

GENERAL NATHAN TWINING AND THE FIFTEENTH
AIR FORCE IN WORLD WAR II

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General Nathan F. Twining distinguished himself in leading the American Fifteenth Air Force during the last full year of World War II in the European Theatre. Drawing on the leadership qualities he had already shown in combat in the Pacific Theatre, he was the only USAAF leader who commanded three separate air forces during World War II. His command of the Fifteenth Air Force gave him his biggest, longest lasting, and most challenging experience of the war, which would be the foundation for the reputation that eventually would win him appointment to the nation's highest military post as Chairman of the Joint Chiefs of Staff during the Cold War.

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Brian Hutchins

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ABBREVIATIONS

AAF – Army Air Forces

ACRU – Air Crew Recovery Unit

AFCE – Automatic Flight Control Equipment

CBO – Combined bomber offensive

CG – Commanding General

GAF – German Air Force

MAAF – Mediterranean Allied Air Forces

MASAF - Mediterranean Allied Strategic Air Force

MATAF – Mediterranean Allied Tactical Air Force

MTO – Mediterranean Theatre of Operations

OSS – Office of Strategic Services

PDI – Pilot Directional Indicator

RAF – Royal Air Force

USAAF – United States Army Air Forces

USSTAF - United States Strategic Air Forces in Europe

CHAPTER 1

INTRODUCTION

General Nathan F. Twining distinguished himself in leading the American Fifteenth Air Force during the last full year of World War II in the European Theatre. Drawing on the leadership qualities he had already shown in combat in the Pacific Theatre, he was the only USAAF (United States Army Air Forces) leader who commanded three separate air forces during World War II. His command of the Fifteenth Air Force gave him his biggest, longest lasting, and most challenging experience of the war, which would be the foundation for the reputation that eventually would win him appointment to the nation's highest military post as Chairman of the Joint Chiefs of Staff during the Cold War.¹

American air power in Europe comprised 148 combat and support groups of men and women who were part of bomber, fighter, reconnaissance, transport, medical, and maintenance units, as well as the many others in staff and planning positions who organized and directed the air campaign, all of which fell under the designation USSTAF (United States Strategic Air Forces). With its headquarters in England, the USSTAF in the European Theatre had two main responsibilities. It was primarily responsible for the destruction of Germany's war potential, while its secondary responsibility was the destruction of Axis air power. The first required a more thorough campaign, such as that conducted against Nazi Germany by the USAAF and the British Bomber Command. The second function is relatively easy to discern. The destruction of an existing air

¹ Herman S. Wolk, "American Chieftains," *Air Force Magazine* (Sep 2002):102.

power required the bombing of its airfields, and denying it the ability to build, and successfully use, replacement aircraft and crew members.

When Twining first joined the European war effort in January 1944, General Carl Spaatz commanded all USSTAF bomber forces there. Spaatz directed the overall bombing effort against Nazi Germany using the VIII Bomber Command in England commanded by Major General James Doolittle and the Mediterranean Allied Air Forces (MAAF) commanded by Lieutenant General Ira Eaker. Under Eaker, Twining commanded the Mediterranean Allied Strategic Air Forces (MASAF), comprising the U.S. Fifteenth Air Force and the British RAF (Royal Air Force) 205 Bomb Group. Twining and the Fifteenth carried out ground support and aerial bombing operations over Italy and France, supported allied forces in the Balkans, and campaigned in all areas occupied by Germany within the range of their bomber and fighter force. Twining sought to realize the Air Corps' strategic vision by successfully leading his portion of the air war which helped bring about the Allied victory in World War II. Without the contributions of senior air commanders like Twining and others serving in ground and naval roles, the war in Europe undoubtedly would have lasted longer.

CHAPTER 2

FAMILY ORIGINS

Nathan Twining was born in Monroe, Wisconsin on 11 October 1897 into a family with a strong military tradition. His family's roots in the future United States went back to the seventeenth century, when his forefathers journeyed from England to settle in the Pennsylvania colony. One of Twining's earlier ancestors, Samuel Twining, served in the Revolutionary War. A later ancestor, John Twining, served in the War of 1812. After that war, the Twining family moved west from Pennsylvania to Wisconsin.

In the American Civil War, Twining's grandfather, Nathan Crook Twining, recruited his own volunteer infantry company and served as its captain under the 40th Regiment of Wisconsin Volunteer Infantry. The 40th fought against Nathan Bedford Forrest in his 21 August 1864 attack on Memphis. One of Nathan Crook Twining's sons, who had been named after his father, joined the U.S. Navy and rose to the rank of rear admiral, participated in the Spanish-American War aboard the battleship *Iowa*, sailed around the world with the "Great White Fleet," and took part in the bombardment of Vera Cruz, Mexico. He also served as Chief of Staff to Admiral William Sims, the Commander in Chief of the U.S. naval forces in Europe during World War I.²

Nathan's older brother Clarence Walter served with the Marine Corps as a drill instructor during World War I. Another brother Edward joined the Air Corps and served

² Twining Papers, Library of Congress Manuscript Division (Hereafter LOC), Box 133, Biographical Material Folder.

in intelligence for the duration of WWII.³ Two other brothers of Nathan Twining were career military officers. Robert Twining attended the U.S. Naval Academy, graduating in 1916, and retired as a captain in the U.S. Navy. Robert would return to active duty during World War II to command a hospital ship. His brother, Merrill Twining, also attended Annapolis, graduating in 1923. He chose to join the Marine Corps and became a lieutenant general in that military branch after World War II. Nathan Twining would have the chance to serve in the same theatre as his brother Merrill during the first days of World War II in the Pacific.

Nathan Twining was a product of the Wisconsin public school system, and enjoyed a childhood full of outdoor pursuits in rural Wisconsin, these included fishing, hunting and hiking, which he would continue throughout his long life. He learned the art of weaving his own fishing lures in his time off, as well as wood carving.⁴

³ Roger Butterfield and Frank Gibney, "The Twining Tradition: A Heritage of U.S. Service from Muskets to Missiles Culminates in Joint Chiefs' New Boss and a Top Marine", *LIFE Magazine*, Vol. 43 (August 26, 1957), 104-122.

⁴ "Well I'm Hooked", *TIME Magazine* Feb. 8, 1954.

CHAPTER 3

EARLY CAREER

3.1 Pancho Villa and the 1st Aero Squadron

When Nathan F. Twining first joined the U.S. military in 1916, he was an enlisted man in Hotel Company of the Oregon National Guard, which he joined because “they had a good rifle range and I liked to shoot.”⁵ Twining’s unit soon was part of General Pershing’s Punitive Expedition into Mexico against Francisco “Pancho” Villa.

Twining did not see combat, but did perform routine guard and patrol duties within the vicinity of the Expedition’s base. This four month experience in Mexico also introduced Twining to the Expedition’s pioneering U.S. Army’s First Aero Squadron, commanded by Captain Benjamin D. Foulois.

This squadron was America’s first operational air unit.⁶ Malfunctioning aircraft and a shortage of repair parts hindered the effectiveness of the Expedition. Foulois recalled that the ground commanders also did not want planes crashing down on their troops, as the air and ground units occupied the same small space.⁷ This fear prompted an expansion of the Expedition’s base and the building of a separate area for the Aero Squadron.

⁵ Edgar Puryear, *Stars in Flight: A Study in Air Force Character and Leadership*, (Novato, CA: Presidio Press, 1981), 139.

⁶ A good description of the Expedition and its challenges is Roger Miller’s *A Preliminary to War: The 1st Aero Squadron and the Mexican Punitive Expedition of 1916*. Washington, D.C.: Air Force History and Museums Program, 2003.

⁷ Benjamin Foulois Oral History, 18 October 1960, USAFA, 10.

3.2 West Point

During the Expedition, Twining won promotion to corporal. Through the Oregon National Guard's help, he became a member of West Point's Corps of Cadets on 14 June 1916. He had initially rejected the offer of an appointment to West Point, but a severe dressing down from the commander of his Guard unit changed his attitude. Twining's early experience with the military life allowed his time at West Point to pass smoothly. As he recalled later: "We got this stuff [basic military activities such as shining shoes, uniform maintenance etc.], this basic stuff in the National Guard."⁸ Even his classmates and other cadets knew that Twining had more basic military experience than the majority of them, but what they respected most was his forthright and honest manner.⁹

The U.S. involvement in World War I in 1917 put Twining's West Point class in an accelerated curriculum to graduate earlier than in the usual four years. Twining received his commission some two years early as a second lieutenant on 1 November 1918. The Armistice ten days later denied Twining and his classmates a chance to see combat. They were able to participate in a tour of European battlefields after the war, before returning to West Point to complete the remainder of their coursework and attend their second graduation on 11 June 1919.

At West Point, Twining's overall performance academically and militarily was satisfactory, ranking him at 123 in the upper half of his class of 311. His highest

⁸ Puryear, *Stars*, 141. Some of General Twining's recollections record him reminiscing in the first person as indicated.

⁹ Jacob Smart Oral History, 17 July 1979, USAFA, 30.

grades were in drill and conduct; his worst subject appears to have been history but he fared better in mathematics and English.¹⁰ Twining also played football and hockey for his class team, a practice he would continue in later assignments at Army schools.

3.3 Infantry Assignments

After serving briefly with the American infantry forces in Germany, Twining returned to Fort Benning, Georgia, and its Infantry School as a student officer. At the school, Twining further developed his hardnosed style of no-nonsense leadership admired by so many of his peers. Here, Twining commanded groups of officers returned from Europe due to disciplinary problems, men who were designated “unfit to represent the United States in a foreign country.”

During his service at Fort Benning, when Twining played for the post football team, he first became interested in aviation, during a game against an Air Service team at Carlson Field, Florida. Since Carlson Field had the only Air Service primary flying school at the time, he and the other visitors were treated to a ride in a JN-4 Jenny.¹¹ Inquiring about the flying school and its curriculum, he became interested in a career in the Air Service.¹² Radial engine theory and engine maintenance especially interested him and he began making regular requests for transfer to the Air Service. After

¹⁰ *Official Register of the Officers and Cadets for 1918*, United States Military Academy. West Point, NY: United States Military Academy Printing Office: 1918. This register also lists the outline for the accelerated curriculum due to WWI, which mainly consisted of Engineering and ordnance classes, as well as law and French. Also see the West Point *Howitzer* for 1919 for Twining’s extracurricular activities in football and hockey.

¹¹ The Curtiss JN-4 Jenny was the primary trainer for the air services of America, Canada, and Great Britain since World War I. The Jenny was a simple 180 horsepower two-seat biplane which never saw combat yet proved excellent for training purposes.

¹² Nathan F. Twining, Oral History Interview, Colorado Springs, CO: Air Force Academy, Nov., 1965.

graduating from the Infantry School in 1920, Twining remained there as an instructor. He was then posted as an aide to Brigadier General Benjamin A. Poore at Camp Travis and Fort Sam Houston in Texas, and then at Fort Logan in Colorado. In 1923, after having requested transfers to pilot training every year for four years, Twining finally received orders for flight training.

3.4 Flight School

The Air Service Primary Flying School at Brooks Field, Texas would be a challenge to the enthusiastic newcomer. Still, Twining managed to overcome apparent prejudices against him, as the veteran members of the small air community tended to look down on newcomers.¹³ He realized that the air community was so small and close-knit, that new men were often unwelcome, unless they could prove themselves. Twining's first flight took place on 23 August 1923, and he won his wings in March of 1924, despite a fifty percent dropout rate in his class.

Twining would later comment that his academic experience at the flying school was, "not exactly MIT but adequate for the job."¹⁴ Twining said little about these experiences in flying school, probably because the six month course was a very busy time for him and all his fellow students. In any case, a great deal of higher level flight training awaited him when he was assigned to the Air Service Advanced Flying School at Kelly Field, TX from which he graduated in September of 1924.

¹³ Rebecca Hancock Cameron, *Training to Fly: Military Flight Training 1907-1945* (Washington, D.C.: Air Force History and Museums Program, 1999), 394-95.

¹⁴ Twining, Oral History, USAFA, November 1965.

Twining performed well enough in the advanced course to return to nearby Brooks Field as a flying instructor. Here Twining was respected for his patient instruction of his students while also putting them at ease. Twining also earned the admiration of later Lieutenant General Elwood Quesada, when he volunteered to remain at the flight school over the Christmas holiday in order to teach Quesada, who was falling behind in his courses due to a broken leg. Quesada later praised Twining's leadership and conduct: "I never knew of a case when Nate was ever jealous of anyone. Nate would never do anything with an ulterior purpose. I never knew Nate to indulge in a self-serving act as a junior officer or as a senior officer."¹⁵ In September of 1926, Twining continued his role as a flight instructor at March Field, California.

3.5 Hawaii

Following his instructor tours, Twining received orders in February 1929 to join the 18th Pursuit Squadron at Schofield Barracks in Hawaii. He served in staff positions with that squadron until he took command of the 26th Attack Squadron. Here Twining regularly led his units in the air alongside his men, something he would also be praised for later in the Pacific Theatre of WWII. Yearly exercises conducted at Hawaii included training periods for Twining and his pilots. The Navy would send air units and surface ships from the U.S. mainland in a mock attack on the Hawaiian Islands, and it was his and other units' task to defend the islands against the attack.

¹⁵ Elwood Quesada Oral History, Albert F. Simpson Historical Research Center, Maxwell AFB, AL, June 22, 1977.

Between the two world wars, a lack of needed funds and minimal allocations of fuel severely limited flying time and the conditions in which the pilots worked. Twining appreciated the training maneuvers since they allowed for longer flights, including rare opportunities for night flying that helped pilots to strengthen flight skills essential to their professional development.¹⁶

During a 1931 mock battle, Twining took his squadron flying low and only on instruments during a horrific storm, on an ambush of Navy planes 200 miles away.¹⁷ Innovations in flight technology and the accuracy of instrumentation allowed for this type of flying, which previously had been a risky endeavor.¹⁸ The attack caused such disruption that the naval air unit had to be “raised from the dead” to let the maneuvers continue. However while in Hawaii, Twining almost ended his military career in a car crash which punctured his knee and chest. Doctors managed to save his leg, thanks in particular to a close physician friend.

In March 1932, Twining was sent to Fort Crockett, Texas to command the 90th Attack Squadron, part of the Third Attack Group. In February 1934 he took part in the short-lived Army Airmail delivery crisis as an engineering officer in Chicago for the Central Zone.

¹⁶ Twining, Oral History. Nov 1965.

¹⁷ “Instrument Flying” or Blind flying is flying the plane without the ability to reference the ground and area surrounding the plane. Then Captain James Doolittle first proved this was possible in September 1929 The year when Twining and his squadron undertook such instrument flying.

¹⁸ James Parton, *Air Force Spoken Here*, (Bethesda, MD: Adler & Adler, 1986), 99. Later General Ira Eaker made the first blind flight across the United States in 1936.

3.6 Alaska Flight

In July 1934, Twining received orders to join the historic Alaska flight led by Lt. Col. Henry "Hap" Arnold. This flight was an Air Corps effort to strengthen its faltering reputation because of its unsuccessful attempt at running the U.S. mail service earlier in the year.¹⁹ Using new Martin B-10 bombers, Arnold and his Air Corps pilots flew from Bolling Field in Washington D.C. to Fairbanks, Alaska, refuelling at various locations along the way.²⁰ However, early in the trip, Twining voiced his concern to Arnold about a serious shortage of repair technicians to support the flight. For this, Arnold summarily dismissed him from the mission, and he returned to Fort Crockett.²¹

Twining left Fort Crockett for Barksdale Field, Louisiana in March 1935, to serve as assistant operations officer of the Third Wing. He soon travelled to Maxwell Field, Alabama to enroll in the year-long course at the Air Corps Tactical School. This course emphasized the doctrine of offensive daylight strategic bombing which would guide the Army Air Forces throughout World War II.²²

3.7 Command and General Staff School

In August 1936, Twining's professional education continued when he began the Command and General Staff College at Fort Leavenworth, Kansas. The courses at Fort Leavenworth included the traditional cavalry, infantry, and map exercises, but also, a

¹⁹ Dik Alan Daso, *Hap Arnold and the Evolution of American Airpower* (Washington, D.C.: Smithsonian Institution Press, 2000), 135.

²⁰ Henry H. Arnold, *Global Mission*, 145-146.

²¹ Twining, Oral History. USAFA, Nov 1965.

²² Stephen L. McFarland and Wesley Phillips Newton, *To Command The Sky: The Battle for Air Superiority over Germany, 1942-1944* (Washington, D.C.: Smithsonian Institution Press), 30.

good amount of instruction in aerial warfare. The syllabus listed activities such as interpreting intelligence provided by reconnaissance aircraft, aviation organization, attack aviation, pursuit aviation, direct support of ground troops, troop movement by air transport, the uses of bombardment aviation, and the organization and use of an air force in attack and defense roles.²³

No records remain of Twining's individual performance at the school, though he was exposed to a great deal of information about strategic as well as tactical command. The Air Corps also organized a demonstration for the students unfamiliar with the use of airpower. No doubt the efforts of retired General Billy Mitchell, who had left active duty in 1926, and others had set the stage for this extensive air power curriculum during the late 1930s.

From 1937 to 1940, Twining served at Duncan Field in San Antonio, Texas as the Air Corps technical supervisor. Duncan Field was an aircraft maintenance and repair facility adjacent to Kelly Army Air Field.²⁴

²³ *The Command and General Staff School Regular Class Schedule for 1936-1937*. Fort Leavenworth, KS:1936.

²⁴ Handbook of Texas Online, s.v. "Duncan Field"
<http://www.tshaonline.org/handbook/online/articles/DD/qbd2.html> (accessed March 3, 2008).



Figure 1: Nathan Twining 1936-1937 Command and General Staff School Class Photo.

CHAPTER 4

WORLD WAR II

4.1 Early Staff Assignments

In August 1940, Twining began a series of brief assignments in Washington, where he saw first hand the start of the nation's involvement in World War II. That month Twining had been appointed Assistant Chief and, then, Chief of the Inspection Division in the Office of the Chief of the Air Corps. In this role, Twining supervised technical inspections on Air Corps equipment that would be needed in the coming conflict.

Major General Daniel E. Hooks, a 1st Lt. in 1940, said later of Twining, that he looked forward to an inspection visit from Twining because,

We knew he would not only tell us where we might be in error but would also show us how to correct our mistakes. He would tell us where other similar schools were running into trouble and how we could avoid such trouble. He was interested in helping us along, not just criticizing. He was expert, open, frank and friendly, and completely honest.²⁵

Twining's ability to discern potential problems and define their solutions would serve him well during his career. His ability to express his opinions without creating tension ensured that the men who served under him respected him. In addition, Twining maintained his ability to inform and instruct his subordinates to help them perform their job successfully.

The impact of the Pearl Harbor attack upon the American military stepped up the pace of war planning in Washington. In December 1941, Twining left the Inspection

²⁵ Puryear, *Stars*, 150.

Division to join the new Operations Division of Headquarters, Army Air Forces in Washington, where he assisted in preparing the initial plans for war in Europe and Japan. Though Twining took no credit for those war preparation plans, his later performance in the war would benefit from this exposure to the planning process.²⁶ By February 1942, he was successively Assistant Executive in the Office of Chief of the Air Corps, and then Director of War Organization and Movements in that office. During this time, Twining also received his promotion to brigadier general on 17 June 1942, which positioned him to assume higher commands during the war.

4.2 To the Pacific Theatre

Following his promotion, Twining was sent to the Pacific Theatre as Chief of Staff to Major General Millard F. Harmon, the Commanding General of the United States Army Air Forces in the South Pacific. In January 1943, Twining took command of his first combat organization, the Thirteenth Air Force. In July, he became Commander, Aircraft, Solomon Islands (COMAIRSOLS). This joint command was one of the first of its kind in the war. Twining's role was a six-month position, rotated among the leaders of the various services assigned to the area, with tactical control of all Army, Navy, Marine and Allied aircraft in the Southern Pacific Theatre.

The Solomon Islands campaign was costly in terms of men and equipment. Twining in particular clashed with Admiral Robert Lee Ghormley, overall commander of operations in the Pacific, about the logistical needs of his force. From the start of the war, those of Twining's men who had been on Guadalcanal faced numerous equipment

²⁶ Twining, Oral History, USAFA, November 1965.

deficiencies. The most serious was the poor quality of their primary airplane, the P-39 Airacobra, which had a relatively low ceiling and performed poorly compared to Japanese fighters.²⁷ In early 1943, the introduction of the twin-engine P-38 Lightning to the theatre improved the aerial defences of Guadalcanal; compared to the Airacobra, the P-38 could outrun or outclimb the Japanese Zero.

Though the Japanese Zero fighter was superior to the American planes at the beginning of the war, its pilots were of poor quality, due to that nation's reliance on pilots with little training while the supply of skilled U.S. pilots continued to grow.²⁸

Admiral Ghormley seemed inattentive to the needs of Twining's men on Guadalcanal. He would never leave his command ship, the Argonne, for any reason, claiming that his proper place was in the ships' communications center. "I kept telling him we had to have a logistic supply to support Guadalcanal, it's a hell of a mess," said Twining. Ghormley would never believe that the situation was as dire as Twining and his planning officer, Marine Corps Colonel DeWitt Peck, described it to him.²⁹

Besides deficiencies in equipment, there were other problems. The tropical diseases carried by mosquitoes also threatened the morale of Twining's men. For example, malaria affected 788 out of every 1,000 men, but the supply of medicine was not enough to cover the troops. Many of those serving in the whole Pacific were

²⁷ Twining, Oral History, 11/3/1967. Interestingly, the Soviet Air Forces used lend-lease P-39s with great success against Nazi Germany, mainly in the antitank and ground attack role. See Dimitr Loza. *Attack of the Airacobras: Soviet Aces, American P-39s, and the Air War Against Germany*. (Lawrence, KS: University of Kansas Press, 2001)

²⁸ Eric M. Bergerud, *Fire in the Sky: The Air War in the South Pacific* (Boulder, CO: Westview Press, 2000), 672.

²⁹ Twining, Oral History, 11/3/1967.

subjected to "mass trials by fever and chill, dehydration and deluge, dust and slough..."³⁰

After Admiral William "Bull" Halsey inspected the area, he quickly took over command from Admiral Ghormley, and as Twining later noted: "things started popping."³¹ Twining also believed that it was General Arnold, now the head of the Army Air Forces in Washington, who had convinced Fleet Admiral Chester Admiral Nimitz, the Commander-in-Chief, U.S. Pacific Fleet (CINCPAC), to remove Ghormley from his post. By ending the practice of wearing regulation neckties in the tropical heat, Halsey raised overall morale throughout the Pacific. Twining and Halsey had a good rapport; the two would always stay together when Halsey appeared in Twining's operational area. Halsey once asked Twining why he had never attracted malaria, to which Twining responded "a quart of whiskey keeps the malaria away."³²

Halsey immediately understood the importance of logistics in the Pacific. As Twining put it: he "didn't have to be taught a second time." Twining came to realize that naval officers were used to fixed bases, and not the forward base concept, which he felt would eventually win the war in the Pacific. The forward base concept simply stated that, in order to press the offensive against Japan, new bases would need to be found or taken from the Japanese, with the goal of eventually reaching and attacking their mainland. This type of campaign would result in a long chain of Allied bases in the

³⁰ *Morale in the AAF in World War II*. (USAF Historical Study No. 78. USAF Historical Division. Air University. 1953), 23-26.

³¹ Twining, Oral History. 11/3/1967.

³² *Ibid.*

Pacific and brought resupply and emergency facilities closer to the front line of battle. Twining felt that the Navy had preferred to maintain more safely situated bases in New Zealand and Hawaii, while using task forces against the Japanese fleet.

As Twining later said: "The idea was to win the European war first – which was sound...we had to hold the line out here because the Japs were really tough."³³

According to Twining, the victory at Guadalcanal in February 1943, "killed the Japanese," in the early period of the war. The "slot" which was the nickname for the Solomon Islands, New Caledonia and New Zealand area, was the key to holding back Japanese advances. The land and naval victories there "destroyed their air force package completely and all the sea traffic. Their battleships, cruisers and destroyers were badly damaged. They lost the bulk of their air force and navy in the battle right there."³⁴

4.3 B-17 Crash and Rescue

A month before the Guadalcanal success Twining had almost lost his life in a B-17 that went down in the Pacific. The bomber had been flying him and others in his party from Henderson Field on Guadalcanal to Noumea in New Caledonia, where he was to meet with General Harmon. He remembered that: "the first greeting I got was when I landed in an old B-17 on the water." Bad weather had made it impossible for the plane to land at Noumea, its original destination. Flight controllers had advised Twining's plane to fly to Efate Island. Twining later learned that searchlights and

³³ Twining, Oral History. 11/1965. 8.

³⁴ Ibid. 10.

beacons were lit up all over Efate, yet they saw nothing from the air and his pilot was forced to ditch the plane in the ocean.

According to Twining the landing was rough, yet no one was seriously injured, though one man "headed off for Tokyo" apparently confused. The fourteen men on the B-17, including Twining's Chief of Staff, Col. Glen C. Jamison, spent six days afloat in two life rafts, with two canteens of water and a can of sardines.³⁵ Gen. Twining did kill an albatross which the men feasted on, favoring the fish in its stomach rather than the albatross meat itself. Twining also took charge of the water rationing, doling out small capfuls of water periodically. The men made the most of the six days by toying with the sharks, even giving one a shoe to eat. Naval PBY patrol planes eventually spotted the rafts, and all the men were rescued.³⁶

In December 1943, Twining returned to Washington, D.C. for a thirty day leave, but once there, General Arnold directed him to take over the Fifteenth Air Force in Italy. Twining attributed his selection for this post to Arnold's recognition that he had done a good job in the Pacific, and would be an asset in the European Theatre. Twining's orders reached him while he was still on leave and he asked Arnold if he could see his family on Christmas Day before going to Italy. Arnold told him "NO! Get going."³⁷

³⁵ Richard Tragaskis. "Pacific Sage Rivals Ricks': Flyers Lived on Fish, Birds." *Times Herald*. Washington, D.C. February 3, 1943.

³⁶ The Consolidated PBY Catalina was one of the most successful planes used in World War II. The plane could land and take off in the ocean, which made it excellent for the search and rescue role. It was also used against submarines, in convoy escort duties, and for transportation.

³⁷ Twining. Oral History. 11/3/1967.

Arnold then relented, to the extent of letting him spend the morning of Christmas Day with his family.

Twining, along with Generals Ira Eaker and James Doolittle, was one of the very few USAAF (United States Army Air Forces) generals with experience in forming and commanding an Air Force from scratch. While the Fifteenth already had been operating for a short time, with General Doolittle as commander, it would grow under Twining to become the second largest U.S. air force of the war, only smaller than the Eighth Air Force, based in Great Britain.

This second of Twining's major USAAF commands during World War II would be the largest and most demanding assignment he would have in that conflict. By the end of the war in Europe, Twining would command over 1,900 planes and 89,000 men.

CHAPTER 5

THE STRATEGIC BOMBING CAMPAIGN

Strategic bombing can be defined as an effort to destroy an enemy's ability to fight. The idea of strategic bombing can be traced back to the origins of manned flight itself. Men first took to the air in balloons dating back to the eighteenth Century, and in gliders in the nineteenth Century, followed by the rigid airship, powered by the internal combustion engine, at the turn of the Twentieth Century. The engine also enabled the development of the aeroplane. In 1903, the Wright brothers conducted the first successful tests of their plane and by 1905 had developed a stable platform for coordinated and powered flight. Airplane development prior to World War I benefited from a variety of international pioneers including the Wright brothers, Count Gianni Caproni di Taliedo, Anthony Fokker, and Thomas Sopwith.

5.1 Early Air Theorists

The costly and stalemated ground warfare of World War I only gave the novel concept of aerial warfare more feasibility and general appeal. The early air theorists used this desire to reduce the human cost of war by proclaiming that bombing would strike decisively at the enemy's vital centers, and quickly end wars. These theorists included the Italian Giulio Douhet, who had experience with the design and construction of bombers. In 1913, Douhet turned to Count Caproni, who was already a pioneer in aircraft design, to build a bomber based on his ideas. Caproni's trimotor aircraft went through several design revisions, and in 1915 it was considered one of the best airplanes in the world at the time. Such a plane could remain aloft for over three hours

and carry a 500 pound bomb load. By the end of the war, Caproni planes were in the service of Great Britain, and France, as well as the Italian Air Force.³⁸ In addition, some Caproni planes had been flown by American naval units.³⁹

Giulio Douhet's 1921 work, *Command of the Air*, which was translated from Italian that year and read widely, called upon the nations of the world to develop their air power capabilities immediately or suffer defeat in the next conflict. His wide-ranging work drew upon nationalistic fervor in Italy and predicted a future battlefield dominated from the air. He even argued that an air force would be able to provide for the national defense of any country with little investment in money or manpower.⁴⁰

In Great Britain, Hugh Trenchard commanded the Royal Flying Corps in WWI and went on to found the Royal Air Force in 1918. Trenchard influenced the ideas of many air power proponents, including General Billy Mitchell. After World War I, Mitchell who briefly had flown and observed WWI air operations in France, and personally led the short-term American air effort there, campaigned stridently for an independent air arm. Mitchell believed that airpower was destined to be the prevailing method of war in the future, and that the airplane would serve a strategic role by attacking what Mitchell called the "vital centers" in enemy territory.

³⁸ Radko Vasicek. "Gianni Caproni went to extremes to build the ultimate airliner after World War I, creating a triple triplane." *Aviation History* July 2000, Vol. 10 Issue 6, p22-24.

³⁹ John Morrow, *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington D.C.: Smithsonian Institution Press, 1993), 340.

⁴⁰ Giulio Douhet trans. Dino Ferrari, *Command of the Air* (New York: Coward-McCann, 1942), 24-31.

By the time of the Second World War, the future development of aircraft and their capabilities would make more realistic the effort to attack vital centers, such as areas of industrial production, transportation, supply, and communications.

Mitchell also correctly predicted the importance of fighter cover during a strategic bombing campaign, without such protection bombers could not destroy the enemy's ability to wage war.⁴¹ In a public statement following the crash of a Navy airship, Mitchell's harsh criticism of President Calvin Coolidge's administration and its handling of military aviation led to his court-martial in 1925. Despite Mitchell's resignation after this incident, he continued to campaign for air power and wrote in his 1925 book that "the destinies of all people will be controlled through the air."⁴² Describing air power as the ability to traverse the globe without borders or restrictions, Mitchell also wrote that the airplane would make warfare fast and decisive, requiring much less money and loss of life.⁴³

Henry Arnold, one of the airmen who received their flight training from the Wright Brothers in 1911, also championed the cause of American air power in the interwar period. His views closely resembled those of Mitchell.⁴⁴ Arnold initially

⁴¹ McFarland and Newton, *To Command The Sky*, 3.

⁴² William Mitchell, *Winged Defense: The Development and Possibilities of Modern Air Power – Economic and Military* (New York: Putnam, 1925), 3. The best treatment of the life of Billy Mitchell is Alfred Hurley's *Billy Mitchell: Crusader for Air Power* (Bloomington, Indiana: Indiana University Press, 1975)

⁴³ *Ibid*, 24.

⁴⁴ Henry H. Arnold, *Global Mission* (New York: Harper & Row, 1949) 26-28.

wanted the Air Service to be a department within the Army, much like the Marine Corps was a department of the Navy.⁴⁵

When Arnold commanded Rockwell Field in California from 1922-1924, he sought to increase the appeal of air power to public opinion with the help of staff members Major Carl Spaatz and Lieutenant Ira Eaker who would later be major figures in the future Air Force. Arnold led the entertainment of Hollywood movie stars, the promotion of civilian aviation, the participation in creating aerial patrols to monitor forest fires and the conduct of nationwide demonstration flights.

During this same decade, General Mason Patrick, the former head of the U.S. Air Service in World War I France, emerged as the new Chief of the Army Air Service. Learning to fly at fifty-nine years of age, he acquainted himself with the work of the air theorists, but astutely dealt with the controversies sparked by Mitchell and other younger Army pilots. Working to win support for an Army aviation whose capabilities were being eroded by post-World War I military demobilization actions and increasingly rigid economy measures, Patrick won support in 1926 for a new organization, the Army Air Corps, that resembled the new department that Arnold and others had sought. Its development raised the hope of its airmen for enough innovation to begin to stay in step with technological advances and, eventually, to weather the impact of the Depression in the 1930s.⁴⁶ The war clouds that then appeared in Asia and Europe

⁴⁵ Davis, Richard G., *HAP: Henry H. Arnold: Military Aviator*. (Washington, D.C.: Air Force History and Museums Program, 1997.), 13.

⁴⁶ John F. Shiner, "From Air Service to Air Corps: The Era of Billy Mitchell" and "The coming of the GHQ Air Force: 1925-1935" in *Winged Shield, Winged Sword: A History of the USAF Vol.1* (Washington, D.C.: Air Force History and Museums Program, 1997), 77-134.

inspired President Franklin Roosevelt to seek the expanded Army air arm that by 1938 saw Arnold become a major general in command of the Army Air Corps.

On 20 June 1941 Major General Arnold assumed command of the newly created United States Army Air Forces (USAAF). President Roosevelt wanted a military air arm equal to that of the Royal Air Force, should the United States join the war in Europe.⁴⁷ General Arnold would serve under the Chief of Staff of the Army, General George Marshall.

5.2 Creation of the Fifteenth Air Force

Well before the Fifteenth Air Force was created, the strategic bombing campaign waged against Nazi-occupied Europe had begun in 1942, through the Eighth Air Force, based in Britain. In far smaller numbers than the USAAF leadership had planned for, U.S. B-17s and B-24s attacked German targets in the occupied territories. However, it would be 1943 before such bombers were able to fly into the German homeland to bomb targets there.

On 22 October 1943, General Dwight D. Eisenhower received a cable from Washington affirming that on 1 November the Fifteenth Air Force would be established within his command. The Fifteenth would serve primarily in a strategic role as part of Operation Pointblank, the Allied effort to destroy the German Air Force. General Carl Spaatz was named the Commanding General, United States Army Air Forces, Mediterranean Theatre of Operations (CG USAAF MTO) and he in turn appointed General James Doolittle as CG of the Eighth Air Force. General Ira Eaker would

⁴⁷ Davis, *Hap Arnold*, 169.

command the Mediterranean Allied Air Forces (MAAF). Under MAAF was the MATAF (Mediterranean Tactical Air Forces) comprising the Twelfth Air Force, and MASAF (Mediterranean Strategic Air Forces) which directed the Fifteenth Air Force and the RAF (Royal Air Force) 205 Group.

The year 1944 saw the long-desired increase in aircrews, equipment, and abilities of the Allied attack force to reach the desired level. This included the movement of the new Fifteenth Air Force and its bombers from North Africa to bases in Italy. These bases were in the occupied territory created by the invasion of Italy and were closer in proximity to Germany.

From January 1944 to May 1945, the Fifteenth Air Force was the southern arm of the aerial pincers against Nazi Germany and her satellites. The Fifteenth would destroy a major part of Germany's oil production and supplies, aircraft production and repair facilities, as well as the other industrial targets, which became significant factors in Nazi Germany's defeat. These major targets included the industrial areas of cities such as Ploesti, Vienna, and Berlin. Also, the Fifteenth carried out attacks on enemy communication lines, in support of advancing Allied ground forces, and in reducing Germany's air power.⁴⁸

By early 1941, requirements for a war with Germany and Japan had been laid out by the Air War Plans Division in AWPD-1: "Annex 2, Air Requirements of the War

⁴⁸ Testimony to members of the House Committee on Military Affairs 21 June 1945 – The Operations of the Fifteenth Air Force by Col. Elmer E. Rogers, Assistant Chief of Staff, A-3 Fifteenth Air Force. Maxwell AFB, AL: Microfilm Reel 8721, Slide 0157ff.

Department."⁴⁹ This plan called for an offensive air effort against Germany, and defensive campaigns against Japan and in the Western Hemisphere. This plan followed discussions with Great Britain which had resulted in the agreement that Europe would be the primary concern, if and when the Americans joined the war effort.

By the time of the attack against Pearl Harbor in December 1941, the USAAF had around 9,000 aircraft spread over 32 groups, and 292,000 personnel.⁵⁰ However, the vast majority of these aircraft were trainers (6,594), or outdated equipment. The USAAF's strategic bombing force in 1941 included only 288 B-17 and B-24 bombers. Arnold had given the command of the Eighth Air Force to Spaatz, while VIII Bomber Command, the Eighth Air Forces' subordinate bomber unit, was led by Ira Eaker. The strategic bombing of German-held territory did not begin until 11 June 1942 when thirteen B-24s of the Eighth Air Force under Spaatz attacked the Ploesti oil refineries.

The American commanders also clashed with their British counterparts over the methods used to attack Germany. Prior to the United States joining the war, the British had abandoned daylight bombing due to excessive losses. The American position was that their technology enabled successful daylight bombing, using planes equipped with precision bomb sights and men trained to use them.⁵¹ Daylight raids would also draw

⁴⁹ McFarland and Newton, *To Command The Sky*, 38.

⁵⁰ *Army Air Forces Statistical Digest: World War II*. Washington, D.C.: Office of Statistical Control, December 1945. Table 84 lists aircraft on hand by the AAF from November 1941 to August 1945.

⁵¹ Craven and Cate. Vol. II, 301.

out the German Luftwaffe so their fighters could be destroyed, thus creating an opportunity to achieve air superiority. But, the American forces had a long way to go.

These methods eventually would prove to be sound in practice, yet what stalled their inception until late 1943 were insufficient numbers of required technology and equipment. To bring about the destruction of the Luftwaffe would require more bombers and Allied fighter escorts whose range matched that of their bombers. Also, a major challenge to be dealt with was that the Germans learned to repair damaged refineries and production plants quickly, requiring numerous raids on the same location time and time again.

In July 1943, General George Marshall, the Army Chief of Staff, approved publication of Field Manual 100-20 Field Service Regulations, *Command and Employment of Air Power*. This document is customarily regarded as the declaration of Air Corps independence. FM 100-20 clearly stated that air superiority over the battlefield was the primary requirement in a land battle. This marked the beginning of a new doctrine for control of air units in combat. Fighter protection units were allowed to conduct their support operations independently, allowing them to seek out and destroy German defensive fighters, rather than remain tied to the bomber formations.

Prior to the creation of the Fifteenth Air Force, USAAF operations had been primarily conducted by the Eighth Air Force from England, and by the Twelfth Air Force in North Africa. The Twelfth Air Force supported the invasions of Sicily in July 1943 and Italy in September of that year. The Fifteenth Air Force began as part of a plan to move Allied air power into the Italian peninsula. Bases in Italy would put all of

southern Germany within bombing range, as well as two of that country's largest aircraft production plants.⁵²

In November 1943, the Fifteenth Air Force took control of the strategic bomber portion of the Twelfth Air Force, while the remainder of the Twelfth's fighters became the Twelfth Tactical Air Force. Doolittle initially commanded the Fifteenth and its first six heavy bombardment groups. An additional fifteen bomb groups slated for the Eighth Air Force would be redirected to the Fifteenth as well, along with long range fighter and reconnaissance groups.

General Eaker in England had opposed the new plan because he felt that the American bomber force should not be split up between England and Italy. Eaker favored the relative safety of the British airbases, as well as the inherent potential of having a single, large bomber force capable of striking together with all available firepower. He also felt that predictions of fair weather in Italy would prove to be incorrect, and more of a problem for attacking bombers.

General James Doolittle felt that flying conditions would be better in Italy compared to those in England, due to the milder climate. Doolittle would back his support with data showing that air operations flown from Italy would have more potential for success during the winter months from May to November. He also felt that compared to bases in England, the Italian bases would have better winter weather.

All of these discussions centered on weather at home base locations, not weather conditions en route to or around enemy targets. What was most important

⁵² Craven and Cate. Vol. II. 563-564.

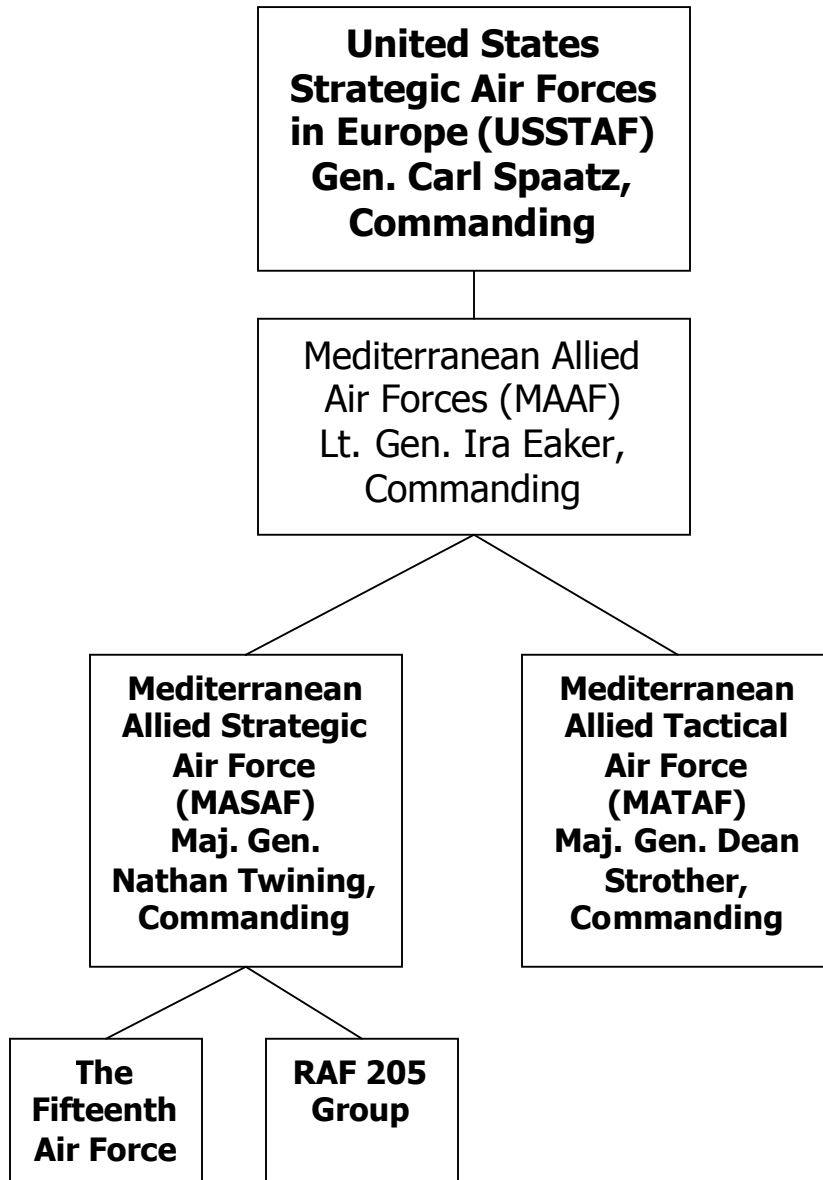
was establishing bomber formations after takeoff, which required adequate weather at the home base. Bombers frequently flew with no communication en route to a target, therefore they had to be in a good formation from the start of a mission into German held territory.

5.3 MAAF Chain of Command

The strategic plan for the American air effort in Europe was made in Washington, and orders initially came to General Carl Spaatz as commander of United States Strategic Air Forces in Europe (USSTAF). Spaatz would issue orders to the MAAF commander General Ira Eaker, who would oversee the campaigns of the Fifteenth Air Force, issuing broad directives to his commanders, including General Twining. These directives were also made with the advice of commanders such as Twining, but the details of operational planning were left up to the individual air forces.⁵³

⁵³ James Parton, *Air Force Spoken Here*, 354,

Figure 2: USAAF Chain of Command, European Theatre



CHAPTER 6

THE FIFTEENTH AIR FORCE

6.1 Aircraft Composition

The Fifteenth Air Force had begun in November 1943 with three bomb wings composed of B-17s, B-24s, B-25s and B-26s as well as P-38 and P-47 fighter bombers.⁵⁴ The Fifteenth would eventually grow to five wings of bombers, four with B-17s and one with B-24s, as well as two wings of fighters using P-38s and P-51s for escort and ground attack roles. In addition, the Fifteenth employed photographic reconnaissance planes, usually modified P-38s, that would determine bombing effectiveness.

The B-17 which Twining's men flew in 1944 and 1945 was part of a bomber evolution that benefited the aircrew involved, as well as the bombing mission in Europe. These later B-17s had expanded fuel tanks, allowing for a maximum of 2,000 miles of mission travel with a 4,000 pound bomb load. The B-17's defensive firepower also had expanded beyond what it had had at the beginning of the war. Twelve .50 calibre machine guns were to fend off enemy fighters, four of these weapons in turrets on top and on the bottom of the plane. Moreover, the crews had the benefit of improvements in protective armor and bullet resistant glass. The B-17 Flying Fortress built by Boeing was the bombing workhorse of the Fifteenth, compared to the newer Consolidated B-24 Liberator.

Since B-24s were less expensive in terms of materiel and manpower, American industry produced far more B-24 Liberators compared to the stronger B-17; in fact,

⁵⁴ Craven and Cate. Vol. II. 569.

more were produced than of any other type of allied airplane during the war. "It [the B-24] brought us back many, many times" said one Fifteenth Air Force navigator.⁵⁵ The B-24 also used ten .50 calibre machine guns for its defense. In comparison to the B-17, the B-24 had a range advantage of 850 miles but a smaller bomb load of 2,500 pounds. In Europe, airmen preferred the B-17 due to its higher resistance to enemy fire, while the B-24 was preferred in the Pacific due to its greater range.⁵⁶

The Fifteenth Air Force also had three fighter groups of P-38s and four groups of P-51s, all under the control of XV Fighter Command. The Lockheed P-38 was an outstanding and versatile fighter primarily used to attack ground targets such as bridges and rail targets. The P-38 carried four .50 calibre machine guns and could carry a bomb load of 3,200 pounds. The Fifteenth also used P-38s modified with a camera under their noses for bomb damage assessments and reconnaissance missions.

Prior to the availability of the P-51 Mustang, the Army Air Forces in Europe used the P-38 and P-47 Thunderbolt for fighter escort missions. External drop tanks were developed make the ranges of the fighter escorts equal to those of the bomber forces. However, the external tanks affected the planes' maneuverability until they were released. Also, German fighters learned to attack the bomber formations early in the mission, forcing escort fighters to jettison their tanks, and therefore shorten their range. Inevitably, the German fighters would wait at the edges of this fighter cover, and attack once the fighters were forced to return home.

⁵⁵ William Hermann, Oral History Interview (Denton, TX: University of North Texas Oral History Collection), 25.

⁵⁶ Craven and Cate.Vol VI. 204-208.

The P-51 Mustang became famous as the only fighter able to escort bomber formations into Germany and back without external fuel tanks, permitting such cover for an entire mission. The P-51 was the highest flying and longest range fighter of the war, and was armed with six .50 calibre machine guns, and could carry up to 2,000 pounds of bomb load.⁵⁷ This fighter defended bomber formations and attacked Luftwaffe fighters and bombers within their home territories. Prior to the development of the P-51 and external drop tanks for fuel, fighters escorted bombers to the limits of their fuel ranges and returned home, leaving the bomber force to defend itself.

6.2 Fifteenth Air Force Bases

Instead of constructing new bases in Italy, the Fifteenth Air Force used captured former German and Italian airfields or aerodromes located around the Italian cities of Foggia and Cerignola, mostly for the remainder of the war. However, Twining's headquarters was located further south along the Italian Adriatic coast at Bari.⁵⁸

General Arnold had clearly defined the Fifteenth Air Force's mission objective for Twining and his men a month before their arrival in December 1944. The directive contained four goals:

1. The destruction of the German Air Force.
2. Support of the Italian ground campaign.

⁵⁷ Craven and Cate.Vol VI. 214-218.

⁵⁸ See Map Next Page

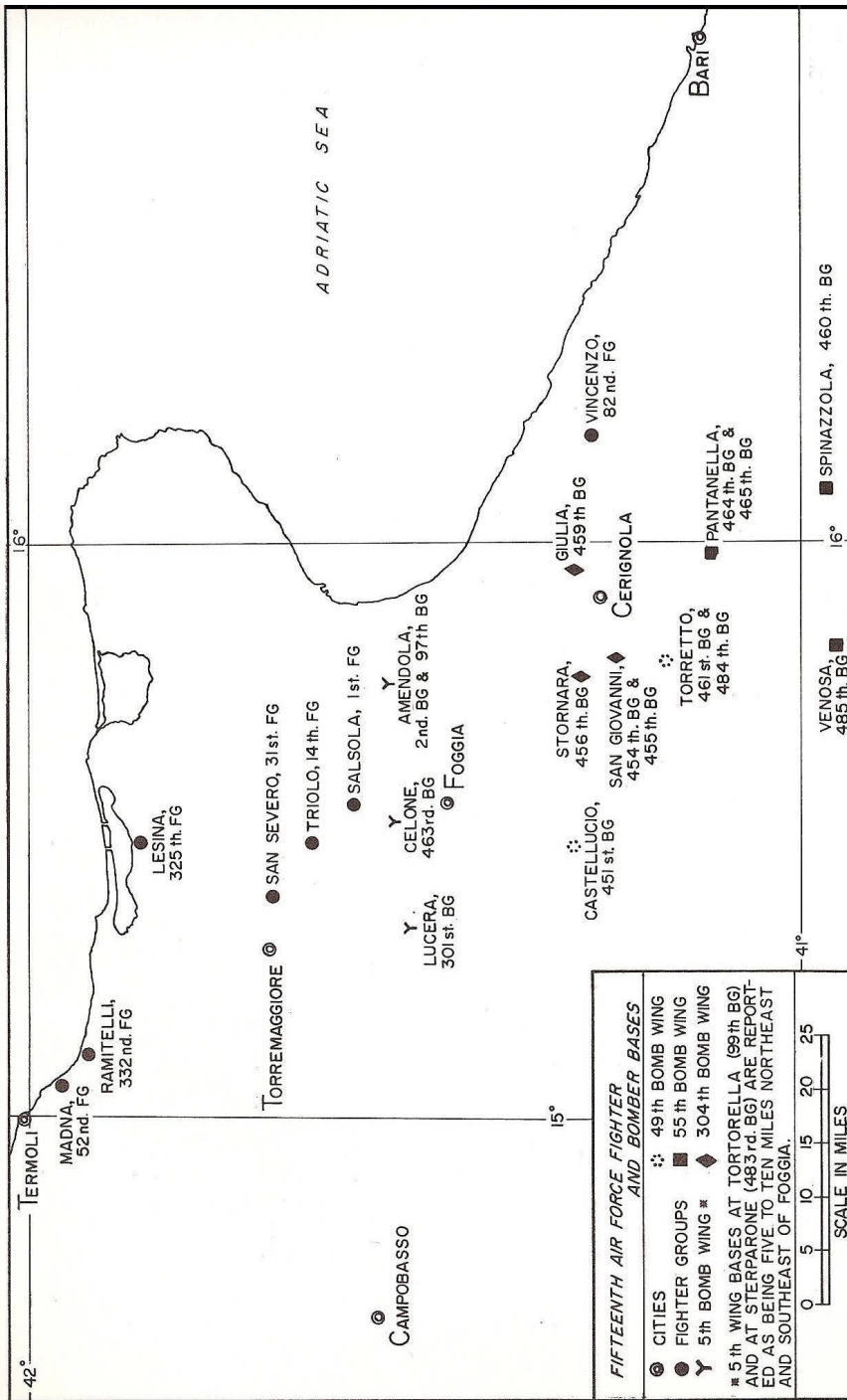


Figure 3: From Shepherd, William D. *Of Men and Wings: The First 100 Missions of the 449th Bombardment Group (January 1944-July 1944), Fifteenth Air Force, World War II.* (Panama City, Florida: Norfield Publishing, 1996), 4.

3. Participation in the Combined Bomber Offensive through the destruction of “vital centers” such as aircraft production facilities, oil fields, refineries, storage, and manufacturing.

4. Weakening the German presence in the Balkans.⁵⁹

6.3 Command Policies

Twining wanted his new air force to have as few growing pains as possible, and join the war effort on a par with the Eighth Air Force as soon as time would allow. When he took command in January 1944 he made clear to his subordinates that the main focuses of their air force were: “more bombs on the target” and: “control.” In explaining his imperatives, Twining related that what was important to him was “the existence of an organization in which integration of effort and responsiveness to command were outstanding attributes.”⁶⁰

Thus, Twining wanted his units to be at the ready and fully capable on a constant basis. He instituted a strict requirement for incoming bomber units; that as long as their personnel and equipment met the required standards, they had to fly a bombing mission within ten days of entering the theatre. Bomber pilots immediately joined veteran groups carrying out missions to acquaint themselves with the local base conditions and their flight routes. William Hathaway, a future U.S. Senator and

⁵⁹ Craven and Cate Vol .II, 572.

⁶⁰ Fifteenth Air Force History Vol. 1 Slide 0357.

Fifteenth Air Force navigator, remembered that his pilot flew a mission as co-pilot the second day after he arrived in Italy.⁶¹

Twining also kept a tight control over praise or criticism directed towards his men. Any communications involving commendation or criticism came through his office staff, even those from within smaller units. In this regard, Twining was ensuring that his men did not receive undue or undeserved criticism, but more importantly, he also sought to present commendations personally whenever possible. When Twining joined the Fifteenth, the presentation of awards and decorations had ceased, and he worked to correct this problem by the spring of 1944. Twining set the desired example, by personally presenting all unit citations awarded to his combat units. In addition, Twining ordered that visits to lower echelon units by his headquarters would be standard operating procedure for all of its sections.⁶²

6.4 Opposing Forces

Facing Twining in Italy and the surrounding German-controlled area was a force led by a formidable commander, Field Marshall Albrecht Kesselring, Commander-in-Chief of the Southwest Area, which comprised all of Italy. Kesselring was a seasoned aviator and commander, and in Dec of 1943 he had felt that the Allied air effort was: "tolerable because their air operations were so systematic and, in our view, not pushed

⁶¹ Personal interview with Sen. William Hathaway. 11/30/2007.

⁶² Fifteenth Air Force History. Vol. 1 Slide 0378-0380.

home.”⁶³ Kesselring believed that he could protect his area of operations from the Allied air and ground effort, even though he had severe shortages in men and materiel.

Kesselring was a unique individual among German commanders. If his memoirs are to be believed, he had no problem standing up to Hitler and making his feelings about the conduct of the war known. Like Twining in 1924, Kesselring joined the German Air Force earlier in the century in 1908, and he commanded Air Fleets in the invasion of Poland and the Battle of Britain. Kesselring was a fighter, yet the Allied advance up the Italian peninsula changed his opinion about the German situation, especially as it concerned air power: “With every step the conditions for an air war improved... We have no illusions about our inferiority.”⁶⁴

6.5 Weather

Twining would lead his forces against Germany from a new offensive front, hoping to force greater dispersal of its defenses, as well as to identify additional target areas for strategic planners. The weather conditions over Europe as a whole would be a significant challenge for all air commanders throughout the war. The weather in Italy also did not cooperate with Twining’s plans. In the first three months of 1944, approximately forty percent of the strategic missions of the Fifteenth were curtailed by lack of visibility both over German target areas and the Italian bases.

Reasonably good weather conditions over an air base would allow for the takeoff and gathering of a bomber formation, which was a necessity when bomber forces relied

⁶³ Albrecht Kesselring. Trans. William Kimber. *The Memoirs of Field Marshal Kesslering*. (Novato, CA: Presidio, 1989), 192.

⁶⁴ Kesselring Memoirs, 191.

on their formations for both protection as well as for bombing accuracy. Still, if a bomber force did get aloft and formed, the weather conditions over a target could scrap an entire mission. Since the United States Army Air Forces (USAAF) did not target civilian areas, its bombers could not release their ordnance over such unmistakable targets as civilian housing where no industrial capacity existed. This practice was in contrast to the German and British bombing campaigns against civilian population centers, aimed at destroying morale rather than industrial capacity.⁶⁵

6.6 "Big Week"

Twining's Fifteenth Air Force did begin with some veteran units. Prior to their transition to Italy, several units had supported ground forces at Kasserine Pass in Africa, and supported the 8th Army in the Western Desert. Twining's initial large-scale bombing operation with the Fifteenth in support of the CBO (Combined bomber offensive), in conjunction with the Eighth Air Force, was called Operation Argument, otherwise known as "Big Week" and took place from 11 January to 1 March 1944. This was an attempt by the USAAF as well as British bomber commands to both wear down the enemy's ability to respond with air power to the coming European invasion, as well as to eliminate German air power permanently. The bombers would be used in two ways during this operation. First, they would strike at enemy fighter plane production plants. Second, the bombers would be used to draw out German fighter defenses so Allied fighters could seek out and destroy them.

⁶⁵ Williamson Murray. *Strategy for Defeat: The Luftwaffe, 1933-1945* (Maxwell AFB, AL: Air University Press, 1983), 331.

Throughout much of 1943, German fighters and anti-aircraft artillery (AAA) had caused the American and British bomber forces many losses. The massive air effort continued attacks on German manufacturing, air bases, and logistical support from France to Germany, costing all the participating air forces dearly, but they achieved the desired effect of reducing the ability of Germany to continue the war.

One aspect of this offensive which caused Twining concern was the Fifteenth's shortfalls in materiel and fully trained pilots as compared to the support provided to the Eighth Air Force in Britain.⁶⁶ Twining's lack of long-range fighter support for his bombers forced him to curtail many missions. During its Big Week operations from January to March, the Fifteenth participated in only five hundred sorties against German aircraft manufacturing, compared to the massive commitment of the Eighth, with thirty-three hundred sorties. Still, Twining lost eighty-nine bombers in the course of only a few days.

The German defenders knew that the Fifteenth lacked long-range fighter cover and learned to focus on attacks coming from Italy. Yet the plan to draw German fighters into combat paid dividends, and the losses suffered by the German Air Force could not be rectified. From March 1944 forwards, the production of German combat aircraft would remain steady. However the effectiveness of Luftwaffe defense would decline due to the loss of experienced pilots, and increasing Allied fighter cover.⁶⁷

⁶⁶ Craven and Cate Vol. III, 336.

⁶⁷ Murray. *The Luftwaffe*. 226-229. And McFarland and Newton, *Command the Sky*, 222.

Poor weather also affected the German ability to respond to Allied attacks. The German fighter force lacked the ability to respond to radar bombing because it had problems both taking off from and returning to its bases in poor weather. This was due to a training deficiency: "shortages of fuel and the danger to trainees had led the Luftwaffe to de-emphasize bad weather flying in its training."⁶⁸ The continual Allied attacks, along with British nighttime bombing, reduced the German fighter force by thirty percent and their crews by sixteen percent. The replacements for these air crew losses were less experienced and considered to be: "as dangerous to themselves as enemy fighters," in bad weather.⁶⁹

6.7 Ground Support in Italy: Anzio and Monte Cassino

The first significant contribution on supporting Allied ground forces engaged in attacks in Italy by the Fifteenth Air Force came soon after Big Week. During the 22 January amphibious landing at Anzio, the ground forces met little resistance, until a German counterattack several weeks later put the invasion in jeopardy.⁷⁰ On 17 February, bombers of the Fifteenth dropped 972 tons of fragmentation bombs on German forces attempting to repel the beach landing, while fending off German fighters attacking the invasion fleet.⁷¹ In addition, supply targets such as marshalling yards and

⁶⁸ McFarland and Newton, *To Command the Sky*, 126.

⁶⁹ McFarland and Newton, *To Command the Sky*. 236-237.

⁷⁰ Parton, *Air Force Spoken Here*, 357.

⁷¹ Twining Papers. LOC. Fifteenth Air Force Summary of its Operations and its Results, 1 November 1943-8 May 1945. Fifteenth Air Force Printed Matter Folder.

rail lines in northern Italy and France were attacked, to reduce the potential for German resupply of forces in Italy.

The ground campaign in Italy progressed slowly following the Anzio invasion. Allied forces attacking up the peninsula also stalled at Kesslering's Gustav Line, a German-prepared defensive position south of Rome and stretching across Italy, with its strongest point at Monte Cassino. The most dramatic Allied ground support operation was the bombing of the Monte Cassino monastery, a monolithic Benedictine Abbey which dominated the landscape for miles around from atop the Cassino Mountain.

Several failed attempts to take the monastery by American, French, New Zealand and Indian troops led British Field Marshall Harold Alexander, commander of the 15th Army Group in Italy, to order the bombing. The commander of the New Zealand Corps, Lt. Gen. Bernard Freyberg initially suggested the bombing.⁷² After receiving his orders at MAAF (Mediterranean Allied Air Forces) headquarters, Eaker conducted a personal reconnaissance flight over the monastery. During this flight, he did see German positions and radio transmitters, confirming it to be an artillery spotting post for the defending Germans. In order to reduce civilian casualties, the Fifteenth had dropped warnings to the monks residing in the monastery that the bombing mission was coming.⁷³

On 15 February 1944, wave after wave of B-24 and B-17 groups flew against the German-occupied structure, dropping over one thousand tons of ordnance. The

⁷² Parton, *Air Force Spoken Here*, 360-364.

⁷³ Fifteenth Air Force History. Vol. 1 Slide 0644.

bombers practically levelled the monastery. The attacking Allied ground forces initially appreciated the Fifteenth's destruction of the monastery. However, the hopes raised by the large-scale bombing assault faded as the Allied troops advanced. The German defenders simply used the rubble created by the bombing as cover to repel several Allied assaults.

An interesting aspect of the attack is that the Allied ground forces seem to have been unaware of the incoming bomber force. An Air Corps report shows that "the men cheered as though witnessing a football game...they couldn't understand why we waited so long to bomb." It appears that no one on the ground responsible for the expected attack knew the bomber timeline:

We talked to dozens of officers and enlisted men and not one knew the bombing was to occur. It appears the men in the line were in the process of being replaced at the time of the bombing. If the ground forces could have known in advance that the monastery was to be bombed, it is felt that it would have fallen immediately.⁷⁴

On 22 February 1944 the Fifteenth Air Force participated in its first coordinated attack with the Eighth Air Force, bombing German aircraft manufacturing in and around Regensburg. Again on 25 February both air forces would focus all missions on this one target, however the Fifteenth would see the most opposition. At Regensburg the Fifteenth was attacked by 200 German fighters, while losing 39 bombers in the process. The requirements of the Pointblank and Operation Argument directives would split the

⁷⁴ Report of Ground Observation of Bombing of Monastery Cassino, Italy by 1st Lt. E.L. Sawyer, Air Corps. Twining Papers LOC Jan-Feb March 1944 Correspondence Folder

Fifteenth between CBO and ground support missions until the Normandy landings enabled them to expand their bombing efforts.⁷⁵

On the ground at Cassino the New Zealand troops' efforts to break through the rubble had come to a stop. Again Lt. Gen. Freyberg requested a bombardment prior to the ground assault. In addition, in a letter to Eaker, General Arnold proposed a spectacular bombing effort against the town of Cassino, drawing on all available aircraft he would "break up every stone in the town behind which a German soldier might be hiding."⁷⁶ Eaker did not agree with Arnold's optimism, but followed his orders and sent the MAAF bombers against the town.

The 14 March attack on Cassino proved to be a problem for Twining. His bombers, following a low-level attack by tactical bombers from the Twelfth Air Force, performed incredibly poorly. Loose formations, incorrect altitude, and an inexperienced bombardier who released his bombs far too early resulted in their striking some friendly forces on the ground. Very few injuries or deaths resulted, yet the overall performance led to a written reprimand from General Eaker to Twining.

Indeed, an assemblage of Allied officers who had gathered to watch the bombing found themselves vulnerable to bombing attacks. Among them was British Lieutenant General Oliver Leese, commanding the 8th Army. He complained to Eaker that "his own personal caravan was turned upside-down and his mess destroyed." One wing each of the B-24s and B-17s hit Allied troops on the ground, which was not reported to

⁷⁵ Parton, *Air Force*, 365.

⁷⁶ *Ibid*, 372.

Twining.⁷⁷ Eaker directed that Twining or a representative from his staff be on the ground as observer the next time bombs were dropped so close to friendly troops, and that they also be in radio communication with the lead bombers.⁷⁸

The entire incident rattled Twining's command, and the details of its outcome are important evidence of his ability to rectify a serious problem of this kind. An investigation ordered by Twining resulted in an explanation of sorts which spread blame on various aspects of the attack. These included poor air formation discipline, smoke obscuring the target, and malfunctioning bomb racks.⁷⁹ The main outcome of the incident was action by Twining to ensure that his air crews received additional training.

Kesselring, thought by the Italian population to be a butcher because of his crackdowns on partisans, claimed that he had always tried to maintain the integrity of such monuments as the Monte Cassino abbey. He wrote in his memoirs that the monastery was never occupied, and the bombing was therefore unnecessary.⁸⁰

Twining immediately began a bombardier school to speed up the training and operational effectiveness of his units. When weather did not allow combat missions, he sent his air units to bombing practice areas. Additional training in unit leadership and in gunnery resulted; which would benefit the still-growing air force when more bombers and fighters began to arrive.

⁷⁷ Report of Ground Observation of Bombing of Monastery Cassino, Italy by 1st Lt. E.L. Sawyer, Air Corps. Twining Papers LOC Jan-Feb March 1944 Correspondence Folder

⁷⁸ Eaker to Twining. 17 March 1944. Twining Papers. LOC. Box 17. Jan.-March 1944 Correspondence.

⁷⁹ Craven and Cate Vol. III 365-67.

⁸⁰ Kesselring Memoirs, 200.

By June 1944, the Fifteenth had its full complement of aircraft in twenty-one heavy bomb groups and seven long-range fighter escort groups. The total number of about nineteen hundred aircraft would benefit Twining's command position substantially, and help support Operation Overlord, the invasion of Europe by Allied forces that same month. The Fifteenth helped bomb occupied French coastal and inland areas, and slowed German reinforcements to the battle area by attacking detrainment and loading stations, rail yards, and communication lines leading into France. This, along with the already strong campaign against German oil supplies and aircraft assembly plants, led the Director of Intelligence for United States Strategic Air Forces in Europe (USSTAF) Brigadier General George McDonald, to write that "the GAF (German Air Force) is fading and failing." McDonald's report not only emphasized enemy troop congestion in Paris but also the low enemy morale due to the troops being forced to march long distances as a result of destroyed rail lines, as well as ammunition and fuel shortages, largely caused by Allied air power.⁸¹

6.8 Ploesti

Twining and the Fifteenth Air Force faced one of their greatest challenges in attacking the Rumanian industrial city of Ploesti and its vast oil fields, the largest source of crude oil for Nazi Germany. A 1943 attack on Ploesti by the Ninth Air Force had resulted in a large loss of American life, and whatever damage done to its refineries was quickly repaired. Twining put his men up against what he knew to be a well

⁸¹ McDonald, George C. "Report: Effects of Allied Air Power on the First Month of Overlord Operations." 6 July 1944. Twining Papers LOC. Box 17. June-July-Aug 1944 Correspondence Folder.

defended and hazardous objective in Ploesti. His leadership against this hard-fought target shows that he dearly cared for his men, but that he also knew that oil production was one of the primary means by which Nazi Germany could keep fighting the war. The Fifteenth attacked Ploesti nineteen times over the course of the war, once with fighters alone.

Over Ploesti itself, the Fifteenth lost 225 bombers out of the 804 that it lost over all oil targets combined. These targets included Vienna, Austria; Budapest, Hungary; Blechhammer, Poland; and Ruhland, Germany.⁸² Hundreds of bombers and airmen from England and Italy were lost over the oil fields and refineries feeding the German war machine, yet those involved, including Twining, considered the sacrifice justified. Ploesti was the primary target for the Fifteenth Air Force until it was determined to be useless late in the war. Twining said of the men lost over Ploesti: "They gave their blood for Hitler's oil. They drove a hard bargain which will never be forgotten."⁸³

The additional training for Twining's men also paid off in bombing results against Ploesti and other targets. Eaker would later compliment the turnaround which the Fifteenth experienced between February and August 1944, calling it a "veteran organization with very high standards of accuracy and operational effectiveness."⁸⁴

In a 1945 *Stars and Stripes* article, Twining wrote that by 19 August 1944, the monthly oil output of Ploesti had been cut ninety percent, from 700,000 tons of crude

⁸² Talk to members of the House Committee on Military Affairs: The Operations of the Fifteenth Air Force. USAFA Reel 8721.

⁸³ Twining Papers. LOC. Recording by Maj. Gen. Twining at Rome 5 April 1945. 1942-1944 Fifteenth Air Force Correspondence Folder.

⁸⁴ Eaker to Twining, 24 August 1944, Twining Papers LOC.

oil down to 77,000 tons.⁸⁵ At the end of the battle over Ploesti, Twining flew into Rumania with his boss, the Commander-in-Chief of the Mediterranean Allied Air Forces, General Ira Eaker. The Rumanian who supervised the area told them that the air actions had caused one hundred percent failure in crude oil production. In addition to the devastating bombing efforts of the Fifteenth, the postwar United States Strategic Bombing Survey credited the Russian advance into Rumania, as well as the mining of the Danube River (the main transportation route for Ploesti oil into Germany), with stopping its oil production.⁸⁶

The missions against Ploesti proved to be the most challenging for Twining and his men. On those missions flown by both American and British bombers, 2,277 men were lost or missing and 270 aircraft were lost to German fire.⁸⁷ The Germans continually moved fresh AAA batteries into the area, and developed new ways of disrupting the bomber missions with smoke generators. On learning of an incoming bomber mission, Germans on the ground would fire up smoke generators that obscured the target area, forcing the bombers to attack blindly into the smoke or divert to secondary targets or home. At least one USAAF crewman, a B-17 ball turret gunner, felt that the smoke pots were a failure:

The smoke was only started when the first planes were detected and still thin enough that the lead bombardier could easily see his target. The smoke

⁸⁵ Nathan Twining, *Stars and Stripes*, April 5, 1945.

⁸⁶ United States Strategic Bombing Survey Summary Report (European War), Sep. 30, 1945, 9.

⁸⁷ Twining, Oral History, 11/3/1967.

columns from those bombs acted as good target locators for the waves of planes following, and therefore the smoke screen was not very effective.⁸⁸

A navigator with the 376th Bomb Group remembered Ploesti as a very difficult target when the smoke was effective. One mission required the bombers to fly over the fortified city twice, due to the inability to see the targets through the haze thrown up by German smoke pots. Flying over the city in daylight, targeted by flak from all angles drove some men to tears: "We found our turret gunner curled up in the back of the plane crying like a little kid."⁸⁹ The effort against this priority target cost the USAAF dearly, not just the Fifteenth.

The eventual availability of H2X radar, adapted from a British version in 1943, would reduce the smoke's effectiveness. The H2X was an air-to-ground radar which could identify large concentrations of buildings, and indicate exactly where refineries were located. Another method used to counter the smoke generated by the Germans, was a long, continuous formation of bombers sent against the refineries. The lead planes would not be able to bomb effectively, but the inevitable dissipation of the smoke concentration due to wind currents would allow those aircraft in the middle and end of the attack formation to hit their targets.

General Twining earned his men's respect by joining them on bombing missions to "see what was going on." One thing Twining would not allow himself to forget was the experience of the men at the front lines during combat. He made it a point to make

⁸⁸ Ackley, Douglas, *Twenty-Seven and a Half Missions in the Fifteenth Air Force*, (New York: Vantage Press, 1997), 24.

⁸⁹ Hathaway interview, 11/30/2007.

sure his men were as well cared for as much as possible. The "Europe First" policy agreed to by the Allied leaders at the Arcadia Conference in 1941-42, had established that the war in Europe would be the priority goal for equipment and supplies. The supply problems which had plagued operations in the Pacific were less of a problem in the European Theatre. He happily recalled:

For the first time in the war I could sit back and see a real stockpile coming in – both men and material. We could sit down and relax and not worry about running out of fighting material, and it was a very satisfying thing to watch. It's just more than you can almost ask for in war.⁹⁰

The fact that the European theatre was supplied better than the Pacific signalled that the war in the Europe was coming to an end.

In the European Theatre, Twining also encountered problems with Russian bureaucracy. He felt that communication with the higher levels of Russian military command were deliberately made impossible. Russians forces also shot down returning American and British bombers and took their crews prisoner, or refused to return rescued prisoners in a timely manner. Although in order to eliminate friendly fire, Russian and American commanders shared "rules of the day" and restricted fly zones, the Russians still continually ignored these rules, downing damaged bombers and capturing their crews.⁹¹ Twining said later that he and Hap Arnold "never trusted

⁹⁰ Twining, Oral History, 11/1965.

⁹¹ These were put in place so that American and Russian forces converging on Germany would not overlap their attacks, resulting in friendly fire. Twining did tell his men that if they found it necessary to land or fly over Russian territory, due to damage or technical problems, that he would back them, and he did. One overflight resulted in a Russian complaint to Washington, for which Twining received no punishment.

them.⁹² Still Twining praised Russian front line units: "They understood they were fighting a war, but it was the back echelon that caused all the trouble. To work with the Russians was absolutely impossible."⁹³

6.9 Shuttle Bombing

In February 1944, General Spaatz ordered the Fifteenth and Eighth Air Forces to begin missions to Russia, as part of the "shuttle bombing" idea to distract German attention away from the Normandy invasion.⁹⁴ Discussions also took place about sending bombers from the Fifteenth on shuttle missions to England, allowing them to bomb further west into France. However, concerns about lack of repair facilities in England forestalled executing that part of the plan.

The missions into Russia, code named Operation Frantic, initially resulted in some enthusiasm for the concept, and Twining's boss, General Ira Eaker, even led the first bombing mission. However, working alongside the Russians proved too difficult for the American forces. A lackluster Russian fighter response to a major German attack on the Poltava base where USAAF bombers were based, stirred bad feelings between the two allies.⁹⁵

⁹² Twining, Oral History, 11/3/1967.

⁹³ Ibid.

⁹⁴ Memo Spaatz to CG, Eighth Air Force, Spaatz Papers, LOC, Operations: Shuttle Attacks Folder.

⁹⁵ Craven and Cate Vol. III, 310-315. And *Shuttle Bombing Operations Utilizing Bases in Russia*, Twining Papers LOC 1944 Correspondence Folder.

6.10 Pathfinder Bombing

During the poor weather of the European Winter, the Fifteenth resorted to Pathfinder-led bombing runs. Twining felt that his air force was far ahead of any other in its innovations related to this practice. The British first began Pathfinder bombing, marking the bomber route or target with incendiaries to guide the bomber force into its targets, as well as stationing a Master Bomber above the force to radio movement orders to the planes below.

The Fifteenth Air Forces' version of Pathfinder was a radar unit mounted on a lead bomber, one for each seventeen bombers in the attack. The Fifteenth also used a PDI-AFCE (Pilot Direction Indicator / Automatic Flight Control Equipment) control for its B-17s which eliminated the need for radio communication during a mission. The PDI directed the pilot of individual bombers towards the target heading, while the AFCE maintained the airplane's course until bombing commenced. When properly used, this equipment took a great deal of the flying strain off the pilots, and resulted in more accurate missions.

The Fifteenth also developed a Pathfinder control chart highlighting all important targets, as well as composing the first complete Pathfinder navigational maps for the USAAF in Europe. Inspectors from the 8th Air Force reported that the Fifteenth Air Forces' use of the Pathfinder equipment was more efficient than that of the Eighth, and should be adopted throughout the Army Air Forces.⁹⁶

⁹⁶ Twining to CG MAAF. 15 May 1944, Twining Papers LOC, Box 17. April-May 1944 Correspondence Folder.

When weather would not allow for either Pathfinder-led or traditional strategic bombing, the Fifteenth would conduct "Lone Wolf" bombing against specific targets in day or nighttime by both heavy bombers and long range fighters.⁹⁷ Twining and other commanders were put under great pressure to carry out the bombing campaign. He maintained his forces and overcame the obstacles which the European weather presented, and pressed the attack as best he could while ensuring his men flew in as safe conditions as possible. Even though Twining and other leaders wanted their men and equipment to operate in the best conditions possible, 1944 in Europe proved to be difficult for all air operations.⁹⁸

Twining's Staff Weather Officer, Lieutenant Colonel Roy Nelson, presented to the Fifteenth's unit historian a good description of the variety and complexity in the weather they faced. He wrote that weather affecting the Fifteenth can be separated into three varieties: Base weather, Route weather, and Target weather. In addition the conditions in Europe changed according to the season, Spring and Fall, Summer, and Winter.⁹⁹

The challenge to a commander like Twining was to interpret the information given him by weather officers and decide whether an attack should take place. If the local base weather was bad, the decision was simple, but what about targets hundreds of miles away such as Ploesti or Vienna? This was a daunting challenge, and in order to

⁹⁷ Twining to Arnold, Spaatz, 29 July 1944, Twining Papers LOC, Box 17. Jun-July-Aug 1944 Correspondence Folder.

⁹⁸ Watts, Barry D., *The Foundations of U.S. Air Doctrine: The Problem of Friction in War* (Maxwell AFB, AL: Air University Press, 1984), 61.

⁹⁹ Memo from Lt. Col Roy Nelson to Fifteenth AF Historian, 12 May 1945, *The Fifteenth Air Force History*. Vol. I Maxwell AFB, AL: Microfilm Reel 8706, Slides 0131-0133.

meet his responsibility as the Fifteenth Air Force Commander, Twining had a large staff of experts to provide him with the kind of information he needed to make command decisions.

Surrounding Twining during every morning planning meeting was a staff composed of numerous experts in all aspects of strategic and tactical aerial warfare. These included an Operations Officer, Tactical Officer, Plane Officer, a Fighter-Pilot Advisor, Intelligence Officer, one man responsible for knowing German tactics and order of battle, and another responsible for knowing the location of enemy Antiaircraft emplacements. The staff also included the Fifteenth Air Force Bombardier, Navigator, Ordnance Expert, Radar Expert, Operational Analysis Officer, and the Weather Officer. It must also be noted that each and every man on Twining's staff had to have seen combat, he would not allow otherwise.¹⁰⁰

These men worked to provide Twining with all the information available on the enemy capabilities to defend, as well as the Fifteenth Air Forces' capability to attack, so that he could decide the best means to go about the bombing campaign for the day. Twining would only allow for one daily meeting with his staff, discouraging additional meetings which took attention away from combat efficiency.

As the Fifteenth Air Force commander, Twining established his practice of discouraging the production and retention of redundant paperwork. He ordered that correspondence, reports and records be kept to a minimum by all units under his

¹⁰⁰ Testimony to members of the House Committee on Military Affairs 21 June 1945 – The Operations of the Fifteenth Air Force by Col. Elmer E. Rogers, Assistant Chief of Staff, A-3 Fifteenth Air Force, Maxwell AFB, AL: Microfilm Reel 8721, Slide 0157ff.

command. All paperwork was forwarded to his Adjutant General and reviewed for its historical value; the rest was burned.¹⁰¹

Twining also commanded as a part of the Fifteenth Air Force, the 324th Fighter Group, born out of the veteran 99th Fighter Squadron under Lt. Col. Benjamin Davis. The 324th also included the new 101st, 301st and 302nd Fighter Squadrons. These were P-51 Mustang squadrons composed of African-American pilots. Initially wary of the squadron's potential but happy to have the planes, Twining accepted the unit. The performance of the group was under continual scrutiny, some of it caused by prejudice, yet Twining came to believe that the African American pilots progressed nicely and performed as well as any other group in his command.¹⁰² The story of the 324th is a triumphant one for race relations and the American military.

The 324th Fighter Group's P-51 "Red Tails" logged a record number of enemy kills because of a previously unknown degree of unit integrity. The group's 99th fighter squadron had remained in the United States since 1942, prepared for deployment. Delays and indecisions as to where to send this unit allowed for further training, yet hampered their ability to gain combat experience. In 1943, the squadron left for North Africa and began a slow progression into combat, during which its people learned a great deal.¹⁰³ When these airmen joined the Fifteenth Air Force, they were combat-ready and performed as well as any others. The group recorded its first enemy kill in

¹⁰¹ Fifteenth Air Force History, Vol. 1 Slide 0371

¹⁰² Twining. Oral History. 11/3/1967.

¹⁰³ Ulysses Lee, *The United States Army in World War II. Special Studies: The Employment of Negro Troops*, (Washington, D.C., Center for Military History: 1966), 466.

July 1943, with 1st Lt. Charles Hall downing a FW-190. The 324th Fighter Group as a whole would record 109 air victories over Luftwaffe aircraft during the war.

6.11 Partisan Support

The Fifteenth also contributed to the Allied resistance effort in Europe, especially as it pertained to Eastern European partisan groups in the Balkans. Twining sent an intelligence officer to the headquarters of Marshall Tito in Yugoslavia to improve the procedure by which combat crews shot down in the region were returned. Tito in turn asked for and received tactical and strategic assistance in Yugoslavian territory through the Fifteenth which would continually bomb German lines of communication and supply in this region.¹⁰⁴

Another Yugoslav partisan and political rival to Tito, was Gen. Drag Mihailcovic who also aided the Fifteenth in its mission and assisted in recovery of personnel. Mihailcovic sent a representative to work with the Fifteenth, and asked for a small group of officers to work with the partisans. He provided weather reporting, as well as aircraft information. The OSS (Office of Strategic Services) became involved after this contact, advising Twining that the Serbian support and resistance was genuine, but they might use the relationship for propaganda purposes. Twining was also ordered not to write that his Yugoslav liaison helped in organizing evacuation operations.¹⁰⁵ Tito would later execute Mihailcovic in 1945. No doubt, the OSS was correct in advising

¹⁰⁴ Twining to Eaker. 5 May 1944 and Tito to Twining 18 April 1944, Twining Papers LOC. Box 17 April-May Correspondence Folder.

¹⁰⁵ Twining to Mihailcovic 30 August 1944 and. Mihailcovic to Twining 30 July 1944 and OSS to Twining 29 Aug 1944, Twining Papers LOC. Box 17, June-July-Aug 1944 Correspondence Folder.

Twining to refrain from allowing either of these men a propaganda advantage in the region.

Twining's Assistant Chief of Staff, A-2, Colonel C.A. Young, gave the most candid interpretation of the Balkan intervention and its purposes. He said that the Balkan Operations, "never had a high priority" over strategic bombing plans. However when speaking about the Balkan situation, he also revealed what Twining and others did not. Col. Young's interview shows that the Fifteenth supported Tito in his civil war against Mihailcovic, bombing targets the former recommended when the weather prevented strategic bombing.¹⁰⁶

There was nothing sinister in this. The goal of Twining and his command when dealing with the partisans was always to use them to rescue their downed airmen. Without partisan support in the rough Balkan countryside, far fewer airmen could have returned home on their own. Twining supported the missions of Tito and Mihailcovic, and Tito exclusively later in the war, but it is obvious that Twining kept the partisan leaders at arms length when it came to propaganda.

6.12 Recovery of Allied Personnel

Also, the MAAF established a dedicated unit to recover personnel whom the partisans had rescued. The ACRU (Air Crew Recovery Unit) was stationed at Bari and while responsible to HQ MAAF for operational orders, its was administratively controlled by Twining. The ACRU had several B-25s and C-47 transport planes which were used

¹⁰⁶ Interview with Colonel C.A. Young, Assistant Chief of Staff, A-2, Fifteenth Air Force, 27 May 1944 by Major W.B. Manhard and Lt. C.B. O'Brien, Fifteenth Air Force Historical Section, *The Fifteenth Air Force History* Vol. II. Maxwell AFB, AL: Microfilm Reel 8706, Slide 1471.

to recover men from assembly points in Balkan territory. The ACRU also participated in supplying the partisan forces with food, clothing, medicine, and other supplies. The missions of the ACRU were frequently flown at night and into unfamiliar territory, which makes their achievements all the more admirable.¹⁰⁷

Twining considered the recovery of Allied personnel held in Nazi territory a top priority. Following the end of the fighting in Europe, Twining grounded 36 B-17s from the Fifth Bomb Wing, converted them for transport use, and flew to Rumania to liberate 1,162 Allied prisoners, many of them in bad shape, who had been left behind by the retreating Germans.¹⁰⁸ This was part of Operation Reunion, which was soon followed by the similar Operation Freedom bringing about the return of three hundred men from Bulgaria through Cairo, Egypt. Twining took great pride in the fact that his air force had made every effort to recover their own people, as well as other Allied personnel. This concern for welfare also endeared Twining to his own airmen still participating in the war, as all must have been relieved to know that they would not be left behind.

Edward Nelson, a B-24 flight commander with the 464th Bomb Group remembers General Twining as a commander who cared deeply about the welfare of his troops. Nelson recalled one incident at the Panatella air base where the commander, Col. Bonner, had ordered a stockade built for men who refused to fly further combat missions. Bonner was a son-in-law of General Benjamin Foulois. On a base visit, Twining encountered the stockade, with men locked in it, and ordered their immediate

¹⁰⁷ Fifteenth Air Force History, Vol. 1, Slides 0672-0674.

¹⁰⁸ Craven and Cate, Vol. III, 298.

release. Twining told Bonner: "This is a volunteer Air Force, if they do not want to fly, they can do something else."¹⁰⁹

The Fifteenth Air Force also dropped fully half of its available bomb load on communications targets within its range of operations. This is often an overlooked aspect of strategic bombing, yet played an important part in advancing Allied armies in both the Western and Eastern Fronts. These attacks focused on rail lines, bridges, and roads as well as supplies headed for German units. This campaign was considered to be less important than the destruction of the Luftwaffe, but when weather would not allow mass formation bombing, communication targets were a good option.

Striking communication targets helped to slow the mobility of the German army and prevent its ability to fight. Twining's Chief of Staff said: "We set out to prevent the enemy from getting the engine to the airplane, the ammunition to the gun, or the gun to the soldier." Many of these missions took place high in the Italian Alps. Bomber crews considered a 14,000 foot raid in the Brenner Pass a "low-level raid."

Until the end of war in Europe in May 1945, the air and ground war in Italy never really concluded for the Allied forces involved. For example, the war on the ground in northern Italy remained a hard fought stalemate until the end of the war, and this required tactical assistance from the air until the German surrender in May 1945. In fact, the largest air operation in which the Fifteenth took part was part of Operation Wovser on 15 April 1945. On that day 1223 heavy bombers of the Fifteenth took to

¹⁰⁹ Edward Nelson, personal interview with author, Feb. 3, 2008.

the air in support of the United States 15th Army Group and the beginning of its spring offensive in Italy.

This was a near-maximum effort by the Fifteenth Air Force, utilizing 98.6% of its available bombers and resulted in the near destruction of the remaining German forces in Italy. The final mission for the Fifteenth would come soon after on 1 May 1945 when 27 B-17s bombed the Salzburg Main Marshalling Yard in Austria.¹¹⁰

Twining successfully conducted his portion of the war in Europe on the tactical level, the kind of result Major General Haywood Hansell described as “the successful execution” of war plans.¹¹¹ Yet the evidence from his command reveals that Twining did much more. The fact that Twining proved able to maintain an offensive bomber campaign, while struggling against the numerous obstacles he and his men encountered, show that he performed exceptionally well.

For a young major general of 47, Twining had gained a great deal of command experience in Italy, experience which would propel his military aviation career ahead. The command of the Fifteenth Air Force taught Twining that no challenge is too big to overcome, and in Italy he faced many. One big challenge was the weather in Italy, which did not behave as the Air Corps meteorologists predicted, and therefore reduced the available flying time of the Fifteenth Air Force.

¹¹⁰ Operation WOSER: The Participation of Heavy Bombers in Final Victory in Italy, Fifteenth Air Force Historical Section, 1945, Twining Papers, LOC, Printed Matters Folder.

¹¹¹ Haywood Hansell, *The Air Plan that Defeated Hitler*, (Atlanta, Higgins-MacArthur: 1972), 277. Haywood Hansell was instrumental in the planning of bombing operations prior to and during World War II. He also commanded a bomb wing in Europe and the XXI Bomber Command near the end of the war in the Pacific Theatre.

Also, the continual needs of the advancing Allied ground forces for tactical support drew fighters and bombers away from the Combined Bomber Offensive. Finally, the political acumen used to maintain relations with allies such as the Russians and Balkan partisans showed that Twining was more than a tactical commander. He had a far brighter future.

6.13 Return to the Pacific

Following the end of the war in Europe, Twining was promoted to lieutenant general, and returned to the Pacific to briefly command the Twentieth Air Force. The Twentieth had been commanded by Major General Curtis LeMay, and Twining was more than generous in his praise of LeMay. Twining appraised the takeover as "like taking over the Notre Dame football team from Knute Rockne." This was high praise, and rightly so as LeMay had become the principal architect of the air war against Japan.

Twining did believe that the atomic bombs, which were dropped by aircraft under his command, were necessary. The 509th Bomb Group unit assigned the A-Bomb mission had been attached to the Twentieth Air Force but no more information had been given to him. When the order to drop the bombs came to Twining, and he initially refused, "I said I'm in command. I'm not going to drop any A-bomb. I'd never heard of it. Why should I stick my neck out?"¹¹²

After some discussion in Washington, Twining was given clearance to view and be briefed on the bomb. As he told it:

¹¹² Twining. Oral History, 11/3/1967, 12. It should also be noted that in reality, Twining had no control over the use of the bomb. President Truman authorized its use, and had Twining tried to interfere he would no doubt have been relieved.

I walked over and saw this 'bucket' sitting over there. I pretty near threw up when I saw it – protuberances, junk hanging all over it. I thought it was a model – a dummy.

As to the necessity of using the bomb, Twining said: "The atomic bomb, for my money, saved the invasion."¹¹³

Twining had an opportunity to speak with an unnamed West Point classmate, who was involved in planning the eventual invasion of mainland Japan. According to Twining, he sat his classmate down and "talked to him like a Dutch uncle and said this invasion is unnecessary."¹¹⁴ Twining's recent briefing on the capabilities of the atomic bomb had convinced him that the invasion would soon become unnecessary.

The Japanese potential for resistance was still substantial. Twining knew that "there wasn't a thing left in that whole empire that could resist except men with rifles – I think they probably had a couple million men under arms still in the empire." What Twining did understand was that the loss of American and Allied men would have been staggering. If the invasion of Japan had taken place, "We would have lost a great many people, unnecessarily."¹¹⁵ Twining's dedication to the lives of his men and those fighting for the Allied cause, as well as his recognition of President Truman's authority, showed in his carrying out the Presidential decision to drop the bombs.¹¹⁶

¹¹³ Twining, Oral History, 11/3/1967.

¹¹⁴ Ibid.

¹¹⁵ Twining, Oral History, 11/1965. 19.

¹¹⁶ It must be noted that Twining was not the sole reason for the dropping of the atomic bomb on Japan. Had he refused to issue orders, he would have naturally been replaced. His motivations for acquiescing were strictly based on his newfound knowledge that the bomb would save thousands of lives, both American and Japanese, had an invasion of the home islands occurred.

Recounting the lessons of World War II in 1965, Twining felt that the nation had to be prepared for anything:

We must be ready. We must have the best. There is no substitute for the best technology. We must have it. We must work on it, and we have to maintain an arsenal of atomic weapons of all kinds and let the world know we've got them for every conceivable type of mission and we may use them and we're not ever going to say we're not going to use them. I think I learned that. I hope we don't forget it.¹¹⁷

For his service during WWII, Twining received several awards and decorations.

These included:

Navy Distinguished Service Medal

Army Distinguished Service Medal

Legion of Merit with Oak Leaf Cluster

Distinguished Flying Cross

Air Medal with Oak Leaf Cluster

European and Pacific Theater ribbons with five battle stars each

Great Britain's KBE (Knight Commander of the Order of the British Empire)

France – Croix de Guerre with palm and Legion D'Honneur

Poland – Gold Cross Medal with swords

Yugoslavia – the Order of the Partisan Star, First Class

¹¹⁷ Twining, Oral History, 11/1965. 20.

CHAPTER 7

POST WORLD WAR II SERVICE

Twining returned to the United States from the Pacific in October 1945, to become Commanding General of the Air Materiel Command at Wright-Patterson Field in Ohio. He would remain in this assignment until October 1947. This was a risky position in that one of his responsibilities was to reduce greatly the number of civilian workers at the base. Officers associated with mass firings rarely tended to win higher command, since they were likely to have drawn the criticism and ire of Congressmen representing those who lost their jobs.

Major General Lauris Norstad told an interviewer that General Spaatz told him: "Nate could and should have great responsibility in this Air Force, and I've decided he ought not be destroyed by that bunch of civil service people out at Dayton. So we got Nate out of there, and that's when he was assigned to Alaska."¹¹⁸ Twining felt that his position at Wright Field was both good and bad. He felt he had been "shanghaied" out of Washington, while at the same time he was glad to be away from the unification crisis there.¹¹⁹

¹¹⁸ Puryear, Stars, 158.

¹¹⁹ The "Unification Crisis" began during the last days of World War II. The issue was whether America's armed forces should be unified in a single service. The services of course were not unified, but the Air Force was given status as a single and separate service from the Army in the National Security Act of 1947.

7.1 Alaskan Command

In October 1947, Twining took over as head of the Alaskan command at Fort Richardson. There was a concern among the U.S. armed services that Alaska was vulnerable to a Soviet invasion. There was a “sense of hopelessness” among the men serving there, mainly due to a lack of equipment. The Alaskan defense forces had no ground troops, no naval support and only two fighter squadrons, all to defend the entire Alaskan area.

Twining motivated his men with his usual stern talk:

You people look fairly intelligent, so why in the hell are you running scared? First, remember the other guys’ problems are as bad as ours, maybe worse. Also remember the enemy puts on his pants one leg at a time just like you do.¹²⁰

The straight talk from Twining relieved the tension in Alaska and was characteristic of his manner of addressing problems: directly and without compromise.

While in Alaska, Twining received permanent promotion to major general on 19 February 1948.¹²¹ Though he maintained a positive attitude in the presence of subordinates, Twining had a poor opinion of their living conditions: “really pretty sad – a disgrace to this country.”¹²² Twining worked to give his men in Alaska better facilities. The building of barracks in Alaska had been stalled for the previous two years, so Twining decided to involve lawmakers. He invited Congressmen and political

¹²⁰ Puryear, Stars, 159.

¹²¹ Twining’s wartime rank was not permanent, he was reduced to permanent brigadier general at the end of the war. This was a common practice and did not reflect on the performance of the officer. The dramatic post-war reductions in manpower necessitated the loss of rank for the majority of officers who elected to remain in service. But career officers such as Twining could be promoted to their permanent ranks.

¹²² Twining, Oral History, 11/1965. 23.

leaders in Washington to Alaska for a “fishing trip.” These visitors saw the living conditions and acted to fund the base at Anchorage for the betterment of the men living there.

Twining returned to Washington in July 1950 as Deputy Chief of Staff for Personnel, a three-star assignment. This position suited him well, as he understood the value of both enlisted men and officers to the Air Force. The cost of training these men was high, and retaining them in the Air Force became a priority. Twining pushed to make a career in the Air Force competitive with the civilian world, with better pay, housing and the feeling that their jobs were valuable.

7.2 Chief of Staff of the Air Force

In June 1953, Twining was named Chief of Staff of the Air Force, succeeding General Hoyt Vandenberg. Vandenberg, who was already suffering from poor health due to cancer, retired following a disagreement with Secretary of Defense Charles Wilson over a reduction in the Air Force budget.

The reasons for Twining’s selection as Chief of Staff were all positive according to historian Edgar Puryear:

He was the logical choice for the job. He was extremely popular in the Air Force; one of the Air Force’s most distinguished elder statesmen, General Spaatz favored his selection; and, finally, he had never been identified closely with either the big bomber men or the tactical air boosters.¹²³

Identification with either the bomber or tactical air camps could put Twining in a bad position if he were to encourage policy supporting one or the other group. Since

¹²³ Puryear, Stars, 159.

Twining thought of air power as a useful tool using all available means including bombers and fighters, his position remained unbiased. As Chief of Staff, Twining sought to gain for the Air Force a guarantee of its position in national defense, strongly believing that his service had established its place.

Twining felt that air power was considered an important part of warfare, and the time had come for the Air Force to settle down and work with what it had. General Vandenberg had pushed hard for a 137 wing Air Force without success. When Twining learned that a 127 wing Air Force was the best Secretary of Defense Charles Wilson would allow, his response was: "No complaints." The discord that the disagreement had caused between General Vandenberg and Wilson was still apparent, and Twining wanted no part of it.

Twining also cautioned his officers against interservice rivalries and got along well with Admiral William Radford, the Chairman of the Joint Chiefs of Staff. He told his people: "If you've got a chip on your shoulder, get it off. We're getting along all right. Don't pick fights with other services."¹²⁴

General Twining had a straightforward way of solving problems in the Pentagon. General Bruce Holloway, then a staff officer (earlier one of the Flying Tigers and, later, Commander-In-Chief, Strategic Air Command) said that: "General Twining had a very uncluttered mind. He would always do things in a simple way with a simple solution. He didn't bother with thinking about all the possible aspects of bureaucratic and political pressure." Holloway quoted Twining's typical comments about dealing with paperwork:

¹²⁴ *U.S. News and World Report*, June 29, 1956, p. 63.

"One of my problems is all this excess paper. A lot of it doesn't amount to a hill of beans." Twining then opened three drawers full of paperwork in his desk. He said, "You know what I do? Unless I get something I know I've got to handle right away, I just throw it all in there and let it marinate for awhile. You'd be amazed how much of this takes care of itself. Every once in a while somebody comes in and goes through it, and will say to me, "Chief, you better take care of this."¹²⁵

As he had made clear during his service with the Fifteenth Air Force, Twining did not care much for excessive or redundant paperwork. What did matter to him were the men under his command, whom he considered himself responsible for. General Bernard Schriever, head of the Air Force's Western Development Division working on intercontinental ballistic missiles said that: "If he had confidence in you, and respected you, he would then delegate without question. You always had the feeling that 'By God, he's supporting me.'"¹²⁶

When Twining did not know or understand people, the treatment was slightly different. Lt. Gen. James Doolittle witnessed a briefing for Twining and said that he would:

sit there politely bored and would never cut you off. But he would tell you when he had had enough. His face sort of went blank, and pretty soon he'd lean over to the nearest guy and say in a low voice, "Man it was the biggest fish you ever saw."¹²⁷

This lack of patience did not conflict with doing his job as the Air Force Chief of Staff. An article profiling Twining said:

¹²⁵ Puryear, *Stars*, 160.

¹²⁶ *Ibid*, 160.

¹²⁷ James H. Doolittle, Quoted in Puryear, *Stars*, 161.

He's nobody's dumbbell and most of his opponents have found him a tough, unrelenting adversary in a horse trade. In Joint Chiefs' meetings, where a bevy of Philadelphia lawyers could easily become confused and distraught, Nate lights up a cigar and keeps a clear eye on the real objective. In Air Force eyes, his biggest and greatest victory came when he blocked Army attempts to move into the long-range missile field.¹²⁸

Twining also supported the military policy of President Eisenhower and John Foster Dulles, his Secretary of State. The idea of massive retaliation, which ensured that NATO allies would be more than capable of repelling any Communist aggression with nuclear weapons, was a policy that Twining agreed with. Twining said that: "It was a fine thing to have, on the record, for our allies who were weakening."¹²⁹

The support of NATO allies and the bolstering of democratic nations abroad was a main focus of the Eisenhower administration, as it was for Gen. Twining. The focus of support lay in air power, as the job could not be done alone by ground forces. On the atomic bomber force, Twining said that the government, "didn't have enough money for everything,... so you had to place your money where it could do the best good in the quickest time. I still think it was as sound as a dollar."¹³⁰

The buildup of the Strategic Air Command bit into the budget of the U.S. Army and caused a great deal of confrontation in Washington. Secretary of State John Foster Dulles supported the Air Force because "he knew this is the thing that was going to

¹²⁸ Jack Wilson. "Service Rivalries Aren't Likely to Ruffle the Air Force's Calm Nate Twining," *Look Magazine*, February 23, 1954, 18: p. 120. Quoted in Puryear. Stars. 161.

¹²⁹ Nathan F. Twining, Oral History Interview, John Foster Dulles Oral History Collection. Princeton: Princeton University Library, March 16, 1965.

¹³⁰ Twining, Dulles Oral History, 7.

keep peace in the world."¹³¹ The idea of a Russian attack on America or her allies was a real source of fear at this time, and the foreign relations of the U.S. as well as its military policy reflected this.¹³² Twining's feelings about the Russian threat were no doubt shaped by his experiences with them during World War II.

Twining appreciated the direct views of Dulles, which called for immediate resolution to potential worldwide conflicts. Dulles told Twining and the other Chiefs,

Whenever you do something, I don't care what it is, or how you're invited in, or anything else – when you put a soldier, sailor, or marine ashore in a foreign country with a gun in his hand, you be ready to go right straight through with it to Peking or Moscow if necessary – be ready for the second step. And don't go over half loaded.¹³³

During the Dien Bien Phu crisis in 1954 the State Department told Twining that the French base must be saved "at all costs." Admiral Radford, the Chairman of the Joint Chiefs of Staff, and Twining agreed that the only way to ensure the French would not be overrun was to use nuclear weapons:

I still think it would have been a good idea – to take three small tactical A-bombs – it's a fairly isolated area; Dien Bien Phu – no great towns around there, only Communists and their supplies. You could take all day to drop a bomb, make sure you put it in the right place. No opposition. And clean those Commies out of there and the band could play Marseillaise and the French would come marching out of Dien Bien Phu in fine shape.¹³⁴

Twining felt that this use of nuclear weapons would have been acceptable, and more importantly, would have sent a message to the "Commies" that it might happen

¹³¹ Twining, Dulles Oral History, 8.

¹³² Intelligence Briefing: Soviet Russia, Twining Papers, USAFA, Box 3 Folder 1.

¹³³ Twining, Dulles Oral History, 11.

¹³⁴ Ibid, 29.

again. During this matter, Admiral Arthur Radford, the Chairman of the Joint Chiefs, solicited the opinions of all the service Chiefs of Staff. Only Twining backed his plan to bomb the areas surrounding the besieged base. Both Dulles and Eisenhower did not approve of this course of action, mainly due to possible political repercussions, yet Twining's conviction remained steadfast.¹³⁵

Eisenhower trusted and appreciated the advice and opinion of Twining, even though he did not always accept Twining's recommendations.¹³⁶ After he retired in 1960 Twining also criticized new methods of retaliation: "Now they talk about flexible response and control – which to me is a bunch of junk. You just don't do these things unless you're going in to win."¹³⁷

Twining would use variations of this analogy throughout his time as Chief of Staff and as Chairman of the Joint Chiefs, and in his writing in retirement. Twining criticized the handling of the war in Vietnam and the Bay of Pigs invasion, as "playing half way."

7.3 Chairman of the Joint Chiefs of Staff

His success as Air Force Chief of Staff led President Eisenhower to nominate Twining to become Chairman of the Joint Chiefs on March 26, 1957. Twining accepted the job of Chairman for practical and unselfish reasons. He did not want the Air Force

¹³⁵ George C. Herring and Richard H. Immerman. "Eisenhower, Dulles, and Dienbienphu: 'The Day We Didn't Go to War' Revisited", *The Journal of American History*, Vol. 71, No. 2. (Sep., 1984), 348. Interestingly, this article presents the opinion that Eisenhower and Dulles came closer to advocating a strike than their memoirs show.

¹³⁶ Eisenhower Press Conference, 20 August 1958, John T. Woolley and Gerhard Peters, *The American Presidency Project* [online]. Santa Barbara, CA: University of California (hosted), Gerhard Peters (database). Available from World Wide Web: <http://www.presidency.ucsb.edu/ws/?pid=11178>.

¹³⁷ Twining, Oral History, 11/1965. 32.

to lose the opportunity of having one of its own as Chairman. At the time, Twining was in fact looking forward to retirement. He had no political goals for the future. Yet, his ability to work well with all members of the services, his integrity and straightforward style all contributed to making him the right choice for the job.¹³⁸

Twining also maintained his support of land-based aviation throughout his career, yet not so nearly as ferociously as others. Twining recognized the need for carrier aviation, yet felt that it was not truly a strategic weapon. "They're for an in-and-out job – landings, support landings, support evacuations, and in some situations if the enemy doesn't have any air or submarines, you can use them just like land-based."¹³⁹ Twining did not appeal strictly to hard-line Air Force dogma which called for sole use of air power. Twining felt that all services could and should use their capabilities to fit the given situation. This acceptance of other viewpoints made him a leader that everyone could stand behind.

Twining entered the job of Chairman of the Joint Chiefs with a clear and direct manner of leadership, strongly behind the policies of Cold War Massive Retaliation and the use of nuclear weapons. Twining's career up to this point taught him the proper management techniques which would enable him to oversee America's military forces for the next four years. Twining never lost his hard-nosed, straightforward attitude which gained him so much respect throughout his career.

¹³⁸ Puryear, Stars, 162.

¹³⁹ Twining, Oral History, 11/1965. 12.

CHAPTER 8

CONCLUSION

During his service as a commander in World War II, Nathan Twining weathered the trials presented by two different combat theatres while commanding three separate Air Forces, the Thirteenth and Twentieth in the Pacific, and the Fifteenth Air Force in Europe. The constant challenge of friction in war as evidenced by the troublesome European weather, ferocious enemies, and the challenges of command relationships all were significant obstacles. The fact that Twining faced and overcame these challenges show that his time as commander of the Fifteenth Air Force was a successful one.

CHAPTER 9

NOTE ON AVAILABLE SOURCES

The available material on the career of Nathan Twining is vast and covers his career well from World War II and up to his time as Chairman of the Joint Chiefs of Staff. The largest resource is the Library of Congress Manuscripts Division, which holds most of Twining's personal papers. The majority of the material is post World War II, focusing on his time in Washington as Air Force Chief of Staff, and later as Chairman of the Joint Chiefs of Staff. However, there is still a great deal of World War II material. His WWII papers have more material about his service in the Pacific Theatre than in any other. Of particular interest, the Commander, Aircraft, Solomon Islands (COMAIRSOLS) radio messages are in several folders, along with several operational histories of the early Thirteenth Air Force. Twining's papers also include his personal flying records and a small amount of biographical material.

The Fifteenth Air Force holdings are even more useful. There are several correspondence folders for memos between Twining's Fifteenth Air Force and both Generals Spaatz and Eaker. This author concentrated on material related to the Fifteenth Air Force, but there is a great deal more available. Some messages are interestingly feisty, but the rest is official and unremarkable. In addition, the papers of Generals Carl Spaatz, Ira Eaker, and Henry Arnold are also at the Library of Congress, which is helpful.

The United States Air Force Academy (USAFA) in Colorado Springs, Colorado also has a collection of Twining's personal papers on topics such as carrier warfare and the

effectiveness of strategic bombing. These topics could be a useful part of a broad overview of the post-World War II unification controversy.

The USAFA also has a great deal of correspondence between the major United States Army Air Forces (USAAF) commanders. Often there are carbon copies of the same material spread between the various collections. The most useful of the material related to Twining is in several boxes of his personal correspondence, some of it noteworthy. A strong aspect of the Academy's library is its collection of relevant oral history interviews, including several of Twining, as well as of Generals Spaatz, Eaker, Arnold and other leaders.

The Air University at Maxwell Air Force Base in Alabama also has probably the largest storehouse of Air Force documents. A big advantage is that this material can be acquired on microfilm. Maxwell holds the only official history of the Fifteenth Air Force that this researcher knows of, as well as numerous valuable oral histories. The oral history work of Edgar Puryear, which is cited frequently in this thesis, is also available at Maxwell. His published work, *Stars in Fight*, on the personalities of air force leaders relied a great deal on these interviews.

There is a copious amount of material about Twining, yet one aspect of the man which will worry any researcher is that Twining spoke and wrote so very little. He kept no diary or journal, and rarely wrote in anything more than a formal manner to friends and family. Twining did write a book after retirement championing the value of nuclear weapons and the need for national preparedness, but the book received poor reviews. To bring to light the actual words and feelings of the very private Nathan Twining still

poses an enormous challenge. However, I for one am still happy that I took the first few steps.

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