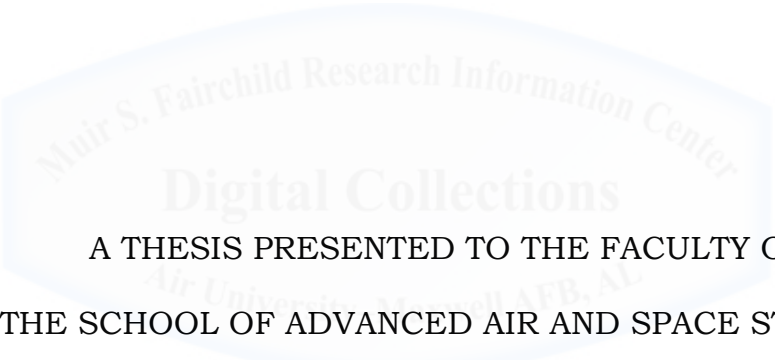


“ENDEARING LEADERSHIP OF ENDURING ORGANIZATIONS”:  
GENERAL NATHAN F. TWINING AND THE DICHOTOMOUS AIR WARS  
OF THE THIRTEENTH AND FIFTEENTH AIR FORCES DURING WORLD  
WAR II

BY  
MAJOR JOHN C. STRATTON



A THESIS PRESENTED TO THE FACULTY OF  
THE SCHOOL OF ADVANCED AIR AND SPACE STUDIES  
FOR COMPLETION OF GRADUATION REQUIREMENTS

SCHOOL OF ADVANCED AIR AND SPACE STUDIES  
AIR UNIVERSITY  
MAXWELL AIR FORCE BASE, ALABAMA

JUNE 2011

## APPROVAL

The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

\_\_\_\_\_  
DR. THOMAS HUGHES (Date)

\_\_\_\_\_  
DR. JAMES M. TUCCI (Date)



## DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.



## ABOUT THE AUTHOR

Maj John Stratton is a 1997 graduate from the United States Air Force Academy, where he earned a bachelor's degree in Political Science. Upon graduation, Stratton attended Euro-NATO Joint Jet Pilot Training at Sheppard AFB, TX, where he received an assignment to fly the F-15C. After completing initial qualification training in the F-15C at Tyndall AFB, FL, Stratton was assigned to the 27th Fighter Squadron at Langley AFB, VA. Subsequently upgrading to Instructor Pilot and Mission Commander, Stratton flew missions in support of Operations NORTHERN WATCH and SOUTHERN WATCH, and responded to the attacks of 9/11 by flying multiple Operation NOBLE EAGLE missions in defense of the United States. Upon completion of his three-year tour at Langley, Major Stratton received a second operational assignment to the 58th Fighter Squadron at Eglin AFB, FL. Within days of arriving, Stratton deployed with his squadron in support of Operation IRAQI FREEDOM, where he led seven combat missions as a Mission Commander and Defensive Counter Air Package Commander. After attending the USAF Weapons School, Stratton served as the chief of Weapons and Tactics for the 44th Fighter Squadron and the 18th Wing at Kadena AB, Okinawa, Japan. After a short stint with the 67th Fighter Squadron as the Assistant Director of Operations, Stratton returned state-side where he attended Air Command and Staff College at Maxwell AFB, AL, and graduated in 2009 as a Distinguished Graduate. Upon completion of the School of Advanced Air and Space Studies, Major Stratton will be returning to Langley AFB, VA, to serve as the Strategy Branch chief for Air Combat Command.



## ACKNOWLEDGMENTS

I would to thank Dr. Tom Hughes for being my mentor and thesis advisor this year. Although the genesis of this paper was firmly rooted in his ideas—which represent those kinds of things that only a master historian would wonder about—he was equally masterful at providing guidance and unique perspectives that were critical to allow the journey to become personal to me, and ultimately reflect my ideas and interpretation of the research. He personifies the moniker of humble, approachable, and credible, and is a shining example of the efficacy of the citizen scholar's deliberate education and preparation of the warrior scholar. In short, he embodies all that is *elemental* about SAASS and it has been my distinct honor to work with him this year. I am a better Air Force officer because of it.

I would also like to thank my reader, Dr. Jim Tucci. Although he joined the team late in the game, his comments and guidance were insightful and deliberate toward making this a more complete and focused thesis. I sincerely appreciate the time spent polishing and revising the work on my behalf.

Finally, without my amazing wife and children, none of this would have been possible, or meaningful. Words do not adequately express my gratitude for their patience and loving words of encouragement throughout this year. They continue to provide an unwavering source of motivation and inspiration and I am humbled by their own selfless service to this country as military dependents. They are the purpose, the passion, and the pride in my life.

## ABSTRACT

This thesis analyzes the air wars waged by the Thirteenth Air Force in the Pacific and the Fifteenth Air Force in Europe during World War II while under the successive command of Maj Gen Nathan F. Twining. By using General Twining as a common denominator to study these two theaters, the author assesses how the United States Army Air Forces, as well as air leaders like Twining, responded to an air war in one theater that was fairly well anticipated and consistent with pre-war airpower doctrine, and one in another theater that was unanticipated and inconsistent with pre-war notions of airpower. The author starts by providing biographical background on General Twining before he departed for the Pacific theater in 1942 to expose the experiences throughout his career that influenced his ideas on airpower and leadership. The author couples this with a broad-brush look at the Army Air Forces before the war to determine how they were organized, what they believed, and how they were equipped as an institution leading up to hostilities in World War II. The results of the pre-war analysis show that Twining was an acculturated Airman and his beliefs were consistent with institutional doctrine, which claimed that airpower could be decisive through the strategic bombardment of an enemy's industrial centers. In the next two sections, the author takes a case study approach to the air operations of the Thirteenth Air Force from January 1943 through December 1943 and the Fifteenth Air Force from January 1944 through May 1945. The final section of the study compares and contrasts the case studies to determine how the commander, and the organizational structure of the numbered air forces, adapted the application of airpower to fit the requirements of the operational environment and emerge victorious in both situations—one that was anticipated and one that was not.

## CONTENTS

Chapter	Page
DISCLAIMER .....	ii
ABOUT THE AUTHOR .....	iii
ACKNOWLEDGMENTS .....	iv
ABSTRACT .....	v
INTRODUCTION.....	1
1 THE PRE-WAR YEARS.....	3
2 WELCOME TO THE JUNGLE: TWINING AND THE THIRTEENTH AIR FORCE IN THE PACIFIC.....	22
3 CLUB MED: TWINING AND THE FIFTEENTH AIR FORCE IN EUROPE.....	59
4 ENDEARING LEADERSHIP OF ENDURING ORGANIZATIONS....	86
BIBLIOGRAPHY .....	113

## Illustrations

### Figure

1	Map of the Solomon Islands.....	47
2	Depth of Penetration of Fifteenth Air Force Bombers into Europe from Operating Bases in Italy .....	64

### Appendices

1	Assignment Timeline.....	110
2	Promotion Timeline.....	112

## Introduction

Gen Nathan Farragut Twining's service to his nation encompassed more than four decades of the most formidable years in the history of the United States and the world. Narrowly missing combat action in the First World War after graduating from an accelerated curriculum at West Point in November 1918, Twining rose through the ranks of the Army's air arm to achieve the rank of brigadier general as the US entered combat operations during World War II. Subsequently ascending to the rank of lieutenant general by the culmination of world-wide hostilities on V-J Day, Twining was one of few American commanders that went straight through the war commanding three Numbered Air Forces: the Thirteenth in the Pacific theater, the Fifteenth in the Mediterranean, and finally, the Twentieth back in the Pacific theater days before the end of the war. Despite achieving the rank of 4-star general and becoming the third chief of staff of the Air Force, and the first Airman to hold the position of chairman of the Joint Chiefs of Staff, General Twining regarded his command of those three Air Forces, and the work he did to help win the war, as his greatest contribution to the Air Force.<sup>1</sup>

The purpose of this thesis is to examine General Twining's contribution during the war by focusing on his command of the Thirteenth Air Force in the Pacific theater and the Fifteenth Air Force in the European theater. These were very different commands, in very different theaters, in very different situations amidst a global war. Not only did these commands pose significant challenges to the employment of airpower, based on the diverse geographic location and physical operating environments of the two theaters, they also challenged the core institutional beliefs held by Army Air Force (AAF) leaders at the time.

---

<sup>1</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 2, Albert F. Simpson Historical Center, Maxwell AFB, AL.

Testing every issue from command and control to roles and mission, airpower was applied effectively, but differently, in each combat theater. By using General Twining's command time and experience as a single lens through which these distinctly different air forces can be viewed, it will serve to illustrate how these issues were resolved by the commander, by the numbered air force, or by the circumstances pertaining to the individual issue or theater. In essence, this thesis delves into the question of what does an air force do when it is confronted with two very different air wars; one that is perhaps an anticipated situation and environment, and one that is most assuredly not?

To answer this question, I will start by looking at the pre-war years of both Twining and the AAF. Chapter one starts with a short biographical sketch of Twining to show how he matured as a man and air officer before entering the Pacific theater in 1942. This is followed by a short examination of the AAF before the war, to understand how it was organized and what it fundamentally believed about airpower as an institution before entering hostilities in World War II. Chapter two looks at Twining's command of the Thirteenth Air Force and overall experience in the Pacific theater. I will first set the stage of combat operations when he arrived and examine how airpower was being used within that context. Next, I examine his time in command of the Thirteenth, the significant missions and events that occurred during that period, and the state of the theater and operations when he gave up command. Chapter three will follow the same organization as chapter two, but will look at his time commanding the Fifteenth Air Force in the Mediterranean theater of operations. Finally, I will conclude by comparing and contrasting the two case studies to understand how Twining, and the AAF writ large, adapted to meet the challenges to emerge victorious out of the dichotomous air wars that confronted them.

## Chapter 1

### The Pre-War Years

#### **Gen Nathan Farragut Twining**

#### **The Formative years: 1897-1919**

Nathan Farragut Twining was born on 11 October 1897 in Monroe, Wisconsin. The sixth of eight children and the third youngest boy, he joined a large and modest family with a rich and distinguished history of service to their nation that spanned more than 10 generations. Although his childhood remained unconfined by the shrouds of his family's military legacy, he recalled being lectured by his father on the virtues of service and military duty. Nathan's father was the single greatest influential figure throughout Nathan's life, and his rigid methodical demeanor, pragmatic ethics, and even handed temper weaved a stiff moral fiber through Nate and his brothers, who were ostensibly disposed to some type of military service. One Fourth of July morning, while Nathan and his siblings waited to get their firecrackers, his father laconically stated "remember this, your country owes you nothing—you owe it everything."<sup>1</sup>

Perhaps less because it was his patriotic duty and more because "they had a good rifle range and I liked to shoot" as he remembered, Nathan began to pay his debt by joining H Company, Third Infantry, of the Oregon National Guard in 1916.<sup>2</sup> After a short stint along the Mexican border with General Pershing's expedition to fight Pancho Villa, Twining passed the entrance examination to West Point and entered in June 1917. To his advantage, his prior military experience gave him the

---

<sup>1</sup> 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*, 26 August 1957, 106.

<sup>2</sup> Clay Blair Jr., "The General Everybody Loves: An Affable Airman with an Exceptional Talent for Calming Belligerent Brass Hats—That's Nate Twining," *Saturday Evening Post*, 17 August 1957, 65.

ability to cope with the harsh treatment and culture shock typified by beast barracks and the entire freshman year. He quickly became popular among the other plebes and excelled at military matters which left time and energy for more extracurricular activities.

Known more as an athlete than a scholar during his brief time at West Point, Twining excelled on the fields of strife, perhaps more than he did in the classroom. Many of his friends and classmates from West Point noted that in spite of his quiet disposition, he competed in sports and everything that he did, he accomplished with a level of raw determination and intensity that became one of their lasting memories of him. It also became a trademark characteristic of his entire military service and led him to become one of the first general officers from the class.

While Twining pursued his education and training at West Point, there was a war raging in Europe. After several attempts to resign as a cadet and join the war effort, Twining's class graduated from an accelerated wartime course on 1 November 1918, just 17 months after they entered. Anxious to serve his country abroad, Twining's hopes were quickly dashed by the signing of the Armistice just 10 days later, bringing an end to World War I. Recalled back to West Point in December, Twining returned with the rest of his class for "intensified training." After passing a second winter and spring as an officer-cadet playing a little football and cramming in what the faculty ensured was "the best of what was left in the courses," he graduated on 11 June 1919, 138 out of 284—smack dab in the middle of the class.<sup>3</sup> Then, as a second lieutenant in the infantry, "Twining found himself in desolate [Fort] Benning, Georgia, living in a tar-paper shack, facing a bleak and monotonous future in the peacetime Army."<sup>4</sup>

---

<sup>3</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 6, Oral History Research Office, Columbia University.

<sup>4</sup> Blair, "The General Everybody Loves," 65.



## **Building Airmanship and Airmindedness: 1919-1934**

Twining spent the ensuing 15 years as a lieutenant, yet these years were anything but monotonous. During a football trip from Fort Benning to Carlson Field, the primary flying school of the Air Corps at that time, the members of the flying school football team gave all of the members of the Fort Benning team a ride in an airplane—the JN-4 Jenny. It was Twining's first ride in an aircraft. He thought "it was a very delightful ride"<sup>5</sup> and decided at that moment flying was for him.<sup>6</sup> However, after several attempts to transfer to the Air Corps were stymied by Twining's commanders, who thought they knew what was best for his career, he became the Aide-de-Camp to Brig Gen B.A. Poore. Unable to extinguish his desire to fly after two years of service with the general, Twining broached the subject again. This time, Twining was granted the transfer and entered pilot training at Brooks Field, Texas, two weeks later.

It was here, at primary flight training, as a student and later as an instructor, that Twining began to come into his own as his proclivity for military service fused with his passion for flying. Taking his first flight on 23 August 1923, Twining met this challenge with the same dogged determination that characterized his time at the Academy. This determination was not misplaced either. The training was tough, and the World War I pilots who developed the training taught not only the fundamentals and basics of flying, but infused the true spirit of flight into the students. Twining recalled that his time in pilot training was remarkable, and, after graduation, he was assigned to Brooks Field as a flight instructor.

That same spirit imbued in Twining as a student, became another of his hallmark attributes as he flew as a flight instructor for three years at Brooks Field, and two more years at March Field. One student

---

<sup>5</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 1, Albert F. Simpson Historical Center, Maxwell AFB, AL.

<sup>6</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 7, Oral History Research Office, Columbia University.



recalled “there was a sour attitude on the part of many pilot instructors, which was partially responsible for a washout rate in excess of 50 percent . . . but Twining was different.”<sup>7</sup> One of Twining’s future fellow commanders in the European theater of World War II, Lt Gen Elwood “Pete” Quesada, shared the same sentiment. After breaking his leg playing football, Quesada was offered the chance to finish his flying training over the Christmas break in order to keep up with the rest of his class, if they found an instructor who was also willing to give up Christmas leave to instruct Quesada. Twining volunteered immediately. For two weeks Quesada received some very special instruction and was left with lasting memories of Twining. “Nate was always jolly” he reminisced. “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.”<sup>8</sup>

Aviation in the mid-to-late 20’s was an untamed, wild frontier. Twining recalled “there were no airfields then, and shooting those little cow pastures was something. When you needed gas you staked the airplane down and went to town and got it . . . but then, once you got that airplane over the fence you were on your own. Nobody could give you orders. You were sitting up there, kind of cocky . . . it was a hell of a lot of fun.”<sup>9</sup> While Twining consciously had a good time flying, he, and the other Air Corps aviators, were also unconsciously building air-mindedness. During this period, there was not an exhaustive body of knowledge that existed to guide or to inform senior Air Corps leaders, or the General Staff, on how to organize, train, or equip their forces. Most of these senior leaders, who were entrusted to make the important decisions with regard to the air arm, were not Airmen. They were all ground officers and civilians who possessed little understanding, and

---

<sup>7</sup> Edgar F. Puryear, Jr., *Stars in Flight: A Study in Air Force Character and Leadership* (Novato, CA: Presidio Press, 1981), 146.

<sup>8</sup> Puryear, *Stars in Flight*, 147.

<sup>9</sup> Butterfield and Gibney, “The Twining Tradition,” 112.

even less motivation, about how to make decisions on behalf of the Air Corps. Therefore, the ideas emanating from the young practitioners gradually gained traction and influence, demonstrating that airmindedness was inseparably linked to airmanship.

### **Expanding Horizons: 1934 - July 1942**

After a two year flying assignment with the 3rd Attack Group, 90th Attack Squadron, and 60th Services Squadron, Twining began the imminent and necessary transformation from a Yankee air pirate to a professional soldier and aviator. As a result of the Postmaster General cancelling airmail contracts held by commercial airlines and the Chief of the Air Corps' approval for the Army to fly the mail, Twining was named the engineering officer for the Central Zone—US Army Air Mail Service—in Chicago in February 1934. This was an enormous responsibility for a lieutenant to undertake. While still making several hair-raising flights during the three month crisis, “his main job was to see that the balky planes in his area kept flying—a thankless task that he performed with noteworthy success.”<sup>10</sup>

In spite of Twining's individual success, the entire operation turned into a fiasco as “disastrous weather nationwide led to the death of several Army flyers in crashes” resulting from a lack of instrument flying training and equipment.<sup>11</sup> For the Army Air Corps (AAC), as an institution, it was a set-back and forced them to reflect on their capabilities. It showed them that it was extremely difficult to disperse men and aircraft, while conducting synchronized flying operations, in all kinds of weather and austere environments, and do it on a very regimented schedule. In short, if the mail-bags were hypothetically replaced with bombs, their demonstrated capability to project airpower made the immediate future look bleak. It was a hard lesson to learn, but one that needed to be

---

<sup>10</sup> Blair, “The General Everybody Loves,” 66.

<sup>11</sup> J. Britt McCarley, “General Nathan Farragut Twining: The Making of a Disciple of American Strategic Air Power, 1897-1953” (PhD diss., Temple University, 1989), 28.

learned and may not have been learned another way. Twining later reflected on this time by saying “I think [the] air mail fiasco helped the Air Force more than anything I know of in my career. It really got the people busy and got us the right equipment which we might not have had up to World War II even, so it was a blessing in disguise.”<sup>12</sup>

After the air mail incident, Twining returned to familiar territory to round out his tour at Fort Crockett, Texas, with the 3rd Attack Group, before being transferred to the 3rd Wing at Barksdale Field, Louisiana. Coincidentally, Twining was promoted to captain after serving as a lieutenant for the better part of two decades. During his time at Barksdale, Twining overlapped with Lt Col Millard F. Harmon, Jr., Barksdale’s station commander, and Maj Claire L. Chennault. While Twining’s exposure to both officers was limited, he knew they were both deeply involved in the internal Air Corps dispute regarding the efficacy of pursuit aviation. Twining, however, still kept an open mind and did not espouse the primacy of pursuit or bombardment aviation.

Twining also had a brief encounter with Lt Col H. H. Arnold in the spring of 1934. Arnold hand-picked Twining “to fly one of the ten brand-new, 200-mile-an-hour, B-10 bombers on a mission to prove the practicability of defending Alaska by air in an emergency,” and bolster the Air Corps reputation after the air mail fiasco. As the personnel met in Dayton, Ohio, Twining bluntly and honestly commented about the make-up of the crew assembled for the mission when Arnold asked for ideas. Twining remarked that “what we need are more mechanics and fewer pilots.” Arnold disagreed and was visibly annoyed that Twining challenged the decision he made. As the expedition got under way, however, the aircraft did not get past Minneapolis before they were riddled with maintenance problems. Reluctantly, Arnold “was forced to send out an urgent call for more mechanics.” Although Twining was

---

<sup>12</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 5, Albert F. Simpson Historical Center, Maxwell AFB, AL.

vindicated on the maintenance issue, he was also the first pilot to be displaced to make room for the new personnel and was sent back to Barksdale. While this episode perhaps cost Twining a footnote in history, it was another lesson that exposed the Air Corps to the difficulty in projecting airpower over long distances.<sup>13</sup>

Shortly after returning to Louisiana, Twining uprooted his family again to attend the Air Corps Tactical School (ACTS) at Maxwell Field, Alabama, in August 1935. By 1935, “the Tactical School was beginning to make reservations in its statements about the purely defensive mission of military aviation.”<sup>14</sup> The demonstrated performance of the B-9 and B-10, as well as the emergence of the XB-17, marked “the promise of even greater things to come and sharply stimulated the development of air doctrine.”<sup>15</sup> Although Twining entered the ACTS with a firm grounding in pursuit and fighter aviation, he was confronted with the notions and theories of strategic bombardment that were yet to be unified and set into a consistent body of doctrine. Upon completing the ACTS, Twining moved to Fort Leavenworth, Kansas, attended the Command and General Staff College, and graduated the following June.

Graduation from his service’s professional schools marked another transition in Twining’s pre-war career; it was at this point that Twining began to rise rapidly in rank and correspondingly take on increased responsibility. In July 1937, he was named Air Corps technical supervisor at San Antonio Air Depot, Duncan Field, Texas. Part of his increased responsibilities there included working with the new flying schools that were being set-up as part of the overall expansion of the air service to train pilots for the impending war.<sup>16</sup> Even though the job consisted of primarily non-flying duties, Twining continued to push his

---

<sup>13</sup> Blair, “The General Everybody Loves,” 66.

<sup>14</sup> Thomas H. Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, USAF Special Studies (1955; new imprint, Washington, D.C.: Office of Air Force History 1985), 53.

<sup>15</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 47.

<sup>16</sup> Puryear, *Stars in Flight*, 150.

self-interests aside and took a more holistic approach, trying to ensure the entire service was prepared for what lay ahead. One of Twining's West Point classmates remarked "it was quite obvious to me that he was on his way to the top . . . he was a 'take-charge guy' who had become proficient in all phases of his profession."<sup>17</sup> Although accruing a strong reputation for being an inspirational leader and taking care of his people, Twining's final posting before the war landed him at the Air Corps Headquarters in Washington, D.C., where his personal talents were summoned.

In August 1940, with the outbreak of war in Europe and the rapid expansion of the Air Corps underway, Twining was reassigned to the Office of the Chief of Air Corps in Washington, D.C., as assistant chief of the Inspection Division. Three months later, he became chief of the Technical Inspection Section in the same office. As fast as the jobs seemed to come and go, the rank seemed to come even faster. Although most of the promotions during this period were wartime promotions, meaning they were temporary promotions, the level of responsibility was real and enormous. Still continuing his rapid ascent up through the ranks, having recently been promoted to lieutenant colonel, he joined the Operations Division in December 1941. In February 1942, Twining became assistant executive to the Chief of Air Corps, Lt Gen Henry H. "Hap" Arnold, and, three months later, was appointed director of War Organization and Movements in that office. Twining despised the paper-shuffling business. Although he drew up war plans on a regular basis, he also pestered Arnold for a combat assignment.<sup>18</sup> Having served in the rank of colonel for less than five months, Twining was promoted to brigadier general in June 1942, and the following month he departed for the Pacific as Chief of Staff for Maj Gen Millard F. Harmon, Jr.

---

<sup>17</sup> Puryear, *Stars in Flight*, 150.

<sup>18</sup> Blair, "The General that Everybody Loves," 66.

## **The US Army Air Force**

American sentiment against war in the aftermath of the First World War left little room for an adolescent American air arm to mature. With the bloody stalemate of trench warfare finally broken by the signing of the Armistice, ironically, many Airmen felt “cheated by fate” as the war’s end “deprived them of the opportunity to demonstrate what airpower could do.”<sup>19</sup> Despite these lamentations, American airpower emerged with a set of abiding roles and missions that would bind the key debates throughout the inter-war years. Its demonstrated capability supplanted many preconceived notions about the nature of warfare, organization and control of airpower, and the general functions of military aviation. But at its core, American airpower was about more than the men and the machines—it was about ideas. These ideas, both practical and visionary, proved to be the underlying force that molded the organization, doctrine, and equipment of America’s air arm leading up to World War II.

### **Organization**

In the 16 years succeeding the end of World War I, “no less than 14 principal boards considered the problems of national defense, the chief one being: how was the air weapon to be fitted into the over-all structure of national defense?”<sup>20</sup> With respect to both the organization and doctrine of the burgeoning air arm, several issues polarized the debate between the old-line ground officers and the contemporary flyers within the US Army. Perhaps the most polarizing of the issues, associated with organization, was the acrimonious struggle to determine if the air service best served the nation’s interests as “an entirely separate, independent branch of the military establishment, or should it remain as an integral part of the Army?”<sup>21</sup> For the Airmen, there was no debate. They believed that the airplane was “genus, not species—a new

---

<sup>19</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 14.

<sup>20</sup> Robert T. Finney, *The Development of Tactical Air Doctrine in the U.S. Air Force, 1917-1951* (Maxwell AFB, AL: USAF Historical Division, Air University, 1952), 12.

<sup>21</sup> Finney, *The Development of Tactical Air Doctrine in the U.S. Air Force, 1917-1951*, 12.



and unique instrument of destruction of such revolutionary potentialities as to demand a sweeping reorganization of the national defense structure.”<sup>22</sup>

The first step toward independence for America’s air arm was taken when it gained statutory recognition as the Aviation Section of the Signal Corps in July 1914. Demonstrating a surprisingly adept ability to fight in the new air domain, the Aviation Section’s *de facto* status as a regular combatant arm was finally made official with the Army Reorganization Act of 1920. However, “the legislation did not alter the existing relationship between the Air Service and the General Staff.” It was not until the Air Corps Act (ACA) of 1926 was passed that a temporary equilibrium in the debate over organization and control occurred. In addition to changing the name of the Air Service to the Air Corps, as well as “strengthening the conception of military aviation as an offensive, striking arm rather than an auxiliary service,” it provided the Air Corps “special representation on the General Staff and an additional Assistant Secretary of War for air affairs.”<sup>23</sup>

While the issue of independence remained contentious throughout the inter-war years, the issue of command and control proved to be an equally polarizing issue. Further complicating the challenge of command and control was the visceral dichotomy between the two parties involved. The first group consisted of the “air crusaders.” Freshly back from their glory overseas, this bunch was young, enthusiastic, idealistic, and 100 percent sold on the efficacy and superiority of airpower over any other branch of warfare. The second group, largely consisting of ranking military and civilian heads of the War and Navy departments as well as the General Staff, remained heavily entrenched in the idea that aviation was auxiliary to surface forces. Locked into this subservient paradigm,

---

<sup>22</sup> Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 1, *Plans and Early Operations, January 1939 to August 1942* (1948; new imprint, Washington, D.C.: Office of Air Force History, 1983), 19.

<sup>23</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 25 and 29.

senior leaders remained blind to the notion that airpower could operate independently of ground forces, while still providing them necessary air support. While breaking this paradigm seemed an insurmountable task, the message of the air leaders remained steadfast—airpower needed to be controlled by Airmen.<sup>24</sup>

The next step toward independence, in terms of both concentration and control, was not realized until the establishment of the GHQ Air Force on 1 March 1935. Within this framework, the Air Corps was still responsible for all training and supply matters, while the GHQ Air Force consolidated all air combat units as a new tactical unit within the Army. Now under the operational command of an Airman, combat units trained and employed as a homogenous force capable of either close support to the ground forces or independent action. While this was a step in the right direction, it was a compromise that fell short of its desired goal and left Army aviation split between the GHQ Air Force and the Air Corps.<sup>25</sup> However, this divide in authority and lack of autonomy was unacceptable, as America stood at the threshold of war in Europe.

As the German war machine spread throughout Europe, the US assumed a defensive posture, motivated by the notion of hemisphere defense. Hemisphere defense was a reaffirmation of the principles of the Monroe Doctrine that were embodied in several of President Roosevelt's addresses. At the beginning of 1939, Roosevelt pledged the support of the American people and their resources "to the protection of the Western Hemisphere and its common ideals." Expounding upon the theme that national defense was only possible through total hemisphere defense, Roosevelt enumerated the many new forms of attack that both Germans and Japanese possessed while "paying special tribute to offensive airpower." In order to check the expansionist ambitions of the Axis powers, Army Airmen advocated for "defense at a distance" by using

---

<sup>24</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 21-22.

<sup>25</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 75.



the mobile striking force of airpower. These were very similar to the ideas espoused by Brig Gen William “Billy” Mitchell and other air leaders, during the 1920’s, who advocated “a defense thrusting far from our shores.” The difference now was that the threat was feasible from the air, as well as by the sea. While Germany and Japan could not strike at the US directly from their homeland, their ability to control territory in northern Europe, western Africa, or the Pacific provided them strategic avenues of approach which left the US vulnerable. Therefore, the AAC needed to secure a wider radius of action for their bombers by both increasing the range of their bombers and acquiring new bases that were strategically located to block the adversary’s advance.<sup>26</sup>

Around the same time, the War Department created the Air Defense Command (ADC) as a single organization to address the air defense needs of the continental United States. In short, the ADC was primarily a planning agency charged with the “development of a system of unified air defense for cities, vital industrial areas, continental bases, and armies in the field.” Since it was only a planning body, “pursuit aviation remained under the jurisdiction of the GHQ Air Force,” the training and supply functions remained under the jurisdiction of the Army Air Corps, and the artillery components remained under control of the ground Army. After a group of observers were sent to the United Kingdom in 1940 to observe air defense operations perfected by the British, they concluded that “the organization for air defense of the United States should be based upon ‘strategic air areas’ rather than upon a single command agency or upon any existing territorial divisions such as army or corps areas.” Therefore, based on the increasing responsibilities placed on the GHQ Air Force, “four air districts were activated in January 1941 and the air units were assigned to these districts.” Later redesignated as the First, Second, Third, and Fourth Air

---

<sup>26</sup> Craven and Cate, *Plans and Early Operations*, 117-119.

Forces, these numbered air forces (NAFs) were “delegated responsibility for air defense planning and organization” throughout the continental United States.”<sup>27</sup>

As it existed within the United States, the NAFs were under operational control (OPCON) of Air Force Combat Command, one of three operational commands under the AAF in June of 1941. While the NAF commanders did not have OPCON of their assets, they retained both tactical control (TACON) and administrative control (ADCON) of both the service and combat units under their command. Of similar importance to where the NAF fit into the command hierarchy was the clarification and delineation of the specific air functions within each NAF. Under the existing NAF structure, the air units formed a composite force under which the roles and missions of the bomber, fighter, air base, and air support commands were differentiated and by which responsibilities were assigned. In essence, the NAF became the organizational scaffolding onto which the AAF could drape the massive build-up of personnel and aircraft to retain an agile and responsive force that could rapidly adapt to a dynamic and diverse global environment.

While the GHQ Air Force found an effective sub-organizational construct in the NAF to employ airpower, GHQ and AAC authority remained divided. Following persistent complaints and protests by the air leaders, Secretary of War Henry Stimson rectified the situation. Effective as of 20 June 1941, Army Regulation 95-5 established the Army Air Forces (AAF) and “gave the air arm the organization that it was to carry into World War II.”<sup>28</sup>

## **Doctrine**

The issues surrounding the organization and control of airpower were inextricably linked to the issues surrounding the employment of airpower. The first issue that polarized the doctrinal debate was the ebb

---

<sup>27</sup> Craven and Cate, *Plans and Early Operations*, 152-154.

<sup>28</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 127.

and flow between bombardment and pursuit aviation as the dominant air arm. Gleaning the critical lessons learned from American airpower's brief and limited experience in World War I, "airmen agreed that the first and foremost principle emerging from the war was that air supremacy was the primary aim of an air force." Thus, the logic continued that since the destruction of hostile aircraft was the province of pursuit aviation, and since attaining air superiority was viewed as a prerequisite to all other operations, it held that pursuit was the foundational arm of airpower and "the most important element of the air force."<sup>29</sup>

While initially acknowledging the leading role that pursuit aviation had taken within the air service, Brig Gen William "Billy" Mitchell saw the promise of bombardment aviation. With his claims that an independent air force could achieve decisive results in war, Mitchell ignited disputes not only over the organization, but the doctrinal employment of airpower. General Mitchell prophesized that the principal value of bombardment aviation ultimately lay in "hitting an enemy's great nerve centers at the very beginning of the war so as to paralyze them to the greatest extent possible." As Mitchell espoused his beliefs on the utility of material destruction, Maj Gen Sir Hugh Trenchard, of the British Royal Air Force, advanced the idea that "the physical damage from these raids was almost negligible in any one city but . . . the ratio of the 'moral effect' to material effect stood at twenty to one." Ideas about how to achieve material effects versus moral effects not only polarized the debate among American Airmen, but also fostered the cognitive dissonance played out in the divergent bombing strategies employed by the US and Great Britain throughout World War II.<sup>30</sup>

Providing moderation, perspective, and influence to this debate, as well as the many others surrounding the development of airpower

---

<sup>29</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 7-9.

<sup>30</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 9, also Craven and Cate, *Plans and Early Operations*, 37.

doctrine during the inter-war years, was the job of the Air Corps Tactical School. However, one of the main problems the ACTS faced in promulgating a straightforward doctrine for airpower was the absence of a discernable national security strategy or policy. While the more mainstream ideas adhered to the publicly stated policy of “pure defense of American continental shores and overseas possessions,” the other side warned of a resurgent Germany and a repeat of World War I.<sup>31</sup> Additionally, the disconnect between a posture that was defensively oriented juxtaposed with the fundamental belief in the inherent offensive capability of airpower, left ACTS instructors grasping for a cohesive strategy of air employment.

In a move that history would later judge as fortunate, brilliant, and visionary, the ACTS instructors solved their dilemma by “ignoring the actual strategic demands of the United States and by discussing pure theory.” In short, the instructors developed a doctrine based on “the general capabilities of the weapon,” rather than “restrict themselves to the expressed national strategic policy, probable combinations of allies, or existing aircraft equipment.” Therefore, as the instructors continued to think theoretically about the proper application of airpower, a coherent and articulate doctrine for American independent strategic bombing began to emerge.<sup>32</sup>

A fundamental underpinning to the development of air strategy during this time was the conceptualization that “because entire societies now went to war, rather than just armies or navies, nations themselves became vulnerable.” Thus, the realization that the nation itself was subject to defeat made the concept of strategic bombing, with its inherent capability to bypass the enemy’s fielded forces and strike at the heart of a nation’s ability and will to wage war, a tenable war winning instrument. The Air Corps’ bomber advocates continued to prophesize

---

<sup>31</sup> Greer, *The Development of Air Doctrine in the Army Air Arm 1917-1941*, 30.

<sup>32</sup> Greer, *The Development of Air Doctrine in the Army Air Arm 1917-1941*, 53.

that “aerial attacks on an enemy’s points of vulnerability” would prove to be the most powerful, effective, and expeditious way to undermine the enemy’s will to fight. After analyzing various social, political, economic, and industrial centers that planners theorized were vital in holding a modern society together, they began to focus on “the main threads in the complex fabric of industrial economies.” Now known as the industrial fabric theory, the ACTS further wed their employment concepts of unescorted, high-altitude, daylight, precision bombing to this theory and codified American strategic bombing throughout the late 20’s and 1930’s.<sup>33</sup>

As war erupted in Europe, America began to send Air Corps observers abroad to find out what lessons could be gleaned from the air war already underway. Air Corps leaders watched both the British and German air forces astutely and reaffirmed their current theories by discerning the utility of, and dependence on, long-range striking power. With that, the AAC “moved to sharpen its doctrinal thinking,” and, in doing so, planners were required to “transform their theories into a practical plan for air action against the nation’s potential enemies.” The final product was delivered to the headquarters on 11 August 1941. It was designated AWP/1. This document outlined an exact number of targets within four key target systems, which were necessary to be destroyed in order to achieve the desired objectives. AWP/1 represented “the final development of American air doctrine prior to the US entrance into World War II and was to serve as the actual blueprint for air operations against the Axis.”<sup>34</sup>

### **Equipment**

Just as issues surrounding organization and doctrine are inextricably linked, the relationship between doctrine and equipment is

---

<sup>33</sup> Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945* (Princeton, NJ: Princeton University Press, 2002), 157, 162-163.

<sup>34</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 109-110.

also intertwined. The debate between the efficacies of pursuit versus bombardment aviation that polarized doctrinal viewpoints had a similar effect on the development and procurement of aircraft. During the immediate post-World War I era, pursuit aviation was the clear front-runner as the principal air arm of the Air Service. The primacy of the observation mission, emerging from the war, necessitated a continued investment and advancement in pursuit aircraft and doctrine. Aircraft engine technology began to advance, improving the speeds, ranges, and altitudes pursuit aircraft could achieve. As aircraft flight characteristics began to change, aviators, such as Maj Carl Spaatz, advocated for many different types of aircraft with different characteristics to perform a variety of pursuit missions. While this line of thinking was suppressed by fiscal deficiencies and the General Staff's overall myopic view of pursuit aviation, it sparked a perennial question of airpower: "should there be one all-purpose type for each branch of aviation, or, at the other extreme, should there be a type for every specialized function?"<sup>35</sup>

Bombardment aviation also wrestled with this issue, but to a lesser extent. Even though bombardment was seen as an auxiliary and supporting role immediately following World War I, it was separated into heavy and light classes. While this helped clarify roles and missions doctrinally, bombardment aviation suffered from the same deficiencies that plagued the pursuit community, to include the influence the General Staff had upon it. Even though the Air Service advocated for two types of bombers to match their divisions, "the General Staff was skeptical in 1928 and urged standardization through development of a single, all-purpose model."<sup>36</sup>

In the early 1930's, the interest in bombardment aviation began to accelerate and pursuit aviation went into a decline. The primary impetus behind bombardment's surge was the successful development of the

---

<sup>35</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 38.

<sup>36</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 45.



Boeing B-9 and Martin B-10, two-engine heavy bombers. Both of these aircraft shattered previous standards with regard to performance and design and “open[ed] the way to still faster and larger planes—planes with the range and load which would make strategic airpower a reality.” Interest in pursuit aviation continued to decline with the emergence of a radical design of a four-engine bomber—the B-17 Flying Fortress. The development of the four-engine bomber, whether in response to or in conjunction with of the Air Corps’ strategic bombing doctrine, was hailed as “the first real American airpower” and “the true key to America’s air strength.” At the time, Arnold concluded “the four-engine bomber was the main turning point in the course of the development of airpower and of world power.”<sup>37</sup>

### **Conclusion**

The interplay between the organization, doctrine, and equipment of the Army’s air arm was significant to the development of American airpower during the inter-war years. Additionally, the relationship between the War Department and the Air Corps was marked by tension in their dichotomous *de jure* and *de facto*—or ‘in law’ and ‘in practice’—pronouncements about airpower. Whereas the War Department, by law, determined the official organizational structure and employment of the air forces, the Air Corps, in practice, “had also developed its own combat doctrines.” By keeping the AAC, and later the AAF, subordinate to the Army, the War Department controlled the Air Corps organizationally. Doctrinally, the Army manuals emphasized airpower’s primarily role as providing close air support to the ground troops, due to the mentality that airpower was an auxiliary force still prevalent among the ground commander corps. In contrast, the Air Corps, in practice, established its own structures, such as the NAF, to work within the organizational system imposed by the War Department. Additionally, the AAC believed

---

<sup>37</sup> Greer, *The Development of Air Doctrine in the Army Air Arm, 1917-1941*, 45-47.

in the efficacy of their strategic bombing doctrine developed by the ACTS. While this doctrine was considered heretical before the war, it was “accepted as orthodox” during the war.<sup>38</sup>

Twining was not impervious to these machinations within the air service. He observed these dichotomies from the time he was a captain at the ACTS, and played a part in furthering them during his time on the Headquarters staff. While he was most comfortable and familiar with fighter aviation, his diverse career leading up to 1942 exposed him to many aspects that made up the whole of airpower. By the time he went to war, Twining was an acculturated Airman, and he did not specifically espouse any ideas that were contrary to the other senior leaders in the Headquarters. As a member of the Operations Division, and later as the director of War Organization and Movement, leading up to his departure for the Pacific, it was clear to him that the AAF was anticipating a war in which airpower would be decisive through the strategic bombardment of the enemy’s vital centers. The AAF got that war—but they also got a war they did not anticipate. Twining would experience both.

---

<sup>38</sup> Craven and Cate, *Plans and Early Operations*, 34.



## Chapter 2

### Welcome to the Jungle: Twining and the Thirteenth Air Force in the Pacific

#### **The Stage is Set**

The United States and the Allies commenced combat operations in the Pacific from an uncomfortable defensive crouch. Capitalizing on the momentum gained through their initial surprise attacks on Pearl Harbor and the Philippines, the Japanese juggernaut steam-rolled through the Pacific. One-by-one, Allied outposts were systematically stripped away as Japan expanded its grip on the Pacific as far eastward as Wake Island and as far south and westward as Rabaul in New Britain.<sup>1</sup> As the US Army Air Force rushed into theater, they began operating from the few remaining strongholds on Australia, New Caledonia, New Hebrides, Fiji, and the Samoa Islands. Weak in numbers—both manpower and aircraft—and lacking a cohesive or centralized control mechanism, airpower's initial contribution to holding the line and stemming further advances by the Japanese was tenuous at best. By May 1942, "Japanese troops and planes stood only 170 air miles from Port Moresby, the most important outpost remaining to the Allies on New Guinea."<sup>2</sup> Therefore, the proximate threat posed by Japanese forces to the Australian continent was the overriding concern for the Allies and dictated an immediate defensive posture.

Australia was a strategic center of gravity for the Allies in the Pacific. As such, the ability to retain the critical sea and air lines of communication between Australia and Hawaii, as well as the West Coast of the United States, became a strategic vulnerability that needed to be

---

<sup>1</sup> Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 4, *The Pacific: Guadalcanal to Saipan, August 1942 to July 1944* (1950; new imprint, Washington, D.C.: Office of Air Force History, 1983), 3.

<sup>2</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 5.

defended and secured if there was to be any hope of stemming the tide against Japan's imperial conquest. Organizationally, the US responded by dividing the Pacific between Gen Douglas MacArthur, who commanded the Southwest Pacific Area, and Adm Chester W. Nimitz, who commanded the Pacific Ocean Area. By further sub-dividing the Pacific Ocean Area into North, Central, and South sections, Nimitz placed the main responsibility for executing this strategic defensive mission squarely on the shoulders of Vice Adm Robert L. Ghormley, who was assigned as the commander of the South Pacific (COMSOPAC) on 13 April 1942. While Ghormley retained control of the naval forces within the South Pacific, he delegated command and control of all aircraft in the area to his air officer, also known as the Commander Aircraft South Pacific Force (COMAIRSOPAC). On 22 May 1942, Rear Adm John S. McCain assumed command as COMAIRSOPAC from his forward headquarters aboard the *USS Tangier* at Noumea, New Caledonia.<sup>3</sup>

Command of the South Pacific was unmistakably naval. With regard to the COMSOPAC staff, "of 103 officers assigned in September 1942, only three wore the Army uniform." The lack of Army officers, specifically the lack of Army Air Force men who understood how to employ airpower to support a predominately naval theater, posed significant questions and challenges as the B-17, and other Army Air Force assets, began to arrive in the South Pacific. While Army Airmen could appreciate the naval character of the theater and the preponderance of leadership roles relegated to the Navy, it was quite distasteful to have the Army Air Forces' newest strategic air weapon under operational control (OPCON) of the Navy. Ideally, they argued that the Army Air Force should "retain their identity, be assigned appropriate missions, and execute them under their own commanders in accordance with Army Air Force doctrine." In order to bridge the gap in this debate

---

<sup>3</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 10.

as well as abrogate the growing problems with administration and supply of the Army ground and air units, General Marshall appointed Maj Gen Millard F. Harmon the Commanding General, United States Army Forces in the South Pacific Area (USAFISPA), or Commanding General South Pacific (COMGENSOPAC) in Navy lexicon. Although this position gave Harmon direct supervision of and administrative control (ADCON) over all Army air units, he “had little say in their assignment, the strategy that dictated their employment, and the organization under which they would operate,” as OPCON still resided with McCain as COMAIRSOPAC.<sup>4</sup>

With Harmon on his way to the Pacific, it was clear that the battle he and the AAF encountered in the theater was not only arrayed along the battle lines with the Japanese, but also along inter-service lines. The Army and Navy faced significant constraints imposed by the character of the Pacific theater and continued to disagree about the most effective and efficient ways to employ airpower. To assist him in both of these fights, Harmon needed an extremely capable staff of acculturated Airmen and AAF officers whose presence could help balance against the overriding naval influence in the theater. For the key positions on his staff, Harmon selected Brig Gen Nathan Twining to serve as his Chief of Staff, Col Robert Breene as his Chief of Supply, and colonels Dean Strother, Thomas Roberts, and Frank Everest as his operations officers. While Twining, Strother, and others would later go on to command air units and direct operations in the Pacific, their time serving as a close knit staff under Harmon thoroughly exposed them to the diverse set of challenges that the operating environment in the Pacific imposed on the employment of airpower.

As the command and control debate continued to simmer, it became readily apparent the air war in the Pacific assumed a character

---

<sup>4</sup> Louis Morton, *United States Army in World War II, The War in the Pacific, Strategy and Command: The First Two Years* (1962; new imprint, Washington, D.C.: Center of Military History, United States Army, 2000), 257-263.

completely unanticipated and inconsistent with the pre-war conceptions of airpower held by most flyers. In addition to not having operational control of their own aircraft, the vast geo-strategic landscape of the South Pacific confounded AAF leaders and challenged their ability to organize, train, equip, and employ the airpower assets already in theater. This was not the anticipated continental land war fought by large conventional forces. Instead, it was a war that required airpower and sea power to operate jointly to achieve their strategic objectives. At the moment, however, those objectives would not be obtained through the AAF's pre-war ideas of strategic bombardment, because there were no strategic target sets in the sense of large industrial complexes the enemy used to conduct and sustain combat operations as conceived of before the war. Those types of targets lay over 3000 miles away and required a massive joint effort of turning back the Japanese advance and moving steadily up the island chains of the Pacific to strike at the heart of the enemy—the Japanese mainland.

As US forces began operations within the theater, it was immediately apparent the environment was not only unique and unanticipated, it was punishing. Conducting combat operations amid the inescapable primitive conditions took a heavy toll on both the air and ground components. In its entirety, the Pacific theater consisted of tens of millions of square miles of area, of which more than 95 percent was water. As a result, the AAF did not fight from centralized bases closely tied together; they “fought from island bases spread hundreds of miles apart.”<sup>5</sup> In addition to the vast distances and open water spaces, each island had its own unique challenges. Not only was the tropical climate unbearably hot, humid, and wet, the surface of the primitive landscape was slashed with rivers and creeks and “further tortured by a mass of

---

<sup>5</sup> *Historical Report: Thirteenth Air Force, 13 January 1943 through 30 June 1949* (Clark AFB, Philippines: Historical Division, Philippines Command and Thirteenth Air Force, 1950), 2.

lush and often impenetrable vegetation.”<sup>6</sup> If these conditions were not daunting enough, further factoring in the effects of isolation, animal life, and disease made the challenges imposed by the operating environment in the Pacific almost insurmountable.

In addition to the harsh and foreboding physical environment, the average distances between the islands and airfields made the supply and sustainment of ground and air forces heavily dependent on airborne and seaborne transport. This was a problem in and of itself, and, as far as the AAF was concerned, an issue that received scant pre-war thought. The long air and sea lines of communication were vulnerable to both operational losses as well as attacks from the enemy, which meant that forward operating bases went for extended periods of time with shortages of supplies and equipment. The lack of spare parts combined with an absence of maintenance personnel “made it difficult to keep more than 50 percent of available aircraft in commission.” If supplies did make it to the island, there were no docks, no roads, and no unloading facilities to facilitate distribution. Additionally, it was rare that supply officers had any advanced notice of supplies being delivered and once the crates were there, they had no way of knowing what was in them resulting in “thousands of crates piled up under the coconut trees awaiting identification.”<sup>7</sup>

The single most critical shortfall in theater, however, was the supply of fuel. Throughout 1942 and early 1943, there was no integrated system of fuel trucks, pipe lines, and bulk storage facilities for the aircraft to draw upon. The only way that fuel reached the airfields was after the individual steel drums containing the fuel were cast over the side of the supply ships, towed to the shore in a net, and then physically manhandled through the jungle for final storage under groups of trees in dispersal dumps. Finally, when the fuel was ready to be used, “it had to

---

<sup>6</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 6.

<sup>7</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 9 and 37.

be loaded into a truck, rolled up onto a stand, and poured out of the drums into tank wagons which then serviced the aircraft.” While this arduous task may appear manageable for the fighters and smaller aircraft, a single B-17 required an average of 50 drums of aviation fuel for each mission. This vignette serves as a clear illustration of airpower’s front lines in the Pacific. For Airmen in the South Pacific during World War II, the modern marvels of flight became hostage to age-old patterns of logistical limitations. There, the environment proved to be as formidable as the enemy and constantly pushed the men near the breaking point. There were few replacements and no reinforcements; “men and machines would fly until either or both gave way under the strain.”<sup>8</sup>

### **Airpower in Context**

Faced with the seemingly insurmountable obstacles posed by both the enemy and the environment, air commanders in the Pacific theater argued the loudest against the primacy of the European theater of war. Ostensibly hobbled from the start by the American “Germany first” approach to the global war, the Pacific was in effect a minor theater, and under the local command structure, the AAF was a minor service.<sup>9</sup> This was not a condition that the AAF leaders or ACTS contemplated in the 1930’s and early 1940’s. However, the AAF had two things going for it. First, since the majority of the entire US Navy’s weight of effort was focused in the Pacific, the Chief of Naval Operations, Adm E. J. King, did not share the long view of the war taken by the rest of the Combined Chiefs and Joint Chiefs of Staff.<sup>10</sup> Between his incessant demands for more support and additional aircraft for Pacific operations and his reluctance to “fully disclose the seriousness of the situation there to his colleagues in the Joint Chiefs of Staff,” King routinely found himself in

---

<sup>8</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 37-41.

<sup>9</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 91.

<sup>10</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 44.



the “hot seat.”<sup>11</sup> Second, the AAF now had a small voice in Harmon as COMGENSOPAC, and he persisted to make the most of it after his initial survey and assessment of the theater’s needs.

As Harmon and his staff rapidly came to the realization that their resources were woefully inadequate, they outlined the critical shortfalls in aircraft and manpower in a letter to Marshall. In it, Harmon strenuously expressed the point that “he stood face to face with painful realities and that in order to hold the key points in his theater reasonable force should be available.”<sup>12</sup> Twining echoed Harmon’s sentiment while reflecting on the Germany first strategy years after the war by saying “I felt pretty badly at first out there. We had very little equipment in the Pacific and a lot of us were worried that the Japs would break through Guadalcanal . . . I think that if I had been the big man there I would have taken a little bit more interest in the Pacific theater at the time and given a little more support.”<sup>13</sup> The big man in this case, General Arnold, disagreed.

The perceived lack of urgency from General Arnold to meet the resource requirements of the air commanders in the Pacific was a contentious issue for Harmon and Twining, who felt as though their strategic position hung in the balance. Despite several more pleas throughout July and August by Harmon, Arnold maintained a stiff resistance to sending more resources to the Pacific. He continued to hold firm to his conviction that “no air units of any kind would be dispatched to Pacific or India bases over and above those which already had been allocated by earlier decisions.”<sup>14</sup> During a trip to the South Pacific in September 1942, to view theater operations for himself, Arnold noted that the Japanese had a total of about 535 planes in theater and

---

<sup>11</sup> Ronald H. Spector, *Eagle Against the Sun: The American War with Japan* (New York, NY: The Free Press, 1985), 206.

<sup>12</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 46.

<sup>13</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 15, Albert F. Simpson Historical Center, Maxwell AFB, AL.

<sup>14</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 14.

“we have in Australia, Southwest Pacific Islands, and Hawaii a total of over 900 planes with 280 more en route.”<sup>15</sup> Further, after visiting a number of facilities, he reiterated his belief that the current base infrastructure in the South Pacific “remained inadequate to absorb more than the numbers already allocated to them and that the major problem was one of proper distribution.”<sup>16</sup> In an attempt to alleviate the distribution problem, some concessions were made by Marshall and Arnold to allow COMSOPAC to divert, temporarily, bombers and aircrews en route to Australia to Harmon’s area and to dictate the movement of all Army air units assigned to the South Pacific. However, Arnold remained resolute in his original position that “the European theater would yield the most profitable return on an investment of airpower” and aircraft must not be diverted from where the war could be won.<sup>17</sup>

While the AAF and Navy air commanders in the Pacific were united in their sentiment that they were significantly under resourced for the tasks they were being asked to accomplish, they remained divided on other major issues surrounding airpower within the theater. In addition to the debates still surrounding command and control, the services diverged on issues regarding how air assets should be based and arranged as well as some fundamental issues about how they should be employed. These issues were inextricably linked and left the senior air leaders in the theater at an impasse.

The disposition of air assets marked one of the greatest divides between the US Navy and US Army Air Forces over the most efficient and effective organization of airpower to defend the South Pacific islands. At the center of the strategic discord was the AAF plea for mobility. Whereas the Navy consistently pushed for “establishing a series of bases,

---

<sup>15</sup> Diary of Gen H.H. Arnold, Trip to the Southwest Pacific, 16 September 1942 to 2 October 1942, Reel 2, Folder 13, Henry H. Arnold Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>16</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 50.

<sup>17</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 49.



each to be defended by substantial air strength that would include a component of heavy bombers,” the AAF believed the best defense lay “in the maintenance of air bases properly disposed to accommodate air striking forces capable of concentration wherever needed.” Army Airmen preferred the ability of a mobile striking force, based in both Hawaii and Australia, which could be concentrated in the central portion of the island chain in approximately one day. Rather than having their bombers operate in piecemeal packets against all Japanese raiding forces “whose carriers could strike and fall back with great speed,” they sought unity of effort and concentration against major landing forces poised against any one of the main islands of the chain. Harmon and Twining believed the inherent flexibility and mobility of airpower allowed for this type of arrangement, as opposed to the Navy method, which continually sought to protect the center and establish a chain of powerful fixed bases.<sup>18</sup>

In the end, the design prescribed by Admiral McCain won the day. His basic air organization called for encompassing all Allied air units in the area into four commands: air patrol, bomber, fighter, and base.<sup>19</sup> However, due to the dispersion and dissimilar composition of the bases, McCain was also cognizant that it was “entirely impractical for him to exercise his command directly.”<sup>20</sup> After consulting with Harmon, McCain decided to “delineate the types of operations” he wanted the various Army air components to accomplish, as well as “promulgate a general doctrine for employment of available forces,” then turn over the specifics of training, supervision, and daily operations to Harmon.<sup>21</sup> Harmon responded by activating a series of “island combat control groups,” whereby he could communicate his guidance to one commander on the island, who then gave the operational direction to all units in the combat

---

<sup>18</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 13-17.

<sup>19</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 31.

<sup>20</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 30.

<sup>21</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 30-31.

team. The island commanders worked with both the combat and service units under their supervision to meet the training and supply requirements as well as the defenses of the individual bases.<sup>22</sup> In the face of the enemy in the field and operating from small and isolated locations, the immediate problem the air commanders in the field faced was largely a matter of survival and freedom from attack. This was an environment that was particularly well suited for the use of airpower, but there was still disagreement on exactly how it should be employed.

As McCain and Harmon assumed their commands in the summer of 1942, they both felt their allocated air assets were woefully inadequate for the task at hand and could be employed in a limited defensive role at best. Arnold told Harmon that “for the time being, operations in the Pacific were to be restricted to those necessary to support the strategic defensive” and the requirements were to be held “to a minimum consistent with that role.”<sup>23</sup> This put Harmon in a precarious position. Unable to conduct operations that were congruent with any of his previous operational background and experiences, Harmon focused his initial requests on additional transports to facilitate the supply and sustainment of the forces he did have.

Predictably, those requests were promptly denied due to lack of resources, so Harmon and Twining turned their focus to supporting the ground offensive that was heating up at Guadalcanal. Although their forces only flew in a supporting role to Marine aviation, it became readily apparent that the P-400's and P-39's were “no match for the Zero or for the enemy bombers now striking Henderson from altitudes above 20,000 feet.” Therefore, in coordination with the 1st Marine Division commander, Maj Gen A. A. Vandergrift, the missions of the AAF fighters shifted to trolling “up and down the beaches and jungles of Guadalcanal,

---

<sup>22</sup> Kramer J. Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, USAF Historical Study 35 (Maxwell AFB, AL: USAF Historical Division, Air University, 1945), 85.

<sup>23</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 32.

bombing, strafing, and harassing the Japanese ground units in close support of the Marine troops.” In addition to excelling in these missions, they performed quite well in conducting dive-bombing operations of the transports, barges, and other Japanese surface-craft surrounding the island.<sup>24</sup>

The perceived influence of airpower’s contribution to combat operations in the South Pacific led Harmon and Twining to shift their allocation requests. In order to match the realities on the ground, the AAF leaders requested an additional six squadrons: “three of dive bombers, two of heavy bombardment aircraft, and one of medium bombers.”<sup>25</sup> Also to the dismay of Arnold and the Headquarters, Harmon and Twining continued to push for the accelerated deployment of P-38’s, whose capabilities were well suited for the Pacific theater. While their requests were not fully met, it is significant to note how these Airmen, fully steeped in the strategic bombardment theories and doctrine of the inter-war years, were now calling for more fighters and dive bombers, based on the realities of the environment.

Twining was instrumental to Harmon in making these tough decisions. As a key staff officer, Twining communicated with the field commanders on a daily basis and routinely observed operations in person. As the air units in theater began flying in support of Marine amphibious operations on Guadalcanal, he continually confronted challenging issues such as the lack of supply, lack of security, lack of infrastructure, and many other impediments to successful air operations. In a sense, the issues Twining confronted with Harmon during the early weeks of the Guadalcanal campaign foreshadowed many of the same challenges he would face as a commander trying to execute an island-hopping strategy throughout 1943.

---

<sup>24</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 41-42.

<sup>25</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 45.

Further nested within the debate surrounding the best composition and disposition of aircraft was another major disconnect between the Navy and AAF—the proper employment of the heavy bombers. Contrary to the pervasive doctrine of high-altitude, daylight, precision bombing against industrial targets developed before the war, air leaders in the Pacific quickly deduced that “here there were no strategic targets in the European sense.” All of the enemy’s centers of production and power projection lay far beyond the range of the current array of forward bomber bases. In this theater, the preponderance of serviceable targets were tactical. Furthermore, “those possessing the highest tactical priority—surface-craft—were precisely the ones which the heavies proved unable to hit with any reasonable degree of consistency.” While the lack of accuracy and effectiveness against the surface targets was troubling to the air leaders, it was attributable to specific causes that could be rectified with the proper knowledge of airpower.<sup>26</sup>

The first cause of the heavy bombers’ low hit rate on surface-craft was directly tied to the Navy’s strategy of having the heavy bombers operate from the middle of the defensive line. Based on Espiritu Santo under the command of Colonel Saunders, the 11th Bomb Group had previously trained to conduct their bombing missions in groups of nine aircraft; three flights of three B-17’s. However, faced with the operating environment afforded by the small island base, they “found that it was impossible to apply this technique; not enough planes could be put into the air to produce a pattern of nine bombers.” Lacking the requisite infrastructure of circulating taxiways and an air traffic control tower, the antiquated aerodrome facilities simply did not permit the bombers to take-off and join up in sufficient force to produce a satisfactory bombing pattern. Even if they had been able to orchestrate an adequate bombing

---

<sup>26</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 90.

pattern, the assigned strike missions against small detachments of highly maneuverable cruisers and destroyers necessitated the “employment of mass in excess of the target’s value.”<sup>27</sup>

The second cause of the low hit rates attributed to the heavy bombers in the theater was firmly rooted in the incongruent airpower doctrines of the Navy and the AAF. Aside from the lack of strategic targets available to the heavy bombers, the tactical targets—surface-craft—that the B-17’s were matched against lay at or beyond the maximum range of the bombers. As a result, the bombers required a reduction in the amount of bombs that could be loaded in order to reach their targets. Coupled with the inability to mass bombers in a satisfactory bombing pattern, a reduced bomb load had little chance of destroying the highly maneuverable surface-craft. In addition, the cumulative length of the missions, which required crews to fly over monotonous and featureless water for many hours, before a frantic and exhaustive search to locate the targets, induced fatigue and strain on the crews and also “exerted an unfortunate effect upon bombing accuracy.” These truths led Harmon to remark that “the power of bombardment is in inverse ratio to the distance to the target.”<sup>28</sup>

In addition to being used against tactical targets, the strategic bombers were also routinely tasked for reconnaissance and patrol missions. In the Navy’s view, the long range bomber was the only asset that could patrol hundreds of miles beyond current allied positions in order to find and report the position of enemy surface-craft. Although the B-17’s were quite capable of accomplishing these missions, the Army air commanders were extremely frustrated watching their heavy bombardment assets frittered away. Collectively, they believed these missions flew in the face of AAF air doctrine and “represented a diversion

---

<sup>27</sup> Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, 71-75.

<sup>28</sup> Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, 73.

from the available striking power” and produced excess strain on the finite number of precious planes and crew allocated to the Pacific.<sup>29</sup>

In October, they confronted Vice Adm William F. “Bull” Halsey, who replaced Ghormley as COMSOPAC on 20 October 1942, with a statistical analysis citing that “78 percent of the total group effort was being devoted to reconnaissance.”<sup>30</sup> Army Air commanders continued to push for a maximum of 25 percent of the reconnaissance duties to fall on the B-17’s and supplement the search effort with the Navy PBY’s instead. While the burden placed on the B-17’s was curtailed slightly during the ensuing months, Naval air commanders continued to use the heavy bombers in this diversionary role, as the information the planes obtained on these searches was vital to the theater commanders. In essence, these aircraft became the seeing eyes of the senior Navy commanders, rather than the striking fist envisioned by the Airmen of the AAF.

Although it is not necessarily excusable, it is understandable that the Navy commanders used the B-17’s for reconnaissance and patrol missions. The lack of intelligence information available to the theater commanders constantly contributed to an overall uneasiness about their exposed and vulnerable positions. Little information was known about the islands the allies occupied, and adequate maps were non-existent for commanders to work from. The small amount of intelligence information available in theater was often crippled by poor communications between senior commanders, due to long distances and inadequate equipment. Much of the intelligence collected was derived from coast watchers—a small group of native men and European plantation owners, working in close proximity to Japanese bases—who transmitted regular reports of enemy troop activity. But these were of limited value, and the most accurate intelligence consistently came from the persistent aerial reconnaissance.

---

<sup>29</sup> Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, 79.

<sup>30</sup> Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, 70.

Overall, Harmon, Twining, and the rest of the AAF leaders in the Pacific believed that the Navy leaders, and their subordinates, simply did not understand airpower. They felt the Navy was “slow to develop Henderson Field as a major air base, and even slower to understand that control of the air around Guadalcanal would be the dominant element in the campaign.” Additionally, although things had improved dramatically under the command of Admiral Halsey, many Airmen perceived the Navy as reticent to use the full striking power of its carrier-based aircraft and had “shown undue caution about risking its ships in support of Guadalcanal.”<sup>31</sup>

### **Standing up the Thirteenth Air Force: A Field Air Force**

Unable to stomach the contentious debates perpetuated by the continued misuse of airpower, Harmon sought change and a way for the AAF to recapture OPCON of its assets, which he regarded as the “heart and soul and guts of the whole business.” Although securing OPCON for the AAF was his ultimate goal, it remained a lofty expectation. A more realistic course of action for Harmon to pursue was to address the overarching need for a competent Airman and staff, who understood the proper employment of airpower, to be in close, personal, and constant contact with those that did have OPCON. The proximity of an air commander, who was intimately familiar with the capabilities and limitations of his forces, who could help ensure the air missions would be planned and executed in accordance with proper air doctrine, was the only hope for airpower’s improvement under the existing circumstance. This would hopefully provide a stop-gap measure for Harmon and the other air commanders who, resentfully and reluctantly, continued to “build up a force, train it, dispose it and supply it and be held

---

<sup>31</sup> Spector, *Eagle Against the Sun: The American War with Japan*, 207.



responsible for its operational effectiveness without some direct contact and influence on its operational control.”<sup>32</sup>

In an effort to avert the further misuse of airpower by the Navy, Harmon submitted his recommendation up the chain for a new numbered air force in the South Pacific. He argued for the establishment of an autonomous air force that gave authority to a single AAF air commander to ensure “preparedness, proper distribution, and effective employment of the Army air forces assigned to his area and for which he was responsible.” Again, careful not to disrupt the existing command arrangements, Harmon’s request tempered his desire for OPCON by seeking a position for an Airman that would be in close coordination with COMAIRSOPAC concerning the operational employment of Army air assets. If this could be achieved, Harmon believed it would “aid in eliminating the Navy’s continued practice of dealing directly with subordinate AAF units, thus permitting the new air force to achieve genuine unity of command.” The War Department concurred with Harmon’s assessment, and, on 5 December 1942, General Marshall authorized the establishment of the new air force.<sup>33</sup>

After serving as his Chief of Staff for six months, Harmon revered Twining. He saw him as the “best qualified officer available” and entrusted him with the command of the new Thirteenth Air Force, which he activated on 13 January 1943.<sup>34</sup> Holding true to Harmon’s vision of proximity and close coordination, Twining established his headquarters immediately adjacent to COMAIRSOPAC’s on Espiritu Santo, affording every opportunity for the joint planning and supervision of air activities.<sup>35</sup> In an effort to further solidify unity of command, Twining immediately stood up the headquarters elements of 13th Fighter

---

<sup>32</sup> Rohfleisch, *Guadalcanal and the Origins of the Thirteenth Air Force*, 83, also Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 70.

<sup>33</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 70-71.

<sup>34</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 70.

<sup>35</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 72.

Command and 13th Bomber Command. As these units were assembled, however, Twining knew that this air force, at least at the outset, had to be a field air force. Due to the “peculiar situation regarding the command of island bases [which] did not warrant full strength Headquarters and Headquarters Squadron for the Bomber and Fighter Commands” at the time, no additional personnel would be authorized and the cadres required to staff the Headquarters elements would have to come from existing sources already in theater.<sup>36</sup>

Yet despite the manning and resource issues that continued to plague the theater, there was cause for optimism. The US war machine was rapidly kicking into high gear as more air assets and fresh crews began to flow into theater. Coupled with increased facilities and the capacity to operate out of Henderson Field, as a result of the Marines’ historic battle and occupation of Guadalcanal, the Thirteenth Air Force could now extend their reach and fulfill a more vital and strategic role in the South Pacific. Before it could do so, however, the Thirteenth had to sort out the loss of its first commander, as he and his aircraft were lost at sea less than two weeks after assuming command.

### **A Year in Command: Significant Missions and Events of the Thirteenth Air Force in 1943**

#### **Twining Lost at Sea**

On 26 January 1943, after a visit with the ground commanders at Henderson Field on Guadalcanal, Twining was summoned by an urgent message from Harmon to get back to Headquarters immediately.<sup>37</sup> Without a dedicated aircraft, Twining and his Chief of Staff hopped onto a B-17 that was already taxiing out and headed south to Espiritu Santo. Enroute to their destination over 600 miles away, their aircraft

---

<sup>36</sup> War Department Adjutant General to commanding general, South Pacific Area, letter, 4 January 1943, Container 121, Folder 6, Document 19, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>37</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 635, 3 November 1967, transcript, 9, Albert F. Simpson Historical Center, Maxwell AFB, AL.

encountered severe thunderstorms, which prevented them from landing at Espiritu Santo as well as Efate, a divert airfield another 200 miles to the south. After several exhausting hours of circling and attempting to land at both airfields, the decision was made to ditch the aircraft into the ocean before it ran out of fuel. While everyone on board survived the violent crash landing and ensuing rush to clear the sinking aircraft, Twining and the 14 other crewmen drifted helplessly in the dark, crammed into two, four-man life rafts with no emergency rations.\*

Search parties were launched early the next morning to locate the overdue aircraft, but the prognosis of rescue looked bleak, as Twining and the others drifted at the mercy of the ocean currents. Packed into the rafts like sardines, the option to alternate some men in the water outside the rafts was quickly eliminated by a group of sharks, which began to make their company known.<sup>38</sup> In addition to the hostile environment below the water's surface, the hot sun and lack of drinking water took a toll on the castaways as "every crewman was hatless and three men were without shirts."<sup>39</sup> As the senior ranking officer, Twining felt responsible for the well being of his men and the instinct to do the right thing. He controlled the rationing of the only two canteens of drinking water, which were filled with dew and rain water, while managing to provide some food by downing an albatross with a single shot of his .45-caliber pistol. With little sustenance and plummeting spirits, their rafts were finally spotted on the fifth day and subsequently rescued the next day by volunteer crews, as the search had officially

---

\* There was an emergency supply of rations, but unfortunately the crewman responsible for bringing them into the raft was hit by a swinging machine gun as he scrambled to get out of the plane. The blow stunned him, and he dropped the package of food, which sank. The men were left with one chocolate bar, one bottle of vitamin pills, and a small can of sardines, which one of the crewmen happened to have in the pocket of his flying suit. Edgar F. Puryear, *Stars in Flight: A Study in Air Force Character and Leadership* (Novato, CA: Presidio Press, 1981), 151.

<sup>38</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 26 June 1967, transcript, 80, Oral History Research Office, Columbia University.

<sup>39</sup> Puryear, *Stars in Flight*, 152.

been suspended three days earlier. After a brief stay in the hospital to treat exhaustion, dehydration, and sunburn, Twining resumed combat operations against the Japanese as commander of the Thirteenth Air Force. Of significant consequence, around the time of Twining's return to command was the victory at Guadalcanal.

### **Impact of Victory at Guadalcanal to overall Solomon Island Strategy**

On 9 February 1943, almost six months to the day after the 1st Marine division led the offensive assault on Guadalcanal, organized enemy resistance came to an end. This victory, which marked the end of nearly a half-year of fighting to protect Australia and secure the lines of communication against Japanese attacks deep in the South Pacific, also marked a shift in momentum and capability in the South Pacific. Interestingly enough, while Guadalcanal was a seminal battle in the Pacific, it was not a stated objective or identified as a decisive point at the outset. Nevertheless, it became one in the unanticipated manner that many battles had before, and would doubtless become again, in the history of warfare.

By early 1943, the Americans were ready to assault Rabaul directly, the preeminent Japanese base in the Solomon Islands. The triumph at Guadalcanal had made this possible. After the war, Twining reminisced that "Guadalcanal was the key to the whole Pacific in those days. What happened in Guadalcanal was what killed the Japanese."<sup>40</sup> They lost a lot of "their finest fighters, their best pilots, their best airplanes and everything" Twining recalled; "we called it the sink hole of the Jap Navy."<sup>41</sup> The victory at Guadalcanal gave the infant Thirteenth a boost of confidence, as well as a short reprieve to regroup itself and prepare for the impending advance up the Solomon chain.

---

<sup>40</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 10, Albert F. Simpson Historical Center, Maxwell AFB, AL.

<sup>41</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 26 June 1967, transcript, 69, Oral History Research Office, Columbia University.

At about the same time, SOPAC leaders refined command and control structures. Much to the credit of Halsey, who was a huge proponent of principles of unity of effort and unity of command, operational control of the air assets was continually pushed down to lower levels. Insisting that “each commander of a task force have full authority over all components of his force, regardless of service or nationality,” he sought to create what he called a “South Pacific fighting team.”<sup>42</sup> The victory at Guadalcanal established a critical foothold within the Solomons through which airpower assets could be consolidated and coordinated for further offensive actions. Recognizing the significance of this situation, Halsey established a subcommand under Rear Adm Aubrey W. Fitch, who had replaced McCain as COMAIRSOPAC on 20 September 1942. On 16 February 1943, Rear Adm Charles P. Mason assumed command of all aircraft on the island under the title of Air Command, Solomons, or more aptly abbreviated COMAIRSOLS.<sup>43</sup>

As the contingent of airpower on Guadalcanal continued to grow, COMAIRSOLS began to develop a more independent as well as integrated structure. It included officers and aircraft from all US services and New Zealand, and the commander exercised operational control of all the land-based aircraft for use in the Solomons.<sup>44</sup> Admiral Fitch, as COMAIRSOPAC, mainly kept to the daunting task of managing the influx of men and supplies now flowing into theater, while Admiral Halsey, COMSOPAC, continued to command the carriers at sea through his task force leaders.<sup>45</sup> For Twining, “operations of the Thirteenth Air Force were often indistinguishable from the general pattern of COMAIRSOLS,” and for the time being, he remained without OPCON of his forces.<sup>46</sup> Although it took some time to mature, COMAIRSOLS represented a

---

<sup>42</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 204.

<sup>43</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 89.

<sup>44</sup> Eric M. Bergerud, *Fire in the Sky: the Air War in the South Pacific* (Boulder, CO: Westview Press, 2000), 434.

<sup>45</sup> Bergerud, *Fire in the Sky*, 434.

<sup>46</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 204.

remarkable achievement in inter-service cooperation. It would become an indispensable part of the offensive up the Solomons, despite the fact that no service prepared for, or practiced, joint operations in any substantial way before the war.

Not only was this a time of change and re-organization, it was also a time for self-assessment. At the end of February 1943, Thirteenth Air Force issued a report entitled *Status of Aircraft and Combat Crews South Pacific Area as of February 23, 1943*. The report detailed the number of authorized and actual aircraft and crew by aircraft type on January 1st, as well as the forecasted changes prior to April 1st. All aircraft types were below authorized combat strength, and there were no immediate replacements for the B-17's and P-38's prior to April 1st. In this respect, the report is informative and lacks any sense of urgency indicating that the aircraft levels represented a problem or constraint to continued combat operations. The more compelling element of the report was a plea for transport aircraft, which stood at 10 actual aircraft of the 13 authorized. The report urgently recommended immediate action to remedy the situation and bring the squadron up to full strength with another 50 percent reserve in the area, while maintaining a replacement level of two per month. From his experiences from Guadalcanal and eight months in theater, Twining knew full well that transport aircraft were essential to the supply and maintenance of the aircraft throughout the forward bases, as well as for rotating personnel through rear area for rest, recuperation, and continued training.<sup>47</sup>

Consistent with the observations made about the combat effectiveness of the P-400's and P-39's support to the ground forces on Guadalcanal, the report confirmed an extensive amount of experience in the fighter force resident in theater. It concluded that, of the 200 fighter

---

<sup>47</sup> Report, "Status of Aircraft & Combat Crews, South Pacific Area as of February 23, 1943," Container 121, Folder 6, Document 162, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.



pilots in the area, 50 percent had been in the South Pacific Area for at least one year, and 25 percent had been on Guadalcanal twice. While this constituted a substantial fighter force, the command was quick to point out that “fighter pilots arriving in this theater have not had thorough training in combat technique night flying, instrument flying, and gunnery.” Perhaps indicative of the philosophy of the commander, the Thirteenth took the initiative and dedicated the resources to train fully the crews within the combat area, rather than having them participate in combat operations for which they were not well trained. This is a small example of the impact that the small level of control gained by establishing the Thirteenth with ADCON and TACON of its forces directly had on combat effectiveness. Another highlight of combat effectiveness was captured in a single mission Twining’s Airmen planned and flew in April 1943 that resulted in a measure of merit specific only to the Thirteenth.<sup>48</sup>

### **Downing of Japan’s Adm Isoroku Yamamoto’s Aircraft**

As the mastermind of the Pearl Harbor attack, Adm Isoroku Yamamoto might have been the most despised man by American servicemen in the Pacific. The Airmen of the Thirteenth received a unique opportunity to exact sweet revenge for all fighting troops in the Pacific and made the most of it. Soon after Navy cryptanalysts intercepted a message that Admiral Yamamoto was planning to visit various bases in the Central Solomons on an inspection trip, President Roosevelt approved a mission that gave airpower the green light to ambush him.<sup>49</sup> The planning and execution of the covert mission was given to Capt Thomas G. Lanphier, Jr., of the 70th Fighter Squadron. Captain Lanphier, a combat tested and proven P-38 pilot, and the godson of Jimmy Doolittle, devised the plan of attack. Knowing only that

---

<sup>48</sup> Report, “Status of Aircraft & Combat Crews.”

<sup>49</sup> Geoffrey Perret, *Winged Victory: The Army Air Forces in World War II* (New York, NY: Random House, Inc., 1993), 431.



Admiral Yamamoto was insistent on punctuality and beholden to his land time of 0945 at Kahili Field, Lanphier chose that moment as the time to strike.

On 18 April 1943, eighteen P-38's—eight from each of the 12th and 339th Fighter Squadrons and two from the 70th—launched shortly after daybreak. The odds of success were infinitesimally small, as “the plan called for an overwater wave-hugging flight of 435 miles by a circuitous route which would avoid all danger of detection by land-based enemy coast watchers.” Yet, after a meticulous brief and flawless execution to the objective, two hours and nine minutes after take-off “there ahead appeared the enemy almost as if the entire affair had been prearranged by mutual consent.” Lamphier’s four-ship moved in for the attack, covered by the other 14 P-38’s flying high cover under the lead of Maj John Mitchell. Lamphier’s formation was immediately confronted by six Japanese Zeros flying escort for the two Betty bombers; one of which was carrying Yamamoto. The ensuing dog-fight was chaos. In the end, both Lamphier and his wingman, 1Lt Rex T. Barber, had a go at the bombers, and Barber was credited with the official downing of Yamamoto’s bomber.\* This was a huge victory for the boys of the Thirteenth and represented only a small part of the broader optimism held by the air leaders in theater at the time; especially by Twining.<sup>50</sup>

Whether eager to share this optimism with his superiors in Washington or just indicative of his out-front leadership and initiative to keep his commanders better informed, Twining sent a memo to General

---

\* Discrepancies exist in historical accounts of this incident. Craven and Cate cite that Lanphier attacked and downed one of the bombers while his wingman, Lt Barber, destroyed the other, yet they do not give credit to either for specifically downing Yamamoto’s bomber. Geoffrey Perret’s account, based on Japanese survivors’ testimony and the physical evidence from the wreckage, deduced that “Lanphier attacked Yamamoto’s aircraft from the right, and either missed or did some slight damage” and as the plane flew on, “Barber attacked it from the left rear, bringing it down.” Perret further states that Barber was credited for the shoot down. Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 214 and Perret, *Winged Victory*, 432.

<sup>50</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 214.

Arnold on 27 April presenting him with an update on the status of the Thirteenth Air Force. Although the memo covers a lot of ground in four pages, two themes of sanguinity seem to appear throughout: improved employment and improved conditions. Twining started by highlighting that his headquarters was still at Espiritu Santo, “in order to be in close proximity to COMAIRSOPAC,” and the new COMAIRSOLS was working directly with the bomber and fighter commanders on Guadalcanal “in [the] formation of plans, assignment of missions, etc.” Begrudgingly admitting he still did not have OPCON of his forces, Twining emphasized that his proximity to and indoctrination of the Navy air commanders has helped them realize that “the Air Force knows something about the employment of air” and relations had improved accordingly. In concluding the letter, Twining praised his fighter pilots and bomber crews for the job they were doing and perhaps exposed his fundamental belief of the true efficacy of airpower. Acknowledging that more work had to be done in the Solomons, he ultimately hoped that the air force could “get away from this island warfare and apply Air Forces directly against the Jap’s vitals as it is surely going to take that to destroy him.”<sup>51</sup>

The other thread detected throughout Twining’s letter—improved conditions—can be attributed to the position held by AAF aircraft on Guadalcanal, as well as an increase in supply and services. Dependent upon naval supply heretofore, Twining thanked Arnold for his “recent authorization of an Air Service Command [that] will help a great deal in our supply and maintenance functions.”<sup>52</sup> By improving the supply, service, and maintenance infrastructure on a forward base such as Guadalcanal, Twining now had the ability to rotate the flying echelons of all squadrons through the island, which improved the morale and

---

<sup>51</sup> Maj Gen N.F. Twining, Commanding General, Thirteenth Air Force, to Gen H.H. Arnold, Commanding General, Army Air Forces, letter, 27 April 1943, Container 121, Folder 15, Document 15, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>52</sup> Twining to Arnold, 27 April 43.

physical condition of his force. In addition to approving the Service Command, Twining also thanked Arnold for a single C-87 that had been allocated to his command. Although this single craft could not quench Twining's insatiable thirst for airlift, it was enough to shuttle combat crews to and from the rest and recovery area in Auckland and had been a "splendid contribution to both health and morale."<sup>53</sup> In addition to the rest area in New Zealand, other rear area units were used for "training and indoctrination of new crews and for reorganizing units that have been in combat."<sup>54</sup> Overall, the average rotation that Twining and his subordinate commanders sought to implement for aircrew was six weeks in the forward bases for a combat tour, rotation to the rest area in Auckland for nine to ten days, and then returning "to the rear echelons of their squadrons for six weeks of additional training."<sup>55</sup> The improved system of supply, maintenance, and sustainment of both the men and machines was a critical enabler for the impending Allied offensive advance up the Solomon Islands known as CARTWHEEL.

### **CARTWHEEL and the Allied Advance through the Solomon Islands**

Although the initial operations in the Pacific were defensive in nature to halt the Japanese advance and buy time to build-up resources in theater, this strategy would not prevail in the end. The Allied leadership in the Pacific acknowledged that it would at some point need to conduct offensive operations to enable the attainment of strategic objectives aimed at the destruction of Japanese vital centers. In this vein, the first major offensive objective for the South Pacific and Southwest Pacific forces was the capture of Rabaul. Rabaul sat strategically at the "apex of a triangle, one leg of which extended

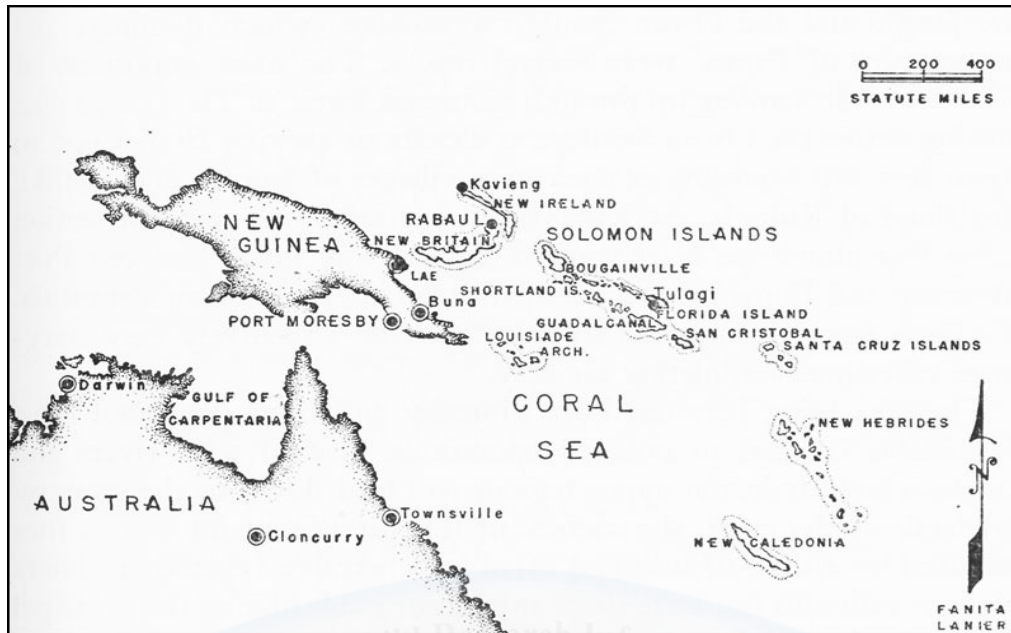
---

<sup>53</sup> Twining to Arnold, 27 April 43.

<sup>54</sup> Twining to Arnold, 27 April 43.

<sup>55</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 274.

southeastward through the Solomons, the other westward along New Britain.”<sup>56</sup>



**Figure 1: Map of the Solomon Islands**

Source: Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 4, *The Pacific: Guadalcanal to Saipan, August 1942 to July 1944* (1950; new imprint, Washington, D.C.: Office of Air Force History, 1983), 3. Taken from Ibiblio.org (accessed 15 May 11).

To capture Rabaul, the Allies devised a plan—code-named CARTWHEEL—to execute a coordinated two-pronged offensive by the Southwest Pacific Forces through New Guinea, and the South Pacific Forces through Bougainville, which would culminate in the destruction and eradication of Japanese forces at Rabaul on New Britain.

The target date for launching CARTWHEEL was set for 15 June 1943. To enable the advance of the South Pacific forces to Bougainville from the southeast, the Allies were “dependent upon the presence of adequate air cover.” However, since the only forward base capable of supporting the initial air operations was Guadalcanal, proper air cover could not be provided. The initial reach for the air forces proved to be

<sup>56</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 207.

too far, so air planners called for securing the intermediate objective of Munda on the western point of New Georgia. The overall plan was that each attack on the intermediate objectives would neutralize or capture the base, providing a foothold for advance. To accomplish this, it would take a well integrated and synchronized effort by the land, sea, and air components to capture the critical stepping stones, by which the Allies could island-hop toward Rabaul. However, the initial moves in this island-hopping scheme presented several challenges to the control of airpower.<sup>57</sup>

The first inherent challenge in moving to forward bases involved the proper protection and dispersion of aircraft. As Japanese air efforts continued to strike with some success at Guadalcanal, Twining was faced with a constant dilemma: send forces forward to relieve congestion on Guadalcanal but operate at below sub-standard levels of mission effectiveness due to the lack of supply, facilities, and maintenance at the forward bases, or take his chances by maximizing the robust facilities at Guadalcanal at the expense of a densely packed ramp. Twining relentlessly tried to persuade the naval commanders that dispersing aircraft was important, and provision needed to be made for more ramp space, individual aircraft shelters, and the like, but to no avail. The dilemma of dispersion presented a no-win proposition, but, finally having a strategy that was taking the fight to the enemy, rather than absorbing their attacks from a defensive crouch, helped assuage these concerns.

The second inherent challenge to operations was establishing an effective method for controlling aircraft in the forward areas. Although Admiral Fitch moved his Headquarters forward to Guadalcanal at the beginning of June, it was still inefficient for him to try and exercise OPCON of the forces moving forward in the attack on New Georgia. To solve this problem, he “established a new unit known as Headquarters,

---

<sup>57</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 219.

New Georgia Air Force (COMAIR New Georgia), composed of personnel drawn from the Forward Echelon . . . and this was attached to the New Georgia Occupation Force.” According to this arrangement, COMAIRSOPAC directed that “operational control of all aircraft assigned to tasks in the immediate vicinity of New Georgia would pass upon take-off to this new organization,” which also controlled air support to the ground operations. Coupled with the establishment of air liaison parties, who worked directly with the ground commanders by advising them on suitable targets and appropriate forces for air attacks, this system worked well and stuck to Admiral Halsey’s philosophy of pushing OPCON down to lower levels. In fact, it worked so well in New Georgia that it was later duplicated by establishing an Air Command North Solomons (COMAIRNORSOLS) on 1 September, just prior to the Allied attacks on Bougainville.<sup>58</sup>

In the mean time, on 25 July, after the first successful assault of CARTWHEEL operations against Rendova was complete, Twining assumed the responsibilities of COMAIRSOLS from Rear Adm Marc A. Mitscher. The unified command of airpower in the Central Solomons under COMAIRSOLS had proven to be a viable construct ever since its creation earlier in the year. However, this was the first time that direct OPCON of all air units in the Solomons was the responsibility of an AAF commander, and Twining was eager not to disappoint. Many of the initial actions Twining took while wearing the dual hat of Thirteenth Air Force commander and COMAIRSOLS were consistent with his previous command priorities. After assessing the fighter actions in support of the landings at Rendova, it was clear that the fighters were “in a state of semi-exhaustion” and having a hard time covering all of their assigned tasks. There simply were not enough fighters, so Twining and Harmon again made their requests known to Washington: specifically they wanted

---

<sup>58</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 221.



P-38's which were by far the most versatile and capable aircraft in theater.<sup>59</sup>

Their request exclusively for fighters is again significant in showing that even though an AAF Airman had OPCON of the forces in theater, they were not blindly wedded to the strategic bombing doctrine espoused before the war and being used to some degree of success in Europe. They made their own decisions about the best and most efficient uses of airpower, based on the nature of the war they were confronted with and what was required to accomplish the tasks at hand. Twining also saw the need to conserve the small P-38 force that he already had, and immediately began to "move the P-38's to a rear training area, retaining only a few as night fighters."<sup>60</sup> The fresh P-38 units would return to the front by 1 September in preparation for the difficult assault against Bougainville.

After consolidating their position on Rendova Island, the South Pacific air forces were poised to make their assault on the important intermediate objective of Munda, on New Georgia. Securing a foothold at Munda was a critical stepping stone in the overall execution of CARTWHEEL as "possession of Munda brought all the Solomons bases within range of the light bombers and fighters." The strategic significance of Munda, however, was not lost on the Japanese either, as "the air phase of the operation had been of greater magnitude than ever was possible in the Guadalcanal campaign." Throughout the 37 day struggle for Munda, which the Allies finally captured on 5 August, the Allies reported downing 385 enemy aircraft while "incurring a loss to themselves of 71 fighters and 22 bombers of all types." Although airpower's effects could be measured at nearly a four-to-one advantage in the air, operations in support of the ground troops proved far less profitable. The terrain and jungle landscape at Munda rendered fighter

---

<sup>59</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 223-224.

<sup>60</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 229.



support to the advancing Allied ground troops nearly useless, and Twining was left to employ his bombers “against those points which were too conspicuous to permit concealment.”<sup>61</sup>

The terrain was only one aspect of the larger collection of challenges that confronted the useful employment of airpower in the South Pacific. Contrary to many pre-war estimations, the enemy in the Pacific “demonstrated the ability to absorb tremendous punishment” in the face of devastating attacks and sustained prohibitive losses.<sup>62</sup> Additionally, the absence of technical aids for precision bombing, such as radar bombing equipment and adequate aerial photographs for target identification, contributed to an overall lack of enthusiasm and “divided opinion over the effectiveness of the air effort.”<sup>63</sup> Sensing these frustrations in both the Pacific and in Europe, General Arnold published a letter to “All Air Force Commanders in Combat Zones” regarding the evaluation of bombing methods and purposes in early June 1943.<sup>64</sup>

While reassuring his commanders that he was happy with their results so far, he issued a word of caution that “we must not complacently tell ourselves that our methods and efforts have begun to reach a peak of perfection beyond which we cannot go . . . there is always room for improvement.” Perhaps some timely commander’s intuition was the impetus behind his terse message to his commanders urging them to forestall any tendency to atrophy or become complacent in their missions. Even though many of his Airmen and commanders had been fighting in the field for over a year, he implored his commanders to remind all personnel that “we have but barely begun to realize the possibilities and capabilities of airpower.” Arnold went further to argue

---

<sup>61</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 232-234.

<sup>62</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 234.

<sup>63</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 234.

<sup>64</sup> Gen H.H. Arnold, Commanding General, Army Air Forces, to All Air Force Commanders in Combat Zones, letter, 10 June 1943, Container 121, Folder 6, Document 9, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

that airpower, specifically the long-range heavy bomber, “which comprise the main striking power of air forces,” could on its own “lift an Air Force from the status of an auxiliary arm to that of an equal with arms which serve in other mediums.” While Twining understood Arnold’s message loud and clear, it flew in the face of many of his observations as COMAIRSOLS, where he routinely saw the success or failure of most missions hinge on the totality of the joint planning and execution effort. Additionally, fighters had accomplished the lion’s share of the work, while heavy bombardment was still awaiting its moment to shine in the Pacific.<sup>65</sup>

After the Allies’ third assault of the CARTWHEEL campaign against Vella Lavella Island in New Georgia, two key observations were becoming increasingly evident to Twining. First, the Allied ‘by-passing’ strategy was working and, as an added side benefit, it was saving lives. Throughout their time together in the Pacific, the Allied ground and air units had developed extremely effective and efficient joint concepts for amphibious landings and support to ground force maneuvers to seize terrain. The high level of mastery attained since the initial landing on Guadalcanal was a critical pre-condition to the by-pass strategy. It allowed commanders to pick and choose more austere landing sites with full confidence that airpower would be overhead aiding with follow-on breakout maneuvers, while the landing forces fought to secure remote beachheads with nearly impassable jungle landscapes. Second, the demand for fighter aircraft had rapidly outpaced the supply. Although Twining again made his case for more fighters to the leaders in Washington, Arnold replied that Twining “would have to manage with the squadrons currently available” as all the fresh units were being thrown against Germany.<sup>66</sup> While the fighter problem continued to plague Twining throughout his tenure as COMAIRSOLS, he was at least able to

---

<sup>65</sup> Arnold to All Air Force Commanders in Combat Zones, 10 June 1943.

<sup>66</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 244.

get the fighters within range of the ultimate objective at Rabaul, through a successful siege of Bougainville.

In the broader context of the CARTWHEEL plan, Bougainville represented “the final land phase of the Solomons campaign” as well as the “sole remaining barrier between Rabaul and the Allied positions in the South Pacific.” Bougainville was the largest island in the Solomons. As such, it was also a geo-strategic goldmine as it had good harbors, terrain favorable to the construction of airfields, and was close enough to other nearby strongholds, such that it could be rapidly reinforced by sea or air. Owing to the fact that the Japanese captured the island in 1942, they had ample time to prepare its defenses. For the Allies, the harbor of Tonolei and airfields of Kahili and Buin in the south, as well as the Bay of Matchin and Buka airfield in the north, became the main points of attack. As the senior leaders considered the situation, General MacArthur, who was set to attack Rabaul from the southwest, requested that Admiral Halsey consider the problem and mount his attack “with a view to obtaining airdrome sites on Bougainville sufficiently far north to permit fighter escorts to operate against Rabaul in December.” This consideration, coupled with Japan’s heavily defended positions in the north and south, presented another prime opportunity to execute the ‘by-pass’ tactic enabled by the proficiency and strong relationships built throughout CARTWHEEL between air and ground forces. As Halsey weighed his options, all the factors taken together “pointed to a landing in the Empress Augusta Bay area near Cape Torokina, a west-coast site that was far from ideal.”<sup>67</sup>

The landing site chosen presented multiple challenges to the landing force. Although the beaches were temporarily free of enemy troops, the landing site was “low and swampy with a heavily timbered coastal plain” and afforded “no satisfactory anchorages for larger vessels,

---

<sup>67</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 245-249.

nor were there any roads or settled communities near-by.” In order to buy adequate time to mount the cumbersome amphibious assault, Halsey asked Lt Gen George Kenney, who served as the commander of the Fifth Air Force, and as the overall air commander under General MacArthur in the Southwest Pacific Area, to guard his flank by having his bombers concentrate heavily on the air and ground reinforcements coming out of Rabaul. This meant that the job of reducing the Bougainville airfields and enemy fell to Twining as COMAIRSOLS. Building on their previous successes and best practices, Twining again established a command to control directly all air over the beaches in support of the amphibious assault by standing up Air Command North Solomons (COMAIRNORSOLS). While COMAIRNORSOLS and his two subordinate fighter commands focused on protecting the invading force and suppressing enemy ground resistance, another factor critical to the success of the operation was Twining’s ability to destroy the airfields and facilities with his bombers before the ground landing.<sup>68</sup>

Twining opened his assault against Bougainville on 18 October, two weeks before the Allied amphibious force hit the beach in the west. While the bombers were able to conduct sustained operations that inflicted heavy punishment on the airfields, the Japanese force “displayed astonishing resiliency under the attacks, making it very difficult to disable them permanently.”<sup>69</sup> The Japanese were quick to fill in the bomb craters enough to keep aircraft in the air and in opposition of Twining’s force. As the Allied land invasion commenced with the amphibious landings on Empress Augusta Bay, there was no question that the enemy’s reaction was going to be swift and mounted from both the sea and the air. To thwart any counter-attacks from the enemy, Halsey positioned his cruisers to block the sea flank from Rabaul, while Twining’s bombers continued to pummel the airfields and infrastructure

---

<sup>68</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 249-252.

<sup>69</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 254.

at the tips of the island, and his fighters protected the ground force advance to secure the airfield at Torokina.

This was joint warfare at its finest. The situation and the nature of the conflict in the Solomons brokered no other solution. As the assault got under way, Halsey grew increasingly wary of the amphibious forces' vulnerable and exposed position on the beaches of Empress Augusta Bay. When he received intelligence reports that more Japanese cruisers had reached Rabaul and worried they would be used against Allied positions on Bougainville, he prepared his carrier force for a massive assault on Rabaul. In order to conduct an effective attack against the forces postured there, Halsey would have to move his carriers further forward than he was comfortable doing and needed to use all of his airpower assets. Since the fighters had to escort the carrier bombers, he asked Twining to "provide for the task force a continuous cover of thirty-two fighters from his resources in the Munda area."<sup>70</sup> Through many other joint operations such as this, Allied air, sea, and land power conspired to overwhelm Japan's resistance on Bougainville and move into the final task of CARTWHEEL operations.

### **Moving On: Status of the Thirteenth Air Force as Twining Left Command**

Just as Torokina airfield on Bougainville became operational and final preparations were completed for the final assault on Rabaul, General Twining departed the Pacific theater and relinquished command of the Thirteenth Air Force. After serving nearly 18 months amid some of the most primitive conditions and desperate times imaginable, Twining's impact on combat operations and the employment of airpower in the Pacific was profound. Although Twining assumed command of a relatively small and disparate band of flying units, the Thirteenth's "record of achievements and accomplishments can in no manner be

---

<sup>70</sup> Craven and Cate, *The Pacific: Guadalcanal to Saipan*, 260.

compared to its relative size.” From its inception until the end of 1943, the Thirteenth Air Force flew a total of 26,214 combat sorties and dropped over 7,300 tons of bombs on Japanese land and sea based targets while downing 551 Japanese aircraft. The Thirteenth developed a reputation as being one of the fastest moving and hardest hitting forces and played a significant role in the overall success of the Allies as a *whole*.<sup>71</sup>

That was the point in the Pacific. The whole was greater than the sum of its parts, and the activities of the AAF were closely tied with those of the Navy, Marines, and other Allied forces. However, it took the services a while to figure this out and appropriately adapt to the environment. The inter-service rivalries and in-fighting that characterized the relationships between the services throughout the inter-war years left the services unprepared for the joint operating environment they found in the Pacific. For the AAF, not only were they subordinate to, and their assets under operational control of, the naval commanders in the theater, but they also could not pursue operational strategies in line with their pre-war doctrinal beliefs. There were no strategic targets against which a strategic bombing campaign could be conducted, and the available tactical targets also proved elusive to the heavy bomber force.

In light of the difficulties presented to the strategic bomber force, the fighters emerged as the stalwart force in the Pacific. Tactical airpower was better suited for the austere operating environment and found a niche conducting interdiction attacks against both the maritime and ground forces of the Japanese. But tactical airpower was not without difficulties of its own. Due to a lack of pre-war training and focus on close air support (CAS), the fighters were unable to support the close fight on the ground. These missions fell to the Marines, who were

---

<sup>71</sup> *Historical Report: Thirteenth Air Force, 13 January 1943 through 30 June 1949*, 2 and 77.

trained well at supporting their ground troops, while the AAF was relegated to missions that were not in the proximity of friendly ground troops.

In addition to the lack of training and education in CAS, the AAF initially struggled with their bread-and-butter air superiority mission as well. The fighter pilots could not match the performance of the Japanese Zero, until the P-39's with improved engines and the P-38's were introduced into the theater. However, maintaining an adequate number of both within, as well as flowing into, the theater was a continuous struggle.

Hampered by the AAF's push for the production of strategic bombers before the war, fighter production lagged behind the operational requirements of the theater air commanders. In addition, the policy that placed the Pacific theater subordinate to the European theater compounded this problem. Unable to overcome the organizational and institutional inertia that set the aircraft force flow into the theater, Twining was unable to alter or adapt it to match his actual needs in the theater. He never had an adequate amount of fighters to fulfill all the requirements for tactical airpower and routinely requested more. Ironically, while his requests continued to be denied by higher Headquarters, his heavy and medium bomber force grew nearly five-fold.<sup>72</sup> In fact, a 13th Bomber Command assessment provided to Twining three weeks before he left command showed that when the October and November allocations of heavy bombers arrived in theater, there would be a total of 150 heavy bombers, which represented the "saturation point" for the theater and "the December commitment of 20 B-24's should be cancelled."<sup>73</sup>

---

<sup>72</sup> *The Thirteenth Air Force in the South Pacific Theater, 1943* (Maxwell AFB, AL: USAF Historical Division, Air University, 4.

<sup>73</sup> Col WM.A. Matheny, Commander, Thirteenth Bomber Command, to Maj Gen N.F. Twining, Commander for Air, Solomon Islands, letter, 18 November 1943, Container



However, amid the unanticipated war that Twining found himself in, he adapted the organization and operation of the Thirteenth Air Force to produce a viable fighting force whose operations were integral to the Allied success in the Solomon Islands. Working through and within the NAF organizational framework, Twining molded the command structure to establish joint relationships that reached all the way down to the tactical level. This operating structure and diversification of effort “resulted in a highly flexible unit, necessitating ground and air crews, as well as staffs, being completely conversant with all situations.”<sup>74</sup>

Overall, the Pacific afforded Twining a veritable laboratory for testing and refining joint airpower concepts; a precious few of which had been conceived of before the war, but most of which had to be improvised under combat conditions. Not only did he have to learn and master the capabilities of every type of aircraft under his command, in serving as COMAIRSOLS, he had to learn and master the most effective means and methods of exercising operational control of his joint and coalition air forces.<sup>75</sup> These, and many others, were the lessons he gleaned from the tricky ins and outs of jungle warfare and had to apply to a much different, but more anticipated, operational context in Europe.

---

118, Folder 1, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>74</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Maj Gen J.P. Hodges, Assistant Chief of Air Staff for Intelligence, Headquarters, Army Air Forces, letter, 21 December 1944, Container 17, Folder NO-DE 1944, Document 111, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>75</sup> Lt Snowden T. Herrick, Short Biography of Maj Gen Nathan F. Twining, Container 134, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

## Chapter 3

### Club Med: Twining and the Fifteenth Air Force in Europe

#### **The Stage is Set**

Approaching the end of 1943, the Allies were beginning to see some progress against the German war machine. Although the Germans still had a firm grasp on the majority of the continent, the Allies had routed German forces in North Africa and successfully advanced across the Mediterranean, securing a small foothold on the shores of Italy and, in effect, opening up a third front against the Axis powers. In order to support the continued advance of ground forces from the south and to set the conditions for an Allied invasion of the continent from the north, the Allies made significant, and controversial, organizational adjustments to the strategic air war being waged in the skies over Europe.

In contrast to the Pacific theater, the organizational and ideological divides that shaped the debates over the command of airpower in the European theater ran along Anglo-American national lines, as opposed to US service lines. As the British Royal Air Force (RAF) sought out leadership positions based on host nation and initial preponderance of force status, the AAF held steadfast to their policy of maintaining as much control as possible over its units and favored command lines of coordination rather than control. In England, the AAF had already lost operational control of their tactical Ninth Air Force, now under the direction of the Allied Expeditionary Air Force for OVERLORD, and the efforts of the Eighth Air Force [their strategic Air Force] and RAF Bomber Command were coordinated “by the informal and intimate liaison maintained by the commanders concerned.”<sup>1</sup> Content with this

---

<sup>1</sup> Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 2, *Europe: TORCH to POINTBLANK, August 1942 to December 1943* (1949; new imprint, Washington, D.C.: Office of Air Force History, 1983), 741.

arrangement for the coordination of strategic operations, the RAF and AAF then began to look at how to fold the newly established Fifteenth Air Force into their effective system of command and control.

From agreements made at the QUADRANT conference in August of 1943, Operation POINTBLANK became the highest strategic priority in Europe. POINTBLANK was the codename for the Anglo-American's Combined Bomber Offensive which began in June 1943. Conceived in the early years of the war and authorized at the Casablanca conference in January 1943, POINTBLANK set out to accomplish the systematic and progressive destruction of Germany's economic and military power to set the conditions for a climactic cross-Channel invasion of north-western Europe under Operation OVERLORD in May 1944.<sup>2</sup>

Following the Allied advance into Italy, General Arnold proposed the Twelfth Air Force, operating as a composite strategic and tactical force analogous to the Thirteenth in the Pacific, be split into two air forces—one tactical and one strategic.<sup>3</sup> With the new strategic air force, Arnold argued Italian air bases could better support Operation POINTBLANK by enabling the destruction of targets beyond the range of bombers flying from England.<sup>4</sup> In addition, a strategic air force initially offered the possibility of multi-axis attacks, forcing the dispersion of German ground and air defenses, as well as the hope of operating from locations with vastly improved weather conditions compared to England. As a result, Gen Dwight D. Eisenhower announced the activation of the Fifteenth Air Force on 1 November 1943 as the strategic air force in the Mediterranean to work in concert with the Eighth Air Force in England in pursuit of POINTBLANK objectives. Three weeks after establishing the Fifteenth, the CCS activated the United States Strategic Air Forces (USSTAF), under the command of Lt Gen Carl A. Spaatz, to control

---

<sup>2</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 563 and 665.

<sup>3</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 564.

<sup>4</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 564.

operations of these two air forces and “complete the strategic air encirclement of Germany and her satellites.”<sup>5</sup>

The USSTAF appeared to be a solid arrangement for the command and control of the US strategic air assets in Europe, although the CCS still saw the need for a coalition command in the Mediterranean at large. Eventually, on 1 January 1944, the United States Army Air Forces in the North Africa Theater of Operations (USAAF/NATO) became the USAAF in the Mediterranean Theater of Operations (USAAF/MTO) under the command of Lt Gen Ira C. Eaker at the Headquarters in Caserta, Italy. With the preponderance of air assets and by designation by the CCS, Eaker also assumed the role of commanding general and air commander in chief for the Mediterranean Allied Air Forces (MAAF), which also consisted of a numbered British air force. The MAAF had three primary tasks under Eaker: “to share USSTAF’s responsibility for the Combined Bomber Offensive (CBO), to support the ground campaign in Italy, and to keep the sea lanes open to provide protection for logistical establishments.”<sup>6</sup> To accomplish these tasks, Eaker kept the previous North African Air Forces structure and organized the MAAF into three distinct air forces—Strategic, Tactical, and Coastal, appointing Major General Twining commander of the Mediterranean Allied Strategic Air Forces (MASAF).

As commander of the US’s strategic air force in the Mediterranean, Twining wore dual hats as commander of all Allied strategic operations of the MASAF, as well as the new Fifteenth Air Force, which he assumed command of on 3 January 1944. This organizational structure helped establish unity of command, while at the same time preserving national distinctions for purposes of administration. It was also very reminiscent

---

<sup>5</sup> Lt Gen N.F. Twining, *Fifteenth Air Force*, Container 134, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>6</sup> Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 3, *Europe: ARGUMENT to V-E Day, January 1944 to May 1945* (1948; new imprint, Washington, D.C.: Office of Air Force History, 1983), 326.

of the time he spent as COMAIRSOLS in the Pacific, commanding both Thirteenth Air Force and coalition aircraft. While Eaker retained overall OPCON of the MAAF, which was also similar to Twining's time in the Pacific subordinate to COMAIRSOPAC, a potential problem for command and control rested in the subordination of the Fifteenth to USSTAF which "left Eaker responsible to two masters insofar as the operations of his heavy bombers were concerned."<sup>7</sup>

Eaker would thus have to balance constantly the requirements levied on the Fifteenth by Spaatz's USSTAF toward the CBO with the requests of Lt Gen Jacob Devers, the new deputy Allied Commander of the MTO, under the British Supreme Commander or the MTO, to support the fight in Italy. While this arrangement presented ample opportunity for disagreement, operations ran relatively smoothly. Eaker and Spaatz "were in full agreement on the overriding priority that should be given strategic bombing," and Devers was cautious not to monopolize or redirect strategic bombing efforts to support ground forces by declaring a ground emergency within the theater.<sup>8</sup> Devers' relationship with Eaker, and the other air commanders within the MAAF, was significant in keeping him from hoarding strategic assets for air cover of his troops and broke long standing stereo-types portraying airpower as an auxiliary force. The control of airpower remained in the hands of an Airman—Eaker—and Twining remained beholden to Eaker by exercising TACON of his forces in support of MAAF objectives.

### **Airpower in Context**

While the unique and challenging environment of the Pacific confronted Twining with an air war that was unanticipated and inconsistent with pre-war conceptions of airpower, the European theater presented a template for air operations that was more anticipated and in line with AAF beliefs before the war. Prophetically playing out in similar

---

<sup>7</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 327.

<sup>8</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 328.

detail to the ideas and concepts espoused by the framers of AWPD/1, the war in Europe pitted nations in a continental land war reminiscent of the Great War 25 years earlier. Additionally, as a result of the continued industrialization and mobilization of entire societies to support the war, pre-war ideas suggesting that the enemy nation itself was subject to defeat were beginning to become reality. True strategic targets that directly contributed to the enemy's ability to wage war lay within the immediate range of Allied strategic bombers. Although operating from different strategic bombardment strategies, both the RAF and AAF used airpower to bypass the enemy's fielded forces and begin the systematic attack and destruction of its vital centers and other points of vulnerability.

As the main effort in the theater, the Combined Bomber Offensive (POINTBLANK) was a coalition effort by the strategic air forces of the RAF and the USAAF. Each operating according to their own peculiar capabilities and concepts, they approached the mission of destroying the sources of German power and ability to wage war from different angles. On the one hand, the RAF preferred to conduct wide-area strategic bombing operations at night, due to a lack of adequate precision bombing technology and limited self-protection capability of their bombers. On the other hand, the Americans attempted to pursue high-altitude, daylight, precision bombing techniques in accordance with their pre-war strategic bombing doctrine.

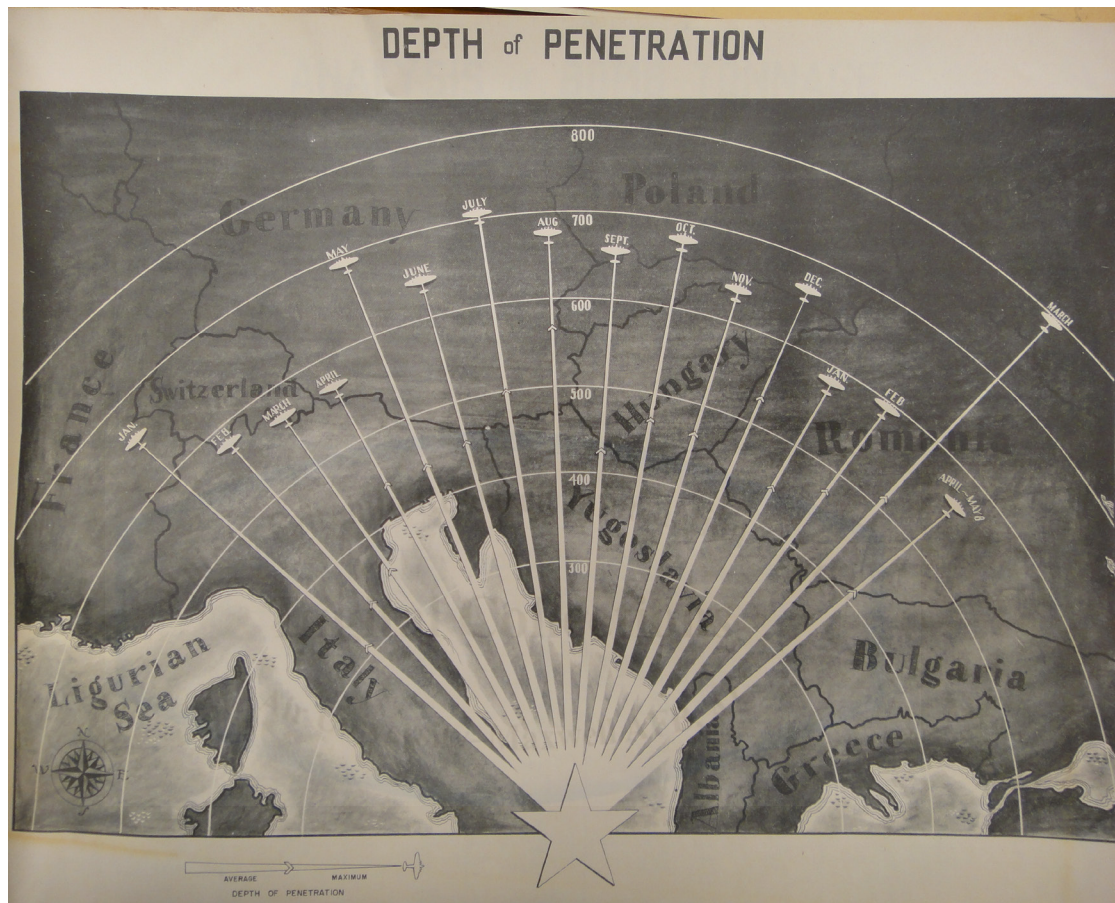
Operating in parallel with the Eighth Air Force, the primary objective for the Fifteenth was the "progressive destruction and dislocation of the German military, industrial and economic system, and the undermining of the morale of the German people to a point where their capacity for armed resistance would be fatally weakened."<sup>9</sup> In stark contrast to Twining's island-hopping experience in the Pacific, 12 enemy

---

<sup>9</sup> Lt Gen N.F. Twining, *Fifteenth Air Force*.



or enemy-occupied countries “containing a wide variety of economic, military, and political objectives,”<sup>10</sup> lay within the combat radius (about 700 miles) of his heavy bombers based on the complex of airfields around Foggia.



**Figure 2: Depth of Penetration of Fifteenth Air Force Bombers into Europe from Operating Bases in Italy**

Source: *The Statistical Story of the Fifteenth Air Force*, (Bari, Italy: 28th Statistical Control Unit, Fifteenth Air Force, 1945), 4, Container 132, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

This auspicious location left the MASAF commander optimistic by having qualitatively more important targets closer to his bases in Italy than to his counter-part's bases in Great Britain, but also daunted, as

<sup>10</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 574.



his force was comprised of only half the strength. Regardless of location, both the USAAF and RAF realized that to tighten the noose around Germany, they had to first neutralize and subsequently destroy the German Luftwaffe. Thus, “continued attacks on his fighter aircraft in the air and on the ground, together with the destruction of his aircraft factories was the order of the day”—and the number one objective of POINTBLANK.<sup>11</sup>

### **Taking Over the Fifteenth Air Force**

As General Twining assumed command of the Fifteenth at the beginning of 1944, he joined an organization that had been at full speed for two months and expanding rapidly. Initially comprised of personnel and equipment provided by the Twelfth Air Force, the Fifteenth contained “six heavy bombardment groups, five medium bombardment groups, and four fighter groups,” which were divided among three wings. Throughout the two preceding months, these forces completed the move from Tunisia and other operating bases in North Africa to the Foggia and Manduria areas of Italy. Again, unlike Twining’s experience in the Pacific, the forward movement of the Fifteenth to bases in Italy “proceeded at a pace which did not outdistance the engineers in their preparation of fields and other facilities.” In addition, while the maintenance of the aircraft in the early months had to overcome significant challenges associated with operating from austere bases, the service and supply of the bases was not a limiting factor, as good command arrangements and facilities already existed in theater under the Air Service Area Commands.<sup>12</sup>

Within this context, under Twining’s command, the MASAF and the Fifteenth conducted missions along five general lines of operation: counter-air operations, support to ground force operations, counter-oil operations, counter-communications operations, and operations concerned with the rescue of prisoners of war for repatriation.

---

<sup>11</sup> Lt Gen N.F. Twining, *Fifteenth Air Force*.

<sup>12</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 567-568.

Maintaining an effective balance between the competing interests of these diverse mission sets required a level of experience, instinct, skill, focus, and leadership that Twining developed during his time as COMAIRSOLS. His ability to draw upon his experience in the Pacific and utilize the inherent flexibility of airpower to execute a wide array of mission sets would become the enduring legacy of the Fifteenth.

### **Eighteen Months in Command: Significant Missions and Events of the Fifteenth Air Force, 1944-1945**

#### **Counter-Air Operations**

Absent the inherent impediments to conducting combat operations that faced Twining in the Pacific, he set his full concentration on accomplishing the primary mission of the Fifteenth—the support of POINTBLANK operations. Specifically, the strategic air forces in both the MTO and Great Britain were focused on “the attainment of air supremacy through counter air force operations and the destruction of the enemy’s aircraft production.” With 50 percent of Germany’s assessed single-engine aircraft production within range of Twining’s bombers in Italy, the ability to have an immediate impact on the degradation of the Germans’ war effort was remarkable. After a series of successful attacks by the Fifteenth on the production facilities of the Luftwaffe, specifically the bombing of the Wiener Neustadt production complexes, which were later crowned as the “outstanding event of its first four months of operations,” the MASAF could sense the heavy blows they were delivering were being felt by the Germans. However, despite these early successes, the strategic missions against priority targets continued to exact a toll on the MAAF as they began to see the level of importance Germany attached to its fighter-production facilities and their “willingness to employ large forces of fighters in the defense of key installations.”<sup>13</sup>

---

<sup>13</sup> Craven and Cate, *Europe: TORCH to POINTBLANK*, 582.

After weeks of bad weather prevented any substantial strategic bombing efforts in support of POINTBLANK at the opening of 1944, a break in the clouds and rain presented the Allies with the opportunity to kick-off Operation ARGUMENT. Still directed primarily against the assembly and production facilities of Luftwaffe fighter aircraft, ARGUMENT sought to further coordinate efforts between the Eighth and Fifteenth “against the highest-priority objectives, most of which by February 1944 were situated in central and southern Germany.” While coordination efforts between the USSTAF assets remained strong, the improved coordination between RAF and US strategic bombers was of significant note. In an effort to increase unity of effort and concentrate strategic effects, “the RAF agreed to make its night area attacks coincide with the [US] daylight missions both in time and in place.” While ARGUMENT operations commenced on 20 February 1944 in “a dramatic series of strategic operations that has come to be called the Big Week,” the Fifteenth, without the aid of H2X radar or long-range fighter escort, would have to wait until the weather cleared in the south to take part.<sup>14</sup>

It did on 22 February. Launching a force of 183 bombers, the Fifteenth bombed the Messerschmitt factory at Obertraubling. Reminiscent of other attacks against well-defended industrial targets, the Luftwaffe again stung the Fifteenth by destroying 14 of its unescorted bombers. With the operations from the north now suspended by weather, the Fifteenth mounted an attack of 102 bombers on 23 February against the ball-bearing plant in Steyr, Austria. Successful visual bombing techniques led to the destruction of 20 percent of the plant, which was then “turning out between 10 and 15 percent of the German ball-bearing production.” This time tasked against an aircraft component plant at Steyr, the Fifteenth’s attack on 24 February consisted of only 87 B-17’s. While the coincident and coordinated

---

<sup>14</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 30 and 35.

attacks by the Eighth in the north were intended to be mutually beneficial, by splitting the German defenses, overcast weather in the north led the Germans to focus their air defenses on the Fifteenth's attacking force in the south. "Despite excellent withdrawal support provided by 146 P-47's and P-38's," Twining's heavy force lost 17 bombers, including all 10 that encompassed the rear formation. As the Fifteenth directed its efforts again against Regensburg for a final attack on 25 February, only 176 of the assigned 400 bombers completed the mission, while suffering 33 downed bombers, nearly one-fifth of the total attacking force.<sup>15</sup>

Operation ARGUMENT received mixed reviews. With the destruction of German fighter production nearing a critical point of urgency for the USSTAF before Big Week, Allied leaders were willing to accept the "risk of exceptional losses that might result from missions staged under conditions of adverse base weather." As the 137 bomber losses of the Eighth were added to the 89 bomber losses of the Fifteenth, for a total of 226, or an overall average of about six percent of the force, the losses were substantial, but still far from being adversely prohibitive to the conduct of future operations. The Germans also sustained significant losses to their aircraft industry, both in the air and on the ground. It was estimated that "the 4000-odd tons of bombs dropped on targets in the aircraft industrial system alone damaged or destroyed 75 percent of the buildings in plants that at the time accounted for 90 percent of the total German production of aircraft." In addition, Allied aircraft claimed to have downed over 600 German fighters of which roughly one-third were credited to fighter escorts and another one-third "to the bombers of the Fifteenth Air Force, which enjoyed no long-range escort." Although the combination of these efforts contributed greatly to degrading the production of German aircraft, the impact was short-lived,

---

<sup>15</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 37-41.

as the Germans further dispersed their production facilities and reinitiated production.<sup>16</sup>

Ironically, while the Fifteenth was conceived in large part to take advantage of perceived better weather conditions in the south, it remained severely constrained by bad weather throughout most of March and confined its operations almost exclusively to striking targets in Italy. Fortunately for Twining's Fifteenth, Italy remained relatively free from attacks by German aircraft. This gave considerable breathing room to MAAF aircraft operating around their home bases and allowed the Allies to preserve an acceptable degree of air superiority over the battle area. Although relatively free from air attack, the net effect to the ground force was negligible as their advance through Italy remained stagnant.

### **Operations in Support of Ground Troops**

Notwithstanding the Mediterranean theater's ostensible relegation to a position of secondary importance, in early 1944, the fact remained that the only Allied boots on the continental land mass of Europe capable of ground operations against Germany were in Italy. Under the existing command and control arrangements for the MAAF, the tactical assets within the Twelfth and the Mediterranean Allied Tactical Air Forces (MATAF) maintained primary responsibility for supporting ground operations, and the Fifteenth's planes supported the ground fight by conducting interdiction missions against German lines of communication. If an emergency was declared by the theater ground commander, the MASAF could shift its weight of effort from its primary responsibility of strategic attack missions in support of USSTAF objectives to missions in close support ground operations. While Twining was familiar with conducting interdiction missions to support the ground fight from his time in the Pacific, this time he had to do it with a predominantly strategic bomber force rather than a tactical fighter force,

---

<sup>16</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 31 and 44-46.

which presented several challenges and yielded a number of lessons learned.

The first ground operations the Fifteenth supported in Italy were to support the amphibious landings at Anzio (Operation SHINGLE) and the subsequent ground operations at Cassino. The Fifteenth's initial interdiction contributions were sporadic, but effective. By attacking the lines of communication and supply, they slowed the reinforcement of German ground troops sent into the area to repel the attack, and allowed the Allies to establish a foothold at Anzio. After intense fighting on the ground throughout January and into February, the US Fifth Army was unable to break through the German lines and asked for more help. While an emergency was not declared by the ground commander, the Fifteenth mustered a substantial force to support the ground fight. The target for the heavies was the Abbey at Monte Cassino.

The abbey was a historic monastery that the Allies believed the German ground forces were unlawfully using for military purposes, within the Italian city of Cassino, to stymie American attacks. After much deliberation, Allied commanders concluded that "the destruction of the monastery was a military necessity and . . . the military exigencies outweighed historical and sentimental considerations."<sup>17</sup> More important than what the abbey represented as a historic monument to the Fifteenth, is what it represented as a tactical target. Targeting the monastery marked a shift away from missions attacking German lines of communication and supply behind the front lines to missions attacking front line tactical targets in close proximity to friendly forces. This insidious mission creep went undetected by Twining and his subordinate air commanders, and, on 15 February 1944, Twining's heavies commenced aerial bombardment operations against the abbey.

---

<sup>17</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 363.



In theory, heavy bombardment of the monastery and surrounding area known as Monastery Hill would soften the German emplacement and set the conditions for an the Allied assault of the stronghold. In practice, however, the attacks succeeded in “destroying the abbey as a historical monument, but only impaired its usefulness to the enemy.”<sup>18</sup> Despite the tremendous psychological impact the bombing had on the ground troops of both sides—the “Allies cheered as if at a football game,”—the Abbey at Monte Cassino “was not attacked by the ground forces after the bombing.”<sup>19</sup> Lack of coordination and communication prevented the ground commanders from knowing the bombing was going to occur, and, as a result, no ground advance was made immediately following the attacks to exploit the effects of the bombing.

The failure of the ground forces to break the stalemate in south-central Italy remained a point of disappointment and consternation for the senior leaders in the theater as well as in Washington. With mounting pressure from both the ground commanders, who felt that tactical air by itself could *not* take care of the ground force needs and were anxious to get assistance from the Fifteenth’s heavies, as well as from Spaatz, who continued to direct the missions of the strategic force in support of the CBO, Eaker and Twining were caught in the middle. In an effort to appease both parties, Twining split his strategic forces between SHINGLE and ARGUMENT. While the heavies continued their support for Big Week operations, the ground forces remained stagnated by heavy resistance and bad weather. In an effort to force a breakthrough, commanders decided that a “maximum air and ground assault would be made on the Cassino front as soon as weather permitted.” Eaker again directed that the entire strength of the MATAF,

---

<sup>18</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 364.

<sup>19</sup> Lt E.L. Sawyer, Jr., Report of Ground Observation of Bombing of Monastery at Cassino, Italy, to Lt Col A.M. Clark, 18 February 1944, Container 17, Folder JA-FE-MR 1944, Document 6, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.



and as much of the MASAF that he could use without an emergency being declared, to “flatten the town of Cassino in one overwhelming air assault.” With Eaker personally observing the operations of his forces, the massive air assault against Cassino got underway on the morning of 15 March 1944.<sup>20</sup>

After three and a half hours of intense bombardment, “more than 275 heavies and close to 200 mediums dropped over 1000 tons of 1000-pound demolition bombs.”<sup>21</sup> While the numbers sound impressive, Eaker was not impressed. In a letter written to Twining regarding the performance of the Fifteenth’s heavies during the bombing of Cassino, Eaker chided Twining for their poor performance. Despite the impressive level of destruction throughout the town, Eaker highlighted a number of timing and accuracy issues that provided the enemy several instances of reprieve and opportunities to organize and regroup.<sup>22</sup> Additionally, he documented two separate instances in which “bombs fell on our own troops” and another incident of fratricide where “the [British] Eighth Army Commander’s own headquarters was bombed, . . . his own personal caravan was turned upside down, and his mess destroyed.”<sup>23</sup> Although Eaker personally attributed much of the poor bombing to the down time the bombers experienced, as a result of prolonged periods of bad weather, he did not excuse it. While he left Twining with the recommendation that next time he, or his deputy, should personally “be present on the ground with the unit commanders to observe the operations,”<sup>24</sup> he never addressed the underlying problem—heavy bombers ostensibly doing close air support.

---

<sup>20</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 364-366.

<sup>21</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 367.

<sup>22</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 369.

<sup>23</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, letter, 17 March 1944, Container 17, Folder JA-FE-MR 1944, Document 7, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>24</sup> Eaker to Twining, 17 March 1944.

Operationally, the mass air attacks on Cassino have been regarded as a “spectacular failure in the use of aircraft for artillery” and brought several important lessons to light regarding air-ground operations.<sup>25</sup> First, while the ground and air commanders felt the bombardment had created a level of destruction that met their desires and expectations, it also “created obstacles in the form of craters and masses of rubble which made the speedy use of armor impossible and handicapped the infantry.”<sup>26</sup> Second, the Allies concluded that “a ground attack which is to follow a mass air attack must be launched immediately, vigorously, and on a large scale.”<sup>27</sup> Eaker underscored this point in a letter to General Devers, stating “the preliminary air bombardment is largely wasted if it be not followed immediately by strong aggressive ground attacks in sufficient force to overcome any enemy opposition.”<sup>28</sup> While these findings seem to shift more of the blame to the ground component for not breaking through the German defenses, Twining and the Fifteenth also took responsibility and sought answers.

In a brilliant attempt to learn from their mistakes and rectify their inadequacies with close bombing, the Fifteenth called on their comrades in the 12th Tactical Air Command (TAC) to serve as “guides” for some of their close support missions. The Twelfth sent three experienced pilots to observe the planning and execution of Fifteenth missions in support of ground troops, as well as offer assistance and techniques for better target identification. While all three 12th TAC pilots felt that their assistance was a positive step for their strategic partners, they only offered one noteworthy suggestion. In his report dated 16 May 1944, Captain Block humbly stated, “the only suggestion that I can offer concerning the

---

<sup>25</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 370.

<sup>26</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 370.

<sup>27</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 370.

<sup>28</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Lt Gen J.L. Devers, Deputy Commander, Mediterranean Theater of Operations, letter, 6 April 1944, Part 1, Container 26, Folder 3, Document 37, Ira C. Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

improvement of heavy bombers operating on or near the bomb line is that the navigators should be equipped with smaller scale, more accurate maps.”<sup>29</sup> While Twining made sure these changes were implemented immediately, they were missing the bigger picture: they wanted to know how to do close bombing better, rather than ask the question if they should be doing the missions at all. Thankfully, flying missions in support of ground troops was the exception rather than the norm for the Fifteenth, and they had tremendous success against strategic targets.

### **Counter-Oil Operations**

One of the greatest contributions and sources of pride for Twining and the Fifteenth was the “drying up of German fuel supplies through attacks on oil refineries.”<sup>30</sup> As a result of their favorable geographic location within Italy, 50 percent of Germany’s total gasoline production was now within reach of the Fifteenth’s strategic bombers,<sup>31</sup> including a series of synthetic oil plants in Germany, Poland, and Czechoslovakia, as well as the three richest oil basins in Europe: Romania, Hungary, and Austria.<sup>32</sup> Although interest in attacking German oil supplies had resonated with the Allies as early as 1940, “by May 1944 only 1.1 percent of all Allied bombs had been directed at petroleum targets.”<sup>33</sup> The shift in strategic priority toward oil that soon followed was directly attributable to the conspicuous success of the Fifteenth’s masterful attacks on Ploesti.

---

<sup>29</sup> Capt K.M. Block, Report on Detached Service to 15th Air Force, to Commanding General, 12th Tactical Air Command, 16 May 1944, Container 17, Folder AP-MY 1944, Document 37, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>30</sup> *Fifteenth Air Force: A Summary of its Operations and Results, 1 November 1943 – 8 May 1945* (Bari, Italy: Historical Division, Fifteenth Air Force, 1945), 3.

<sup>31</sup> *Fifteenth Air Force: A Summary of its Operations and Results*, 3.

<sup>32</sup> Col E.J. Rogers, Jr., “Operations of the Fifteenth Air Force” (talk, Members of the House Committee on Military Affairs, Bari, Italy, 21 June 1945), Container 134, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>33</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 172.

On 5 April 1944,\* the Fifteenth struck and badly damaged the Astra group of refineries at Ploesti, Romania, unmistakably slashing at the jugular vein of Germany's oil and gasoline supply—the life-blood of their vast mobile warfare machine.<sup>34</sup> Against strong criticism from Air Chief Marshal Sir Arthur Harris of the RAF Bomber Command, who was wedded to infrastructure targets dealing with transportation, the attack was conducted surreptitiously, but with the consent of Arnold and the CCS. Under the guise of striking transportation targets in the vicinity of Ploesti, 146 B-24's and 90 B-17's from the Fifteenth dropped 588 tons of bombs, the majority of which “coincidentally” fell inaccurately and impacted the refineries.<sup>35</sup> Still unable to proclaim success and the opening of the oil offensive, the damage sustained by these attacks encouraged additional missions to be sent against the marshalling yards near Ploesti with “the expectation that most of the bombs would produce ‘incidental’ damage to oil refineries.”<sup>36</sup> Twining subsequently sent his bombers to attack Ploesti “on average every three weeks until the end of the war,” unabashedly referring to it as “Number One on the Hit Parade.”<sup>37</sup>

It took until 8 June 1944, with OVERLORD two days old, for General Spaatz to move petroleum targets to the top priority spot for his strategic bombing force. Fortunately, in the two months following the initial attacks at Ploesti, both the Eighth and the Fifteenth enjoyed tremendous success against oil targets writ large. While Ploesti

---

\* Discrepancies in the date of this operation exist between official histories, to include Craven and Cate, and a paper written by General Twining highlighting the significant events of the Fifteenth Air Force. The official histories recount the operation occurring on 4 April 1944, while Twining referenced it as having occurred on 5 April 1944. This paper uses the date prescribed by the official histories and regards the date in General Twining's article as a typo.

<sup>34</sup> “General Twining Lauds Fifteenth for its Contribution to European Victory,” *Sortie*, 8 May 1945, Container 132, Folder 3, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>35</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 174.

<sup>36</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 174.

<sup>37</sup> Geoffrey Perret, *Winged Victory: The Army Air Forces in World War II* (New York, NY: Random House, Inc., 1993), 232.

remained the “favorite target of the Fifteenth Air Force until August 1944,” they were also very adept at striking oil installations throughout Eastern Europe.<sup>38</sup> USSTAF continued to expand the scope of oil missions for the Fifteenth by adding the large synthetic refineries of Burx, Ruhland, and the great synthetic complex centered at Blechhammer.<sup>39</sup> By August 1944, under personal inspection by Eaker, it was clear that the Fifteenth’s sustained bombardment campaign against the oil targets of Ploesti had hurt the enemy. Production capacity was dangerously low, and the lack of fuel and lubricants had a significant impact across the entire spectrum of the German military. By March 1945, a full year after commencing operations against Ploesti, it was assessed that “not one drop of fuel could be produced for the German war machine” leading German Reichsmarschall Hermann Goering to comment that “without fuel, nobody can conduct a war.”<sup>40</sup>

Similar to the counter-air battle, the counter-oil story cannot be complete without acknowledging the cost such a campaign took on the Fifteenth. As Twining later recalled, “the battle for oil to deprive the Germans of the life blood for their war machine was bitterly contested by the enemy.”<sup>41</sup> While the Germans experimented, with some success, by using large smoke screens to degrade the visual accuracy of the bombers, the traditional air and ground defenses combined to make the oil targets the most heavily defended targets in Europe. The defense of the refineries was continually strengthened, as anti-aircraft guns were routinely doubled and tripled creating a nearly impenetrable ‘flack alley’ for the brave and courageous pilots to fly through. They didn’t always make it. In fact, as a result of the determined defenses, the Fifteenth’s loss rate was “three times higher than it was against communications

---

<sup>38</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 178.

<sup>39</sup> Rogers, “Operations of the Fifteenth Air Force,” 21 June 1945.

<sup>40</sup> Reichsmarschall Hermann Goering, cited in Rogers, “Operations of the Fifteenth Air Force,” 21 June 1945.

<sup>41</sup> Lt Gen N.F. Twining, *Fifteenth Air Force*.

targets.”<sup>42</sup> The total counter-oil campaign cost the Fifteenth 804 heavy bombers with “the bitter battle of Ploesti alone claiming 223 of these.”<sup>43</sup>

### **Mid-Point Assessment & Update: Innovation or Improvisation?**

Having not been operational for a full year yet, Fifteenth flyers racked up some impressive achievements and their impact on the degradation of the German war machine was undeniable. However, they continued to face challenges. They belonged to the newest air force in the theater and had to strike a harmonizing balance between innovation and improvisation to accomplish their tasks and continue to please their dual masters.

In his weekly round-up letter of 21 March 1944, marked explicitly FOR GENERAL ARNOLD’S EYES ONLY, General Eaker gave the Chief a blunt assessment of the Fifteenth’s performance to date. After a section of glowing remarks about the Twelfth, he continued, “I wish I could say I am as happy about the Fifteenth Air Force as I am about the Twelfth. By Eighth Air Force standards, the Fifteenth is a pretty disorganized mob.” Eaker stopped short of directly criticizing the men of the Fifteenth, but he highlighted issues, such as their tactical air force lineage, their inaccurate bombing of small point targets, the impact to training and experience due to their rapid build-up, and the uncooperative weather in the south, which all presented barriers and challenges to a seamless assimilation into the European Theater of Operations. In a rather sycophantic tone, he praised Arnold for the “new blood” the Fifteenth received from Arnold in the form of good group and wing commanders, and was enthusiastic that they could help get the outfit into shape. Additionally, he acknowledged that Twining “has got a difficult job” and commended him for having “set about it with a will.” Concluding with the notion that the MAAF “shall spare no pains in order to leave nothing undone to build the Fifteenth up to my standards as quickly as possible,”

---

<sup>42</sup> Rogers, “Operations of the Fifteenth Air Force,” 21 June 1945.

<sup>43</sup> Rogers, “Operations of the Fifteenth Air Force,” 21 June 1945.



it was clear Eaker would not give Twining unlimited time to adjust to European operations. Twining would have to innovate and improvise if he wanted to keep his job. <sup>44</sup>

The difference between innovation and improvisation is small but not semantic, especially in a combat theater. Innovation has to do with introducing new things or methods and implies a level of deliberation or time to prepare. Improvisation speaks to the ability to deliver, accomplish, or perform without prior preparation. Stated another way, there is an inverse relationship between improvisation and the component of time. Time was not something that Twining generally had a lot of when he commanded the MASAF, but his command exhibited qualities of both innovation and improvisation.

One clear example of Fifteenth improvisation came shortly after the bombings at Cassino, when it became evident that support to the ground forces was not an incidental mission in the MTO. The perceived failure of the missions and the early fratricide incidents shook the confidence of the Airmen and unnerved Twining. Initiating the cross-flow of observers from the Twelfth to the Fifteenth was an excellent attempt to improvise solutions to difficult problems under rigid time constraints in wartime conditions. Although the program did not get to the root of the problem, it did find a deficiency with the maps that provided an opportunity to improvise new techniques and procedures. It is hard to believe that such a seemingly obvious point was so easily overlooked, but that is the nature of combat, and the reason why good improvisation sometimes arbitrates between victory and defeat.

Twining and the Fifteenth also showed a capacity and aptitude for innovation as well. Radar bombing via H2X-equipped aircraft executing Pathfinder tactics and formations was still very much in the experimental

---

<sup>44</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Gen H.H. Arnold, Commanding General, Army Air Forces, letter, 21 March 1944, Series 8, Box 105, Folder 4, Official Correspondence 1 November 1943 – 21 April 1944, Murray Green Collection, United States Air Force Academy, Colorado Springs, CO.



phase in late '43 and early '44. Roughly a dozen H2X-equipped B-17's were operating within the Eighth Air Force in the early months of 1944, and despite persistent pleas from General Spaatz to General Arnold on behalf of the Strategic Air Forces, the H2X equipment was "discouraging slow in coming."<sup>45</sup> This meant the Fifteenth would have to wait.

In anticipation of receiving their share of the radar bombing equipment soon, Twining and the Fifteenth established a comprehensive system for its beddown and integration into the force. In his report of 15 May 1944, titled "Pathfinder Equipment in the Fifteenth Air Force," Twining advised Eaker on his command's progress. In detail, he updated Eaker on the present organization and method of employment for the Pathfinder aircraft in the Fifteenth. Fully cognizant that it would take some time for his crews to become familiar and proficient with the tactics, techniques, and procedures of radar bombing, he outlined a three-phased training and certification program for the Pathfinder crews to ensure the optimization of the system and resources. Twining concluded his report by reiterating to Eaker the sentiment of an Eighth Air Force inspection team, which reported that the Fifteenth's innovative effort "was potentially much simpler and more functional than that of the Eighth Air Force . . . [and] within the next three months the Eighth Air Force might adopt the Fifteenth Air Force's plan of organization."<sup>46</sup>

As a result of a continuing balance between innovation and improvisation, the Fifteenth demonstrated a gradual but persistent level of improvement in all facets of their strategic bombing. After flying their first Pathfinder mission on 9 July 1944 and further exploiting their robust training and certification plan, "the Fifteenth Air Force sharply raised its level of accuracy and developed techniques, such as the use of

---

<sup>45</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 18.

<sup>46</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, letter, 15 May 1944, Container 17, Folder AP-MY 1944, Document 29, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

diamond-shaped formations, which insured more safety for the bombers as well as greater precision in attack.”<sup>47</sup> This, however, did nothing to change the simple fact that “the most important targets were [still] the most difficult to hit.”<sup>48</sup>

### **Counter-Communication Operations**

Playing out in the shadows of the counter-air and counter-oil operations, Twining’s bombers also waged a very successful campaign against enemy lines of communications. Popularized under the moniker of the transportation plan, the chief targets singled out for destruction were the “routine servicing facilities in the key rail centers, since their destruction would be likely to cripple the entire system immediately.”<sup>49</sup> In addition to cutting rail lines, considerable effort was put into attacking large marshalling yards as well as traffic on the lines which amounted to large numbers of locomotives and other rolling stock, supplies, and equipment.<sup>50</sup> While typically regarded as important secondary targets, when weather precluded bombardment of strategic oil and aircraft production centers within Germany, communication targets were also attacked whenever the situation demanded it.

As it was originally conceived, the transportation plan sought to isolate the beachheads around Normandy being used for the cross-channel invasion by preventing the Germans from “reinforcing their counter-invasion divisions at the critical time.”<sup>51</sup> Therefore, the primary and most lucrative target sets were located more in the northwest corner of Europe and were heavily targeted by the Eighth and Ninth Air Forces. The Fifteenth played a minor role with respect to striking communication

---

<sup>47</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 286.

<sup>48</sup> Col W.M. Garland, Report on Bombing Accuracy of the 15th Air Force, to Commanding General, Mediterranean Allied Air Forces, 29 June 1944, Container 17, Folder JE-JL-AG 1944, Document 46, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>49</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 150.

<sup>50</sup> *Fifteenth Air Force: A Summary of its Operations and Results*, 7.

<sup>51</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 150.

nodes in the preparation for OVERLORD, but had a significant impact on targets throughout Italy and the Balkans. As Twining highlighted during his V-E Day address to the Fifteenth, “nearly half the total bomb tonnage dropped by our air force was on enemy lines of communication.”<sup>52</sup> Not only was the disruption of traffic and destruction of supplies caused by the Fifteenth’s widespread and persistent attacks important to choke off the flow of Germans to the south and paralyze their mobility, it also “contributed greatly to the progress made on the Italian, French, and Balkan fronts during the months that followed.”<sup>53</sup>

While the success the Fifteenth had against communication targets was very similar to the success Twining enjoyed with the Thirteenth’s interdiction of maritime and ground forces, the missions were still very different. Interdicting large transportation and communication complexes supporting a vast army engaged in a continental land war was much different than interdicting small moving surface-craft and roads cut out of a jungle. Although Twining was able to adapt to the missions in Europe, ironically, it seemed as though he saw the counter-communication missions as an inefficient use of his bomber force, yet he did not make the same argument when conducting close bombing missions. In a letter to Eaker, Twining expressed his concern saying “it has long been the opinion of this Command that attacks against bridges by heavy bombardment are a very uneconomical employment of airpower and cannot be justified except in cases of dire emergency.”<sup>54</sup> Regardless, the attacks against communication targets continued up to the last day

---

<sup>52</sup> General Twining Lauds Fifteenth for its Contribution to European Victory,” *Sortie*, 8 May 1945.

<sup>53</sup> General Twining Lauds Fifteenth for its Contribution to European Victory,” *Sortie*, 8 May 1945.

<sup>54</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Commanding General, Mediterranean Allied Air Forces, letter, 9 June 1944, Container 17, Folder JE-JL-AG 1944, Document 39, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

of the war, ultimately breaking the enemy's ability to resist the Allied Army's incursion into Germany from all sides.

### **Repatriation Operations: Operations REUNION and FREEDOM**

Eclipsing the impressive combat accomplishments of the Fifteenth are two events that are singularly distinctive to the Mediterranean Theater and General Twining's command. The Airmen of the MASAF paid a heavy price for the dangerous but vitally important missions they accepted. Their loss rates were high, and most of those that survived bailing out of their destroyed or crippled aircraft were captured and became prisoners of war. Luckily, however, the dynamic nature of the combat theater led to a prime opportunity for the Fifteenth to rescue and repatriate their fellow Airmen, who had been shot down behind enemy lines.

In a remarkable turn of events, Romania changed sides in the war in late August 1944. Their prisoners, especially the flyers from the MAAF, were now "in danger of being evacuated to Germany or having to spend a long period of time in Russian hands before they got home." In the midst of the ensuing confusion, one of the American POWs, Lt Col James A. Gunn III, escaped to the sanctuary of Italy inside the radio compartment of an Me-109G piloted by a Romanian officer. As he relayed his story of the situation unfolding in Romania to personnel in the Fifteenth, they rapidly took matters into their own hands.<sup>55</sup>

Anxious about missing out on this fleeting opportunity, the Airmen of the Fifteenth quickly converted a total of 56 B-17's into transports and flew to Popesti airport, near the imprisonment facilities outside of Bucharest. There the crews of the Fifteenth crowded as many prisoners as they could into the bombers and flew them back to bases throughout Italy in relays. Once the prisoners were heartily welcomed back onto friendly soil, they were fed and given medical treatment before continuing

---

<sup>55</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 298.

on their way home to the United States. In all, 1,162 prisoners were rescued and returned over a three-day period that later came to be referred to as Operation REUNION.<sup>56</sup>

Still riding a high from their success in Romania, the Fifteenth was called on again when Bulgaria surrendered to the Russians in September. Although the Allies were aware that over 300 prisoners were in Bulgarian custody, the Bulgarians preempted the Fifteenth's rescue operations by sending the prisoners by rail to Turkey, a neutral country.<sup>57</sup> From Turkey, they were then sent on to Cairo, Egypt, at which time the Fifteenth was able to fly in and pick up "259 Fifteenth Air Force personnel, 5 British, 9 Czech Air Force, and 5 Italian Army" personnel.<sup>58</sup> On that same day, 17 September 1944, the Fifteenth also rescued an additional 63 Allied personnel from Czechoslovakia and Yugoslavia. While the spirits of the prisoners were immediately raised upon the return to Italy, it was evident that the months of beatings, combined with substandard food, shelter, and medical care had taken a toll on their bodies. The Americans investigated and sought further retribution for the atrocities, but nothing came of their indictments at the end of the war.

Overall, no other air force during the war recovered so many of its pilots and crews. Twining's dedication to accomplishing these "miscellaneous operations at no expense to [the] strategic bombing program" received high praise from Eaker, Arnold, and other senior leaders.<sup>59</sup> While the events surrounding Operations REUNION and

---

<sup>56</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 298.

<sup>57</sup> Craven and Cate, *Europe: ARGUMENT to V-E Day*, 299.

<sup>58</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, letter, 18 September 1944, Container 17, Folder SE-OC 1944, Document 67, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>59</sup> Lt Gen B.M. Giles, Deputy Commander, Army Air Forces, to Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, letter, 10 October 1944, Container 17, Folder SE-OC 1944, Document 79, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

FREEDOM dominated the narrative, escape and recovery activities continued throughout the war. Remarkably, by 22 May 1945, as a result of over 300 successful operations, 6,071 personnel [were] returned, by air, surface-craft, or on foot through enemy lines.<sup>60</sup> However, it was the distinctive accomplishments of Operations REUNION and FREEDOM that Twining would later regard as “the most satisfying event in the history of our air force.”<sup>61</sup>

### **Moving On: Status of the Fifteenth Air Force as Twining Left Command**

While the repatriation missions may be the most satisfying, Major General Twining and the entire Fifteenth Air Force could be proud of many things. The Fifteenth continued to operate in support of all five mission sets outlined above until V-E Day, 8 May 1945, and made a tremendous contribution to the complete and overwhelming defeat of the enemy. At the cessation of combat operations, the Fifteenth had flown over 152,542 bomber sorties and 89,835 fighter sorties with a total combat strength of 21 heavy bomber groups, seven fighter groups, and nearly 65,000 ground personnel.<sup>62</sup> With this operational strength, they “dropped 309,278 tons of bombs on enemy targets in 12 countries of Europe including major military installations in eight capital cities.”<sup>63</sup> In addition, they destroyed all of the gasoline production within the ranges of their bases in Southern Europe, which amounted to be approximately 50 percent of all Axis fuel on the continent, while also imposing a toll of 6,289 enemy aircraft lost in the air or on the ground.<sup>64</sup> Their triumphs were not without tribulations. The Fifteenth lost 3,410 aircraft and

---

<sup>60</sup> *Fifteenth Air Force: A Summary of its Operations and Results*, 11.

<sup>61</sup> General Twining Lauds Fifteenth for its Contribution to European Victory,” *Sortie*, 8 May 1945.

<sup>62</sup> *The Statistical Story of the Fifteenth Air Force*, (Bari, Italy: 28th Statistical Control Unit, Fifteenth Air Force, 1945), 4, Container 132, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>63</sup> *Fifteenth Air Force: A Summary of its Operations and Results*, 1.

<sup>64</sup> *Fifteenth Air Force: A Summary of its Operations and Results*, 1.



2,703 personnel killed in action while also suffering 14,181 aircraft damaged and roughly equal that number in personnel wounded and missing in action.<sup>65</sup>

This accumulation of impressive statistics is no doubt an important aspect of the overall narrative of the Fifteenth Air Force, but it does not tell the whole story. Similar to the operations Twining conducted with the Thirteenth, they provide a glimpse into the challenges he faced as the commander and speak to harrowing tasks assigned to the brave men under his command, but there is still more. The air war that Twining fought in Europe, and more specifically in the Mediterranean, was fundamentally different than the air war he encountered with the Thirteenth in the Pacific. The employment of airpower in Europe fit with the AAF's pre-war conceptions of airpower and demonstrated the point to the enemy that "no factory, no refinery, no railroad yard, no airfield, or vital bridge of any value to him, was safe from Allied bombing."<sup>66</sup> The rest of the narrative is simply that the Fifteen's exemplary performance was the culmination of an idea of what airpower could do. It was the manifestation of pre-war doctrine, effective and efficient organization, and superior equipment, which were all enabled by an unwavering national industrial and moral base. It was, in essence, "just more than you can almost ask for."<sup>67</sup>

---

<sup>65</sup> *The Statistical Story of the Fifteenth Air Force*, 4.

<sup>66</sup> General Twining Lauds Fifteenth for its Contribution to European Victory," *Sortie*, 8 May 1945.

<sup>67</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 2, Albert F. Simpson Historical Center, Maxwell AFB, AL.



## Chapter 4

### Endearing Leadership of Enduring Organizations

Historical accounts of the Thirteenth and Fifteenth Air Forces during World War II portray them as secondary or minor air forces compared to the better known numbered air forces in the Pacific and European theaters. Nonetheless, their distinguished service, as well as that of their commander, bears further examination. The nature of the air war that confronted General Twining and the other air leaders in the Pacific was vastly different from the one raging in Europe. Although aerial warfare in both theaters placed all Allied Airmen in the face of great danger, one respected scholar concluded “it is almost impossible to compare the experience of allied Airmen in Western Europe to their counterparts in the South Pacific, as they inhabited different worlds on the ground.”<sup>1</sup> Yet, General Twining commanded in both theaters, and his service provides an opportunity to do just that: to compare and to judge the air wars in both places with a common denominator—Twining.

Twenty years after the conclusion of World War II, General Twining remarked that one of the major lessons of the war was that “we have to be prepared; we have got to be prepared. We have to have a good fighting force readily available, particularly air . . . we must be ready. We must have the best.”<sup>2</sup> Twining can attest to the fact that the preparation of the modern battlefield, including the disposition of forces, creation of the logistical networks, and the procurement of supplies, resources, and equipment, required the “complex planning on the part of a large number of highly trained professional men.”<sup>3</sup> The Army Air Force was lucky to

---

<sup>1</sup> Eric M. Bergerud, *Fire in the Sky: the Air War in the South Pacific* (Boulder, CO: Westview Press, 2000), 2.

<sup>2</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 20, Albert F. Simpson Historical Center, Maxwell AFB, AL.

<sup>3</sup> Bergerud, *Fire in the Sky*, 3.

have many of these kinds of men serving in all major combat theaters prior to and during the war. They sought practical solutions to mitigate the chaotic and complex aims of war on a global scale, while molding and refining their institution to keep a sharp focus on the powerful and deadly objects of war—particularly the use of airpower. By further examining the Thirteenth and Fifteenth Air Forces under the command of General Twining, three main questions emerge: was the numbered air force (NAF) construct central to the way the air war was conducted in each theater? How did the AAF reconcile differences in pre-war beliefs, expectations, and doctrine compared to the reality of the war they were confronted with? And finally, how did Twining and the AAF assess their performance in two very different situations?

### **The NAF as an Army Air Force Organization**

The gravity of world affairs in 1941 demanded that an adolescent Army air arm develop and mature well ahead of its projected timelines. The demanding strategic environment levied a requirement on the AAF to develop and deploy forces to fulfill a dual role mission: prepare for the “execution of air operations in defense of the continental United States and its overseas possessions” *and* prepare for the execution of air operations “outside the United States and its possessions as required by the situation” (emphasis added).<sup>4</sup> It is no surprise then that the comprehensive and vast nature of this mission posed significant challenges to the allocation of scarce resources among widely dispersed army air units. The only organizational framework the AAF had to draw on to meet the demands of the new strategic environment was the NAF system they recently developed to delineate and define the roles, responsibilities, and organization of air commands within the continental

---

<sup>4</sup> Craven and Cate, Vol I, Wesley Frank Craven and James Lea Cate, eds., *The Army Air Forces in World War II*, vol. 1, *Plans and Early Operations, January 1939 to August 1942* (1948; new imprint, Washington, D.C.: Office of Air Force History, 1983), 151.

United States.<sup>5</sup> In short, the NAF construct provided the sole organizational model for the overseas commands.

### **Command and Control of the NAF**

While the Thirteenth and Fifteenth Air Forces were forged in the fire of combat operations, many of the same nuances that facilitated a streamlined operational environment for the NAF in the United States plagued its effectiveness when translated to the context of wartime theaters. In general, the NAF proved to be a sound institutional framework by which the AAF leaders could apportion, allocate, and distribute resources—both men and equipment—into widely disparate combat theaters along functional lines. However, the issues surrounding the control of the NAF and its forces turned out to be a source of great tension and had a much greater impact in the Pacific than it did in the European theater. The fact remained that the NAFs were only a mechanism to provide forces to the theater commanders, who then assumed OPCON of those forces once in their area of responsibility.

In both the Pacific and European theaters, operational control of the air assets was delegated down several levels within the chain of command. In the Pacific, OPCON was delegated down to COMAIRSOPAC, and, in the Mediterranean, it was delegated down to the MAAF commander. The point of greatest distinction between the theaters was that the Pacific theater was inherently controlled by the navy. This created an environment in which OPCON did not reside with an AAF Airman and undermined not only the doctrinal employment of the air assets, but also the command relationships within and beyond the theater.

In the Pacific, there was great concern among the AAF leaders that airpower was not being used appropriately and already meager resources were being frittered away. Although establishment of the Thirteenth Air

---

<sup>5</sup> Craven and Cate, *Plans and Early Operations*, 152.

Force in close physical proximity to COMAIRSOPAC gave Twining organizational heft and a voice with which he and his subordinate commanders were able to influence air operations, the Navy was still running the show. In this environment, personal relationships were extremely important. AAF leaders had to work hard to establish a rapport with the other services, as well as demonstrate a high level of competency as they exercised TACON of their own air units. Twining and the airman of the Thirteenth went to great lengths to establish the requisite trust and credibility with the air leaders of the other services to ensure their voices were heard and respected in regards to the proper employment of airpower. In the Pacific, the NAF commander, the subordinate commanders, and the NAF structure as a whole helped assuage much of the tension inherent in the OPCON dynamic within the theater, and provided a unifying mechanism for the entire air effort.

The same tensions surrounding the OPCON issue were less apparent in the European theater. Since the regional air commanders who held the OPCON reins were USAAF Airmen, there was less dissent among the NAFs as to how airpower was being employed. Although Twining did not make the same attempt to be in close proximity to Eaker—who was in Caserta, Italy, as commander of the MAAF just across the peninsula from Bari where Twining's headquarters was located—that he made to be in proximity to COMAIRSOPAC in the Pacific, he enjoyed a good personal relationship with him and shared similar institutional beliefs about the proper use of airpower. In addition, the strategic environment in Europe also facilitated the use of air assets that was more in line with AAF doctrinal tenants of strategic bombardment. After serving in the Pacific, it was refreshing to Twining that he could use his air assets in accordance with his own pre-war convictions and beliefs. Further, in Europe Twining enjoyed the luxury of commanding in a highly resourced theater. He remarked after the war that “we had grand bases, excellent logistics . . . we never lacked for

anything.”<sup>6</sup> All of this served to mitigate the tensions surrounding the control of airpower in the Mediterranean theater.

### **Communication**

While the NAF architecture helped the air commander’s work through the issues surrounding OPCON, it also created challenges to communication throughout the chain of command, as well as between the NAFs. Even under their original design for use in the United States, the NAF commanders did not have a direct communication link to General Arnold in Washington. They were subordinate to the Air Force Combat Command commander, who was thus an intermediary between the NAFs in the field and the Headquarters in Washington. As applied to the combat theaters during the war, the NAFs sought to function in a similar manner, with the regional and/or theater air commanders serving as the agent between the NAF commanders and Arnold. However, the Pacific theater did not afford General Arnold an AAF officer in an intermediate role between himself and the NAFs, so Arnold was forced to devise work around solutions that created additional tensions, especially with the Navy.

Siding with his air commanders in the theater, General Arnold felt airpower was being mis-allocated and mis-applied in the South Pacific. In addition, the four layers of command all occupied by naval officers that separated the AAF Chief of Staff from the NAF commanders failed to give Arnold the level of control he desired over AAF units and the status of the war in the Pacific. Once he allocated the forces to the theater, they were no longer his. Worse yet, air force aircraft were not being controlled by AAF Airmen, a problem Arnold tried to overcome by simply corresponding directly with the NAF commanders. Arnold had regular correspondence with General Harmon serving as COMGENSOPAC, but many of Harmon’s responsibilities concerned the resourcing and

---

<sup>6</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 22, Oral History Research Office, Columbia University.

sustainment of all Army forces in the theater, and he was somewhat removed from the details of the air war. Arnold also had extensive correspondence with General Kenney. While Kenney was never shy about providing his views to Headquarters on the role of airpower in the Pacific, not every detail he provided translated to the needs, wants, or concerns that Twining had in the Thirteenth. Therefore, initiating and responding to direct correspondence with Arnold was something that Twining learned to embrace.

In a letter that Twining routed through Harmon to Arnold, updating him on the issues in the Thirteenth, he commented to Harmon that, “[I] believe such a letter, once a month or so, might keep him [Arnold] better informed and may help to beat down questionable reports of some of these fly-by-night observers coming out here.”<sup>7</sup> This is an early example of how difficult it was for commanders to wear a dual hat. Wearing one hat, Twining was responsible to Arnold for the ADCON functions of the Thirteenth. Wearing another hat, Twining was responsible to COMAIRSOPAC for the TACON functions he executed with the Thirteenth. Thus, Twining had to find and walk a fine line to keep his boss in Washington informed and happy, while at the same time not appear as if he was circumventing his chain of command in theater.

In contrast to the Pacific, the Mediterranean theater provided a much more cohesive chain of command that better facilitated the flow of information between the Headquarters and the NAF. With AAF officers serving as the regional commanders, they filled the void that existed in the Pacific between Arnold and the NAF commanders. Therefore, within the MAAF, Twining worked within the bounds of the organizational chain of command and did not have dual-hat responsibilities as he was responsible to Eaker for both his ADCON and TACON duties. He

---

<sup>7</sup> Maj Gen N.F. Twining, Commanding General, Thirteenth Air Force, to Gen H.H. Arnold, Commanding General, Army Air Forces, letter, 27 April 1943, Container 121, Folder 15, Document 15, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.



corresponded directly with Eaker on all issues he faced in theater and did not have separate chains of command with competing interests. Eaker, on the other hand, was responsible to several masters and received guidance from Arnold, Spaatz, and Eisenhower, but the ambiguity was removed from the NAF level. The legitimacy created by having Airmen in the key regional and theater air command positions enabled the communications to and from the NAF to flow as it was originally designed.

At the same time, however, the cohesive chain of command and communication lines in the Mediterranean yielded two specific unintended consequences. The first adverse by-product was the lack of a lateral communication mechanism. In general, the NAF commanders were very proficient at flowing information up to their superiors and down to their subordinate wing and group commanders. While this is an extremely valuable attribute of any highly functioning bureaucratic organization, it can also create insulated or stove-piped NAFs that could potentially be working at cross-purposes with other NAFs within or outside the theater. As the historical material is somewhat limited from this perspective, and it is hard to ascertain how much correspondence Twining had with his fellow NAF commanders, the value of communicating across institutional barriers at similar organization levels, or at the peer level, cannot be overstated. Major General Twining, as the commander of the strategic air forces in the south, would have enjoyed tremendous benefit from corresponding directly with Maj Gen James "Jimmy" Doolittle, the commander of the Eighth Air Force and the strategic air forces in the north. Official records show no signs of this dialogue ever occurring as the flow of information went up the chain, then over to the other regional commander, and then back down to the appropriate NAF commander. This was a missed opportunity to exchange valuable information on tactics, techniques, and procedures

specific to their situation in Europe and ensure the right hand knew what the left hand was doing.

A second unintended consequence of the unified chain of command and communication lines in the Mediterranean theater was that it provided the higher Headquarters more accurate information, which led to the tendency for senior air leaders to micro-manage subordinate commanders and second guess decisions they were making. Senior leaders within any bureaucratic organization with well defined levels of command or management will always be confronted with the task of trying to strike a harmonious balance between giving too much guidance or not enough; getting too involved or being too hands off. The mechanism for communication and correspondence that the NAF provided proved no different, and Eaker struggled to find this illusive balance with Twining.

Several letters between Eaker and Twining allude to this dynamic. After berating Twining in a letter early in his command about the fratricide the Fifteenth inflicted on the British Eighth Army at Cassino, Eaker closed by saying “my overall reaction is that what you need most is the leadership of good group and wing commanders.”<sup>8</sup> In another letter later in the year, Eaker outright acknowledged that he was bordering on micro-management as he stated “I am as inhospitable as anybody I know to Monday morning quarter-backing or to running an Air force by remote control . . .” before he went on to opine there was too much dispersion of effort and too many abortive efforts in the Fifteenth.<sup>9</sup> In light of the immense magnitude of operations and levels of correspondence that took

---

<sup>8</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, letter, 17 March 1944, Container 17, Folder JA-FE-MR 1944, Document 7, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>9</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, letter, 17 December 1944, Container 17, Folder NO-DE 1944, Document 107, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

place within each NAF on any given day, these examples appear as only minor distractions and relatively isolated incidents. However, though the letters and responses were always cordial, one cannot help but get a sense that Twining might say “oh great, here it comes again” when he received the typed memos from higher echelons.

### **Composition**

A final element of the NAF organization to examine is the overall composition of forces that comprised the Thirteenth and Fifteenth Air Forces. Although it is difficult to get an accurate assessment of the actual number of aircraft either NAF possessed at any given time, it is possible to look at the number of fighter and bomber groups and wings within each NAF. Under their original design, a NAF was supposed to function as a composite force made up of fighter, bomber, and service commands. By looking at the type and distribution of aircraft resident in both NAFs within their respective theaters, initial judgments can be made as to whether or not they were operating as originally intended and if their composition was appropriate for the missions they were conducting.

The Thirteenth Air Force proved to be much more of a work in progress for Twining than the Fifteenth. In mid-July 1943, right after CARTWHEEL operations commenced and just before Twining assumed the role of COMAIRSOLS, a snapshot of the Thirteenth's composition was captured in a memo to Twining from a statistical officer. At that time the Thirteenth was comprised of the following: two fighter groups consisting of six fighter squadrons, two heavy bomb groups consisting of five heavy bomb squadrons, and one medium bomb group with three medium bomb squadrons. In addition to these forces, there was an assortment of signal, photo, control, intelligence, aerodrome, and weather squadrons within the fighter and bomber commands. It must also be emphasized that these forces were spread between five separate islands with multiple airfields.

On the surface, the composition of the Thirteenth appears reasonable and the slight edge in the number of bombers over fighters was consistent with the AAF's pre-war assessments and aircraft production capabilities. In retrospect, Twining asserted this was the only solution at the time. In the 1930's and early 1940's, "the Air Force knew it was going to have to fly long distances to carry out its mission and the long-range bomber was the solution." Ironically, however, the nature of the air war in the Pacific placed a heavy emphasis on fighter aircraft. Although the naval commanders preferred a preponderance of heavy bombers to fly reconnaissance and patrol missions, interspersed with a few interdiction or long range attack missions to protect their strategic defensive holding positions in the Solomon Islands, Twining and the other air commanders could not get enough fighters into the theater to meet their needs. The fighters, particularly the P-38's, were tasked with their traditional roles of escort and air superiority which were "absolutely essential to the success of the bomber," but their proven ability to interdict maritime targets as well as their general support to the ground troops were an indispensable contribution to the outcome in the Pacific (emphasis in original). While the NAF functioned as it was originally intended to, Twining felt that he had enough bombers and continued fighting to get for more fighter assets into the theater.<sup>10</sup>

In the Mediterranean, the composition of the Fifteenth Air Force was a deliberate reflection of its mission. Whereas the Thirteenth was responsible for conducting both strategic and tactical missions in the Pacific, the Fifteenth was designated as the strategic force within the MAAF, as opposed to the Twelfth, which was the tactical force. Therefore, the Fifteenth's composition reflected its strategic nature and consisted of the following forces: five heavy bomber wings consisting of six B-17 groups and fifteen B-24 groups, and one fighter wing with three

---

<sup>10</sup> Gen Nathan F. Twining, interview by Arthur Marmor, Oral History Interview 634, November 1965, transcript, 7, Albert F. Simpson Historical Center, Maxwell AFB, AL.

P-38, three P-51, and one P-47 fighter squadrons. In this environment and against the robust aerial defenses of the Germans, the fighters deviated little from their escort and air superiority roles. Additionally, the bombers in Europe conducted operations on a scale incomprehensible to the bomber forces in the Pacific, as often times a single mission against a strategic target set used as many bombers as there were total in the South Pacific.

In general, the Fifteenth had the appropriate composition of aircraft and functioned as intended to carry out its strategic mission. However, when weather or other factors precluded Twining's bombers from striking their primary 'strategic' targets, the inherent flexibility of airpower enabled his forces to flex to secondary 'tactical' targets. The results from some of these missions underpinned an argument that the heavy bomber crews were not properly equipped to execute the tactical missions and also created an overall lack of focus on the successful prosecution of the strategic bombardment campaign. In sum, strategic and tactical NAFs were not conceived of before the war. Therefore, although the NAF provided a viable structure to execute these bifurcated mission sets, it ran into trouble when it was resourced and equipped for one, but tried to accomplish the other. This problem, as well as many others, illustrate how the NAFs, and AAF writ large, had to reconcile their pre-war conceptions with the hard realities of the wars they faced.

### **Reconciling Pre-war Beliefs with Wartime Realities**

As the US hastened preparations and began mobilizing for war, military leaders constantly sought to understand the strategic environment that confronted them. Instinctually, they sought clarity in the midst of the initial fog of war, in order to determine the relative strength of their forces and the soundness of their methods to defeat the Axis nations. This included reconciling the force they built and trained in peacetime and the force that would be required to act in wartime. There was little time to develop new tactics, techniques, procedures, or

capabilities. Therefore, anything the military failed to account for, or could not account for, before the war had to be reconciled through a degree of innovation or improvisation dictated by the circumstances and the time allotted to develop new solutions. As stated in chapter three, there is an inverse relationship between the concept of improvisation and the component of time. If given more time to prepare or react, more innovative solutions can be developed, whereas if the need is immediate or time is critical, improvisation will be the rule of the day. This section will assess where the AAF and the NAFs commanded by Twining had to innovate, and where they had to improvise, to reconcile any differences between pre-war beliefs and wartime realities.

### **Influence of Geography**

When Twining and the other AAF leaders arrived in the Pacific, they inherited a force that was pushed into a defensive posture, barely clinging to the last territorial footholds in the theater. While the environment and the nature of the air war was largely unanticipated and required a great deal of improvisation on behalf of the commanders and crews to operate effectively, the notion of assuming a strategic defensive posture was not a foreign concept. In fact, it was essentially the same concept as the AAF's plan for hemisphere defense, but superimposed on the territories in the Pacific.

The concepts embodied in the hemisphere defense mission directly translated to the situation Twining and the other military commanders were confronted with in the Pacific. Similar to the geostrategic position of the US, "the strategic importance of the theater lay entirely in its geographic relationship to other areas . . . the South Pacific was a strategic key to important doorways." Since there were no strategic objectives that had inherent value to attack or defend, "the air bases themselves became the only strategic objectives of importance." Therefore, the seizure of enemy air bases, or the construction of new ones, became the most urgent objective and underpinned the entire



island-hopping concept manifest in the CARTWHEEL operations. The issues that surrounded the strategic defensive narrative in the Pacific are closely related to a broader set of geographic concerns that equally affected the missions conducted in both theaters.<sup>11</sup>

Giulio Douhet believed that “all the influences which have conditioned and characterized warfare from the beginning are powerless to affect aerial action,” a view widely shared by air power advocates before the war.<sup>12</sup> In the Pacific, however, Airmen quickly found geography and geostrategic positions were a timeless element of war and had to be accounted for on both micro- and macro-scales. On the macro-level, the United States was geographically blessed with a position of strategic isolation. With the Atlantic and Pacific Oceans serving as insulating buffers that helped the Western Hemisphere remain relatively free from attack by the Axis power, the United States was able to continue generating men, material, and equipment to project power on a scale unmatched in history. This then required a robust logistics system to move the resources generated at home forward into the combat theaters. The lines of supply and communication were long and extremely difficult to defend, leaving them vulnerable to enemy attack and disruption. Hence, although airpower was a modern marvel able to strike at the heart of the enemy, it remained constrained by the same elemental factors of geography and supply that constrained land warfare since the beginning of time.

The US tried to mitigate some of the impact geography had on airpower by securing a system of air bases that could “extend the capabilities of existing equipment to the point where it could cover all sea and land areas” that the enemy could use to attack Allied forces.<sup>13</sup> Since this innovative solution was not possible at the outset of hostilities, both

---

<sup>11</sup> Bergerud, *Fire in the Sky*, 5.

<sup>12</sup> Giulio Douhet, *The Command of the Air*, ed. Joseph Patrick Harahan and Richard H. Kohn (Tuscaloosa, AL: University of Alabama Press, 2009), 9.

<sup>13</sup> Craven and Cate, *Plans and Early Operations*, 120.

the European and Pacific theaters depended upon maintaining a system of continual forward progress, by advancing their front lines to a point where enemy war making capability came within reach. For the Thirteenth, their advance was slow, but steady, and the ability to strike at the Japanese mainland was not possible until the forces in the South Pacific advanced all the way through Indonesia and the Philippines before they secured operating bases on Okinawa and Guam. Taking advantage of the progress made from North Africa into southern Europe, the Fifteenth was established for the expressed purpose of operating from the south in order to bring into striking distance key industrial centers within German territory that remained beyond the reach of the bombers in the north.

The geography and operating environment in and around the airfields also had significant ramifications on airpower at the micro-level. While Twining enjoyed the benefits of an existing airfield infrastructure, when he took over Fifteenth's operations in the Mediterranean, he enjoyed no such luxury in the Pacific. As detailed in chapter two, the jungle environment of the South Pacific was extremely foreboding to air operations. Engineer and air base units that were accustomed to constructing and operating airfields in the US had no way of preparing for the conditions they faced in the jungles of the Pacific. In addition to having to clear the dense vegetation, specific tests had to be conducted on the soil so that airfields could be constructed in locations that had a high level of coral deposits to support the weight of the heavy aircraft. Coral, combined with runway matting, provided a viable improvised solution for constructing runways, as cement was in short supply and dirt strips became eroded and washed away by the monsoon rains of the tropical climate. Obviously, then, it was easier to seize existing bases than it was to construct new ones, and, for that task, the AAF relied on its sister services—particularly the ground troops of the Army and Marines.

## **Roles and Missions of Airpower**

Having to rely on the ability of ground forces to make an amphibious landing, secure a beachhead, and then expand the lodgment inland to secure an airfield was something that received scant thought and preparation before the war. In fact, conducting any kind of joint operations was, by and large, a foreign concept to the AAF, and they were ill-prepared to execute optimally in a joint environment, as were their sister services. Any joint training or exercises before the war were at most conducted through parallel or synchronized operations, but very little effort was put into making the operations coordinated or integrated. Yet, in the middle of the South Pacific, the AAF found that joint operations meant not only coordinated and integrated, but also interdependent. They not only had to work with the other services, they in fact relied on the other services in many regards, and other services relied on them.

The unanticipated joint nature of this operating environment had a significant influence on the roles and missions airpower was expected to perform. Before the war, the AAF primarily trained to conduct three main combat missions: strategic attack, interdiction, and support to the ground troops, more commonly known as, close air support (CAS). All three of these missions were dependent upon the success of the AAF mission of air superiority. The mission that was most affected by the joint operating environment was the CAS mission.

The fact that the fighters of the AAF could not conduct CAS for Army and Marine ground units was a black-eye to the pre-war preparations of the force and required true improvisation. In the Pacific, realizing that the Marine F4F's were more capable of supporting their ground brethren, Twining and the fighter commanders developed other tasks and targets for the fighters to support the ground effort. As highlighted in chapter two, the AAF P-39's and P-400's were searching for a mission, as they were unable to counter the Zeros at high altitude

and were also not allowed to conduct CAS. Therefore, conducting strafing and dive bombing attacks on Japanese maritime forces surrounding the island, and on the ground forces on the beaches away from friendly forces, pushed them away from CAS toward more of an interdiction role.

In contrast to the Pacific, the failure of the AAF to conduct CAS missions in the Mediterranean was less attributed to specific aircraft and more to a fundamental lack of understanding of airpower's capabilities. A specific case in point is found in the Cassino operations. The stagnant ground situation, coupled with the lack of confidence in tactical airpower to support the ground fight, led the ground commanders to pressure Eaker for heavy bombers to aid the ground efforts. Eaker, in trying to please one of his many masters, obliged by directing Twining's strategic forces to attack tactical targets in close proximity to ground forces, which led to disastrous results. In a letter to Lieutenant General Devers, the deputy commander for the Mediterranean Theater of Operations, Eaker tried to quell any resentment the ground troops or commanders had over the fratricide by first writing, "the accuracy or inaccuracy of the bombing had nothing to do with the success or lack of success of the ground battle." However, he drove the point home that those operations were a mis-application of airpower when he stated "the heavies should not be used on the battlefield except in grave emergencies," and, if they were to be called in to join the tactical air forces, "there must be a means of ground control in the target area for the heavies as there is for the Tactical Air Force." <sup>14</sup>

However, both theaters had good success in the interdiction mission. Interdiction missions seem to lie in the middle, between the extremes of strategic bombardment and CAS. Both strategic and tactical

---

<sup>14</sup> Lt Gen I.C. Eaker, Commanding General, Mediterranean Allied Air Forces, to Lt Gen J.L. Devers, Deputy Commander, Mediterranean Theater of Operations, letter, 6 April 1944, Part 1, Container 26, Folder 3, Document 37, Ira C. Eaker Papers, Manuscript Division, Library of Congress, Washington, D.C.

air assets can be used to attack most target sets within interdiction missions, and the results are typically more nebulous at the time of the attack. While initial bomb impacts and strafing results can be observed, recognizing overall trends in enemy ground force movement, composition, and effectiveness takes a longer period of time. In both the Pacific and the Mediterranean, the composition and actions of Twining's NAFs allowed for a substantial amount of interdiction missions to be conducted with significant long-term effects. These missions were neither dramatic nor highly publicized, living in the shadows of massive strategic bombing efforts or harrowing CAS and air superiority missions, but their slow and methodical degradation of the enemy's strength and mobility was an unsung contribution of airpower in the Thirteenth and Fifteenth under Twining's command.

Whereas the Pacific required a preponderance of CAS and interdiction missions, due to the inherent lack of strategic targets, the Mediterranean air war allowed Twining to focus on strategic bombardment of the enemy as imagined before the war. As discussed previously, the composition and location of his forces in Italy enabled a direct assault on Germany's war-making capability through attacks on their oil, aircraft, transportation, and distribution infrastructures. In addition, as opposed to the Pacific theater, where airpower's success was attributed to its joint nature, airpower's success in the Mediterranean was highly reflective of its coalition nature. Twining's British 205 Royal Air Force group was trained and equipped for bombing at night in accordance with their doctrine. Even though they were conducting area bombing and not the daylight precision bombing the US subscribed to, Twining acknowledged that "it was a very handy thing to have them specifically trained for night bombing . . . and they did a wonderful

job.”<sup>15</sup> Ironically, the joint and coalition nature of operations in both theaters dictated that the AAFs look at their effectiveness differently than they had anticipated before the war.

### **Assessing the Air War**

#### **Mission vs. Metrics**

In trying to determine the extent to which airpower was effective and efficient during the war, the statistical data collected by the Thirteenth and the Fifteenth was only a part of the equation. The vast quantities of bombs dropped by the Fifteenth in Europe, compared to the relatively insignificant amount dropped by the Thirteenth, might suggest that airpower was far more effective in Europe than in the Pacific. In reality, however, many of the measures of merit were subjective and varied from theater to theater, or even from NAF to NAF. For example, it was very standard to track metrics on a daily basis such as the number of sorties flown, the tonnage of bombs dropped, the number of missions aborted, or the number of aircraft lost. Yet, when Twining was commanding the Thirteenth in the Pacific, these statistics mattered to some degree but he was more concerned with his Air Force's ability to impact that advance through the Solomon Islands, which was a reflection of the interdiction and ground support missions his force was conducting. Since the ground troops were the ones having to secure each new forward location, Twining was very attuned to their force protection needs and made sure his forces supported the troops to their level of satisfaction—not to his level of satisfaction based on arbitrary metrics.

With the Thirteenth, Twining was perhaps more receptive to the feedback and cues he received from his joint partners on the ground, and at sea, to determine how well airpower was doing as opposed the situation in the Mediterranean. While Twining's aircraft supported the

---

<sup>15</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 33, Oral History Research Office, Columbia University.



ground forces in Italy, their overall focus was on supporting operations, such as ARGUMENT, POINTBLANK, and counter-oil missions, that struck at the heart of the German's war making capacity. The degradation and destruction of the German war machine relied on the consistent precision application of large amounts of bombs against specific and concentrated target sets that could only be done by the sheer volume of airpower that the Allies possessed. However, similar to other combat theaters, it was extremely difficult to get an accurate measure of how your forces were doing. Battle damage assessment of targets was difficult to conduct, and sometimes the mountains of compiled statistics simply did not match—or worse, hid—the perceived truth on the ground. Even more common was the problem of having to attack a target, or set of targets, for months on end before any level of degradation could be measured or observed. Therefore, it was incumbent upon Twining and other commanders to intuit on their own how their units were doing and determine the efficacy of airpower beyond the statistical data. This required building relationships, it required initiative, and it required leadership. One measure of merit that was well understood by the AAF before the war and was a distinct aspect of Twining's command of his NAFs was the impact of casualties on sustained air operations.

### **Mission vs. Men**

For most military commanders in World War II, the hardest part of the job was knowing that men under your command were probably going to die and maybe because of specific decisions that you made. For General Twining, who commanded two NAFs over a nearly three year period, this was most assuredly the case. The span of command under his tenure at the two NAFs encompassed nearly 200,000 people, who were conducting very dangerous air operations, in very dangerous combat theaters, in the middle of a world war. However, the fact that it

was inevitable and expected that people would die under his command did not make it any easier.

Twining was aware of two distinct sides to the casualty coin. The first were the casualties suffered by friendly forces as a result of fratricide; specifically, as a result of the aircraft of the Thirteenth or Fifteenth Air Forces. Friendly loss of life was never an easy situation to deal with, but it became almost unimaginably burdensome when that loss was due to negligence or mistakes made by men under Twining's command. He had to deal with two such incidents while commanding the Fifteenth.

The first instance occurred during the bombings at Cassino shortly after Twining took command. While these missions were relatively unfamiliar to the aircrew and required heavy strategic bombers to conduct attacks in close proximity to friendly troops, excuses were paltry when fratricide occurred. Owning up to their mistakes, Twining penned an apology letter to Lt Gen Sir Oliver Leese, the Commanding General of the British Eighth Army. Without offering an excuse he expressed, on behalf of himself and the members of his command, his "deepest regrets for the accidental bombing" of the General's headquarters and troops under his command "during the air attack on Cassino town."<sup>16</sup> In the second incident, Twining again owned up to the mistakes made by his command and expressed his regret and sympathies to Air Vice Marshal W. F. Dickson, the commanding officer of the Desert Air Force, for the casualties caused as a result of a "misadventure on the part of aircraft of the Fifteenth Air Force."<sup>17</sup> In

---

<sup>16</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Lt Gen Sir Oliver Leese, Commanding General, British Eighth Army, letter, 19 March 1944, Container 17, Folder JA-FE-MR 1944, Document 8, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>17</sup> Maj Gen N.F. Twining, Commanding General, Fifteenth Air Force, to Air Vice Marshal W.F. Dickson, Desert Air Force, letter, 22 June 1944, Container 17, Folder JE-JL-AG 1944, Document 40, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

both cases, Twining did the appropriate thing and showed extraordinary leadership by accepting responsibility as the commander. Although it was clear that the accountability rested with him, incidents like these can unnerve, and rattle the confidence of, even the most seasoned of combat leaders.

The other side of the casualty coin was the loss of life incurred by the force during the day-to-day operations amid a punishing combat environment. In an interview conducted after the war, Twining purposefully remarked that “in the 18 months I was in Europe conducting the operations of the Fifteenth Air Force, we lost about 3,000 airplanes. That’s a great number of aircraft, and a great concern.”<sup>18</sup> In contrast, during the year that Twining commanded the Thirteenth Air Force, he suffered the loss of only 112 aircraft<sup>19</sup> which produced less than 100 casualties, as opposed to the more than 2,700 casualties produced by the loss of his 3,000 aircraft in the Fifteenth.<sup>20</sup> Further commenting on the losses, particularly the losses his command suffered in going after the highly defended oil targets, he reaffirmed his belief that the strategic attacks “were worthwhile” (emphasis in original).<sup>21</sup> Conceding that the risk associated with these missions bothered him by saying “these are the things that worry you, when you are losing so many people,” he was also adamant that “if you’re going to be successful in your air attacks, you must go out day after day, day after day, and not give the enemy a chance to rebuild, just keep it knocked down.”<sup>22</sup>

---

<sup>18</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 32, Oral History Research Office, Columbia University.

<sup>19</sup> *The Thirteenth Air Force in the South Pacific Theater, 1943* (Maxwell AFB, AL: USAF Historical Division, Air University, 5).

<sup>20</sup> *The Statistical Story of the Fifteenth Air Force*, (Bari, Italy: 28th Statistical Control Unit, Fifteenth Air Force, 1945), 4, Container 132, Nathan F. Twining Papers, Manuscript Division, Library of Congress, Washington, D.C.

<sup>21</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 31, Oral History Research Office, Columbia University.

<sup>22</sup> Gen Nathan F. Twining, interview by John T. Mason, Jr., 5 June 1967, transcript, 31, Oral History Research Office, Columbia University.

With such a vast differential in the number of losses between the two theaters, it begs the question ‘why did this occur?’ Under the command of the person, what was the calculation he used to determine the cost/benefit analysis of the mission and the men in a war that was completely anticipated, and one that was not? In the European theater, while the loss of life and aircraft was much greater, even losing up to 10 percent of the force on any given raid, the losses were never cost prohibitive, since they were in a fully resourced theater where operations were fully consistent with pre-war notions of the best use for airpower. In the Pacific, in contrast, operations were inconsistent with pre-war notions and losses were not immediately made good, which tended to limit the scale and scope of acceptable loss.

Twining’s case, in particular, is interesting in light of his own brush with death that occurred only days after taking command of the Thirteenth, as well as suffering the loss of his friend and mentor “Miff” Harmon in early 1945 to an aircraft accident in the Pacific. Whether either of these experiences had any impact on his overall sentiments about the number of casualties his command endured may never be known. But it is safe to say that the loss of life was more to Twining than just the cost of doing business. It clearly weighed on him and he took great pride in the efforts his commands made to mitigate the loss of life.

### **Legacies**

The examination of the Thirteenth and Fifteenth Air Forces under the command of Maj Gen Nathan Twining during World War II reveals enduring lessons about model organizations and leadership. As Twining entered combat operations in the Pacific as Harmon’s chief of staff, it was readily apparent that the air war, and the operating environment, were not what they anticipated. Not only did this unique war challenge Twining personally, as well as professionally, it challenged the fundamental beliefs about the employment of airpower that he developed

for nearly 24 years as an Army air officer. After struggling for institutional independence and the ability to retain control of airpower in combat for decades before the war, the AAF entered the war in the Pacific with neither. Although the Army Air Force gained distinct separation for itself within the Department of War, it lost operational control of its assets in the predominately naval war of the Pacific. In addition, the theater was void of the strategic target sets the AAF pre-war doctrine was built upon and forced Twining to develop different priorities and operational approaches to support his advocacy for the proper employment of airpower.

In Europe, Twining and the AAF found a more familiar setting and were able to employ airpower to its full extent, and in accordance with their pre-war thoughts and attitudes. While the war in Europe was definitely not welcomed, it was at least anticipated and could be related to experiences and training that the leaders and aircrew had before the war. The notions of conducting a sustained strategic bombing campaign that remained a distant vision for Twining in the Pacific were now a possibility in the Mediterranean with his vast array of heavy bombers, strategically nestled within striking distance of the German war machine. Incrementally and methodically, with the proper application of strategic airpower against the German's vast production, oil, communication, and transportation networks, Twining saw an ideology become reality and the German giant fall to its knees. It was not only a validation of a doctrine, but an affirmation of a profession and culture that believed in the promise of airpower and had the fortitude to see it through. Much of this was accomplished by Airmen, but the organization they created was a critical enabler to their success as well.

The NAF construct proved to be a flexible and agile organization that could readily adapt to, or be adapted by, the changing face of airpower. As it has endured for over 70 years to remain a cornerstone of today's air fighting force, it provides an operational framework that

possesses enough structure to unify the power of its units with the purpose of its masters, as well as afford them the flexibility to operate effectively in many different environments. This organizational mold, when put in the hands of capable leadership, as it was with General Twining in two theaters of World War II, provides American air forces a mechanism for confronting dichotomous air wars. In Twining's time, it provided a mechanism for reconciling pre-war beliefs with wartime realities, and it helped Twining succeed in one environment that was largely anticipated, and one that was not. General Twining and the NAFs he commanded continue to serve as models for current and future operations and practitioners of airpower. They remain a testament of endearing leadership and enduring organizations.





# Appendix 1

## Assignment Timeline

Date		Event / Promotion / Position	Location
Year	Day-Mon		
1897	11-Oct	Born	Monroe, WS
1916	Jun	Company H, 3 <sup>rd</sup> Infantry Div, Oregon NG	Portland, OR
1917	Jun	Entered US Military Academy – West Point	West Point, NY
1918	1-Nov	Graduated West Point – Returned to West Point for 6 more months of schooling as an officer cadet at the conclusion of World War I	West Point, NY
1919	Jun	Military Ground Observer	Belgium, France, Italy
	Oct	Student, Basic Course - 29 <sup>th</sup> Infantry	Ft Benning, GA
1920	Jun	Company Commander - 29 <sup>th</sup> Infantry	Ft Benning, GA
1921	Feb	Aide-de-Camp to BG B. A. Poore	Camp Travis, TX; Ft Logan, CO; Ft Sam Houston, TX
1923	Aug	Primary & Advanced Flight Training	Brooks Field, TX
1924	Sep	Flight Instructor – Air Corps Primary Flying School	Brooks Field, TX
1927	Jul	Flight Instructor – Air Corps Primary Flying School	March Field, CA
1929	Feb	Adjutant & Commanding Officer - 26 <sup>th</sup> Attack Squadron	Wheeler Field, Territory of Hawaii
1932	Mar	Pilot - 3 <sup>rd</sup> Attack Group	Ft Crockett, TX
	Aug	Pilot - 90 <sup>th</sup> Attack Squadron	Ft Crockett, TX
	Sep	Pilot - 60 <sup>th</sup> Service Squadron	Ft Crockett, TX
1934	Feb	Engineering Officer – Central Zone	Chicago, IL
	Jun	Adjutant – 3 <sup>rd</sup> Attack Group	Ft Crockett, TX
1935	Mar	Assistant Operations Officer – 3 <sup>rd</sup> Wing	Barksdale Field, LA
	Aug	Student – Air Corps Tactical School	Maxwell Field, AL
1936	Jun	Student – Command and General Staff School	Ft Leavenworth, KS

1937	Jun	Air Corps Technical Supervisor/Inspector – San Antonio Air Depot	Duncan Field, TX
1940	Aug	Assistant Chief, Inspection Division – Office of the Chief of Staff, HQ AAF	Washington, DC
	Nov	Chief, Inspection Division – Office of the Chief of Staff, HQ AAF	Washington, DC
1941	Dec	Operations Division – Office of the Chief of Staff, HQ AAF	Washington, DC
1942	Feb	Assistant Executive Officer – Office of the Chief of Staff, HQ AAF	Washington, DC
	May	Director, War Organization and Movements – Office of the Chief of Staff, HQ AAF	Washington, DC
	Jul	Chief of Staff to MG M. F. Harmon, Commanding General USAFISPA	Noumea, New Caledonia, Solomon Islands
1943	3-Mar	Commanding General – 13 <sup>th</sup> Air Force	Espiritu Santo, New Hebrides, Solomon Islands
	25-Jul	Commander, Aircraft, Solomon Islands	Henderson Field, Guadalcanal, Solomon Islands
	Nov	Commanding General – 15 <sup>th</sup> Air Force	Bari, Italy
1944	1-Jan	Commander, Mediterranean Allied Strategic Air Forces	Bari, Italy
1945	2-Aug	Commanding General – 20 <sup>th</sup> Air Force	Harmon Field, Guam
	16-Oct	Rest & Recuperation	Bulling Field, Washington, DC
	8-Dec	Commanding General – Air Materiel Command	Wright Field, OH
1947	1-Oct	Commander-in-Chief – Alaskan Department	Ft Richardson, AK
	21-Oct	Commander-in-Chief – Alaskan Command	Ft Richardson, AK
1950	Jul	Acting Deputy Chief of Staff for Personnel – HQ USAF	Washington, DC
	10-Oct	Vice Chief of Staff of the Air Force	Washington, DC
1953	30-Jun	Chief of Staff of the Air Force	Washington, DC
1957	15-Aug	Chairman of the Joint Chiefs of Staff	Washington, DC
1960	1-Sep	Retired	Washington, DC
1982	29-Mar	Died	Lackland AFB, TX

## Appendix 2

### Promotion Timeline

<b><u>Date</u></b>		<b><u>Promotion</u></b>
<b><u>Year</u></b>	<b><u>Day-Mon</u></b>	
1918	1-Nov	Graduated West Point – Commissioned as Second Lieutenant
1923	20-Nov	Promoted to First Lieutenant (permanent)
1935	20-Apr	Promoted to Captain (temporary)
1935	1-Sep	Promoted to Captain (permanent)
1938	7-Oct	Promoted to Major (temporary)
1940	1-Jul	Promoted to Major (permanent)
1941	22-Jul	Promoted to Lieutenant Colonel (temporary)
1942	1-Feb	Promoted to Colonel (temporary)
	17-Jun	Promoted to Brigadier General (temporary)
	12-Nov	Promoted to Lieutenant Colonel (permanent)
1943	5-Feb	Promoted to Major General (temporary)
1945	5-Jun	Promoted to Lieutenant General (temporary)
1946	18-Jul	Promoted to Brigadier General (permanent)
1948	19-Feb	Promoted to Major General (permanent)
1950	10-Oct	Promoted to General (temporary)
1953	30-Jun	Promoted to General (permanent)

## Bibliography

### Books

- Bergerud, Eric M. *Fire in the Sky: the Air War in the South Pacific*. Boulder, CO: Westview Press, 2000.
- Biddle, Tami Davis. *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*. Princeton, NJ: Princeton University Press, 2002.
- Craven, Wesley Frank, and James Lea Cate, eds. *The Army Air Forces in World War II*. 7 vols. 1948-1958. New imprint, Washington, D.C.: Office of Air Force History, 1983.
- . *The Army Air Forces in World War II*. Vol.1, *Plans and Early Operations, January 1939 to August 1942*. 1948. New imprint, Washington, D.C.: Office of Air Force History, 1983.
- . *The Army Air Forces in World War II*. Vol. 2, *Europe: TORCH to POINTBLANK, August 1942 to December 1943*, 1949. New imprint, Washington, D.C.: Office of Air Force History, 1983.
- . *The Army Air Forces in World War II*. Vol. 3, *Europe: ARGUMENT to V-E Day, January 1944 to May 1945*, 1948. New imprint, Washington, D.C.: Office of Air Force History, 1983.
- . *The Army Air Forces in World War II*. Vol. 4, *The Pacific: Guadalcanal to Saipan, August 1942 to July 1944*, 1950. New imprint, Washington, D.C.: Office of Air Force History, 1983.
- Douhet, Giulio. *The Command of the Air*. Edited by Joseph Patrick Harahan and Richard H. Kohn. Tuscaloosa, AL: University of Alabama Press, 2009.
- Futrell, Robert Frank. *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907-1960*, Volume 1. Maxwell AFB, AL: Air University Press, 1989.
- Glines, Carroll V. Jr. *The Compact History of the United States Air Force*. New and revised edition, New York, NY: Hawthorn Books Inc., 1973.
- Huston, Maj Gen John W., ed. *American Airpower Comes of Age: General Henry H. "Hap" Arnold's World War II Diaries*, Volume 1. Maxwell AFB, AL: Air University Press, 2002.
- Maurer, Maurer. *Aviation in the U.S. Army, 1919-1939*. Washington, D.C.: Office of Air Force History, 1987.
- Momyer, Gen William W. *Airpower in Three Wars*. Maxwell AFB, AL: Air University Press, 2003.
- Morton, Louis. *United States Army in World War II. The War in the Pacific. Strategy and Command: The First Two Years*. 1962. New imprint, Washington, D.C.: Center of Military History United States Army, 2000.

- Mrozek, Donald J. "Nathan F. Twining: New Dimensions, a New Look." In *Makers of the United States Air Force*, edited by John L. Frisbee, 257-280. Washington, D.C.: Air Force History and Museums Program, 1996.
- Perret, Geoffrey. *Winged Victory: The Army Air Forces in World War II*. New York, NY: Random House, Inc., 1993.
- Puryear, Edgar F. Jr. *Stars in Flight: A Study in Air Force Character and Leadership*. Novato, CA: Presidio Press, 1981.
- Spector, Ronald H. *Eagle Against the Sun: The American War with Japan*. New York, NY: The Free Press, 1985.
- Watson, George M. Jr. *Secretaries and Chiefs of Staff of the United States Air Force: Biographical Sketches and Portraits*. Washington, D.C.: Air Force History and Museums Program, 2001.

### **Periodicals and Newspaper Items**

- Blair, Clay Jr. "The General Everybody Loves: An Affable Airman with an Exceptional Talent for Calming Belligerent Brass Hats—That's Nate Twining." *Saturday Evening Post*, 17 August 1957, 32-33, 65-67.
- Butterfield, Roger and Frank Gibney. "The Twining Tradition: A Heritage of US Service From Muskets to Missiles Culminates in Joint Chiefs' New Boss and a Top Marine." *Life*, 26 August 1957, 104-106, 111-114, 119-120, 122.
- "History's Child." *Time*, 18 May 1953.
- "The Champ." *Time*, 6 August 1945, 29.
- "The New Dimension." *Time*, 8 February 1954, 18-25.

### **Interview Transcripts**

- Twining, Nathan F. Interview by Arthur Marmor. Oral History Interview 634, Transcript. Maxwell AFB, AL: Albert F. Simpson Historical Research Center, Air University, November 1965.
- . Interview by Arthur Marmor. Oral History Interview 635, Transcript. Maxwell AFB, AL: Albert F. Simpson Historical Research Center, Air University, 3 November 1967.
- . Interview by Arthur Marmor. Oral History Interview 636, Transcript. Maxwell AFB, AL: Albert F. Simpson Historical Research Center, Air University, 3 November 1967.
- . Interview by John T. Mason, Jr. Oral History Interview #1, Transcript. Oral History Research Office, Columbia University, 5 June 1967.
- . Interview by John T. Mason, Jr. Oral History Interview #2, Transcript. Oral History Research Office, Columbia University, 26 June 1967.

- . Interview by John T. Mason, Jr. Oral History Interview #3, Transcript. Oral History Research Office, Columbia University, 12 September 1967.
- . Interview by John T. Mason, Jr. Oral History Interview #4, Transcript. Oral History Research Office, Columbia University, 12 September 1967.

### **Historical Studies**

- Fifteenth Air Force: A Summary of its Operations and Results, 1 November 1943 through 8 May 1945.* Bari, Italy: Historical Division, Fifteenth Air Force, 1945.
- Finney, Robert T. *The Development of Tactical Air Doctrine in the U.S. Air Force, 1917-1951.* Maxwell AFB, AL: USAF Historical Division, Air University, 1952.
- Greer, Thomas H. *The Development of Air Doctrine in the Army Air Arm, 1917-1941.* USAF Special Studies. 1955. New imprint, Washington, D.C.: Office of Air Force History, 1985.
- Historical Report: Thirteenth Air Force, 13 January 1943 through 30 June 1949.* Clark AFB, Philippines: Historical Division, Philippines Command and Thirteenth Air Force, 1950.
- Rohfleisch, Kramer J. *Guadalcanal and the Origins of the Thirteenth Air Force.* USAF Historical Study 35. Maxwell AFB, AL: USAF Historical Division, Air University, 1945.
- . *The Thirteenth Air Force: March-October 1943.* USAF Historical Study 120. Maxwell AFB, AL: USAF Historical Division, Air University, 1946.
- The Thirteenth Air Force in the South Pacific Theater.* 750.3084-2, Maxwell AFB, AL: USAF Historical Division, Air University, 1943.

### **Unpublished Papers**

- McCarley, J. Britt. "General Nathan Farragut Twining: The Making of a Disciple of American Strategic Air Power, 1897-1953." PhD diss., Temple University, 1989.

### **Diaries and Personal Papers**

- Arnold, Gen H.H. Diary of Trip to the Southwest Pacific, 16 September 1942 to 2 October 1942. H.H. Arnold Papers. Manuscript Division, Library of Congress, Washington, D.C.

### **Manuscript Collections**

- Arnold, Henry H. Papers. Library of Congress, Washington, D.C.
- Eaker, Ira C. Papers. Library of Congress, Washington, D.C.
- Twining, Nathan F. Papers. Library of Congress, Washington, D.C.

### **Electronic Publications**

Arlington National Cemetery. "Nathan Farragut Twining, General, United States Air Force." <http://www.arlingtoncemetery.net/ntwining.htm> (accessed 3 November 2010).

