needed. The crews were awakened before daybreak, went to the communal baths to shower and shave, and then went to

the mess hall for breakfast. The officers next went to main briefing and for the first time were informed of the target. An operations officer described the importance of the target, the route, check points, and mission procedures. The intelligence officer added more detailed information about the target and enemy defenses, and the staff weather officer went over forecast conditions for the mission. Following the main briefing the navigators, bombardiers, pilots, and radio operators went to separate briefings. The navigators collected maps and information sheets and drew up flight plans for their aircraft. The bombardiers collected target data and photographs, noting prominent features to be used as check points. The pilots went over the information that was received earlier and waited for any last minute instructions, and the radio operators received the days radio codes, call signs, frequencies, and signal information.

The gunners had their own briefing, which covered the general details of the mission concentrating on enemy fighter defenses, the last known deployment of fighters, and where interceptions were most likely to occur. They were also briefed on the weather, altitudes, escort fighter types and rendezvous points. After the briefings, the men changed into their flying suits, collected their equipment, received their evasion kit, and left behind any personal belongings.[23]

They were then transported to their plane. When they arrived they went through a pre-flight check list and an inspection of the plane, while gunners prepared their guns. When this routine was completed the crew waited, sometimes for more than an hour. If the mission was cancelled, a red flare was fired from the control tower; if not, a green flare was used, which informed the pilot to start the engines and be ready to taxi out. While the plane sat on the hardstand, which open onto the perimeter track, each pilot had a sheet of paper specifying which plane he was to follow. When that plane passed, the pilot left the hard-stand.[24]

On most missions the bombers, overloaded with fuel and bombs, used the entire runway for takeoff. Once in the air the pilot flew in a spiral while gaining altitude. Each Eighth Air Force bomb group had a designated area for assembling its airplanes.[25] In the Second Bombardment Division, to help with group assemblies, each group had an assembly ship, which was a brightly colored B-24 no longer used for combat. The 389th assembly ship was painted with wide bright green and yellow stripes and was called the "Green Dragon," possibly named after a popular tavern in Wymondam.[26] When the Group assembled it joined the other groups at a predetermined place, time, and altitude. After the entire bomber formation was formed, the airplanes started toward the target. During assemblies the 389th and

other groups had several mid-air collisions between their own planes and with bombers from other groups. The weather was a contributing factor, but the primary cause of these collisions was the strict timing required for assembly. This problem plagued the groups throughout the war. The Eighth Air Force, in the summer of 1943, used radio beacons to help decrease the number of collisions. Initially, RAF beacons, called "splashers," were used until a system of low-powered radio transmitters could be developed by the Eighth Air Force. This system, called "bunchers," was used until the end of the war.[27]

At a predetermined time the task force crossed the English Channel to the continent with or without all bombers scheduled to fly. Once the planes were over the continent, the Germans had already begun preparing their defenses. The two main German defenses were fighter aircraft and anti-aircraft artillery. The enemy was very effective with both, and the men of the 389th had a great deal of respect for and fear of them.[28]

Before American involvement in the ETO, the High Command believed that a large, tight bomber formation with its many guns could easily defend itself against German fighter attack without the need for a fighter escort. The 389th, along with other groups, did not receive fighter escort on its early missions, including all those flown from bases in North Africa and several from Hethel. Events

proved that without escorting fighters, the formation often could not adequately protect itself, and a large number of bombers were lost. In late 1943, however, fighter escorts were provided for every mission. Improvements in the range of the P-51 and P-47 by the addition of disposable fuel tanks meant that the escorts could fly with the bombers to the target and back, and as a result the loss of bombers to enemy fighters decreased.[29] The success of fighter escort was apparent to the men of the 389th, who had nothing but praise for them. The men used words like "beautiful," "great," "wonderful," "loved it," and many others to express their gratefulness. Most believed that escorts saved many lives and that they improved dramatically their chances for survival during the war.[30]

With regard to their enemy, the men rated the German pilots and planes as excellent and considered them highly skilled and very effective in breaking up the formation. Toward the end of the war, however, German effectiveness diminished. The Germans, with fewer experienced pilots and poorly trained new ones, were not always considered a threat to the bomber formations.[31]

German artillery, or flak, was more dreaded and hated than the fighters. Flak batteries were concentrated mainly around the major cities and industrial complexes, but some were stationed throughout the countryside. Ardrey remembered:

> When flak was very, very near you could see the angry red fire as the shell exploded before the black cloud formed. You could hear the bursts sounding like wuff, wuff, wuff under your wings. You could see the nose of the ship plowing through the smoke where bursts had been. You could hear the sprinkle of slivers of shrapnel go through the sides of the ship if they were getting close to you. You don't realize the terror it strikes into some airmen's hearts until you've had your own plane shot to hell a few times.

Gebhard stated about the flak: "There was nothing you could do about it but sit up there and take it. At least with the fighters you could shoot back." Reuben Duke observed, "We had a lot of flak at most targets. It does not buffet the airplane, and you may hear a muffled sort of 'whoosh' sound until you get hit. Then it sounds like someone threw a bucket of rocks on the side of a tin barn with you inside the barn." Raymond said, "Flak took its toll on all of us, as there was just simply nothing we could do about it except pray that it would not hit us, at least not seriously enough to cause us to go down." Some flak could be avoided by the routes taken to and from the target; however, the flak around the target could not be avoided. On the bomb run toward the target, the bombardiers took control of the bomber. Straight and level flight was necessary for accurate bomb deliveries. The bomber had to fly straight through all the flak and could not take any evasive action until the bombs were dropped and had cleared the target. The pilot detested that part of the mission the most. "The longest moments of my life were when the

bombardier took control of the plane going to the target while flak was exploding all around," stated Gebhard.[32]

Once past the target the formation turned and headed back to its base, having again to defend itself against the German fighters. Instead of attacking the formation, most of the time the fighters attacked bombers that were in trouble. Bombers that had been heavily damaged and could not stay with the formation were easy prey for the German fighters. It was common for most of the bombers in a group to receive battle damage. When the planes returned to base, the ground personnel would be waiting to count the number of planes returning and the fire fighting and medical units were ready in case they were needed. The bombers with badly wounded men received first priority to land. These planes fired red flares signifying they had wounded aboard.[33]

When all the surviving bombers had landed, someone from the Intelligence Section interviewed the crews during the post-mission interrogation. They were always given a shot of whiskey, and the Red Cross would have coffee and donuts ready. The interrogation generally lasted about fifteen to thirty minutes, depending on the mission. The questions were about enemy defenses, the intensity of the flak, the number of enemy fighters sighted, and their type. The interrogators asked about bombing accuracy, what bombers were seen going down, the number of parachutes seen, and what damage was done to their plane. The men were usually

so worn out from the mission that after the interrogation they returned to their barracks to get some much needed sleep. Some got food or took a hot shower or wrote home, but they mainly wanted sleep.[34] The repair crews quickly repaired the damaged bombers and had them ready for the next mission. This routine would be repeated well over 300 times before the end of the war.

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[18]History of the 389th Bombardment Group, microfilm roll B0418; Ardery, Bomber Pilot, 122, 125-126; Craven and Cate, The Army Air Forces in World War II, Vol. II, 550-551.

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[26]"Group Based at Hethel During World War Two" 389th News Letter 4, No. 4 (Fall 1991): 2; Raymond, letter to author; Simpson, interview by author.

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[32]Ardrey, Bomber Pilot, 124-125; Duke, letter to author; Gebhard, interview by author; Raymond, letter to author.

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CHAPTER VI

OVERLORD: PREPARATION AND INVASION

When the 389th returned from Tunis, the Eighth Air Force was ready to begin preparations for the invasion of France. For the rest of 1943 and into the next year, more bomb groups transferred to the Eighth. During this period the 389th and the rest of the Eighth Air Force were often diverted from bombing strategic targets in Germany to flying tactical missions against targets in France for the upcoming invasion. Instead of carrying out the strategic doctrine that had been devised, the 389th on many occasions was sent to bomb targets not suitable for a four-engine, high-altitude bomber.

Nevertheless, the primary mission of the Eighth Air Force continued to be strategic bombing in accordance with the Pointblank directive. Operation Pointblank was the code name for the strategic bomber offensive against German industry with emphasis on attacks against the German air force and aircraft factories. Pointblank was part of the larger Combined Bomber Offensive (CBO) and was a preliminary to the invasion of France. The CBO subjected Germany to around- the-clock bombardment by the American and British air forces. The CBO plan, with the approval of the Combined

Chiefs of Staff, established priority targets and missions for the Eighth Air Force in May 1943.[1]

Pointblank was already in operation when the 389th settled at Hethel for the duration of the war. The Group's first missions after the Italian campaign was to Vegesack, Germany, on 8 October. Vegesack, located northwest of Bremen, was a shipbuilding center with extensive dock yard facilities. The Group flew lead for two other B-24 groups. The bombing results were poor, and only a few of the bombs hit the target. Several bombs hit the town of Blumenthal, a mile west of the dock yards. Effective smoke screens, accurate and intense flak, and enemy fighters affected the bombing accuracy. Approximately forty German fighters attacked the unescorted formation for over an hour. Fortunately the Group lost only one bomber.[2]

The following day the Group flew with the Second Bomb Division to Danzig to bomb U-boat pens. Again, smoke screens and flak affected the bombing, and most of the bombs fell wide of the target. Only a few ineffective fighters met the attackers, and the mission was completed with no losses.[3]

The rest of October was disappointing and frustrating in regard to the bombing of enemy installations. Eight times the crews were roused from their beds, briefed, and set for take off only to have the mission cancelled because of bad weather. On just three occasions did the Group

actually take off, and all three times it flew diversionary missions over the North Sea. This had an adverse effect on morale. The men were on edge and they were anxious to get their missions completed. To go through all the preparations and, worst of all, waiting for take off and then having to stand down, made the men irritable. The three diversions that were flown did not help.[4]

The situation then began to change. The development of new bombing equipment enabled bombing through heavy cloud cover. The British invented a targeting system known as H2S using microwave radar. This system was an airborne radar set with downward looking transmitters that allowed the air crews to see through heavy cloud cover. It was a self-contained radar device that transmitted a beam which scanned the ground below and provided a map-like picture of the terrain on its cathode ray tube indicator. The AAF, however, had difficulty using H2S at high altitudes. To correct this problem, scientists at MIT built a new radar set called H2X. Using a shorter microwave length, the H2X gave a sharper, more accurate picture of the ground. This new system was quickly put into combat.[5]

On 3 November, with the 389th also taking part, B-17s equipped with H2X led a large formation of bombers to the dock yards and U-boat pens of Wilhelmshaven. Earlier in the year this city had been a high-priority target because of its U-boat pens. It was the first target attacked by the

Eighth Air Force and had been bombed several times. By the fall of 1943, however, U-boat facilities were no longer considered an important target. Since Wilhelmshaven was on the coast near the estuary of the Weser River, it was easily identifiable on the radar screen, which showed with clarity the contrast between land and water. This information made it a viable target to test the new system.

The Second Bomb Division B-24s flew in the last formation of the mission force and had no radar-equipped pathfinder bombers. The Liberators were instructed to release their bombs on parachute marker flares dropped by the preceding formations. This tactic was difficult because the flares were not always easily seen. The bomb results, though not good, were promising. Many of the bombs did hit the target and caused damage to several port installations. Although the damage was not considered extensive, the fact that the port was hit with the use of radar-bombing, manned by inexperienced pathfinder crews made the mission a success in the opinion of the AAF's High Command.[6]

The 389th and the Second Bomb Division had a more difficult time than the other divisions. Having no path-finders and bombing by flares made their bombing accuracy poor. This situation would continue throughout November and December as heavy cloud cover forced many of the missions to be carried out by radar bombing.[7]

The Group flew five more missions in November, one to Münster, two to Bremen, and two to Norway. On the Münster

and the second Bremen mission the Group encountered little difficulty. On the first mission to Bremen, however, the Group lost two bombers when they collided on the bomb run; one bomber exploded on impact, and the other was reported going down. The two missions to Norway, which were within two days of each other, were the only times the 389th flew to that country.[8]

The first mission to Norway was on 16 November to a German heavy water plant located in the mountains on the outskirts of Rjükan about seventy-five miles west of Oslo. The 389th had difficulty in assembling, due to the bad weather over England. Unable to assemble by the designated departure time, most of the bombers returned to base. A few planes, however, formed with other groups and bombed the target and returned with no losses.

Two days later they returned to Norway to bomb the JU-88 assembly plant at the Oslo-Kjeller airport. A formation of only B-24s left England with no fighter escort. This group encountered enemy fighters as it went to and from the target. The Group successfully bombed the airport causing considerable damage to the runways and to many buildings. The 389th lost one plane.[9]

In December the Group flew ten missions with five being aided by the pathfinder force (PFF). The Group flew to various targets in France and Germany. They attacked airfields in France, port areas at Ludwigshafen, Bremen,

and Kiel, the industrial center at Solingen, communication centers in Osnabrück, and other targets. With the increased number of missions the Group lost nine bombers, six to enemy fighters and two to flak, and one to unknown causes when it suddenly exploded over England.[10]

On 24 December the Group attacked a new type of target. The Germans had built several small installations in the Pas de Calais area which were to be used as launching sites for the V-1 "buzz" bomb. When it was confirmed that these installation were actually V-1 sites, the Allied High Command ordered an all-out attack by the Eighth Air Force. The code name for the missions against the rockets sites was Noball, and the code name for the entire campaign against the German long-range missile program was Crossbow. The missions against the rocket sites became known by either name. The first Noball mission by the 389th was to Eclimeaux. The flak was meager and inaccurate, and no enemy fighters were encountered. The first Noball mission was considered a "big milk run," or a very easy mission, as no bombers were lost by the Eighth, but photo reconnaissance showed little, if any, damage. The 389th flew numerous Noball missions during the war because launching sites were small and extremely difficult to hit.[11] At first the attackers encountered little enemy opposition, but as the bombing finally began to take effect, the flak concentrated in the target area became more severe. The damage done

to the sites was minimal, and they eventually had to be captured by the infantry.[12]

In the meantime major changes took place within the Group. Colonel Wood was transferred to the Twentieth Combat Wing, with Wood taking command of that organization. The Group's new commanding officer was Colonel Milton W. Arnold, who took over on 30 December. Arnold was transferred from the Second Combat Wing, where he had been chief of staff. A West Point graduate and a veteran airman, Arnold had a leading part in the development of the North Atlantic Air Route while with the Air Transport Command.[13]

There were also many other changes within the Eighth Air Force. Since the Second Bomb Division had increased to eight groups and other groups were arriving, combat wings were created between the groups and the division, with three or four groups making up a combat wing. The 389th was assigned as the lead group of the Second Combat Wing with Wing headquarters at Hethel. On 8 January 1944 Eighth Bomber Command was redesigned Eighth Air Force Headquarters with Major General James H. Doolittle as commander.[14]

On 1 January the United States Strategic Air Forces in Europe (USSTAF) was established with General Carl ("Tooey") Spaatz as commander. The USSTAF was established to control and coordinate the activities of the Eighth and Fifteenth Air Forces for the remaining Pointblank operations and the upcoming cross-channel invasion. General Anderson,

commander of the Eighth Bomber Command, became deputy commander for operations under Spaatz, and General Eaker former commander of the Eighth Air Force, was sent to Italy to command the Mediterranean Allied Air Forces.[15]

After the holiday season, the Group went back to work in a new year. Through January and most of February, the weather remained a problem, and many missions could not be flown. From 4 January until 15 February the Group flew seventeen missions, and on six of these the bombing was done visually. During this period the Group attacked six targets located in Germany. One mission was to the dock yards at Keil, two were flown to both Frankfurt and Brunswick, one to Ludwigshafen, and one to the Gilze-Rijen airdrome in Holland. The Group also flew nine Noball missions to the Calais area. In this period the Group lost six bombers, four on the raid to Ludwigshafen. Losses were mostly to fighters.[16]

Throughout most of the period the Group's bombing was not very successful. Weather and the lack of PFF B-24s were the biggest problems. The Second Bomb Division did not receive its first radar-equipped B-24 until January and flew its first mission on 11 January to Brunswick. Although the PFF bomber made bombing easier for the Group, it did not improve accuracy. Radar-bombing was no substitute for visual bombing in clear weather, but it did allow bombing in prolonged bad weather and thus keep pressure on the Germans

at a time when they might have been recuperating. As more PFF liberators became available, the 564th was transformed into a PFF squadron and supplied PFF aircraft to other groups in the wing.[17] By the end of January 1944, a new navigational device was added to improve bombing accuracy: Gee-H, a modification of the Gee navigational system used a special aircraft radio receiver which received pulsating radio signals from ground stations. This device was used for short-range missions into France.[18]

The continuing bad weather in the early part of 1944 caused Pointblank to fall behind schedule until the last week of February when the weather over Germany cleared enough for several consecutive days of concentrated bombing of the German aircraft industries, ball bearing plants, and other industries. With the forecast of clear weather General Spaatz decided to start Operation Argument.[19] Argument was the code name for a series of coordinated attacks by the Eighth and Fifteenth Air Forces against high priority targets in central and southern Germany. Since November of the previous year the AAF had planned this massive attack, but the bad weather made it impossible to execute Argument.[20]

On 20 February Argument began with the largest attack to date mounted by the Eighth Air Force. Twelve targets had been selected for the first day, all of which were major assembly and component plants for German aircraft. The

389th attacked an assembly plant at Brunswick. The bombing was done visually with excellent results. Most of the raids on the first day of Big Week, as it would later become known, were considered a success, with heavy damage to many targets. With the success of the first day and forecast of good weather on the next day, another large-scale assault was mounted.[21]

The 389th was assigned to bomb Diepholz, a fighter storage park. The Group was again able to bomb visually, and Diepholz sustained severe damage. Four storage buildings and two workshops were destroyed with major damage done to the hangars and barracks. The storage park, however, was one of only a few targets bombed visually, and as a result not much damage was done to other targets.[22]

The third day was a complete washout. The 389th was supposed to bomb the ME-110 assembly plant at Gotha, but bad weather over England caused problems in assembling the formation. The 389th did penetrate enemy territory, however, before being recalled. On 23 February the bad weather persisted over England and no operations took place. The next day, however, the weather had greatly improved and an all out attack was launched.[23]

The 389th again targeted the plants at Gotha, the largest producers of twin-engine fighters, while flying lead for the Second Bomb Division. The mission did not go well, as the lead bombardier had an oxygen failure. The

bombardier lost consciousness and fell on the bombsight causing the aircraft to slide off-course and releasing the bombs early. Most sources indicate that the entire Group bombed early, but the Group reports stated that only the lead squadron bombed prematurely while the rest of the Group realized the mistake and successfully attacked the target and severely damaged the plant. The plant lost four large workshops, and several other workshops were damaged. However, many of the machine tools survived.[24] The Second Bomb Division encountered heavy fighter opposition and with the 389th slightly out of position, received much of the attention. As a result of the combination of enemy fighters and accurate flak, the Group lost more bombers at Gotha than at Ploesti. The loss of men and bombers was high but was less than predicted. The losses on this day was the highest of the week.[25]

The 25th of February was the last day of Big Week, and the 389th attacked the Me-110 component and assembly plant at Furth. The weather was again clear, and fighter opposition was light. The post-reconnaissance reports indicated that most of the plant was in flames, and about forty fighters had been destroyed on the adjacent field. The following day the weather turned bad and Big Week was over.[26] Such constant and intensified flying put a strain on both men and equipment. The Group lost ten bombers during the week, seven on the raid to Gotha. Nevertheless,

the bombing results were excellent as they inflicted great damage to many of their targets. The men also received much praise for their accomplishments, including praise from General Spaatz on the raid to Gotha: "Sunday's great air battle was a major contribution toward ultimate victory. The performance of your bombers... was magnificent."[27]

How successful Big Week was to ultimate victory is debatable. The damage to the aircraft industry was believed to have been great. Attacking the plants almost simultaneously caused a great reduction in fighter production for a short time. It denied Germany and the Luftwaffe hundreds of fighters when they were badly needed and could have been used against the Allied invasion of France. The United States Strategic Bombing Survey (USSBS) estimated that Big Week cost the Germans about two months of production and an estimated 1,000 finished planes destroyed at the factories.[28]

The Germans, however, suffered only a temporary setback and were quickly able to repair the damage that had been done. At Gotha, for instance, most of the damage was done to buildings, and most of the equipment survived. The Germans were thus able to produce more fighters per month after Big Week than they did before.[29] General Adolf Galland, commander of German fighter forces, stated that the success of Big Week had been exaggerated by Allied propaganda and that the Allied Command overestimated the

effects of the raids and underrated the resilience of German industry.[30]

The raids, however, did have a major impact on the aircraft industries. Before the end of Big Week, changes were already being made, and the aircraft industry was being reorganized and production was transferred from Herman Goering's Air Ministry to Albert Speer's Ministry of Armaments and Maintenance. Soon afterwards the industry was dispersed throughout the countryside.[31] Although this move helped increase the production of fighters, in the long run it made the industry dependent on transportation units, and the eventual attacks on transportation facilities contributed to the final breakdown of the aircraft industry.[32]

The true success of Big Week was the destruction of German fighters and pilots, losses the Luftwaffe could no longer afford. The German fighter force began to decline as it had to replace older and more experienced pilots with younger and poorly trained pilots.[33] Thus, the air battle during that week helped establish air superiority for the Allies. According to General Haywood Hansell, "Big Week achieved its basic purpose. The resistance of the Luftwaffe Fighter Command was broken, but was still capable of vicious spasms of fighting."[34]

Nevertheless complete air superiority had not been achieved. The German fighters were still a problem to Allied bombers and remained a menace to the invasion. After

Big Week, however, the fighters did not always attack the bomber formations. Some raids were almost ignored, while others were fiercely opposed. Outside Germany the fighters no longer seriously opposed the bombers.[35]

The 389th did not fly again until early March, and the Group went through many personnel changes during March and April. Many of the original cadre of men who had survived had finished their tours and were being transferred, while new men constantly replaced those who had left or had gone down in combat. On 29 March Colonel Arnold was transferred to the Second Bomb Division and the Group's air executive officer, Colonel Robert Miller took command.[36]

In March and April the Group flew thirty-two missions, fourteen in March and eighteen in April. In the first few days of March the Eighth Air Force, due to the weather, was confined to short-range missions over France. The Group flew one such mission on 5 March to the Landes De Bussac airfield and lost one plane. With more favorable weather, and the pressure of time because of the invasion, the need to defeat the Luftwaffe led to an increase of the bombing of Germany. On most days the Group bombed aircraft and ball bearing targets. When the weather was too severe for blind-bombing, they attacked rocket sites and airfields in France. In March, the AAF went to Berlin for the first time. Many industrial targets were located in or near the German capital, where there was the Erkner ball bearing

plant and plants that produced fighters, fighter engines, and electrical components. The Allied High Command realized the prestige and morale factors involved in bombing Berlin and was certain that the Luftwaffe would give battle, which would help the Allies to gain air superiority.[37]

There were two attempts made to bomb Berlin, but they were unsuccessful. A raid on 3 March was aborted because of the weather, and a raid on the following day was also aborted because of heavy cloud cover. One combat wing did manage, however, to get through and bomb a suburb of Berlin.[38]

Two days later the Eighth tried again. On 6 March the Eighth Air Force launched over 670 planes to bomb targets in Berlin. The city was heavily defended by antiaircraft artillery: 78 heavy batteries with a total of 414 88mm, 105mm, and 128mm guns. In addition there were 14 light batteries with 331 smaller caliber guns.[39] The Second Bomb Division flew in the rear of the task force with the Second Combat Wing flying lead. The 389th was sent to bomb the Daimler-Benz aero engine plant at Genshagen, twenty miles south of Berlin. Each bomb division had its own target. Since the force encountered solid overcast over most of the area, the First and Third Divisions were forced to bomb targets of opportunity. The 389th and most of the Second Bomb Division were able to find their target and bomb the partially obscured engine plant.

Only the Genshagen engine plant, of the three primary targets, was attacked. Because of the cloud cover and the intense flak, just a few of the bombs hit the target, causing little damage. Although little damage was done to Berlin, the Luftwaffe suffered forty-six fighter pilots killed or wounded, a severe blow to the dwindling fighter force. The bomber force lost sixty-nine aircraft. The First and Third Divisions encountered heavy fighter resistance and lost most of the bombers. The 389th lost only one bomber. Thirteen others suffered minor flak damage.[40]

Two days later the bombers returned with the 389th being sent to bomb the Erkner ball bearing plant on the eastern side of Berlin. The weather was excellent, but the Group were unable to bomb when the Group had to change course to avoid a B-17 formation trying to find its target. The Group was able to maneuver back on course, but the factory, which had been hit by the First Bomb Division, was on fire with black smoke rising from the target. The smoke obscured the factory, and the Group was forced to bomb another target. They flew toward the center of the city and bombed a railroad yard. The flak again was heavy, and they lost two aircraft. The fighter opposition was light, possibly because the Germans were recovering from the previous mission. The mission was considered a success, and

the Erkner factory was seriously damaged and out of operation for a extended period of time.[41]

The weather turned bad and the Group flew a large number of PFF missions. They attacked many familiar targets, such as Frankfurt, Münster, and Brunswick, and many new targets, including Mannheim, Tutow, Friedrichshafen and Hamm. The Group continued to fly Noball missions and missions against airfields throughout France. Fifteen Liberators were lost during this period. Five went down in March and ten in April.

The Group's bombing accuracy improved. In April, they received "very good" to "excellent" scores on six missions, which included Brunswick, Tutow, and Oschersleben. The other missions were to airfields and rocket sites. They also flew two more missions to Berlin, on 22 March and 29 April. On both missions they were required to use PFF aircraft and due to cloud cover over the targets, damage to the area could not be assessed.[42]

The mission to Hamm on 22 April proved to be a nightmare for many groups of the Second Bomb Division. The mission was scheduled for an early morning take-off to bomb the marshalling yards in the city, but it was delayed several times because of the weather over the target. After several hours the command decided to proceed. No problems occurred on the route to the target. The bombers had some fighter protection part of the way, but none over the target

or on the homeward flight. The strong headwinds delayed the approach and caused two groups to miss the yards, so they had to bomb a separate target. The 389th and the rest of the formation were able to find the yards, but weather and intense flak caused many bombs to go astray. The Group returned to Hethel after nightfall. Unknown to the crews, the Luftwaffe had mounted a night intruder operation to intercept the bombers as they circled over their airfields. One bomber was shot down and several crash-landed at the base resulting in several men being killed or wounded.[43]

Operation Pointblank ended in April. Although 31 March was the official end, missions were still flown throughout April.[44] With completion of Pointblank the AAF had almost complete daylight air superiority over western Europe, including Germany, and it retained this advantage for the rest of the war. With the heavy loses of fighter pilots, the Germans began a policy of conserving those left, and they also started transferring bomber and transport pilots to fighter units as "a matter of emergency."[45]

With the end of Pointblank the Strategic Air Forces were placed under the control of General Eisenhower. The formal transfer took place on 14 April, but Eisenhower began exercising his power by the end of March because the demands for the invasion received priority from all Allied air forces.[46] There was much controversy over the pre-invasion bombing strategy. Spaatz, Doolittle, and other Strategic

Air Force officers wanted to continue to attack German industry, with an emphasis on the oil refineries. Many in the RAF and a few American commanders, however, supported the plan to destroy enemy transportation. This plan called for the destruction of the railroad centers in France and Belgium to delay German reinforcements to Normandy and was to use all Allied strategic bombers. Spaatz argued that strategic bombers did not have the ability to bomb small targets. Spaatz was also concerned about the German fighter threat. He knew that the fighters would not offer resistance in order to save some railroads, but they definitely would fight to save German industry. Solomon Zuckerman, who initially prepared the plan for the destruction of the transportation network, and who was scientific advisor to the deputy commander of Overlord, based his arguments on results seen in Italy and Sicily. Then men who were part of Eisenhower's staff in the Mediterranean Theater of Operations approved the plan. These advisors had limited experiences with strategic bombing and did not consult the strategic air commanders. On 26 March, Eisenhower selected the transportation plan, which was implemented almost immediately. He did, however, allow Spaatz to attack the synthetic oil works during a few good weather days.[47]

Between 1 May and D-Day, the 389th bombed mostly French and Belgian targets. Its part in the transportation plan

was to attack marshalling yards, but the 389th did bomb several other types of rail facilities. It also flew several missions to airfields and rocket sites. Two experimental PPF raids occurred on 25 and 27 May against coastal batteries in the Pas de Calais. The initial test was not successful, but improvements were made in equipment and techniques that provided better results.[48] On many of these missions the Group split into two units and attacked separate sites. The Luftwaffe did not oppose bombing in France and Belgium, but flak and the weather often caused problems as several missions were conducted with PPF or were cancelled. The Group did fly occasionally into Germany to hit the aircraft industries and oil plants in order to continue putting pressure on the Luftwaffe. On 19 May, on its 100th mission, the Group hit the fighter assembly plant at Brunswick.[49]

The Eighth Air Force's first attack on oil production was on 12 May against several refineries. Spaatz was correct in his belief that the Luftwaffe would come up and fight. The 389th was first sent to the oil plant at Zeitz and caused great damage. The next raid, on 28 May, the Eighth dispatched a record force of 1,282 bombers to attack several oil targets. This time the 389th was sent to Merseburg and was credited with excellent bombing results. The following day the oil industries were attacked for the last time prior to D-Day. Then the Group hit Politz,

northeast of Berlin. The results were again the same, but fighter opposition was not as strong.[50] These three raids were a preview of things to come, once the strategic bombers were not needed for support of ground troops. The Group's losses for May were nine bombers, almost all to flak and all on missions to Germany. After the raid to Politz, the Group was used exclusively through most of June in support of the invasion.[51]

With Overlord just a few days away, the Group flew multiple tactical missions on the same day, including three on 4 June. It targeted airfields, coastal batteries, and rail facilities.[52] As D-Day approached the crews knew it was about to happen, but not the actual day it would be launched. The majority of the men did not learn the precise details until the briefing at about 0200 on the morning of 5 June.[53]

The Group flew a record four missions on D-Day. The 389th launched fifty Liberators, including fourteen pathfinders, some of which were sent to other groups.[54] Although the Group was not the first over the beaches that day, one of the 564th squadron's PFF's was the first over the beaches, as it flew lead for the 446th Bombardment Group, which flew lead for the Second Bomb Division.[55] The Group was dispatched to attack German fortifications at Omaha Beach. Cloud cover obscured the shoreline, and this necessitated bombing by instruments.[56] Because of the fear

of the bombs falling short and hitting Allied troops, the bombardiers were ordered to hold their bombs a few seconds beyond their aiming point. This caused many of the bombs to fall behind the beach defenses and the damage to them was not as extensive as it had been hoped. Many of the ground commanders were disappointed in the effectiveness of the bombers.[57]

The following three missions hit transportation chokepoints in several towns to delay German reinforcements. The Group's second mission was to St. Lo, but cloud cover and lack of PFF Liberators caused the bombers not to bomb. The next mission was to Caen, and the final mission was again to St. Lo. Once more the weather was a problem, but the bombing was accomplished.[58] The effectiveness of these raids was hard to evaluate since the targets were obscured by clouds, and many follow-up raids occurred before reconnaissance was obtained.[59]

Things went extremely well for Allied Air Forces on D-Day, since the Luftwaffe was practically non-existent. The 389th encountered no enemy fighters because the majority had been pulled back into Germany to protect industry. They did encounter some flak, but it caused few problems. Fatigue was probably the biggest problem, as the final flight did not return until after nightfall.[60]

The men were not given much time for rest. The next day they flew another mission in support of the invasion and

during the remaining days of June, the Group flew numerous tactical missions just behind the Normandy beaches. The Group attacked bridges, railroad junctions, crossroads, and airfields. It also flew several Noball missions in the Calais area. The weather was the Group's worst enemy, causing the majority of the targets to be bombed by radar. The flak was meager and inaccurate, and German fighters never appeared. Only one aircraft was lost during these missions.[61]

The success of the strategic bombers on the smaller tactical targets was difficult to assess. Cloud cover and other reasons caused many results to be unobserved. Some changes were made to increase bombing accuracy. On several missions only the 389th flew to the target, and sometimes the Group was divided into two units. On many of the missions, the Second Combat Wing flew with one or two squadrons from each bomber group. Also, the bombers attacked at a lower altitude than usual. The Group, however, was credited some excellent bombing results on eight missions, most of which were against airfields. It was also credited with destroying a railroad viaduct on 12 June, along with an airfield, a bridge on 15 June, and a rocket site on 24 June.[62]

To some observers the transportation plan was considered a success, but not because of the Eighth Air Force heavy bombers. The constant bombing of the

transportation system did delay some German reinforcements from reaching the invasion front, and the constant bombing of the airfields prevented the Luftwaffe from recouping their bases in France.[63] Most of the damage done to these targets was, however, from the Ninth Air Force's medium and light bombers and Allied fighters. Although the 389th had some success against the airfields, it had virtually none against rocket sites, bridges, railroad junction, and other small targets.

The 389th did fly a few strategic missions in June. The first strategic bombing since D-Day was on 18 June to oil refineries at Hamburg. The weather caused problems and forced the Group to bomb by radar with satisfactory results. No fighters were encountered, but the flak was considered some of the heaviest. On 20 June the majority of the Group hit the refineries at Politz, while some of the Group's bombers attacked a rocket site. Intense flak was prevalent over the target, and the 389th lost six bombers, including two in a mid-air collision over the Baltic Sea. The bombing was done visually, and the results were excellent as the refinery was forced to shut down for extensive repairs.[64]

The following day the Group was sent to Berlin, with the exception of a small detachment sent on a Noball mission. The Eighth Air Force dispatched one of the largest attacks yet mounted against the German capital. Nearly 2,500 bombers were sent to attack aircraft factories,

railroad facilities, and governmental areas. The 389th was after a factory on the South side of Berlin. The Group again encountered heavy flak and for the only time in June, encountered German fighters. The Group lost six bombers, five of which were shot down by the fighters. The bomb results were considered excellent and the factory was reported heavily damaged.[65]

June was probably the busiest month for the Group. Thirty-five missions were flown, and the average number of sorties flown by a crew was nine. Bombing was accomplished on thirty-three missions with 1,935.8 tons of bombs dropped. There were eleven days of multiple missions. Four were flown on D-Day, three on 4 June, and two missions flown on nine other days. That was the most missions flown by the Group in a single month. The group lost fifteen aircraft. In addition to the losses previously mentioned, one was lost on 28 June on a raid to Saarbrücken.[66]

The success of strategic bombers on tactical missions varied greatly. In the transportation plan the bombers were used against different types of targets, most of which were smaller than those the air crews were accustomed to attacking. The marshalling yards were generally bombed successfully, and over a period of time the bombers were able to post excellent results against enemy airfields. Smaller targets, such as railroad bridges and gun emplacements, were seldom destroyed. The strategic bomber dropped

a large tonnage of bombs and lost air crews and bombers on targets they were not trained or designed to bomb. The targets were generally obscured by clouds and forced the use of the PFF, which made accurate bombing even more difficult. Even though the transportation plan was considered a success, the strategic bomber was only a small part of that success.

The last part of June saw the return to the strategic bombing campaign. Although the Eighth Air Force was again bombing German industries, especially the oil refineries, it continued to fly missions in support of the ground troops throughout the rest of the year.

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CHAPTER VII

A MULTI-PURPOSE ROLE: SUCCESS OR FAILURE

For the remainder of the war the 389th Bomb Group as well as all strategic bomb groups of the Eighth Air Force served in a multi-purpose role. The strategic bombing of Germany increased dramatically as more missions were flown at a greater rate. Although the emphasis targeted the oil industry, the Eighth Air Force continued to bomb aircraft and ball bearing factories, along with other war industries. Strategic bombing, however, was only part of the mission. The heavy bombers were still used for tactical support, attacking transportation chokepoints and airfields. They also continued attacks against German rocket installations. By the end of June the 389th flew missions in direct support of ground operations by bombing German front-line positions or by delivering supplies to Allied troops. The tactical missions totaled about half the number of missions flown by the Group for the rest of the war.

Most of the missions flown in July and August were tactical or against the rocket sites. The 389th continued to bomb bridges, rail lines, and other targets in support of the transportation plan, and it also attacked airfields in France and the low countries. The bomb results for the missions were generally poor. German fighters were no

longer encountered over France and flak was not always a problem, but cloud cover often caused missions to use PFF aircraft. Radar bombing was still not as accurate as visual bombing, and bombing accuracy suffered. The Group was successful in its attacks on large marshalling yards and became fairly accurate in bombing airfields, but smaller targets were seldom hit. The Group dropped a large tonnage of bombs on small transportation facilities but achieved little accuracy. Even with the poor results, however, people outside the strategic bombing command believed the heavy bombers were needed in this role.[1]

In early and mid July the strategic bombers were used for the first time in direct support of ground forces. British and Canadian armies, in their drive eastward, had been halted by the German defenses near Caen. The British called in RAF heavy bombers to destroy the German defenses, with the first major air assault on the Caen defenses on 7 July when the RAF area-bombed the city. Ninth Air Force medium bombers followed up the next day by hitting troop concentrations. This bombardment, supplemented by naval artillery fire, caused such cratering that the ground attack, launched on 8 July, was made more difficult. Nevertheless, most of the city was taken.[2]

The German defenses, however, were not entirely broken, and the Allied troops needed further air support to break out of Caen and into the countryside. Operation Goodwood,

spearheaded by airpower, was created to accomplish it. This operation included most of the groups in the Second Bomb Division, including the 389th. Their responsibility was the demoralization of enemy personnel, cutting off communications, and temporary neutralization of personnel and material in their assigned target areas east of Caen.[3]

On 18 July approximately 1,000 RAF heavy bombers pulverized most of the German positions. They were followed by 643 B-24s, which attacked some of the same targets. The 389th, however, was unable to identify its assigned target and did not bomb for fear of hitting friendly troops. The Group continued a few miles farther east and bombed a target of opportunity. Bombers from the Ninth Air Force followed the Second Bomb Division and attacked gun positions. The British army advanced immediately after the bombing and found many Germans dazed and confused by the concussion of the aerial assault. The British broke through the German lines and made gains of about seven miles southeast of Caen before the Germans regrouped. The Germans and heavy rain halted the British advance.[4]

Although only limited success resulted from this raid, many Allied commanders realized its potential. Enemy organization was disrupted, and reports from the British army stated that there was a great degree of destruction in the bombed area. Field Marshal Gunther von Kluge, in his report about the Caen sector, stated: "Whole armored units

. . . were attacked by terrific numbers of aircraft dropping carpets of bombs.... The psychological effect ....[of] bombs raining down on them... is a factor which must be given serious consideration."[5]

Carpet bombing, as it became known, again became important in the Allied advance across France. When the American forces at St. Lo found themselves in a situation similar to the British at Caen, the Eighth Air Force was dispatched to carpet bomb a five-square-mile area along the south side of the St. Lo-Periers road in preparation for an assault by the U.S. Army.

Operation Cobra was originally scheduled for 21 July, but the weather forced postponement until a week later. On 24 July the Eighth Air Force dispatched almost 1,600 bombers to the St. Lo area. The plan called for the Ninth Air Force bombers and fighter-bombers to began the air assault followed by the Eighth's heavies, with the Ninth's medium bombers attacking last. Heavy clouds were reported over the target area, and there was an attempt made to recall the mission, but only a few of the bombers received the message. Visibility was poor, and the Second Bomb Division, the first formation of heavies over the target, did not bomb and returned to England. The visibility improved slightly allowing elements of the First and Third Bomb Divisions to drop their bombs. Some of the bombs fell on American troops, and sixteen were reported killed and many wounded.[6]

The air assault was ordered again for the next day in much better weather. Extensive precautions were taken against short bombing. Red artillery smoke was used, as before, and ground troops were withdrawn 1,500 yards north of the bomb line and where they marked their positions with colored panels spread out on the ground. The order of attack was the same as before, with the Second Bomb Division leading all strategic bombers. Although visibility was better, clouds necessitated bombing from a lower altitude of about 12,000 feet. Even with the precautions, short bombing still occurred, with disastrous results. There were 102 soldiers killed and 380 wounded.

The smoke markers were of little help, for they were not easily seen and the wind quickly dispersed the smoke. Clouds of dust and smoke rose from the bombing, and winds carried the smoke back over the troops. This obscured the area, made visual bombing difficult and, along with low-altitude bombing, caused many of the errors. Even with the mistakes, however, the bombing was a success. The American forces broke through the German lines because German soldiers were in disarray. The bombing affected enemy morale and the efficiency of their defenses.[7] General Omar Bradley, commanding general of the invasion forces, was initially appalled by the number of American causalities caused by the bombs, but he later wrote about St. Lo that "The bombing had done far more damage than we could possibly

imagine." General Gerd von Rundstedt, commander of the defending German forces described the attack as "the most effective, as well as the most impressive tactical use of air power in [his] experience".[8]

The 389th was one of the first groups over the target. At first they encountered no opposition, but then flak suddenly erupted within the Group's formation. Two bombers were quickly lost, and many others were damaged. The Group was credited with excellent results, however, as they placed all their bombs in the target area.[9]

During the summer months, Noball missions were delegated to a lower priority, under ground support missions and the oil campaign. In July and August the Group flew only a few Noball missions. Most of these attacks were radar-aided, and the bomb results were unobserved. The 389th's last Noball mission was on 28 July.[10]

During this time the strategic bombing campaign slowly gained momentum. Oil was the first priority with ball bearing plants, tank and truck production, and ordnance depots given lower priorities. Spaatz and many others still believed that the destruction of Germany's oil-producing capacity would force them out of the war.[11]

The Allies originally listed eighty-one oil targets but bombed about 135. Ninety percent of production was concentrated in fifty-four refineries and synthetic oil plants. In August 1944, when the Russians captured the

Romanian oil fields, Germany was forced to rely more on synthetic oil plants. The synthetic plants were mainly two types. The Bergius hydrogenation process and the Fisher-Tropsch process. The refineries were located in a few areas, and these targets were divided between the Eighth and Fifteenth Air Forces, with the Eighth concentrating on northwest and central Germany. The eighteen plants that used the Bergius process provided 90 percent of Germany's aviation fuel, and they also processed freibgres, a propane and butane substitute for automotive gasoline. These plants included Merseburg-Leuna, near Leipzig, Politz, Brüx, Zeitz, Magdeburg, Ludwigshafen, and others. The destruction of these plants would not only effect oil production, but also limit the production of nitrogen, methane, and other materials used for synthetic rubber, munitions, explosives, and other chemical products. The nine Fischer-Tropsch plants, six of which were in the Ruhr Valley, were considered less important since they produced mainly low-grade fuel for motor transport.[12]

The 389th's strategic missions for the remainder of the summer consisted of not only oil targets, but also attacks against German aircraft industries, chemical works, and marshalling yards. A total of fourteen aircraft were lost, eleven on missions into Germany. The greatest number lost on a single raid was five during a mission on the 7 July to the refineries at Halle. Two aircraft collided over the

Dutch coast, and the other three were lost to flak. Several aircraft were severely damaged by flak but managed to return to England. Three bombers were lost on missions to France, two on a mission to St. Lo and one on 19 July while bombing an airfield. German fighters were encountered on some of the missions, but the majority of the Group never met them. The bombing accuracy varied because the weather, flak, and smoke screens covered targets and forced bombing by radar. Overall, however, the performance of the 389th was considered exceptional since the majority of their targets were damaged, especially the refineries.[13]

The number of raids on the German oil industry alarmed the German High Command. Albert Speer, in his report to Hitler, stated that, "the enemy has struck us at our weakest points. If they persist at this time, we will no longer have any fuel production worth mentioning."[14] By mid-July Ultra intercepts revealed that fuel shortages had placed the German war effort in desperate straits, necessitating limitations on pilot training. Also, the Germans discontinued long-range bomber attacks against Russia for lack of fuel. Certain units, no longer deemed important, did not receive their allotment of fuel, and on 5 July Goering had banned all non-essential flying. By mid-August the Germans had begun to restrict operational activity. Air reconnaissance was to be flown only when essential; four-engine aircraft could only operate with permission from the High Command;

and all other aircraft were to operate only when action would be decisive or the chance of success was considered good.[15]

To save the oil refineries German authorities attempted to disperse the industry as they had previously done with the aircraft industries. The policy of concentrating production in large plants was abandoned, and the Germans began construction of an estimated 3,000 small plants. This tactic was soon found to be impractical, and the emergency organization for the quick repair of the large oil installations proved to be more effective.[16] The Germans also began to increase defenses around the refineries. Antiaircraft batteries had more than doubled around many of the plants, and some were defended by more than 1,000 guns. A large number of smoke generators also surrounded the plants, and the Germans camouflaged plants and built decoys which were partially successful.[17]

The Americans, however, continued to bomb the refineries with excellent results throughout the summer, but in September other German targets were hit. In September the Eighth Air Force flew only a few missions against oil refineries, and the 389th flew just one mission against an oil refinery during the month. The majority of their missions were against marshalling yards in western Germany to delay enemy reinforcements and supplies on their way to France.

The Group began the month by bombing the Karlsruhe marshalling yards on consecutive missions and lost three bombers to flak. Missions to Mainz and Ulm soon followed. On 11 September the Group flew its one mission to an oil target, the refinery at Misburg. This was an all-out attack by the Eighth Air Force; 1,100 bombers were dispatched to targets throughout Germany. Substantial damage was done to most targets, including Misburg. For the first time since the end of May, the Luftwaffe attacked in force, but the 389th did not encounter any fighters, and no aircraft were lost on this mission. On 13 September the Group bombed an ordnance depot at Ulm, and afterwards the Group was taken out of combat for two weeks to ferry supplies to France.[18]

These missions became known as trucking missions, and only the Second Bomb Division was used. The Liberators mainly carried fuel to General George S. Patton's Third Army. The devastation of the railway system, caused by the pre-invasion bombing attacks, had created a logistical problem in supplying the ground forces, and since not enough transport aircraft were available, the Liberators were pressed into service with each B-24's bomb bay modified to carry 200 five-gallon drums of fuel.[19]

The bombers were loaded with fuel at the base. The Group did not fly in formation, and the bombers generally flew by themselves and unescorted to fighter airfields near

Paris. Because of the difficulty of unloading the fuel, the crew often remained several hours and sometimes overnight. The Group did not lose any bombers on these supply missions.[20]

While on the trucking missions, changes took place within the command structure. Eisenhower's control of the strategic bombers came to an end. Even though Spaatz had the authority to run his own strategic campaign, Eisenhower did have the power to call upon the USSTAF for assistance in ground emergencies. By this time, however, enough airpower was available that diversions for ground support did not prevent striking targets believed important.[21]

On 25 September the Group again flew missions into Germany and finished the month by bombing marshalling yards and armored vehicle plants during runs to Koblenz, Hamm, and Kassel. The Group lost only three bombers, the second lowest number in a month during the war.[22]

On 2 October 1944 the 389th flew its 200th mission to Hamm. It was a PFF mission, and the Group returned with all aircraft. The Hamm mission was indicative of those flown in October. With the Allied Armies advancing across France, the Second Bomb Division flew half of its sixteen missions against marshalling yards in western Germany. These missions included Rheine, Koblenz, Köln, and Mainz. They flew several missions against oil refineries at Hamburg, Reisholz, and Bottrop, plus missions to the tank plant at

Kassel, a fighter engine plant at Hamburg, an ordnance depot, and an airfield.

The weather during the month grew progressively worse, causing twelve targets to be bombed by radar. At times the weather over the target deteriorated to the point of forcing the Group to bomb secondary targets or targets of opportunity. Even in such conditions the Group's bombing was often good as indicated by subsequent aerial reconnaissance photographs. The Group lost only two aircraft for the month, both due to ground fire. For the month the Group encountered no enemy fighters.[23]

With winter coming the weather over Europe further deteriorated, allowing only five visual missions among the fourteen missions flown in November. Oil refineries and marshalling yards were the targets concentrated on for a total of eleven. The remaining three targets were small tactical targets.

The Group began the month by striking the refineries at Gelsenkirchen. That mission was quickly followed by missions to Bielefeld, a second mission to Gelsenkirchen, the refineries at Sterkrade, and the marshalling yards at Karlsruhe. On the ninth the Group flew a tactical mission in support of ground troops in the Metz and Thionville areas of France.[24]

The Germans had occupied a chain of fortresses along the Moselle River, and the firepower from these forts had

halted Patton's Third Army. Operation Madison called for the use of airpower to help the Third Army break through the German defenses and cross the river to the north and south of Metz, bypassing the forts, which were later surrounded and taken. The Eighth Air Force was ordered to destroy the gun batteries in the area. Air operations were initially scheduled for 5 November, but weather conditions made visual attacks impossible. With persistent bad weather over the next several days, the command decided to bomb through the clouds with the use of radar. The ground attack began on 8 November with the support of the Ninth Air Force, and the next day the Eighth Air Force attacked several forts in the area.

Extra precautions were taken to ensure the safety of the troops by positioning the troops four miles from the bombing. American artillery fired black smoke bursts to an altitude of 17,000 feet, and barrage balloons flew at 1,500 feet to help mark the front lines. Radio transmitters also were used to mark the bomb line by radar. The lead aircraft radio would receive the signal when it passed directly overhead and would fire flares to be acknowledged by the rest of the formation. The aircraft would then find and bomb their target either visually or by radar. The transmitter worked exceptionally well, while the artillery smoke was not easily seen. There was only one report of short bombing, which caused one minor casualty. Over 2,600 tons of bombs were dropped by more than 1,200 heavies.[25]

Bombing accuracy, however, was low primarily because of bombing by radar. Only a few of the fortifications sustained any damage. Nevertheless, reports from the Third Army and from prisoner interrogations stated the overall effect of the bombing was excellent. The density of the defense were such that any bomb anywhere within or near the area would hit something important: a gun position, tanks, barbed-wire entanglements, or wire communications. The German troops were reported dazed and demoralized, and their communications had been disrupted. The Third Army subsequently crossed the river and continued eastward.[26]

On 10 November the Group was sent against Hanau-Langendiebach airfield, as the Eighth Air Force bombed numerous airfields in western Germany. Afterwards the Group returned to strategic bombing for the remainder of the month. Following a raid on the Battrop refinery, the Group was dispatched to the oil refinery at Hamburg on the 21st and finished the month by bombing the marshalling yards at Bielefeld, Offenburg, Hamburg, and railroad viaducts at Bingen and Altenbeken.[27]

Despite the weather, the bombings on many of the missions, were reported good or excellent. The men had improved their bombing by radar, and although it was still not as accurate as visual bombing, there was considerable improvement. The Group lost three aircraft in November, but only one to enemy action. For the second month in a row, enemy fighters did not appear.[28]

By the end of November German oil production was estimated at 31 percent of the monthly averages in the preceding spring, with most of the supplies coming from the benzol plants, which the Allies regarded as not worth attacking. Several refineries were heavily damaged, including Merseburg-Leuna, and most of the synthetic plants were reported out of action. The Germans, however, were very adept at repairing the damage, so several missions were necessary in most cases to destroy a refinery.[29]

During the fall months the feasibility of attacks on the German transportation system was still being debated. Some in the British Air Ministry were in favor of bombing the railway and water transportation systems of western Germany, while most members of the American high command were opposed. By the end of October, the Western Allies decided that oil would remain the top priority, with transportation next, and all other targets last. The marshalling yards at Köln, Münster, and Saarbrücken were severely damaged during the fall months. The 389th and the Second Bomb Division bombed viaducts in November and caused some problems for the Germans. The best results were on the 26 November raid on the Ottenbecken Viaduct, which remained closed for three months. Though the damage was at times severe, the Germans were generally able to make quick repairs, and flexibility of their system helped to compensate for any damage. But the continued bombing had

started to take a toll. The bomber and fighter strafing attacks on the trains, which forced them to run only at night, did slow troop and supply movements in the Ruhr Valley. In a report on 11 November, Speer warned of disaster looming in the Ruhr as coal shipments out of the Ruhr came almost to a standstill.[30]

Tank and truck plants, ordnance depots, and other industries also received attention, but only minimal damage resulted from the raids. Since these targets were low priority, they were infrequently attacked, and the damage was limited generally to buildings, but with most of the machinery surviving. With the exception of the tank plant at Kassel, which by October was completely destroyed, most plants were easily repaired and in some instances became more productive. As a result these targets received little attention during November and were seldom attacked afterwards.[31]

The weather in December was the worst the Group had experienced since arriving in England. It was colder than the previous year, ice, snow, and rain made their appearance with unpleasant regularity. The Group flew nineteen missions in December, eight of them in the last ten days. On sixteen of the missions the bombing was done by radar, either by the Gee-H or H2X system, and on some missions both were used. The first December mission was to the Bingen marshalling yards where one aircraft was lost for unknown

reasons. This raid was followed by other raids to the yards at Bebra, Münster, a second raid to Bingen, and a mission to Hanau, where a second bomber was lost due to flak. One visual raid was flown to a railroad viaduct at Minden, where the Group was credited with excellent results. On 11 December when the Group was dispatched to a railroad bridge at Maximiliansau, several bombers became separated from the Group, joined a second formation of Liberators, and bombed the Hanau marshalling yards.[32] This was the largest force of bombers so far dispatched by the Eighth Air Force as 1,586 bombers attacked rail targets and bridges in western Germany.[33]

On 16 December the Germans in desperation launched a counterattack in the Ardennes Forest. The Germans attacked at a time of extremely bad weather making it impossible to provide air support to armies of the Allied Forces. To counter the German attack, Eisenhower assumed command of all three divisions. He made the Second Air Division available to the Ninth Air Force to help strengthen interdiction efforts if needed. The heavies bombed tactical targets such as communications centers, airfields, bridges, road and railroad junctions, ordnance areas, and troop concentrations.[34]

The 389th flew its first mission during the Battle of the Bulge on 19 December in weather that was generally considered unflyable. The mission was to the Ehrang

marshalling yards, a secondary target, as the weather limited the Allied efforts. The weather prevented the bombers from flying until 23 December, when the Allies launched another limited effort. A small force attacked targets behind the German lines, with the 389th bombing a communications center at Junkerath.[35]

Finally, on the following day the weather cleared enough for an all-out aerial assault. It was the largest armada of the war with more than 2,000 bombers participating. Many bomb groups used their war-weary bombers and the Second Bomb Division even used its brightly colored assembly ships.[36] The bomber force dropped more than 5,000 tons of bombs on approximately eighty targets, mainly airfields and communication centers.[37] The 389th visually bombed two targets at Bitburg and Cochem, with excellent results. The weather over England, however, forced many of the Groups to land at airfields other than their home bases where they would spend Christmas.[38]

On Christmas Day the Eighth dispatched a much smaller force, since many groups had become scattered. The Second Bomb Division was again responsible for hitting communications targets. The 389th's primary target was Wahlen, but it also bombed other targets. For the first time in months the air crews encountered enemy aircraft when the 565th became separated from the formation. Approximately twenty

enemy fighters attacked the lone squadron from the rear and shot down three Liberations in the first attack. Soon afterwards escort fighters appeared and chased the Germans away. The 389th's gunners were credited with two enemy fighters destroyed and one damaged.[39]

For the remainder of the month the Group struck rail targets in western Germany in support of the battle front. The yards at Kaiserslautern, Homberg, and Feusdorf were bombed visually, and the Group was credited with some excellent results. The Group finished the month bombing railroad bridges at Auskirchen and Koblenz, which were bombed by radar.[40]

What the men of the Group remember mostly about the Battle of the Bulge was the bad weather. The fog was so thick at the base at times that one could not see the end of the runway. Sol Greenberg, a navigator in the 566th, recalled that after take-off, "...we could see fires all over the countryside from planes that had crashed. It was an eerie scene as the gunners kept calling out the locations of the orange glows." On occasions, when the Group returned from a mission, they were forced to land at other bases, some of which were a good distance away from Hethel.[41]

The Group began the new year as it had finished the old year, for on New Years Day it attacked a railroad bridge at Neuwied and several targets of opportunity as the Eighth Air

Force flew in support of the ground forces.[42] Also, on 1 January, all Eighth Air Force bomb divisions were re-designated air divisions for the remainder of the war.[43]

The 389th flew several more missions during the Bulge Campaign, striking marshalling yards at Hamberg, Neustadt, and Zweibrucken, along with several railroad and highway bridges, primarily over the Rhine River. The Group flew its last "Bulge" mission against a rail bridge at Rudesheim on 13 January.[44]

The Allied Air Force gave a good account of itself during the Battle of the Bulge. In many instances the air crews flew in weather that would have aborted missions under normal circumstances. When the weather cleared around Christmas, the bombers became very effective, destroying airfields, marshalling yards, and communication centers behind the German lines; and combined with the tactical bombers and fighters in direct support of ground troops, they contributed greatly to the defeat of the Germans.[45]

During the "Bulge" the Germans were hampered by a lack of fuel. Part of the German plans were to capture Allied fuel dumps, but they failed and their tanks and other motorized vehicles ran out of fuel. The bombing of the German oil industry thus proved its value. It also brought much concern over the value of bombing the enemy's transportation network. The Allied Air Forces dropped several times the tonnage of bombs on railways than on oil

targets, and still the Germans launched a major offensive. These attacks did not seem to have an effect on troop and supply movements.[46]

On 14 January the Group returned to bombing the oil industry, with an attack on the Ehmen storage tanks. The visual raid was successful and the Group was credited with having 90 percent of their bombs landing within 2,000 feet of the target. Two days later, the Group flew to Magdeberg, followed by a raid to Hamburg. In both raids the Group bombed visually and scored excellent results. The weather then turned bad over England, forcing the cancellation of several missions over an eleven-day period.[47]

The last three missions for the month were tough ones. Bombing was done by radar with unobserved results on two of the three, and the third was recalled after the bombers penetrated Germany. On the 28 January raid to the oil refineries at Dortmund, the crews encountered intense and accurate flak. The majority of the bombers were damaged, many severely, with one aircraft lost. On the following mission to Hamm, an aircraft was also lost to flak.[48]

The Group flew fourteen missions during January with most of the targets being bombed by radar. When visual conditions did exist, the bombing was successful. The Group lost three bombers, including two to flak. No enemy fighters were encountered, thanks to the fighter escort.[49]

Similar operations continued in February with strikes on oil or rail targets. The Group flew sixteen missions.

Unfavorable weather kept missions to a minimum in the first half of the month with only five missions in the first fifteen days, three were to the oil refineries and one to the marshalling yards at Magdeburg in central Germany in support of the Russian offensive. Two bombers were lost to flak. The fifth mission was to railroad viaduct at Bielefeld. All five missions required radar, and bombing results went unobserved.[50]

During the second half of the month, they flew eleven missions, beginning with an attack on the rail yards at Rheine. On 19 February the Group bombed a munitions plant at Jungenthal and lost one bomber.[51] On the 22 and 23 February the Group flew two missions as part of Operation Clarion, a major assault on the German transportation system. It called for the use of all Allied bombers, fighters, and fighter-bombers. The plan was designed to strike rail targets in small towns across Germany, which had not been bombed, to demonstrate to all German people that the Allies controlled the skies. The goal was to destroy German morale.[52] There was some opposition to Clarion in that it was a form of terror bombing and would result in high civilian causalities. Others argued, moreover, that the destruction of rail targets in small towns would have no major effect on the German transportation system. To reduce the number of civilian casualties the heavy bombers bombed from an altitude of less than 10,000 feet, which brought

concern over the possibility of high losses among the bomber crews.[53]

When the weather cleared over Germany on the twenty-second, the assault was launched. The 389th was first dispatched to the cities of Sängerhausen and Nordhausen. The next day it bombed Paderborn. The missions were "milk runs," for the Group did not encounter any enemy opposition, including flak, and all aircraft returned to Hethel.[54] The damage to these targets was extensive, with 150 marshalling yards damaged, numerous rail line cuts, and about 300 locomotives destroyed; but there was no evidence of a breakdown in the railway system, nor did it seem to have any effect on morale. No further Clarion missions were launched after the second raid.[55]

On 26 February the Group returned to Berlin with the Eighth Air Force to bomb rail targets. The 389th was sent to bomb the railroad stations on the north side of Berlin. The weather necessitated bombing by radar, and only moderate damage resulted. Spillage from the bombing also damaged some industrial plants, some businesses, and residential areas. The Group encountered no enemy fighters and received meager flak, and all bombers returned safely.[56]

In March, the weather changed for the better, and the Group flew twenty-five missions. Morale was high as many of the men believed that the war in Europe was nearing the end. Evidence indicated that the oil refineries and other oil

targets had suffered severe damage. The First and Third Air Division continued to bomb oil targets, but the 389th and all Liberator groups attacked numerous railway facilities.[57]

The Group began the month by striking the yards at Ingolstadt. This raid was followed by consecutive missions to Magdeburg's oil refineries. On 4 March Aschaffenburg was bombed as a target of opportunity. The Group was then sent to the refineries at Harburg, which was the last oil target the Group would bomb for a period of time. The Group continued to bomb marshalling yards in central and east Germany to support the Russian army. On 11 March the Group bombed the U-boat yards at Kiel in hopes of destroying the Germans' new type of U-boats. Even though bombing accuracy was considered excellent, the mission was a failure because the submarine pens survived.[58]

The Group returned to Berlin for two more missions on 15 and 18 March. On the first Berlin mission the Group struck the Zossen Army Headquarters a few miles outside the capital. The bombers bombed visually and caused considerable damage to the buildings. On the second mission to Berlin the Group hit a tank plant. The 389th, part of the largest daylight assault on Berlin, helped inflict heavy damage on the plant and again returned with no losses.[59]

After two successful missions to the industries in Hemmingstedt and Baumenheim, the Group was dispatched to a jet airfield at Achmer. The planes made a visual attack on

the airfield and caused considerable damage and destroyed several jets on the ground. Even though the jets were already being flown in combat, the Group had not encountered any in combat. After the Achmer raid the Group flew another mission to the yards at Münster, and again they were credited with excellent results and encountered meager enemy defenses.[60]

On 24 March, the 389th flew in support of Operation Varsity, the code name for the Allied crossing of the Rhine River into northern Germany. The role of the Eighth Air Force was two-fold. One was the use of the B-24s to fly supply missions to the paratroopers along the east side of the river, and the second was to destroy enemy communications and airfields in the region. The 389th flew two missions on this day. The first mission was the supply mission. The Group, along with 240 Liberators, was to fly at an altitude of about 500 feet and as slow as possible to drop the supplies. This mission was met with little enthusiasm because the crews knew the danger of flying low over enemy territory. Each bomber carried 10,000 pounds of supplies, stored in the bomb bay and in the rear, making the aircraft tail heavy and more difficult to fly. Most of the supplies were dropped in the proper area, and some groups, including the 389th, made a second pass to get the supplies on target. The Liberators paid dearly for this mission, for fourteen were shot down. The 389th lost two bombers, with

two more crash-landing in Allied territory and one in England.[61]

With the Allied crossing of the Rhine, the Germans were finished. The bombing of Germany had destroyed the oil industry and caused severe damage to the railroads in western Germany. The strategic bombing was coming to an end for worthwhile targets were now hard to find. The Eighth Air Force was forced to bomb targets which had never been attacked or targets that had not been bombed since 1943. Some had already been attacked in March, such as the Zossen Headquarters and the U-boat yards.

The Group flew fourteen missions in April mostly in clear weather and was credited with excellent bombing. These missions were destined to be the Group's last in the ETO, but they were by no means in every instance "milk runs." On 4 April the 389th bombed the Parchim and Wesendorf jet airfields. Several jet aircraft attacked the Group. One bomber was lost, but the Group was credited with two enemy aircraft destroyed. Another bomber was lost the following day on the mission to the marshalling yards at Plauen.[62] The 7 April raid to Düneburg the Luftwaffe again attacked the Group. A crippled ME-109 rammed the lead bomber, bounced off, and slammed into the deputy lead. All three planes went down in flames. The Group's commanding officer, Colonel John Herboth was killed in the collision.[63]

The Group continued to bomb marshalling yards and jet-related targets including airfields at Memmingen and

Rechlin, a jet fighter plant at Fürth, and the yards at Amberg.[64] On 14 and 15 April the Group flew its last two tactical missions. The Eighth Air Force bombed a pocket of German resistance near Royan, France, which was denying the Allies the use of the port of Bordeaux. What was supposed to have been an easy mission proved otherwise for the Group. A formation of B-17s made a second run over the target and released their bombs as the 389th passed underneath. Five Liberators were struck by bombs, one exploded, another was seen going down on fire, with both crews reported killed. Two bombers crash-landed in France and one in England. The second mission to Royan was carried out with no problem.[65] After the Royan raid the rest of the missions were uneventful, with no losses for the rest of the war. On 25 April the 389th bombed the marshalling yards at Salzburg. This was the Group's final mission.[66]

On 14 May, after V-E day, the Group was ordered home. Five days later the movement got underway, and through the rest of May and into June, the Liberators left the runways for the last time, and Hethel became a RAF base once again. When the Second World War ended, the Group was stationed at Charleston Air Base, South Carolina, preparing for the Pacific Theater. With no job left to do the 389th was deactivated on 13 September 1945. It had been in existence almost 1,000 days.[67]

For the record, the Group flew 321 operational missions, of which 317 were combat missions. It was credited with 7,579 successful sorties and dropped over 17,500 tons of bombs. The Group lost 153 bombers in combat. The gunners received credit for 204 enemy aircraft destroyed. The Group flew in nine major campaigns in three zones of operations in the ETO. It received a distinguished unit citation and a Medal of Honor for the Ploesti raid. There were also seven Bronze Stars and hundreds of other medals, including DFCs, DSCs, Air Medals, and Purple Hearts.[68]

From the time of the invasion until the end of the war the 389th and the Eighth Air Force were used in different capacities, especially the Second Air Division B-24s. The Group was used on several tactical missions, which were not always suitable for the strategic bombers. Although the carpet bombing at St. Lo, Caen, and Metz was successful and showed in some circumstances that heavy bombers could be used in direct support of ground operations, there were some disasters, such as the Rhine supply missions. The majority of the tactical missions were against targets just behind enemy lines to prevent the Germans reenforcing their armies. The targets included airfields, railroad bridges, and other transportation chokepoints. The strategic bomber was not designed for these types of targets. The 389th did become fairly successful in destroying airfields, but the small

transportation targets were seldom hit and destroyed, although a large tonnage of bombs was dropped. Some of the senior officers in the AAF were against the use of the heavy bombers in this fashion, partly because of the lack of results and the diversion of the bombers from their original purpose.

The strategic bombing campaign was more successful in late 1944 and in 1945 than any time previously. With air superiority, more bombers reached their targets and bombed with improved accuracy. The AAF bombing of oil refineries were targets that could be easily damaged and whose loss was disastrous to the German war machine. Marshalling yards, which received more tonnage than oil, were more difficult targets to destroy, but the continual bombing of the yards did have an effect on the enemy transportation network near the end of the war.

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CHAPTER VIII

CONCLUSIONS

The 389th was very much a typical heavy bomber group. It was comprised of men from various parts of the country with diverse backgrounds. They flew bombers with such names as "Delectable Doris," "Little Gramper, Jr.," "Bomb Voyage," "Rambling Wreck," "Pistol Packing Mama," "10 Schilling Annie," "Lonnie Mac," and others.[1] How these men worked, flew, fought, and died was no different from any other group. The same is true of the success the 389th had in the bombing of enemy targets.

When used in the role for which they were primarily designed, strategic bombers proved successful. When used in other roles, such as ground support or supply missions, the heavy bomber was generally a failure. The examination of the activities of one group can give an indication of the successes and failures of the entire strategic bombing campaign in Europe.

When the Group flew its first missions from North Africa, it had some difficulties in hitting targets. As the men soon learned, combat was different from training. With experience, however, the Group did improve, and these missions helped prepare them for the difficult missions over Germany.

The Eighth Air Force, still in its infancy, had to overcome numerous problems before it became an effective force over "Fortress Europe." In 1943 and most of 1944 the air war was truly a battle of attrition and, due to the fighter opposition and intense flak, the Eighth Air Force losses were high. The weather was also a constant problem, for prolonged bad weather kept the bombers grounded. Some of these problems the AAF was able to solve. The two most important developments that reduced losses and improved bombing results were the long-range escort fighters and airborne radar. The use of radar and the creation of the pathfinder force enabled the bombing of targets on bad weather days that had not bee possible before. These developments put more strain on the German defenses and their ability to repair damage by bombing targets more often and preventing the installations from returning to fully operational status. The drawback to radar bombing was that it was less accurate than visual bombing.

The development of escort fighters, long overdue, was instrumental in the defeat of the Luftwaffe. Not until after the Allies gained air superiority did the bomber offensive begin to meet expectations. The long-range escort fighter helped get more bombers to and from targets, thereby enabling them to drop more bomb tonnage. Other efforts to increase the number of bombers reaching the target and to improve accuracy included improvement of combat formations,

use of assembly ships to reduce the confusion and time in forming the group, wing, and division formations, and the change of all group aircraft bombing off the lead bomber. The Eighth Air Force and the 389th Bomb Group had not accomplished a great deal in its destruction of Germany until Big Week. During the last of February 1944 the air war turned in favor of the Allies.[2] Prior to Big Week bombing had accomplished little. The Eighth Air Force, the main strategic bombing force, had few groups to carry out the task. Numerous bomb groups, such as the 389th, had been diverted to other areas. Because of the smaller force, weather, and lack of escort fighters, the bomber force was unable continually to strike German industries. The Germans quickly repaired damaged factories, and it might be months before the bombers returned. Where the bombers did succeed was by forcing the Germans to divert to air defenses a large number of soldiers and civilians, planes, guns, and other equipment that could have been used elsewhere.[3]

By the time of Big Week, however, the Eighth Air Force, augmented with additional crews and aircraft, was able to dispatch large bomber formations to strike targets on consecutive days without huge losses. Though damage to the German aircraft assembly plants during Big Week was not as substantial as hoped, it did force the Germans to disperse the industry throughout the country-side. The biggest accomplishment during Big Week was that the AAF began to

take control of the skies. The effectiveness of the Luftwaffe began to decline as it was forced to replace older and more experienced pilots with younger and poorly trained pilots. The bombers were then able to hit any target in Germany within range, including Berlin, and the establishment of air superiority made the invasion of France possible.[4]

In 1943 and early 1944 the 389th bombed several aircraft installations, primarily airplane assembly plants, in hopes to destroying German fighters before they were built. According to United States Strategic Bombing Survey (USSBS) the bombing of the plants had some effect. Records show a small drop in the number of fighters delivered to the Luftwaffe up to and through the last week of February 1944. But production recovered quickly and increased during the summer, reaching its peak in September and gradually decreasing thereafter.[5]

Attacks on aircraft industries were not entirely successful. USSBS showed that, although the buildings were destroyed, the machine tools survived. Also, the Allies underestimated the German's ability to repair damages, as factories were quickly put back into production. The Germans also had an excess of equipment and manpower to restore production. As German industry became fully mobilized, this excess may have accounted for the increase in productivity. The bombing, however, did force the Germans to make changes

in the industry and disperse it, which probably limited the manufacture of aircraft.[6]

Another industry attacked extensively in 1943 and early 1944 were the ball bearing plants. The AAF decided to attack this industry because it was heavily concentrated in only a few plants, and the bearings were indispensable to German war production.[7] The 389th attacked very few of the plants, its most important target being the Erkner works in Berlin.

The results of the attacks on the ball bearing plants were similar to those on the aircraft assembly plants. The buildings were damaged, but the production equipment inside survived. The Germans had a large surplus of bearings to draw from and were successful in creating substitutes whenever possible, and they were also able to disperse the industry. The USSBS concluded that the bombing of the ball bearing industry had no reasonable effect on war production.[8] The belief was that heavier bombs, longer fuzes, and more concentrated attacks would have destroyed the industry.[9] After the war Albert Speer, in interrogations, stated that the attacks on the ball bearing industry could have brought "armament to a standstill after about four months . . . that they could have paralyzed the production of thousands of armament plants severely by destroying five or six relatively small targets."[10]

On the other hand, when the Eighth Air Force used bombers in support roles, something for which they were not designed, such missions invariably ended in failure. With the invasion of the continent imminent, strategic bombers were diverted from their strategic campaign to support Overlord. Although many commanders in the USSTAF opposed this diversion, from May 1944 the heavy bombers on many occasions served as tactical support of ground operations. The 389th bombed mainly rail targets and airfields in France and Belgium to delay the German reinforcements and prevent the Luftwaffe from re-occupying these bases. Even after the invasion the heavies were still diverted to tactical support, thus allowing German industry to become fully productive without any interruptions.

The destruction of enemy transportation during Overlord was successful, but the bombing accuracy of the heavies was generally poor. The strategic bomber was not designed for these types of missions, and many times they were carried out in overcast weather. Though the 389th did become fairly accurate in destroying airfields, other targets such as bridges, highways, and railroad chokepoints were seldom hit, and a large tonnage of bombs were dropped with poor results.[11] The success of the campaign against enemy transportation owed more to the medium and light bombers and the fighter and fighter-bombers.

The 389th and the strategic bombers were also diverted to bomb the V-rockets sites along the French coast. On the majority of the Noball missions, the bombers inflicted little, if any, damage to the rocket sites. The sites were too small, and often the missions required the use of radar, thus making the sites impossible to hit. The Eighth Air Force lost many bombers and crews on targets that would have been best served by other aircraft. The USSBS in its report stated that the bombing of the launch sites delayed the use of the V-1 until after D-Day.[12] Nevertheless, the majority of the rocket sites had to be captured by the infantry.

Some tactical missions were very successful. The carpet bombings at Caen, St. Lo, and Metz showed that in some situations strategic bombers could be used in support of the infantry, for the bombing of a particular area instead of a small target proved to be within the ability of the bomber crews. Even with the casualties suffered by the ground troops at St. Lo, with the proper precautions taken to prevent such casualties carpet bombing became a viable option. Though the Rhine supply mission also proved to be successful, it was accomplished at a high price to the Second Air Division's B-24s. The 389th and other groups successfully dropped their supplies at a very low altitude while under intense fire from German ground forces. The Rhine supply missions were probably the single worst use of the strategic bombers in the war.

Prior to D-Day, the strategic bombers began the campaign against the German oil industry. The attacks intensified at the end of June and quickly forced the Germans to cut back on training and combat operations. As a result of this campaign German production from the synthetic plants declined throughout the rest of the war, and by July every major plant had been hit. The Germans generally were able to make quick repairs, but, unlike before, the bombers returned with sufficient frequency to ensure that the refineries were kept out of production.[13]

With both production and stock declining, German aircraft operations were almost eliminated for lack of fuel. In the closing months of the war Luftwaffe pilots went into combat with only about forty hours of flight training. Germany lacked the fuel to provide adequate training. Germany's large resource of aircraft remained grounded for lack of fuel, unable to oppose the Allied ground forces. Tank and armored vehicles were moved to the front by oxen, and every motor trip exceeding sixty miles had to be approved by the commanding general. A speed limit of seventeen miles per hour was also imposed.[14]

The oil campaign had some unexpected dividends. The destruction of the oil refineries also affected other materials. The loss of nitrogen and methenol hampered the making of explosives, making it necessary to fill shells with a mixture of explosives and rock-salt extender. There

was a shortage of ammunition on all fronts by the end of the war. The synthetic rubber industry also suffered, for these plants relied on fuel from the refineries.[15] The destruction of the refineries was the factor that proved the success of strategic bombing.

The bombers were also used frequently against marshalling yards throughout Germany. The Eighth Air Force dropped more bombs on rail yards than any other target. The USSBS stated the attacks on the transportation system completely disorganized the German economy. It reduced war production in all categories and made it difficult to move what was produced to the front; and it also limited the tactical mobility of the German Army.[16] The USSBS, however, overstated some of the success because the railway and waterway system of Germany was very efficient. The strategic bombing of the yards was accurate and caused substantial damage, but it did not have a devastating effect on the rail system, for the Germans could quickly repair the damage or bypass badly damaged areas. At best the bombing slowed train movement for a short time. The destruction of locomotives and rolling stock was, however, more damaging to the Germans.

The destruction of German transportation in certain areas was successful, particularly in the Ruhr Valley, and bombing almost isolated that area from the rest of Germany. Coal from the mines could no longer be transported, as rail

traffic in the Ruhr was almost non-existent by February 1945.[17] The destruction wrought in the Ruhr and in western Germany was a combined effort by the strategic bombers, medium bombers, fighters, and fighter-bombers.

Although mistakes were made, strategic bombing did have a decisive effect in the war. The bombers could have been used differently or better in some situations. Escort fighters should have been provided sooner and the oil campaign could have started earlier, maybe as early as Big Week. Strategic bombing was a new, unproven weapon, and much had to be learned during the war. Nevertheless, the bombing of Germany was a vital part in the winning of the war.[18]

The best way to prove the success of strategic bombing may be from the writings, interviews, and interrogations of the German military after the war. During the war British intelligence deciphered many German messages that showed the impact bombing had on the German armed forces. Speer in his memoirs described the devastating effect of bombing on refineries, the transportation system, and other industries. The interrogation of enemy leaders also demonstrated the effectiveness of the bombers. In one session a lieutenant in the Luftwaffe, who was tired of the war and had flown an Me-262 out of Germany, stated, "In the interior of Germany the railroads were gone, the factories destroyed, there was no oil, the best of the pilots had been killed, bomber

pilots were flying jet planes without sufficient training, and the war couldn't continue for more than two or three weeks. All organized resistance would be gone."[19] During interrogations of German generals and industrial officials, many praised the achievements of Allied air power and regarded it as the decisive factor in Germany's defeat.[20]

The Strategic Bombing Doctrine was created before the United States involvement in the Second World War. The doctrine called for a large number of bombers in tight formation to fly deep inside enemy territory and destroy the enemy's war making capability. The B-24 "Liberator" and B-17 "Flying Fortress" were designed and the crews trained for this purpose. In war, however, plans change.

The 389th, along with most strategic bomber squadrons was diverted from its original purpose and by the end of the war served in a multi-purpose role. When used for the purpose for which it was created, strategic bombing, the 389th proved to be successful. The Group, however, was misused in the role of tactical bombing. The heavy bomber and heavy bomber crews were not designed or trained for that role. With the exception of carpet bombing enemy troops concentration, the use of strategic bombers in a tactical role was a failure. This study of use and misuse of the 389th shows the overall effectiveness of the strategic bomber during the Second World War.

ENDNOTES

[1]Brient, interview by author; Byers, interview by author; Crum, letter to author; Hartley, letter to author; Raymond, letter to author; Reichley, interview by author; Simpson, interview by author.

[2]Infield, Big Week, 155; Levine, Strategic Bombing of Germany, 193.

[3]Levine, Strategic Bombing of Germany, 193.

[4]Infield, Big Week, 115-118; McFarland and Newton, To Command the Sky, 192, 240-241.

[5]USSBS, Summary Report (European War), 6-8.

[6]Craven and Cate, The Army Air Forces in World War II, Vol. III, 892-794; USSBS, Summary Report (European War), 6-8.

[7]USSBS, Summary Report (European War), 5.

[8]Craven and Cate, The Army Air Forces in World War II, Vol. III, 800; USSBS, Overall Report (European War), (Washington D.C.: GPO, 1945) 29; USSBS, Summary Report (European War), 5-6.

[9]Hansell, The Strategic Air War Against Germany and Japan, 119-121.

[10]Ibid., 121.

[11]History of the 389th Bombardment Group, microfilm roll B0419.

[12]USSBS, Summary Report (European War), 12.

[13]Craven and Cate, The Army Air Forces in World War II, Vol. III, 794-795; USSBS, General Summary, Oil Division Report (European War), (Washington D.C.: GPO, 1945), 1-2; USSBS, Summary Report (European War), 8-9.

[14]USSBS, General Summary, Oil Division Report (European War), 1-2; USSBS, Summary Report (European War), 9.

[15]Hansell, The Strategic Air War Against Germany and Japan, 122; USSBS, General Summary, Oil Division Report (European War), 2-3; USSBS, Summary Report (European War), 9-10.

[16]Craven and Cate, The Army Air Forces in World War II, Vol. III, 796-797; Hansell, The Strategic Air War Against Germany and Japan, 122-126; USSBS, General Summary, Transportation Division Report (European War) (Washington D.C.: GPO, 1945), 3-4; Summary Report (European War), 12-13.

[17]USSBS, Summary Report (European War), 13-14.

[18]Craven and Cate, The Army Air Forces in World War II, Vol. III, 793-794; Levine, The Strategic Bombing of Germany, 197-199.

[19]Arnold, Global Mission, 544.

[20]Craven and Cate, The Army Air Forces in World War II, Vol. III, 786.

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