

SERVING THE CAUSE:
DUTY CONCEPTS AND COMBAT EFFECTIVENESS IN WAR

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APPROVAL

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

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DISCLAIMER

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

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ABSTRACT

This thesis examines the relationship between duty and combat effectiveness in the Luftwaffe and the USAAF during World War II. The author argues that duty is a fundamental characteristic of a military institution. Commanders must develop and maintain devotion to duty in order to ensure combat effectiveness. To evaluate the validity of this argument, the author researched leading historical literature regarding the role duty played in the two air forces and also examined primary evidence such as unit histories, letters, personal diaries, and interrogation reports.

The Luftwaffe, during the heady years of victory, reaped the benefits of a strong sense of duty; and success strengthened the duty concept. Thus, the duty concept, combat effectiveness, and military effectiveness were mutually reinforcing. The Luftwaffe then went through a period of uncertainty and ultimately defeat. During these periods, combat effectiveness was degraded due to strategic misjudgments; the duty concept seemed to stay strong, but there were indications that it wore down at the margins. Ultimately, due to persistent strategic failure and combat ineffectiveness, devotion to duty was ultimately undermined and the Luftwaffe leadership openly plotted against Reichsmarschall Hermann Göring. Thus, the duty concept followed where both combat and military effectiveness led.

The USAAF experience was similar to the Luftwaffe. Although a strong duty concept initially magnified combat effectiveness, as the war progressed combat ineffectiveness had a seriously degrading effect on the USAAF morale. If left untended, this degraded morale could have led to a failure of the duty concept. The USAAF operational-level leaders were able to remedy combat effectiveness and restore devotion to duty by adapting a flawed doctrine to the new realities it faced. In short, combat effectiveness had a greater influence on devotion to duty than devotion to duty had on combat effectiveness.

The study concludes that duty and combat effectiveness are reciprocally related. Combat effectiveness both feeds on devotion to duty and reinforces it, but sustained combat ineffectiveness will initially degrade and eventually erode airmen's devotion to duty. Conversely, devotion to duty can for a time sustain an air force during periods of low combat effectiveness.

At the end of the day, the Americans outperformed their German opponents in maintaining a strong duty concept and combat effectiveness through a sound grand strategy, operational and tactical flexibility, and increasingly significant qualitative advantages in aircraft and aircrew.

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Introduction

A fighting force's concept of duty is a perennial subject of interest in military affairs. And no wonder – it is central to the fighting spirit that motivates individuals to risk their lives in combat. While widely recognized as an important issue, very little has been written concerning the role that duty plays in war. Carl von Clausewitz believed that war's moral factors were central to its conduct but could neither be classified nor counted, and that any attempt to do so would lead to platitudes proclaiming the obvious.¹ They could, however, be described by one who had seen and felt them. What this thesis refers to as duty falls clearly within Clausewitz's construct of moral factors.

Clausewitz noted that an accumulation of factors causes things to go wrong in war. He called the sum of these factors "friction." The marshalling of qualities such as courage, stamina, and determination overcomes friction. Thus, the drive to reduce friction in war takes a toll on combatants. Duty exacts a price on the fighting force. It is therefore up to the military commander to determine how best to spend this valuable currency. Clausewitz said there were two qualities required of a commander: a keen intellect to give insight into the unforeseen and the courage to follow this insight wherever it might lead.² He went on to say that the "strong rather than brilliant" mind is more apt to persevere in combat.³ Clausewitz was speaking from experience based on his time serving in the Prussian army. He understood what the generals of his time dealt with and saw first-hand what worked and what failed.⁴ Clausewitz further argued that these individual moral qualities also characterized the army's larger virtues.

¹ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: N.J.: Princeton University Press, 1976), 184-185.

² Carl von Clausewitz, *On War*, 102.

³ Carl von Clausewitz, *On War*, 103.

⁴ Carl von Clausewitz, *On War*, 113.

These military virtues, Clausewitz argued, are brought out by the general who understands how to harness the qualities of courage and determination into a military spirit that encompasses the whole army. He noted that military spirit “is one of the most important moral elements in war.”⁵ This spirit grows in individuals who steep themselves in military activity through training and the application of their studies of the military arts.⁶ Like the individual, a military institution must have boldness and perseverance. Leaders play a central role in forming these traits; but with proper attention, they soon take on a life of their own. The bold move is seldom the easy move. Strength of heart and mind, in both the military institution and the individual it instructs, is vital to creating a high level of military effectiveness.

What Clausewitz described is integral to a duty concept. It is easy to publish orders or conduct training that tells an army it should be bold, but to have true boldness springs from the fighting men and women who have trained together and have been instilled with the sense of purpose necessary to fight. Their individual and cumulative ability to meet the intense demands of combat makes a duty concept important in both peace and of war. The dedication of one’s life to a cause, to one’s country, and to victory is something only a strong duty concept can produce. Although most military personnel have some understanding about “duty,” they need training and indoctrination to bring the concept into focus and make it a tool for producing collective effectiveness in war.

This thesis seeks to understand key components of the duty concept and determine whether there is a causal relationship between it and combat effectiveness. The air war during World War II provides useful evidence for examining airmen’s particular duty concepts as they fought in fighters and bombers, an activity that carried inherent risks

⁵ Carl von Clausewitz, *On War*, 189.

⁶ Carl von Clausewitz, *On War*, 187.

that only multiplied when they moved from training and indoctrination into combat. The following research question thus comes forth: How well did the Luftwaffe and the United States Army Air Forces develop a duty concept within their aircrews and translate that duty concept into combat effectiveness?

Airmen who fought in World War II generally embodied their respective countries' duty concepts, which were themselves extensions of complex issues such as rationality, ideology, and political ambitions. Throughout the war, governments called on their airmen to fly in the face of death, serious injury, or capture. These airmen faced not only the threat of the enemy, but also the fragility of their aircraft and the unforgiving air environment. Sending people to kill and, if necessary, die for their country's sake requires appealing to their sense of duty. Duty is developed in many ways, but of particular concern to this thesis is how a nation develops its people's devotion to duty and then sends them to fight for their country. The demonstration of a duty concept is especially important in three areas: the ability to complete training, the development of operational effectiveness, and the linkages these factors have to strategic outcomes. Despite the fact that emerging realities of technologically-based war seem to clash with a duty concept based on the image of the aviator as a heroic figure, these issues remain important in today's armed conflicts.

This work's argument is both conceptual and evidentiary. It begins by examining in some depth the concepts of duty and combat effectiveness. For the purposes of this paper, duty is defined as the sense of obligation to do what is right. In peace, courage is not a central requirement to fulfilling one's duty. However, in war, doing what is right frequently requires a large measure of courage because death is almost always a possibility. Thus, courage in war is central to the concept of duty. Combat effectiveness is defined as the ability to win battles and campaigns. It is thus a necessary, but not sufficient, condition for

victory in war. It is a component of the larger concept of military effectiveness, which also embraces military strategic and grand-strategic acumen.

The writings of Carl Von Clausewitz, Lord Moran, and Mark Wells are central to any exploration of duty characteristics. These authors, aside from offering useful insights into the psychology of war, present distinct perspectives on warfare during its pre-industrial, land-based industrial, and aerial-industrial ages. These examinations of the role of moral factors in war offer an evolving understanding of the duty concept. Clausewitz's *On War* represents the truths of the moral factors in war before technology had come to exert anything approaching a dominant role in battle.⁷ Lord Moran's book *The Anatomy of Courage* demonstrates that the pervasive introduction of machines in combat added another facet to the complexities of the duty concept.⁸ Finally, Mark Wells' *Courage and Air Warfare* provides insight into the nature of courage among Allied aircrews during World War II, when technology took war to the skies.⁹

The second volume of Williamson Murray's and Allan Millett's *Military Effectiveness* analyzes military effectiveness during World War II.¹⁰ Like moral factors, the notion of military effectiveness is complex and multi-faceted. Murray and Millett argue that military effectiveness represents a leader's ability to link his insights to the existing situation in order to accomplish his operational objectives with available resources. Their work assesses the effectiveness of seven countries, including both the United States and Germany, in World War II, based

⁷ Carl von Clausewitz, *On War*, 184.

⁸ Charles M. Wilson, [Lord Moran], *The Anatomy of Courage: The Classic WWI Account of the Psychological Effects of War* (New York, NY.: Carrol & Graf Publishers, 2007).

⁹ Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass & Co. Ltd, 1995).

¹⁰ Allan R. Millett and Williamson Murray, *Military Effectiveness: The Second World War* (Winchester: Allen & Unwin Inc., 1988).

on this ability to connect insight with execution. They thus offer a construct to focus the analysis of military effectiveness. Their analysis encompasses all four levels of war, from the tactical, to the operational, to the military strategic and finally the grand-strategic. This thesis, however, examines only combat effectiveness, which is limited to the tactical and operational levels of war. However, it also examines how different approaches to the ties between duty concept and combat effectiveness resulted in either greater or reduced military effectiveness. One must also bear in mind that good and bad strategies may have profound effects on tactics and operations. Thus, for the purposes of this study, strategy is addressed as a contextual element.

The argument then moves from concept to evidence. Two historical examples explore the interrelationships between duty concept and combat effectiveness. The Luftwaffe and the United States Army Air Forces offer a great deal of evidence to support the idea that the latter relied to some extent on the former. These air forces had distinct approaches to airpower and implemented their visions for it, with some modifications, until the end of the war. There is a great deal of information regarding the size, strength, and tactics of both air forces. Both inculcated and drew upon their aircrews' duty concepts, and both suffered heavy casualties. The presentation of these factors also highlights how duty affects both an attacker attempting to make an enemy submit and a defender fighting for national survival. World War II provides a rich historical example of the dynamics of duty and its relation to combat effectiveness. Due to severe losses in heavy and sustained aerial battles of attrition, air forces required a strong dedication to their objectives. Those that succeeded and those that failed did so, in part, as a result of how well the airmen conducted themselves, but this quality was in turn subject to the larger constraints airmen labored under as a result of their particular country's duty concept, and the rationalities and ideologies that comprised it.

The examination of these two relatively abstract concepts of duty and combat effectiveness requires careful attention to methodology. For instance, Wells argues that morale is a phenomenon that resists quantification.¹¹ The same is true of duty, which is related to, but distinct from, morale. We cannot develop a measuring stick for how hard a unit fought and why. This work seeks to understand this complex phenomenon by immersion in the numerous unit histories, letters, personal diaries, and other varied research material housed at the Air Force Historical Research Agency at Maxwell AFB, Alabama. By combining these accounts with the body of knowledge that has been accumulated regarding combat effectiveness, biographies of aces, the concepts of airpower theorists, and histories of World War II writ large, a picture emerges regarding the relationship between duty and combat effectiveness. The final analysis, however, is based on evaluations of the fidelity of the evidence and an aggregate assessment of the relative merits of various air forces' duty concepts, and the causal relationships between these concepts and combat effectiveness. The argument concludes with an assertion about which air force more effectively developed a duty concept among its aircrews and why, and how and why it translated that duty concept into combat effectiveness and, ultimately, into a greater level of military effectiveness. The work then outlines the contemporary implications of these conclusions.

¹¹ Mark Wells, *Courage and Air Warfare*, 89.

Chapter 1

Duty and Combat Effectiveness

Encourage us in our endeavor to live above the common level of life. Make us to choose the harder right instead of the easier wrong, and never to be content with a half truth when the whole can be won. Endow us with courage that is born of loyalty to all that is noble and worthy, that scorns to compromise with vice and injustice and knows no fear when truth and right are in jeopardy.

From the West Point Cadet Prayer

The moral elements of war are among the most important in war. They constitute the spirit that permeates war as a whole, and at an early stage they establish a close affinity with the will that moves and leads the whole mass of force, practically merging with it, since the will is itself a moral quantity. Unfortunately they will not yield to academic wisdom. They cannot be classified or counted. They have to be seen or felt.

Clausewitz

What are the elements of duty and combat effectiveness, and why are they important? This chapter employs the writings of Carl von Clausewitz, Lord Moran, and Mark Wells to identify the components of duty and examine why each writer felt it was important. These books are useful because they show an evolution of understanding regarding the concept of duty. Carl von Clausewitz, the renowned Prussian military theorist, provides an intuitive understanding of the role duty played in the early industrial age. Lord Moran records his observations of courage in industrial war in his book, *The Anatomy of Courage*.¹ Mark Wells

¹ Charles M. Wilson, [Lord Moran], *The Anatomy of Courage: The Classic WWI account of the Psychological Effects of War* (New York: Carrol & Graf Publishers, 2007).

applies duty concept specifically to World War II airpower in his book, *Courage and Air Warfare*.² The synthesis of these three works will identify the components of duty and why they matter. The insights derived from this synthesis will provide the common reference point for analysis of the historical examples.

Alan Millet and Williamson Murray's three-volume work, *Military Effectiveness*, addresses the other half of the equation by analyzing the complex phenomenon of effectiveness in war.³ The work argues that there are both vertical and horizontal dimensions to military activity. The vertical dimension comprehends the political (or grand-strategic), strategic, operational, and tactical levels of war. The horizontal dimension involves the "numerous, simultaneous, and interdependent tasks that military organizations must execute at each hierarchical level with differing levels of intensity in order to perform with proficiency."⁴ The horizontal dimension involves tasks such as manpower procurement, planning, training, logistics, intelligence, technical adaptation, and combat. Millett and Murray further argue that military effectiveness springs from a leader's ability to link insights derived from various situations to the execution of a particular mission based on the resources at hand. The insight required to link the political, strategic, operational, and tactical levels of war requires the type of genius referred to by Clausewitz. Because the horizontal factors, such as training, procurement, and intelligence are constantly changing during war, leaders at each level must not only keep the vertical factors in sight, but also do so in a fluid environment. In this fluid environment, the concept of duty both influences military effectiveness and is also influenced by it.

² Mark K. Wells, *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War* (London: Frank Cass & Co. Ltd, 1995).

³ Allan R. Millett and Williamson Murray, *Military Effectiveness: The Second World War, Vol. I & 2* (Winchester: Allen & Unwin Inc., 1988).

⁴ Allan Millet and Williamson Murray, *Military Effectiveness*, Vol I, 2.

This dynamic interaction is particularly pronounced at the operational and tactical levels of war, but extends into the strategic level as well and has great importance there. Thus, for the purposes of this thesis, the operational and tactical levels of war will be the primary focus for determining the causal linkages between a concept of duty and combat effectiveness, and strategy will be treated as an important contextual issue.

Duty

Doing one's duty in combat is both personal and difficult. In fact, during both peace and war, choosing the right path in the face of possible scorn, failure, and physical harm constantly tests every human being. There is immediate duty, such as to family and church, and broader duty, such as to the Constitution or the Führer. Harnessing the duty concept is crucial to the state's ability to convince its citizenry to fight and possibly die in furtherance of grand-strategic objectives. Military institutions around the world and through the ages have attempted to instill a sense of duty into their fighting forces. One such means of doing so has been to illustrate the linkages between the state's way of life and the individual identity this overarching security provides. A person devoted to family and church will likely not be induced to fight unless directly threatened. If, however, a person can be brought to see that providing for the common defense of his or her state is necessary to ensuring security, the state might potentially harness that person's sense of duty to a political purpose.

This duty concept, once ignited, has often been considered a force unto itself, capable of winning wars. One of the most famous instances of this occurred when revolutionary France harnessed the power of a liberated citizenry. The official decree of 1793 by the Committee of Public Safety, known as *levée en masse*, stated clearly:

From this moment until that in which every enemy has been driven from the territory of the Republic, every

Frenchman is permanently requisitioned for service with the armies. The young men shall fight; married men will manufacture weapons and transport stores; women shall make tents and nurse in the hospitals; children shall turn old linen to lint; the old men shall repair to the public squares to raise the courage of the warriors and preach the unity of the Republic and hatred against the kings.⁵

The *levée en masse* had the desired effect of calling the people of France to arms. Napoleon, who became emperor of France in 1804, understood the role of this influence in maximizing the power of the forces under his command. He also understood the strategy and tactics that could, in combination with such a strong duty concept, help him to impose his will on Europe's other great powers. Napoleon's long string of victories has been recorded and analyzed in detail. One such analyst, Carl von Clausewitz, was fascinated by Napoleon's profound impact on the conduct of war. Clausewitz penned *On War* to understand the nature and character of war, a subject for which he had an incisive and inquiring mind.⁶ Of particular interest for this paper is Clausewitz's understanding of the moral factors of war.

To Clausewitz, war is a contest of wills, and this contest takes place from the commander all the way down to the individual soldier.⁷ The military spirit of an army is composed of virtues such as bravery, boldness, and perseverance.⁸ Clausewitz argued that these virtues can be cultivated in an army through rigorous training and fighting, but those doing the fighting must also have a reason to fight. A state's leaders must broaden the soldier's personal sense of duty into a national one. They must also guide this sense of duty into a productive war-

⁵ Gunther E. Rothenberg, *The Art of Warfare in the Age of Napoleon* (New York: Midland Books, 1980), 100.

⁶ Peter Paret, *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton: Princeton University Press, 1986), 186.

⁷ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: N.J.: Princeton University Press, 1976), 75.

⁸ Carl von Clausewitz, *On War*, 190-193.

winning endeavor and not squander an army's sense of duty on frivolous endeavors. Based on Clausewitzian reasoning, this work argues that the task of marshalling an army's concept of duty ultimately rests on its leaders.

To understand the challenges facing a leader, it is important to understand the environment of war that Clausewitz described. First and foremost, "War is the realm of danger; therefore courage is the soldier's first requirement."⁹ Furthermore, this realm of danger is characterized by suffering, uncertainty, and chance.¹⁰ Clausewitz understood these dangers of war from his time in the service of the Prussian army. The danger of war may seem attractive to the inexperienced, but in reality it presents a severe test of endurance of both the body and mind. Friction, Clausewitz argues, inhibits all military action. The only remedy is "Headlong, dogged, or innate courage, overmastering ambition, or long familiarity with danger—all must be present to a considerable degree if action in this debilitating element is not to fall short of achievements."¹¹ The commander who possesses the proper temperament and who can exert the greatest possible control over these complex and chaotic factors, will be successful in war.

Clausewitz asserts that one develops a temperament for war through learning and understanding those factors about war that foster the commander's confidence and determination. "Determination in a single instance is an expression of courage; if it becomes characteristic, a mental habit. But here we are referring not to physical courage to accept responsibility, courage in the face of a moral danger. This has often been called courage d'esprit, because it is created by the intellect. That however, does not make it an act of the intellect: it is an act of

⁹ Carl von Clausewitz, *On War*, 101.

¹⁰ Carl von Clausewitz, *On War*, 101.

¹¹ Carl von Clausewitz, *On War*, 114.

temperament.”¹² Thus, Clausewitz recognized clearly that the moral qualities of the commander, while vital, were insufficient. He believed that genius meant having a “very highly developed aptitude for a particular occupation.”¹³ The military commander should strive to develop both his intellect and his determination in order to be an effective leader. These traits should not be in conflict and should act together harmoniously.¹⁴ Thus, Clausewitz opined that it was the commander’s responsibility to develop his own sense of duty and then to spread it to the army.

An army’s military spirit is thus in large measure a reflection of the commander’s duty concept and his ability to communicate it to his troops. Like the commander, the army must possess bravery, boldness, and perseverance. Clausewitz emphasized that military spirit “is one of the most important moral elements of war.”¹⁵ There are two sources for developing the military spirit or *élan*. The first is victory in battle, and the second is frequent exertion. The army that fights with *élan* does so because of the influence of the commander both in training and at war. Clausewitz stated that when *élan* is present, “great strength of will is rarely needed”¹⁶ The crux occurs when an army is beset by adversity and the commander’s strength of will must push his troops forward. Therefore, it is the commander’s moral qualities, imparted to the army, that produce “outstanding success”. The larger the army, the stronger the commander’s character must be. The army looks to the leader for courage. “The ardor of his spirit must rekindle the flame of purpose in

¹² Carl von Clausewitz, *On War*, 102.

¹³ Carl von Clausewitz, *On War*, 100.

¹⁴ Carl von Clausewitz, *On War*, 100.

¹⁵ Carl von Clausewitz, *On War*, 189.

¹⁶ Carl von Clausewitz, *On War*, 104.

others; his inward fire must revive their hope”¹⁷ The commander who loses his courage loses his army’s support.

Clausewitz understood that there are two types of courage in the face of danger: permanent and temporary. The first is a factor of an individual’s personal makeup. This reflects the notion that a leader is courageous because of some genetic predisposition or because he holds life cheap. The second is courage of the moment. This is fleeting but can be very powerful because it harnesses emotions such as “ambition, patriotism or enthusiasm of any kind.”¹⁸ Taken individually, these forms of courage are too extreme for warfare; the soldier who is overly courageous will probably have trouble convincing his less courageous brothers-in-arms to follow him. An intense courage of the moment, on behalf of some national fervor for example, is as likely to foster an unruly mob that does more harm to itself than to an enemy. Clausewitz believed that a harmonious combination of the two represented the perfect balance. The soldier’s natural courage, the permanent kind, can be developed through training and preparation for the perils of war. This is the steadier and calmer type of courage. However, the second variety—temporary courage—is like a wave; it sweeps up the enthusiasm of the masses and instills those who were individually less courageous with a sense of guided purpose. The permanent courage already present in the ranks acts as a guide for the titanic forces of the moment created by temporary courage.

Napoleon captured France’s imagination and mobilized a nation to fight, not blindly as enraged men but as one, under the command of a man with vision and genius. These men were triumphant because they were bold, believed in the duty-related virtues of the revolution, and

¹⁷ Carl von Clausewitz, *On War*, 104.

¹⁸ Carl von Clausewitz, *On War*, 101.

accepted advances in warfare that other nations did not.¹⁹ Napoleon's army was made up of far more than farmers with muskets. Its soldiers trained and prepared for battle. They were specialized in their training and took pride in their conduct in war. The French Revolution introduced the world to wars in which the entire nation participated. The individual and the state became fused, and Napoleon directed this fusion to the accomplishment of his goals of personal and national greatness. Clausewitz studied Napoleon's rise and recorded his observations as he understood them, offering an intuitive perspective of warfare at large. A century after the defeat of Napoleon and eighty years after the publication of *On War*, a British surgeon named Charles Wilson, who later became Lord Moran, found himself treating soldiers serving in the trenches of World War I's Western Front.

Moran wrote *The Anatomy of Courage* to discover "how courage is born and how it is sustained in a modern army of free people."²⁰ To Moran, courage is a limited commodity, and the over-expenditure of this commodity in war leads to mental and emotional breakdown. Moran identified four degrees of courage. There are those who do not feel fear; those who feel it but do not show it; those who feel fear, show it, but do their job anyway; and those who feel it, show it, and succumb to it.²¹ The two extremes of this analysis act as its dialectic, while the middle is where most of humanity resides. Every warrior moves along this continuum of courage. Continued combat may cause a loss of courage over time. On the other hand, a significant victory or a few days' respite from combat is likely to increase a soldier's courage.

Moran understood how intangible courage is. Nevertheless, through close observation he was able to discern some useful insights

¹⁹ John A. Lynn, *The Cambridge History of Warfare* (New York: Cambridge University Press), 189.

²⁰ Lord Moran, *Anatomy of Courage*, 1.

²¹ Lord Moran, *Anatomy of Courage*, 5.

into its nature. According to Moran, training, fellowship, and leadership can prop up a person's natural sense of courage, while success is its ultimate enabler. Leadership is "the quality that enables a man to think out what he wants to do and his ability to persuade others to do it. Success is the bridge between; once men are satisfied that their leader has it in him to build for victory they no more question his will but gladly commit their lives to his keeping."²² The relationship between duty and leadership here is very clear. Courage relies on danger to become manifest in its truest form; war arranges the meeting.

Like Clausewitz, Lord Moran believed sound leadership is a fundamental ingredient to the recipe that produces duty. When a leader has proven he can provide victory, the sense of duty becomes cemented among the troops under the leader's command. In Moran's construct, leadership must monitor the morale of the troops, understand what drives them, and guide the intangible force of duty towards national goals. As Moran put it, "[I]n the trenches a man's will power was his capital and he was always spending, so that wise and thrifty company officers watched the expenditure of every penny lest their men went bankrupt."²³ If courage is fundamental to duty in war and it is an expendable commodity, it is necessary for the leaders of the state, as well as the leaders of the armed forces, to harness it effectively. Although duty and courage are not synonymous, evincing a sense of duty in war requires courage. Thus, courage is what enables warriors to perform their duty, to do what is right in the face of adversity and even death.

Airpower offers its own challenges regarding the husbanding and expenditure of courage. Lord Moran argued that pilots and associated aircrews require a particular form of courage.²⁴ They must face both the enemy and the inherent dangers of flight, which stem largely from

²² Lord Moran, *Anatomy of Courage*, 204.

²³ Lord Moran, *Anatomy of Courage*, 70.

²⁴ Lord Moran, *Anatomy of Courage*, 105.

equipment failure and weather.²⁵ Furthermore, because men are isolated in their aircraft, the enthusiasm to press into a target or enemy territory is based largely on their individual mettle. Each sortie draws from the bank of courage, and leaders must be aware of the cumulative effects of withdrawals from the bank of courage in order to maintain unit cohesion and fighting effectiveness. The ability to fly effectively, especially in combat situations, also relies on the training done prior to engaging in combat. Lord Moran noted that it “was not that years of training had made the actions of the regular soldier automatic, but that they had implanted in the very marrow of the men the creed of the Regiment which blossomed into a living faith till nothing else mattered.”²⁶

While Moran touched briefly on courage in air warfare, Mark Wells, a USAF historian, provides in-depth analysis of the roles morale and courage had in the skies during World War II. Due to the extreme conditions of air combat, it became necessary to understand aircrew morale as a separate type of morale. Wells uses the definition of aircrew morale from Craven and Cate’s 1958 official history of the Army Air Forces in World War II. To Craven and Cate, aircrew morale “denotes an attitude of mind which, when favourable, leads to the willing performance of duty under all conditions, good or bad, and which when unfavourable leads to the unwilling or poor performance, even perhaps to non-performance, of duty under the same good or bad conditions.”²⁷ This definition highlights the role of duty. It is unlikely that an airman arrives at his station with either a purely favorable or unfavorable attitude. The individual factors at work within each airman depend on where he resides on the scale of courage. Furthermore, the missions he

²⁵ Lord Moran, *Anatomy of Courage*, 104.

²⁶ Lord Moran, *Anatomy of Courage*, 181.

²⁷ Wesley Craven and James Cate, *The Army Air Forces in World War II*, 7 vols (Chicago: University Press, 1958), Vol. VII, 431.

flies and training he receives, together with adequate rest and leadership, will determine if that airman's courage increases or decreases.

Wells, a pilot and a historian, researched both unit records and reports from survivors in England and the United States to compile *Courage and Air Warfare*. His book provides focused insight into "moral fibre" in air combat. Wells describes the high attrition rate of United States Army Air Forces personnel assigned to Eighth Air Force during World War II. Bomber crews had just over a 25% chance of surviving the 25 missions required to complete a combat tour. This slipped to just over a 21% chance when the requirement increased to 30 missions.²⁸ The airmen understood their low chances of survival, but for the most part they flew in the face of these odds. Some airmen required rest and were later able to fly again, having spent their reserves of courage in the course of dangerous missions. Others were unable to fly again, suffering from a complete "Lack of Moral Fibre," or LMF, a term coined by the British. LMF became the term given to the condition of airmen who suffered from neuropsychiatric disorders.²⁹ Wells described two approaches to dealing with LMF. The first, adopted primarily by the British, was a "stiff upper lip" mentality that emphasized deterring the lack of moral fibre through peer pressure and shame. The other, adopted primarily by the Americans, was a more forgiving medical approach.³⁰

World War II airmen were almost completely reliant on their equipment and favorable weather to succeed in their missions. Once airborne, there was no option to replace broken bodies or equipment, and the weather was a hazard unto itself. In human terms, the success of any mission relied largely on the aircrews' courage to proceed into contested territory, attack their targets, and return home. They did all of

²⁸ Mark Wells, *Courage and Air Warfare*, 101.

²⁹ Mark Wells, *Courage and Air Warfare*, 70.

³⁰ Mark Wells, *Courage and Air Warfare*, 206.

this in the face of significant obstacles. Aircrew also had the option, in certain cases, of shirking their duties without being challenged, and some did. Instead of entering contested areas, a bomber could drop short or wander off course into a relatively safe zone. Wells argued that the emotional environment was characterized by “tedious boredom and great physical stress punctuated by all-to-lengthy stretches of confusion, panic, furious activity and instant death.”³¹ Aircrew could easily explain away why they were out of position at the time, but for most, their training, leadership, discipline, and duty concept strengthened their minds, and most performed their duty in spite of the high casualty rates.

Taken together, Clausewitz, Moran, and Wells offer useful insight into the nature of courage and duty in war. Clausewitz, with his intuitive understanding of war in the early industrial age, provides a foundation for understanding the nature of war along with the importance of both courage and leadership. In his view, the leader’s character is central to army’s morale. Lord Moran, on the other hand, explored the nature of courage and how men expended and restore it during industrialized war. This understanding is important to examining how military organizations go about maintaining courage within their ranks. Finally, Mark Wells takes courage to the skies of World War II, examining how it influenced Allied aircrews. Moreover, by examining how the American and British leadership dealt with aircrew neuropsychiatric disorders, Wells provides an understanding of what did and did not work in regards to re-instilling an aircrew’s sense of courage and duty. The ability to do what one considers to be right in the face of adversity or danger defines the duty concept. Acting in the face of danger requires an individual to expend his courage in order to do what is right. The leader, based on his personal courage and ability to instill it in his subordinates, is responsible for maintaining a military organization’s courage. Ideally, a

³¹ Mark Wells, *Courage and Air Warfare*, 211.

strong, wise leader, directing the efforts of courageous warriors imbued by a deep sense of duty, will create the necessary building blocks for success in war. A strong sense of duty is thus a necessary, though not sufficient, condition for combat effectiveness.

Combat Effectiveness

Having examined the elements of the duty concept, we must now examine the second element of this study: the effectiveness of military institutions. All are focused on how effectively their fighting units perform against those of their enemy. Such effectiveness is the ground upon which armed forces determine war's outcomes. The nation that most effectively weds its armed forces' capabilities to its grand strategy is more likely to achieve its objectives than one that does not. Allan Millett's and Williamson Murray's three-volume work, *Military Effectiveness*, provides a comprehensive explanation of the components of military effectiveness. Their study examines seven nations over three periods and across four levels of war. The nations include America, Britain, France, Germany, Italy, Japan, and Russia. The three periods are World War I, the interwar period, and World War II. Finally, the levels of war include the political (grand-strategic), strategic (military-strategic), operational, and tactical.³²

However, because this thesis examines the *combat* effectiveness (rather than the broader military effectiveness) of the Luftwaffe and the USAAF during World War II, the operational and tactical levels of war are the principal foci. Nevertheless, where appropriate, the narrative will make connections between these levels of war and the higher, strategic levels. In any case, operational and tactical effectiveness each have two sub-categories: insight and execution. The leader capable of seeing the actual problem, gathering his resources, and successfully executing a

³² Allan R. Millett and Williamson Murray. *Military Effectiveness: The Second World War*, (Winchester: Allen & Unwin Inc., 1988) Vol I, ix.

plan in keeping with his insight, which frequently has to adjust as execution progresses, is deemed to have been combat effective.³³ Insight is required to see what it is important to do and how to do it, while execution is the use of the resources at hand to implement the commander's will and intent. Insight is important at all levels of war. The policy must be realistic and viable. The military strategy should likewise be tailored to support the grand strategy, and operational and tactical activities should be designed and executed to support the military strategy. If any of these activities is out of harmony with the other, the effectiveness of the whole will suffer.

To sum up, combat effectiveness is determined by a leader's ability to see what has to be done and how to do it. This is linked directly to a leader's ability to accomplish what needs to be done with the resources at hand. Military effectiveness is not exclusive to the field of combat; it should be linked to all levels of war and evinced from the head of state at the top all the way down to the soldier in the field. The duty concept is integral to military effectiveness because if warriors fail to follow orders or do what the situation demands of them, their leaders cannot execute plans, and their insight thus becomes worthless. Conversely, if leaders inculcate their troops with a flawed, inflexible, or unreachable duty concept, their effectiveness at every level of war will be in jeopardy.

Summary

Duty embraces the willingness of individuals and organizations to do what their leaders ask of them in spite of the cost. Essentially, duty means doing what is right in the face of adversity, or in the case of a soldier, what his leader says is right. Duty has two manifestations: duty in a time of peace and duty in a time of war. Duty in a time of peace may require great moral courage because of threats to an individual's status or reputation, but it does not always test a person's physical courage

³³ Millett and Murray, *Military Effectiveness*, Vol III, 324.

because of the relative or absolute absence of danger. The need for moral courage does not diminish in combat, but duty in war also calls upon a warrior's courage to fight in the face of danger and death. The latter type of duty is the focus of this thesis. Because courage is an expendable commodity and not easy to replenish, it is important to identify what adds to and subtracts from it. Numerous factors can drain courage, including poor leadership and defeat in battle, to name but two. The constant requirement to draw on finite reserves of courage leads to fatigue and potentially neuropsychiatric breakdown. The prescription for restoring waning courage can include rest, appointing an effective leader, or winning battles. Combat effectiveness requires clear insight and sound execution. A well-developed duty concept is required for military effectiveness primarily because without it, there can be no effective execution.

The constructs of duty and combat effectiveness developed hereto will be carried forward as lenses through which to examine the relationships between duty and combat effectiveness among German and American aircrews in World War II.

Chapter 2

To the Finish: Duty and Combat Effectiveness in the Luftwaffe

Our aces fought until they were killed.

Adolf Galland

The Luftwaffe started World War II with ruthless efficiency but ultimately lost the war in the air as a result of flawed strategic leadership, grinding enemy attrition, and increasing industrial, logistical, and aircrew shortfalls. Germany had originally taken the lessons learned from the failure of World War I and applied them to the military machine Hans von Seeckt and his staff began rebuilding during the interwar period. Key among those lessons was the need for rapid deployment of forces to overwhelm the enemy, and so the idea of three-dimensional maneuver warfare, later dubbed “blitzkrieg” by the media, was born. Meaning “lightning war,” blitzkrieg required a concentrated assault by mechanized infantry, tanks, artillery, and airpower against enemy lines, without regard to flanks.¹ It relied on surprise and rapid maneuver. A successful attack left an enemy unable to defend against the onslaught, especially once ground and air assets had disorganized and disrupted command-and-control, logistics, and reinforcement in the enemy’s rear echelons. The Luftwaffe, initially comprised of some of the world’s very best pilots and other aircrew members, played a pivotal role in blitzkrieg tactics.

The Luftwaffe’s ability to translate a sense of duty into combat effectiveness evolved through three stages: the years of victory, uncertainty, and failure. Although the Luftwaffe’s official duty was to provide air superiority and support to ground forces in the framework of combined operations, this changed as the war proceeded and Germany

¹ Richard Holmes, *The Oxford Companion to Military History* (Oxford: Oxford University Press, 2001), 135.

went from constant victories to frequent defeats and a requirement to defend the homeland from air and then ground attack. Within this changing context, we must examine the particular manifestation of duty for each of the three periods and the factors influencing aircrews' duty concept. Each section concludes with an assessment of how well the Luftwaffe translated its sense of duty into combat effectiveness. The years of victory, from 1939 to 1941, had much to do with the fact that the Luftwaffe was the most experienced and best-equipped air force in the world.² During the years of uncertainty, from 1942 to 1944, the Luftwaffe found itself mired in Russia and forced to defend against Allied bombing at home, which created increasingly severe shortages of experienced pilots. Last came the years of defeat, from 1944 to 1945, signaled by the pilots' revolt against Reichsmarschall Hermann Göring, the Commander-in-Chief of the Luftwaffe. In this stage, the Luftwaffe was severely limited in the operations it could conduct. It was fighting with full knowledge of impending defeat. Thus, the Luftwaffe transitioned from being a victorious service whose pilots were regarded as heroes, to a struggling force unable to offer a credible defense against the Allied onslaught. The aircrews' evolving—or, more accurately, devolving—morale and ultimately duty concept, illustrates the range of extremes a service can experience in war and how the leadership coped or failed to cope with these blows to its airmen's morale.

To understand the Luftwaffe's duty concept, it is useful to examine the air doctrine it took to war in 1939.³ In *The Luftwaffe's Way of War*, James Corum and Richard Muller provide clear insight into this doctrine. Luftwaffe Regulation 16, "The Conduct of Air Warfare," published in 1935, was the doctrinal foundation of the Luftwaffe's early victories. It

² James S. Corum, *Wolfram von Richthofen* (Lawrence: University Press of Kansas. 2008), 156.

³ James S. Corum and Richard R. Muller, *The Luftwaffe's Way of War* (Baltimore: The Nautical and Aviation Publishing Company of America, 1998), 118

emphasized that the mission of the armed forces in war was to break down the will of the enemy. The will of the nation finds its greatest embodiment in its armed forces. Thus, destruction of the enemy armed forces is therefore the primary goal in war. The mission of the Luftwaffe was to serve these goals by commanding the war in the air within the framework of combined arms.⁴ While this doctrine remained the same throughout the war, the strategic environment evolved, thus requiring changes in the manifestations of the Luftwaffe's sense of duty.

The start of the war saw the Luftwaffe as an offensive machine buoyed by top-notch equipment, training, and personnel. The victory over Poland in 1939 further bolstered the airmen's already strong sense of duty. This duty concept was very Nazi-centric, more so than that the other services. To understand what framed the Nazis' duty concept and why the Luftwaffe was more imbued with that ideology, one must examine the political foundation of the Nazi party. Macgregor Knox stated in *Common Destiny*,

Explanations for this [Nazi] excellence in the service and pursuit of evil have varied. The unfailing professionalism of Prusso-German forces from the Great Elector onward has long been an obvious and persuasive answer, although recent pioneering work has only partially charted the exact nature and extent of German professional military superiority in the twentieth century... [The soldiery] fought to the end because it *believed* in its own collective racial superiority, had faith in the Führer's word, and placed its hopes in the regime's promised new weapons of staggering power.⁵

The Luftwaffe, as the most junior and technologically advanced of the services, both in terms of existence and relative age of pilots, was "inevitably more receptive to Hitler and National Socialism than the

⁴ Corum and Muller, *The Luftwaffe's Way of War*, 120.

⁵ MacGregor Knox, *Common Destiny: Dictatorship, Foreign Policy, and War in Fascist Italy and Nazi Germany* (Cambridge: Cambridge University Press, 2000), 187-188.

Army.”⁶ Propaganda and indoctrination certainly help solidify this idea. As one pilot stated, “We really believed in him. Hitler did a lot for me. I had a wonderful youth. We were young, we were so much indoctrinated by propaganda, by the years of victory reports. Afterwards, people said, ‘How could you have believed in this man?’ Yet we did—totally.”⁷ As Heinz Knoke stated before he joined the Luftwaffe in the summer of 1939, “German populations all over Europe are reaching hands out to Hitler. It is the same wherever we go... I am only one out of many millions of enthusiastic young people who have absolute faith in Hitler and dedicate themselves to him without reservations.”⁸ Yet even this nearly fanatical sense of duty could not by itself ensure victory.

In fact, the Battle of Britain in 1940 was the Luftwaffe’s first major defeat. Although it was a setback and had at least a transitory effect on aircrews’ morale, their duty concept was unshaken leading up to the invasion of Russia in 1941. This huge undertaking proved to be the first major failure for the German blitzkrieg. Dogged Russian defense and numerical superiority, both on the ground and in the air, demonstrated that the blitzkrieg could be stopped. Increasingly-heavy British and American heavy-bomber attacks in 1943 further degraded the Luftwaffe’s morale when the offensive machine that had swept over Poland in 1939 was suddenly forced into a defensive role over the Reich. This task was even more difficult than it might have been due to the cumulative losses of aircrew and equipment since the start of the war, along with the steadily increasing effects of Allied strategic bombing on the Third Reich’s industrial complex.⁹ The Luftwaffe did what it could with the resources it had to slow the Allied onslaught and turn the tide of the war. Despite

⁶ Richard Suchenwirth, *Historical Turning Points in the German Air Force War Effort* (New York: Arno Press, 1968), 14.

⁷ Richard Muller, *The Air War Over Germany*, 220.

⁸ Heinz Knoke, *I Flew for the Führer* (New York: Henry Holt & Co., 1953), 9.

⁹ Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Maxwell AFB, Alabama: Air University Press, 1983), 303.

a brave effort, the Luftwaffe lost air superiority over Germany, hastening the Third Reich's defeat. The last phase of the war was heralded by the pilots' plot against Göring in the winter of 1944-1945. In short, from 1939 to 1945, the Luftwaffe ran the gamut from the towering heights of victory to the degrading depths of defeat.

The Years of Victory, 1939-1941

Adolf Hitler reignited post-World War I Germany's sense of nationalism. By blaming the Jews, politicians, and Allied nations responsible for brokering the Treaty of Versailles, Hitler stoked the fires of German resentment while at the same time restoring a deep pride in being German.¹⁰ The Treaty of Versailles was humiliating, and runaway inflation came after the French took control of the Ruhr industrial complex in response to the German political establishment's attempt to default on its war reparations. The German people were thus looking for leadership. Hitler offered it when he came to power in January 1933. From that point forward, Germany spent the next six years rebuilding its military strength so Hitler could right the wrongs of Versailles. The Luftwaffe was central to this development.

In fact, the Luftwaffe prepared for war in a manner befitting both Clausewitz's and Lord Moran's ideas about an armed force's military qualities, including the duty concept.¹¹ Germany's new airmen exploited the latest in aircraft technology and conducted realistic wargames to train aircrews and refine their emerging doctrine. The Luftwaffe prepared its aircrew for battle both in terms of equipment and courage. Lord Moran stated that leadership and equipment were paramount to a

¹⁰ Geoffrey Parker, *The Cambridge History of Warfare* (New York: Cambridge University Press, 2005.), 316.

¹¹ "An army's military qualities are based on the individual who is steeped in the spirit and essence of this activity; who trains the capacities it demands, rouses them, and makes them his own; who applies his intelligence to every detail; who gains ease and confidence through practice, and who completely immerses his personality in the appointed task." Clausewitz, *On War*, 187.

pilot's resolve.¹² The Luftwaffe leadership embraced this idea by conducting realistic training and providing first-class equipment. The Luftwaffe also developed an air doctrine conducive to fostering courage and resolve. Regulation 16 prescribed that a leader must have an “untiring care for the well being of the soldier—all these create in misery and death an unbreakable fighting fellowship.”¹³ This doctrinal proposition illustrates the emphasis the Luftwaffe placed on leadership and the maintenance of courage—two of the necessary elements of a strong duty concept.

Armed with effective training and the best dive bomber in the world, the Luftwaffe began World War II by supporting the invasion of Poland. The men who went to war were eager to do so. Luftwaffe pilot and eventual Squadron Commander, Heinz Knoke's memoir, *I Flew for the Führer*, noted, “I apply for my call-up [for the Luftwaffe] to be advanced, but cannot get anything definite beyond some vague promises which mean nothing. I do not know exactly why it is, but somehow the prospect of actually experiencing war rather appeals to me.”¹⁴ Knoke was too young to fly in the Polish campaign, but he captured the attitude of many of the German youth who eagerly joined the Third Reich's military machine to return Germany to its rightful stature.

The Luftwaffe was intent on destroying planes on the ground before they could takeoff, to ensure air superiority. But their attack aircraft suffered from three distinct problems, all of which required courage to overcome. The first—weather—is common to any aircraft. The second was distinct to the rigors of dive bombing, a preferred German tactic brought to near-perfection with the Stuka. The last was again common to all aircraft in war: enemy fire. The Luftwaffe received a

¹² Charles M. Wilson, [Lord Moran], *The Anatomy of Courage: The Classic WWI account of the Psychological Effects of War* (New York: Carrol & Graf Publishers, 2007), 105.

¹³ Corum & Muller, *The Luftwaffe's Way of War*, 120.

¹⁴ Heinz Knoke, *I Flew for the Führer*, 12.

harsh lesson in regards to weather when on 15 August 1939 during a pre-war training exercise, 30 Stukas began a practice bombing run in changing weather. The reported cloud cover that was supposed to extend between 2500 to 12,000 feet had merged with a fog bank below the 2,500 foot “pull out” point. Thirteen Stukas flew into the ground as a result.¹⁵ Weather thus drew from the bank of every airman’s courage. This was particularly true of the dive-bomber pilot, who deliberately placed his aircraft in a dive, through variable weather formations, in order to strike a target. But the concept of duty placed accomplishing the mission above the assumed risks of weather. But, the rigors of dive bombing were inherently dangerous for other reasons as well.

The JU 87 “Stuka” pilot usually started at 12,000 feet, put his aircraft in a 70-to-80 degree dive and released his bomb at 2,300 feet, then pulling out of the dive and experiencing a “grey out” due to temporary loss of blood to the brain.¹⁶ Dive bombing, while very accurate, was also relatively predictable. Thus a ground gunner could fairly easily acquire the line of dive bombers. To counter this threat, dive bombers would either attack out of the sun or from different directions in hopes of confusing and dispersing the fire.¹⁷ It took a good deal of courage and skill to fly an aircraft headlong toward the ground while being shot at and then have the presence of mind to release one’s munitions at the correct altitude. The numerous training exercises could prepare pilots for the rigors of weather and the physical effects of dive bombing, but they could not simulate enemy fire.

Luftwaffe dive bombers were vulnerable to numerous enemy weapon systems. The Stuka was particularly vulnerable to large-caliber

¹⁵ Cajus Bekker, *The Luftwaffe War Diaries: The German Air Force in World War II* (New York: Da Capo Press, 1994), 43.

¹⁶ Cajus Bekker, *The Luftwaffe War Diaries*, 42.

¹⁷ Mike Spick, *Luftwaffe Bomber Aces: Men, Machines, Methods* (London: Greenhill Books, 2001), 36.

weapons and anti-aircraft fire.¹⁸ Because many of the targets attacked by dive bombers had several gun emplacements, dive bombing such targets would have seemed almost suicidal to the uninformed observer. The deadliest threat, however, was enemy fighters, not only for what they could do to Luftwaffe attack aircraft and bombers, but also for their effect on ground forces. The heavy emphasis on attacking the Polish Air Force on the ground to gain and maintain air superiority was well placed. But due to a false start on Germany's part, Poland knew the attack was coming and was able to disperse its aircraft to secondary bases. Additionally, on 1 September 1939, the day of the invasion, Luftwaffe aircrews had to abort their missions against primary targets due to "shocking weather for flying," in other words, fog.¹⁹

Despite the German blunder in operations security and the intervention of weather, the inferior Polish Air Force and Poland were doomed. While aircraft could move to secondary bases, Polish communication and transportation nodes could not. Dive bombers, with their great accuracy, crippled Polish command and control, making a coherent defense impossible. Göring's claims of "lightning speed and undreamed of might" proved a reality in the Polish campaign.²⁰ The Luftwaffe achieved air superiority, and the German army was able to engage Polish forces without fear of air attack. Moreover, Luftwaffe dive bombers were able to cut off the supply lines and harass the enemy rear. The invasion of Poland began on 1 September 1939 and ended 6 October 1939 with Germany and the Soviet Union dividing the country.

The Luftwaffe's way of war was validated and refined in the skies over Poland. The two tasks of achieving air superiority and supporting combined-arms operations would become the staple for future Luftwaffe

¹⁸ Mike Spick, *Luftwaffe Bomber Aces*, 35.

¹⁹ Cajus Bekker, *The Luftwaffe War Diaries*, 27.

²⁰ Cajus Bekker, *The Luftwaffe War Diaries*, 58-59.

missions, a limited focus that would ultimately prove its undoing. But in the short run, the Polish campaign spurred improvements in communications and reconnaissance for support of the army—the result being arguably the most capable combined-arms force in the world. This approach would serve the Luftwaffe well in Norway and France, but would be woefully deficient in attacking Britain.

Few first-person accounts regarding the invasion of Poland exist in English. Thus, the attitude of the Luftwaffe pilots and aircrew can only be surmised based on the information provided by the high command and by the attitude of the pilots during the Battle of Britain. Clausewitz and Moran both state that victory has a positive effect in bolstering courage and instilling confidence in leadership.²¹ It is safe to say, with the successes in Poland, Norway, the Low Countries, and France, that the Luftwaffe went against the Royal Air Force (RAF) buoyed with confidence and perhaps a touch of bravado. After all, since Germany was winning its campaigns with such ease, and National Socialist ideals comprised the duty concept underlying such magnificent victories, there was in the aircrews' and other troops' minds a clear tie between these factors.

Luftwaffe prewar training was furthered by wartime experience, thus creating a veteran cadre and unit cohesion that Moran spoke of as a key ingredient for maintaining courage.²² But the Battle of Britain shattered this image and acted as a premonition of the failures to come. Hitler had not anticipated fighting Britain. He had expected, based on German military might and Prime Minister Neville Chamberlain's policy of appeasement, that the war in the West would be over after the capture

²¹ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: N.J.: Princeton University Press, 1976).

²² Charles M. Wilson, [Lord Moran], *The Anatomy of Courage: The Classic WWI Account of the Psychological Effects of War* (New York: Carrol & Graf Publishers, 2007).

of France.²³ But the newly appointed Prime Minister, Winston Churchill, took a much more aggressive stance. He rallied the British and encouraged American support and involvement in the war. Hitler thus saw no other choice but to attack Britain, and his hope was that the Luftwaffe would clear the way for an invasion.²⁴ General Alfred Jodl made the bold statement that “The ultimate German victory over Britain is only a matter of time.”²⁵ But for the invasion to be a success, Hitler knew his air force had to achieve air superiority. For this reason, he ordered the Luftwaffe to attack British airfields, radar sites, and aircraft industries.

The Luftwaffe High Command knew that destruction of the RAF had to be accomplished prior to any seaborne invasion.²⁶ They implemented a five-phase plan to do so. The first involved fighter sweeps, designed to engage RAF fighters that flew up to meet these Luftwaffe aircraft violating British air space. The RAF, however, realized that the fighters offered little threat to ground targets. Given the disadvantage of being forced to climb into an attacking opponent, the RAF eventually stopped intercepting German formations altogether. The second phase involved using decoy bomber formations to bait RAF fighters into the sky. The RAF, however, overcame this tactic by moving some of their aircraft to bases further north, thereby giving the RAF more time to climb and engage the enemy. This caused higher German casualties than the Luftwaffe High Command anticipated. The third phase centered around striking RAF air bases and destroying the airplanes on the ground, another throwback to the Polish campaign. Like the Poles, the British were able to disperse to other airfields and

²³ Gerhard L. Weinburg, *A World at Arms* (Cambridge: Cambridge University Press), 118.

²⁴ Gerhard L. Weinburg, *World at Arms*, 150.

²⁵ Alfred Jodl, “War Diaries and Correspondence of General Alfred Jodl: The Continuation of War against Britain, 30 June 1940” (ND) 1776-PS.

²⁶ “Galland Report”, 193.

absorb the damage at fields targeted by the Luftwaffe. Unlike the Polish, the British ground forces and command and control systems were not simultaneously targeted and attacked by the German army. The Luftwaffe eventually decided to proceed with its attack on British industry, believing that the RAF posed a diminished threat. This final phase of the battle, which attempted to make up for the previous limitations of short-range fighters, was the introduction of the fighter-bomber. While the aircraft achieved its goals of delivering munitions and self defense, the payloads proved to be too small and British resistance too strong. In short, the RAF maintained a porous but sufficiently effective defense and Churchill rallied the English people to withstand the rigors of the German aerial assault.²⁷

The Luftwaffe suffered from three limitations in the Battle of Britain, two related to technology and the third to doctrine. The first limitation existed because the fighter escort needed for the bombers only had one-and-a-half hours of fuel, thus limiting the bombers' range as well. Adolf Galland, Gruppenkommandeur (Group Commander) of Jagdgeschwader 26 (JG 26), likened this to being "a dog on a chain who wants to attack the foe but cannot harm him, because of the limitation of his chain."²⁸ The second limitation was in the comparable technology of the RAF, which had Spitfires that were a solid match for Luftwaffe Messerschmitts. Lord Moran said "the pilot must feel that his craft is the best of its kind" in order to strengthen his resolve. Up until the Battle of Britain, the Luftwaffe's aircraft embodied this notion. But against the British, they were not the best in the sky. When Hermann Göring asked Adolf Galland what he would like to have in the way of fighters, Galland

²⁷ Intelligence Summary No 147, "Galland Report", 27 Aug 1945, Call #520.056-193, IRIS #01075592, (USAF Collection, AFHRA, Maxwell AFB AL), 30.

²⁸ Adolf Galland, *The First and the Last: The Rise and Fall of the German Fighter Forces, 1938-1945* (New York: Henry Holt & Co., 1954), 25.

replied “Give me a Staffel [squadron] of Spitfires!”²⁹ The last limitation came from the Luftwaffe’s doctrine, which was ill-suited for a strategic air war.

Entering into the Battle of Britain, Luftwaffe courage ran high. In a letter to his parents, Luftwaffe fighter pilot Hans-Otto Lessing remarked, “I am having the time of my life. I would not swap places with a king. Peacetime is going to be very boring after this!”³⁰ In Lord Moran’s construct, if these men knew fear, they did not show it. The excitement of the war and the thrill of victory provided ample sources of courage and reinforcement of the duty concept.

German pilots likened flying against the enemy to hunting, and enemy kills achieved contributed to a warrior-hero ethos.³¹ This led to fierce competition between Luftwaffe units to achieve the most kills and garner the highest-scoring aces.³² This contrasted significantly with the RAF, which valued “distinguished service” over the number of victories.³³ This difference in approach illustrated the Luftwaffe construct of duty that placed the individual at the center. Unfortunately, the Luftwaffe leadership was inconsistent in its endeavors to nurture or replenish this initially strong duty concept when things began to go wrong. In fact, as the British shot down increasing numbers of Luftwaffe pilots, the thrill of victory ebbed and with it went the absolute faith initially fostered by the Germans’ strong sense of duty. Oberleutnant von Hahn wrote, “There were hardly any of us who had not had to ditch with a shot-up machine or an empty tank.”³⁴ Another pilot, Helmut Ostermann said that some of

²⁹ “Galland Report”, 27.

³⁰ Stephen Bungay, *The Most Dangerous Enemy: A History of the Battle of Britain* (London: Aurum Press, 2000), 160.

³¹ Jager is the term used for fighter aircraft in German, jager translates into “hunter”

³² A Luftwaffe pilot became an ace after five confirmed shoot downs of an enemy aircraft.

³³ Stephen Bungay, *Most Dangerous Enemy*, 162.

³⁴ Stephen Bungay, *Most Dangerous Enemy*, 303.

the pilots were considering transfer to quieter duty. The British Spitfires and the channel offered a very different battle environment than the Polish campaign. The failure to achieve air superiority took a toll on the Luftwaffe, and the hunting persona of the pilots turned on itself. Ulrich Steinhilper noted, "I was thinking we were all fighting to rid the sky of the RAF; and what was really developing was that many individuals were using the battle as a stage upon which they could further their own careers and personal scores."³⁵ Richard Muller's *The Luftwaffe Over Germany* also commented on the glory-hungry pilots who desired above all else to win the coveted Knights Cross, an extremely prestigious medal worn about the neck. These pilots were deemed to have "neck rash."³⁶ The RAF proved to be more resilient than the Luftwaffe had expected; and the Luftwaffe sense of duty was too individualistic, which suggested personal kill ratios were more important than military objectives. In this sense, the Germans failed the tests of both combat and military effectiveness.

If success and respect were driven by the number of kills achieved, the Luftwaffe pilot could measure his courage by the numerical victories reaped. This offensive manifestation of duty would be germane as long as victories continued. The Luftwaffe that entered the Battle of Britain was the embodiment of this ethos. Yet the Luftwaffe that exited the battle was "worn to the point where flying suffered, so Galland demanded and got permission to give the entire Geschwader [a Luftwaffe organization intermediate in size between an American group and wing] a rest."³⁷ The Luftwaffe leadership realized the strain on the men and equipment, and rested the wing in Austria for two months in 1941 while their equipment was overhauled. Decorations were awarded to the most deserving men to improve morale. Nevertheless, the Battle of Britain

³⁵ Stephen Bungay, *Most Dangerous Enemy*, 303.

³⁶ Richard Muller, *The Luftwaffe Over Germany*, 95.

³⁷ "Galland Report," 29.

represented the first failure of the Luftwaffe to date and resulted in Hitler's cancelling the invasion of Britain.³⁸ Hitler apparently saw no easy victory in Britain and, recognizing the cost in both manpower and political prestige the loss had incurred, cast his gaze to Russia, which had always been his preferred and indeed inevitable enemy.

During the years of victory, the Luftwaffe adopted an air doctrine born of the experiences of World War I that complemented and in fact became an integral part of the army's blitzkrieg tactics. Based on the political objectives of continental conquest, the air doctrine focused on combined arms. The invasion of Poland saw the successful implementation of this form of warfare. Germany next invaded Norway, the Low Countries, and France. Luftwaffe integration with the army improved, and the combined-arms approach represented exactly what the high command and even Hitler himself envisioned as the ideal form of warfare. The power of the blitzkrieg went as far as the English Channel, where land forces had to halt until the Luftwaffe won air superiority over Southeastern England. The Channel also proved to be a significant obstacle to the Luftwaffe, which was designed to operate in close proximity to friendly airfields. The extended distances to targets consumed much of the fuel required either to reach strategic targets or to engage in dogfights. The bombers were capable of flying farther; but without fighter escort, they were at the mercy of the RAF. In the end, the Luftwaffe's failure to achieve air superiority prohibited the land invasion and tarnished the image of German military might.

The Luftwaffe's sense of duty remained largely unchanged even after the reversal over the English Channel, especially since the lightning march across Western Europe had been so successful and clearly would not have been possible without the Luftwaffe's major contributions. The offensive-minded Luftwaffe manifestation of duty and system of rewards

³⁸ Stephen Bungay, *Most Dangerous Enemy*, 341

based on the individualistic warrior-hunter ethos contributed to maintaining the duty concept through the early part of the war. The optimism of an early British defeat was anchored in the Germans' early successes. But the reality of the Battle of Britain, in which a tactical air force was fighting a strategic air war, took its toll on men, equipment, and morale. As Galland noted, "Failure to achieve any noticeable success, constantly changing orders betraying lack of purpose, and obvious misjudgment of the situation by the Command, and unjustified accusations had a most demoralizing effect on us fighter pilots, who were already overtaxed by physical and mental strain."³⁹

Regarding combat effectiveness, Germany's insight into continental conquest had so far proven accurate. The blitzkrieg was a perfect tool to achieve political and military objectives, as long as the objectives were within easy reach, as they had been in Poland, Norway, and France. Millett's and Murray's *Military Effectiveness* assessed German tactical effectiveness as the best in World War II and the operational effectiveness as second only to that of the Americans.⁴⁰ The *United States Strategic Bombing Survey* (USSBS) summarizes the German emphasis best in the assessment of the *German Strategic Plan*:

What Germany lacked in numbers of divisions, in raw materials and in basic industrial strength, it planned to compensate with highly trained ground units of great striking power. These were to be equipped and ready to march while Germany's enemies were merely preparing. Essential in this strategy was a technically well-developed air force in being. Emphasis was not placed upon the development of an air force that would destroy the sustaining resources of the enemy's economy. In the German plan it was anticipated that an enemy's entire country would be so quickly overrun that little concern need be had for

³⁹ Adolf Galland, *The First and The Last*, 31.

⁴⁰ Allan R. Millett and Williamson Murray, *Military Effectiveness: The Second World War* (Winchester: Allen & Unwin Inc., 1988), 321.

industrial and war production that was merely potential. The air force was, primarily, an arm of the blitzkrieg.⁴¹

The USSBS also states that even Hitler's most cautious advisors were astounded by the success of the blitzkrieg and considered the Battle of Britain only a minor setback. The important issue was the invasion of Russia, a campaign that was to take approximately a month and certainly no more than four. Afterwards, Britain could be dealt with at Hitler's leisure.⁴²

In short, Luftwaffe morale from 1939 to 1940 was high, as was its operational and tactical effectiveness. Maintenance of morale was not a primary concern because it was propped up by successful engagements, especially in 1939. As long as the blitzkrieg remained effective and the Luftwaffe maintained technical superiority over its enemies, the duty concept remained unchallenged and maintenance of morale was a self-correcting endeavor. The Battle of Britain, with heavy losses for no gain took its toll on the Luftwaffe, but as Galland stated in his memoirs, "The Battle of Britain, of course, was never one of Hitler's original war aims. It was merely a stone which had rolled in his way; it had either to be removed or to be by-passed. In any case it was something which could not be allowed to interfere with the main objective, the destruction of Bolshevism."⁴³

Of course, in a case of the shoe now being on the other foot, British night bombing of Germany heralded the changing roles of the Luftwaffe as early as 1940. While the initial British bombing efforts were largely ineffectual, the Luftwaffe understood its duty to the defense of Germany

⁴¹ United States Strategic Bombing Survey, "Summary Report European War", 30 September 1945, Call #168.7045-58, IRIS #127189, (USAF Collection, AFHRA, Maxwell AFB AL), 1.

⁴² United States Strategic Bombing Survey, "Summary Report European War", 30 September 1945, Call #168.7045-58, IRIS #127189, (USAF Collection, AFHRA, Maxwell AFB AL), 2.

⁴³ Adolf Galland, *The First and The Last*, 51.

and apprehended the growing seriousness of the threat between 1941 and 1943. Wilhelm Johnen would end the war as an elite Luftwaffe night-fighter wing commander, but in the summer of 1941, he was a regular night-fighter pilot defending the skies over Germany. Johnen's duty was simple, "Protect your country, your women and children from death out of the skies. Put all your efforts into the defence of your country."⁴⁴

The Years of Uncertainty, 1942-1944

Rebounding from the Battle of Britain, Hitler concentrated his forces against Russia. The war in the East was supposed to be the type of war for which the Luftwaffe had trained; German forces were expected to easily defeat the *Untermenschen* (inferior men) of Russia. On 22 June 1941, over 4.5 million troops of the Axis powers invaded the USSR along a 1,800-mile front.⁴⁵ Codenamed Barbarossa, It was the largest military offensive in history.

Luftwaffe morale at the start was very good. As Lieutenant Heinz Knoke stated in his diary, "Now there is a rack slung along the belly of my good 'Emil,' carrying 100 five-pound fragmentation bombs. It will be a pleasure to drop them on Ivan's dirty feet."⁴⁶ Lieutenant Knoke's diary entry on 22 June reveals the emphasis the Luftwaffe placed on tactical bombing by utilizing fighter aircraft in a non-traditional role and the ideologically and racially driven disposition of the German military towards the Russian Bolsheviks. Knoke's unit would fly six times that day to bomb and strafe the Russians.

The Luftwaffe doctrinal concept was the same—to conduct combined-arms operations. It is important to note that combined-arms

⁴⁴ Wilhelm Johnen, *Duel Under The Stars* (London, William Kimber & Co., 1957), 16.

⁴⁵ Trumbull Higgins, *Hitler and Russia* (New York: The Macmillan Company. 1966), 11–59, 98–151.

⁴⁶ Heinz Knoke, *I Flew for the Führer*, 43.

operations did not subjugate the Luftwaffe to the army. The Luftwaffe believed that attacking “enemy combat power and the sources of supply that sustain it” was a primary concern of the bomber force.⁴⁷ Again limited by the resources available, the Luftwaffe force structure was ill suited for long-range bombing. But the Luftwaffe was well designed for the purposes of destroying Russian aircraft on the ground at forward bases and harassing enemy lines of supply. The hope for a speedy victory in Russia vanished in the face of the Russian army’s fierce resistance and the Luftwaffe’s underestimation of the Red Air Force. The Red Air Force, while technically inferior and having less-well-seasoned pilots, nonetheless had a quality all its own—quantity. It also had the backing of a huge aero-industrial complex safe behind the Ural Mountains.⁴⁸

Deficiencies in the Luftwaffe intelligence branch, combined with the by-now standard racist hubris, contributed to the Germans’ underestimation of their Russian foes. An assignment to intelligence duties was as undesirable posting for any officer who sought command and glory.⁴⁹ But even with shoddy intelligence and a fierce foe, the Luftwaffe contributed to the initial German successes on the Eastern Front.

Nevertheless, three factors would render the work of the Luftwaffe “*first inadequate, and finally irrelevant.*”⁵⁰ These included the inability to translate operational victory into strategic success, the failure to gain long-term air superiority, and Luftwaffe resistance to re-focusing its operations. Moreover, the German advance into Russia was so deep that army and air force units became dangerously dispersed, requiring long

⁴⁷ Richard Muller, *The German Air War in Russia* (Baltimore: The Nautical and Aviation Publishing Company of America, 1992), 5.

⁴⁸ Richard Muller, *German Air War in Russia*, 41.

⁴⁹ Richard Muller, *German Air War in Russia*, 40.

⁵⁰ Richard Muller, *German Air War in Russia*, 51.

supply chains that made concentration of forces difficult.⁵¹ Tactical victories were plentiful, but they offered little strategic benefit. Flying units were being called into action regardless of their suitability to the task, which led to a further mismatch of tactical and operational goals to the overall strategy.

The failure to take Moscow in December 1941 and the quagmire of Stalingrad, ending with the annihilation of the 6th Army in February 1943, represented disastrous turning points for Germany in World War II.⁵² The Luftwaffe's turning point occurred in July 1943 at Kursk. There the Luftwaffe conducted its last major combined offensive operation. From that point forward, the defense of the homeland would become the priority.⁵³ The speedy victory over Russia and acquisition its resources were not to be. Furthermore, the gathering storm of Allied strength was looming in the West.

While the German army was freezing before the gates of Moscow, Japan attacked the United States at Pearl Harbor on 7 December 1941, prompting an American declaration of war on Japan. Hitler anticipated that Roosevelt would seize the opportunity to declare war on Germany (something the President had no intention of doing) and decided to preempt the Americans instead. As the German foreign minister, Joachim von Ribbentrop, stated, "A great power does not allow itself to be declared war upon; it declares war on others."⁵⁴ As a result of this foolish move, Hitler brought the United States into the war against Germany and Italy much earlier than would otherwise have been the case.⁵⁵ In mid-1942, the United States began deploying bombers and fighters to England to aid the British in the bombing of Germany. This

⁵¹ Richard Muller, *German Air War in Russia*, 57.

⁵² Richard Muller, *German Air War in Russia*, 63.

⁵³ Richard Muller, *German Air War in Russia*, 94.

⁵⁴ Gerhard L. Weinberg, *Hitler & World War II* (Cambridge University Press: 1995), 203.

⁵⁵ Gerhard L. Weinberg, *Hitler & World War II*, 194.

campaign targeted German industry and war production facilities. The strategic bombing campaign, along with German preoccupation in Russia, gave the Allies enough time to coordinate a ground invasion. This put a resource-constrained Germany in a multi-front war. The summer of 1942 was a tough time in Germany. As Wilhelm Johnen stated in his memoirs, “The first doubts as to our war leadership began to rise and many people lost their faith in the Hitler regime.”⁵⁶

Luftwaffe effectiveness was directly related to the resources targeted by the strategic bombing campaign, especially petroleum, which barely met wartime requirements prior to the strategic bombing.⁵⁷ Moreover, pilot training, which was consistently behind aircraft production, was further degraded by the heavy losses against United States bombers and exacerbated by the lack of petroleum. Flying training hours were cut first in half and then in quarter as the war progressed: “The German pilot training program was the first to feel the effects of Spaatz’s Oil Campaign, and never recovered.”⁵⁸

The first major Allied invasion began in North Africa and pushed the Luftwaffe to Sicily. The offensive lightning war that the Luftwaffe had trained for and fought had failed in Russia. A new war loomed, one that put Germany on the defensive and forced the Luftwaffe to adapt to a new role, one of guardian of the sky. The previous duty of supporting the army was replaced with the duty of protecting the German homeland. The heroic warrior-hunter who flew planes as something of a sport was thus replaced by men who shared a common resolve: stopping the Allied bombers. Aircraft on the Eastern Front were concentrated in the Mediterranean, the West, and over the Reich to defend against the Allied bombers.⁵⁹

⁵⁶ Wilhelm Johnen, *Duel Under the Stars*, 55.

⁵⁷ Geoffrey Parker, *The Cambridge History of Warfare*, 323.

⁵⁸ Richard Muller, *The Luftwaffe over Germany*, 292.

⁵⁹ Richard Muller, *German Air War in Russia*, 92.

Johannes Steinhoff was a group commander of one such force stationed in Sicily. His diary, *Messerschmitts Over Sicily*, describes the seemingly impossible situation in which the Luftwaffe found itself. The ME-109, so feared over Poland and France, was now becoming a relic in the rapidly advancing field of aircraft innovation. Replacement parts and crews were in short supply. Exhaustion from constantly being bombed was commonplace, and the orders from Reichsmarschall Göring were unrealistic. The pilots who flew understood the stakes of failure. The years of victory had been a period in which the sense of courage and duty were replenished by sweeping successes. The leadership could ensure adequate rest and recognize good work because of the ample victories achieved with the help of the Luftwaffe. As the war progressed, victories were harder to come by. When the tide changed and the Luftwaffe went from being aggressor to defender against a numerically and technologically superior foe, the ability to pause became more difficult and Göring's darling service fell into disgrace because it failed to stem the Allied onslaught. The years of uncertainty brought a different situation altogether. Victory could be defined as not failing against the overwhelming odds, but with so few pilots and aircraft, rest became increasingly hard to find, casualties increased faster than the inadequate training system could replace lost aircrew, and the odds in the air grew steadily longer. The manifestations of these severe stresses on duty and morale became increasingly clear.

Exhaustion was a common companion to the Luftwaffe pilots stationed on Sicily. Steinhoff wrote that "the nights were short and we were overtired and wanted to sleep."⁶⁰ When he requested a period of rest for his group, he was denied due to the need for maintaining the Sicilian defense. In response, Steinhoff stated that, "the group is no longer a

⁶⁰ Johannes Steinhoff, *Messerschmitts Over Sicily* (Mechanicsburg: Stackpole Books, 2004), 9.

battle-worthy unit. Its combat value is precisely nil.”⁶¹ This was from a commander who lived with his airmen and understood the effects exhaustion had on them. The men were mentally and physically exhausted.⁶² Lord Moran understood the toll exhaustion takes on a soldier and what a boon a good rest can be in terms of restoring morale and tactical effectiveness.

The effects of exhaustion were clear everywhere in Sicily. Men were jumpy. Some were terrified of the bombing raids, but they never turned down a mission. This represents a clear example of Lord Moran’s third type of courage: to show fear but fight through it.⁶³ This period also represented a shift from a largely combat-effective force with high morale to a force that had suffered major defeats and began to experience wavering morale. In Steinhoff’s words, “This, then, is what we had come to after having ourselves been the more powerful enemy in the early stages of the war. Now we had learned what the taste of defeat was like.”⁶⁴ This acknowledgement of defeat did not mean the airmen of the Luftwaffe were lacking in courage or in duty concept.⁶⁵ The element of danger, inherent in any war, loomed very large in the eyes of the aircrew when the odds of survival began to decrease. Allied bombers, bristling with machine guns, had a direct effect on the Luftwaffe aircrews: “[T]he bombers loomed large in their illuminated sights... they would open fire too soon and break off because the chances of coming out unscathed were so small.”⁶⁶ The sources of courage that were so plentiful in the early years of the war—leadership, training, victory, and superior equipment—were either gone altogether or in ever-shorter supply. Leadership had to fill the void created by the absence of the latter three.

⁶¹ Johannes Steinhoff, *Messerchmitts Over Sicily*, 13.

⁶² Johannes Steinhoff, *Messerchmitts Over Sicily*, 10.

⁶³ Lord Moran, *Anatomy of Courage*, 5.

⁶⁴ Johannes Steinhoff, *Messerchmitts Over Sicily*, 48.

⁶⁵ Johannes Steinhoff, *Messerchmitts Over Sicily*, 24.

⁶⁶ Johannes Steinhoff, *Messerchmitts Over Sicily*, 17.

The dearth of training was especially debilitating. Veteran pilots were replaced by young men who lacked thorough training and were not expected to survive beyond the first few engagements.⁶⁷

The defense of Sicily ended with the few airplanes left to the Luftwaffe dispersed across the island. On 13 June 1943, official word came from Luftwaffe High Command to evacuate.⁶⁸ This was part of a larger trend in which the Luftwaffe conducted the wholesale stripping of the fronts to defend the homeland against heavy-bomber raids. While the Luftwaffe's duty concept and morale were still good, it was wavering fast. Field Marshal Erhard Milch stated that, "The morale of the German fighter personnel is excellent, and under the circumstances imposed by their numerical weakness their performance deserves to be emphasized. The officers responsible for fighter operations are fully capable to cope with their mission. The daytime fighter defense situation can be considered absolutely secure on the condition that adequately strong reinforcements are moved in."⁶⁹ On the surface, this statement appears positive. But the "adequately strong reinforcements" did not exist. Although some interpretation is required, Milch's call for reinforcements, which he knew would not be forthcoming, portended increasing difficulties.

Strategic bombing and the resources required to wage a multi-front war were taking their toll. What was once the best trained and equipped air force in the world struggled to stave off defeat. As Steinhoff noted, "The Luftwaffe that entered the war was an incomplete weapon and, when that war had to be conducted against great powers on several fronts, the high command and its instrument were very far from adequate for the task that confronted them."⁷⁰ Flight commander Heinz

⁶⁷ Johannes Steinhoff, *Messerchmitts Over Sicily*, 24.

⁶⁸ Johannes Steinhoff, *Messerchmitts Over Sicily*, 229.

⁶⁹ Richard Muller, *The Luftwaffe Over Germany*, 93.

⁷⁰ Johannes Steinhoff, *Messerchmitts Over Sicily*, 252.

Knoke was more blunt when he stated in October of 1943, “This war has become a merciless affair. Its horrors cannot be escaped.”⁷¹

To summarize the years of uncertainty, the operational and tactical successes of the years of victory were replaced by increasing strategic, operational, and tactical defeats. Luftwaffe morale paralleled trends in combat effectiveness. The responsibility of maintaining aircrew devotion to duty was increasingly put on the leadership. This is not to say that the duty concept had broken, but it was clearly under increasing stress. As one German report regarding the situation in Tunisia stated in May of 1943, “The defenders... were destroyed by the absolute superiority of the enemy, and shortage of supplies.”⁷² Heinz Knoke detailed a briefing by Göring in November of 1943 that indicates the unraveling of the Reich, “It is a surprise to us when he [Göring] expresses the opinion that it is we, the air crews assigned to the defense of the Reich, who must be held responsible for the failure of air defenses in the West.” Knoke, in true aircrew fashion, later stated, “We need more aircraft, better engines—and fewer Headquarters.”⁷³ This was the prelude to the ultimate test of devotion to duty in 1944, when the Allies gained air superiority over Germany and the Luftwaffe leadership faced abject defeat and ultimate irrelevance.

The Years of Defeat, 1944 to 1945

The German situation was worsening steadily in 1944. Allied attacks took a heavy toll on the Luftwaffe. Wilhelm Johnen recounted some of this hopelessness after his thirteenth, fourteenth and fifteenth bomber kills. His 15 February night mission entry stated, “But what did fifteen four-engined bombers shot down mean? An individual success,

⁷¹ Heinz Knoke, *I Flew for the Führer*, 131.

⁷² German Translation No. VII-72: Course of the War I. “The Course of the War in the Mediterranean Theater of Operations, 1 January – 13 May, 1943. 512.621, IRIS # 00212164, USAF Collection, AFHRA, Maxwell AFB AL.

⁷³ Heinz Knoke, *I Flew for the Führer*, 140.

that was all. With the destruction of Berlin the crisis of the Nazi dictatorship began, for this round-the-clock bombing exhausted the civilian population. Even those who had firmly believed in victory began to doubt.”⁷⁴ The inability of the German leadership to plan and equip for a defense of the homeland was evident. The duty of the Luftwaffe now focused on survival, it's own, and the Reich's.

Steinhoff realized in the summer of 1944 that the end was in sight. Worse yet, there was nothing to be done about it. When Steinhoff had been withdrawn from Sicily to defend the mainland, he witnessed firsthand the destruction of the German cities. Because the Luftwaffe was so “wrongly equipped and wrongly engaged,” the German air arm was powerless to make a difference, save one option.⁷⁵ In a show of dissatisfaction with the political leadership, a group of renowned Luftwaffe aces staged a fighter pilot revolt against Göring. The plot occurred some few months after Göring began accusing the Luftwaffe of shirking their duties and attacking the pilots for cowardice when they were not effective against Allied bomber formations. The most famous of Göring's verbal assaults against the Luftwaffe was in October of 1943 when he stated, “I have laid aside my decorations. I shall not put them on again until the German Luftwaffe fight with the kind of dedication it fought with when I won them.”⁷⁶ The plot was conspiratorial and not nearly as spectacular as the assassination attempt against Hitler on 20 July 1944. The conspirators were some of the most decorated fighter aces in the Luftwaffe, including Günther Lützow, Josef Priller, Hermann Graf, Gustav Rödel and Hannes Trautloft. Galland even involved in the plot. The actual confrontation with Göring occurred on 19 January 1945 in Berlin. Günther Lützow and Johannes Steinhoff were the two present

⁷⁴ Wilhelm Johnen, *Duel Under the Stars*, 119.

⁷⁵ Johannes Steinhoff, *The Luftwaffe Plot against Göring* (Washington DC: Potomac Books, 1985), xiv.

⁷⁶ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, 21.

there.⁷⁷ The Reichsmarschall considered the fighter pilot revolt an act of treason. Steinhoff recalled Göring's words, "What you're presenting me with here, gentlemen, is treason—mutiny!"⁷⁸ Göring threatened imprisonment, court martial, and even execution; but for the most part, nothing happened.

The plot was largely symbolic. But what it signified in terms of lack of morale for the Luftwaffe is significant. The loss of the air war over Germany brought the Luftwaffe Generals to open treason because they felt they lacked the proper equipment and leadership to achieve victory. The confrontation with the Reichsmarschall was "a conspiracy without hope."⁷⁹ The closing days of World War II for the Luftwaffe were signaled by an act of conscience. The Luftwaffe fighter pilots revolted because they felt they had to do what was right, even in the face of likely persecution, and even if their actions could not change the course of the war. These were men who had faced danger at every turn, men like Steinhoff who had 176 confirmed aerial victories, and now, for the sake of the men they commanded, felt compelled to confront the head of the Luftwaffe. The plot took place so these men could "justify ourselves, to ourselves."⁸⁰ However, it is significant to note that Steinhoff had long believed Göring had been incompetent, but it was not until Luftwaffe combat effectiveness deteriorated that he was driven to speak out. This point highlights the linkages of Luftwaffe morale to combat effectiveness. When effectiveness fell, morale followed. In this case it led to open treason by the members of the plot. Steinhoff and the other plotters believed in their duty to Germany and the Reich; when they were unable to meet this duty, they revolted. But how does the fighter pilot pilot's revolt relate to the concept of duty? On the one hand, it represents a

⁷⁷ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, 104-106.

⁷⁸ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, 112.

⁷⁹ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, xiv.

⁸⁰ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, xiv.

supreme act of duty – fidelity to one’s conscience. But on the other, it represents an absolute lack of faith in the Luftwaffe’s military leadership. And because Göring had Hitler’s solid backing it may have also represented a questioning of the most sacred tenet of National Socialism – the Führerprinzip.

Two main factors contributed to the years of defeat: inadequate equipment and virtually non-existent training. While the Allies had constantly upgraded their aircraft throughout the war, Germany had no such luxury. Moreover, the Allies were able to send experienced aircrews back to their home stations to train new crews, while the Luftwaffe, on the other hand, was unable to fill operational cockpits with even partly trained pilots. In February of 1944, Flight Commander Knoke was one of the last surviving original member of his flight; and he knew the odds. “Our little band grows smaller and smaller. Every man can work out for himself on the fingers of one hand when his own turn is due to come.”⁸¹ Williamson Murray noted in *Strategy for Defeat: The Luftwaffe 1933-1945* that, “the American pressure put the German fighters in a meat grinder battle of attrition both in terms of pilots and of materiel. It was the cumulative effect of that intense pressure that in the final analysis enabled the Western Powers to gain air superiority over Europe.”⁸² By late 1944, the skies over Germany belonged to the Allies. After the war, when interrogators asked one German General why the RAF encountered no serious Luftwaffe interference during daylight raids, the General replied that “The Germans were unable to make a serious attempt to interfere with the RAF daylight bombing for the simple reason that they had no sufficient aircraft and pilots to do so.”⁸³

⁸¹ Heinz Knoke, *I Flew for the Führer*, 161.

⁸² Williamson Murray, *Strategy for Defeat: The Luftwaffe 1933-1945* (Maxwell AFB: Air University Press, 1983), 255.

⁸³ Great Britain/Ministry of Home Security. “Answers to ‘Bombing Policy’ Questionnaire by General Piocher”, Call # 512.619-4, IRIS # 00211923, USAF Collection, AFHRA, Maxwell AFB AL.

The quality of German aircraft was also inferior to that of the Allies. The commander of the fighter pilots, Adolf Galland, said, “we need high-performance aircraft to restore the feeling of superiority in the Luftwaffe...I would at this moment rather have one 262 [jet aircraft] in action than five 109s.”⁸⁴ Squadron Commander Heinz Knoke echoed this sentiment in his 10 September 1944 diary entry, “If we could only have one or two Wings operating with the new ME 262s, there would still be a good chance to save the situation. Otherwise the war in the air will be lost.”⁸⁵

Even with top-of-the-line aircraft, however, the Luftwaffe was chronically short of experienced pilots, often placing poorly or partly trained pilots in the cockpit as a result of both poor planning and an increasingly severe fuel shortage. This practice resulted in increased mortality and decreased combat effectiveness among Luftwaffe pilots. “Outnumbered on all fronts from 1942, the experienced fighter-unit leaders steadily became casualties and dropped from the lists. By mid-1944 a large majority of Jagdwaffe [fighter force] Staffel [squadron] leaders were former enlisted pilots...they received no training for their new, crucially important roles as formation leaders.”⁸⁶ Galland attempted to correct the problem, but he failed to account for the enlisted men’s lack of education, maturity, and flying skills.

The men of the Luftwaffe fought courageously to the end, and they did so in full acknowledgement of impending defeat.⁸⁷ In fact, they never truly lost their huntsman perspective on flying. As Steinhoff stated, “we were more than just soldiers: we were fanatical fliers, whose achievements had been consistently rewarded with decorations and

⁸⁴ Donald Caldwell and Richard Muller, *The Luftwaffe Over Germany: Defense of the Reich* (St Paul: MBI Publishing, 2007), 189.

⁸⁵ Heinz Knoke, *I Flew for the Führer*, 201.

⁸⁶ Caldwell and Muller, *The Luftwaffe Over Germany*, 285.

⁸⁷ Asher Lee, *The German Air Force* (New York: Harper & Brothers, 1946), 297.

privileges.”⁸⁸ The operational leaders of the Luftwaffe, who had been defending the homeland against a superior enemy and who were doing so with limited means, felt it was imperative to stand up against this type of rhetoric. Clausewitz and Moran placed a high degree of emphasis on the leader’s ability to cultivate morale and a sense of duty. The Luftwaffe’s operational leadership, when faced with maintaining aircrew morale, realized that they were not provided with adequate means to fight and win. Göring’s inflammatory remarks and lack of understanding of the existing air situation gave the plotters an ideal target on which to vent their frustrations.

During the years of defeat, the Luftwaffe continued to fight, and despite mounting attrition, the pilots did their duty at the operational and tactical levels of war. There was little choice when faced with a war of survival. Stories like Heinz Knoke’s offer insight into the power of duty. Knoke was shot down several times, suffered two concussions, numerous fractures, and was declared unfit for flying. But he lied to continue fighting. When his guns failed to fire, Knoke used his ME-109 to ram an Allied fighter. Knoke’s story covers the entirety of the war. He joined the Luftwaffe because he believed in the Führer but ultimately surmised “The reputation which Hitler established for himself at the beginning of the war as the ‘greatest military genius the world has ever seen’ is slowly evaporating. He would do better to leave to his experienced generals the business of conducting the war.”⁸⁹ In short, the Luftwaffe’s duty concept, already flawed in various ways, could not overcome the additional burdens Hitler and his flawed grand strategy placed on it.

⁸⁸ Johannes Steinhoff, *The Luftwaffe Plot against Göring*, xiv.

⁸⁹ Heinz Knoke, *I Flew for the Führer*, 200.

Summary

The linkages between Luftwaffe combat effectiveness and morale became very clear during the course of the war. In the heady years of victory, a strong sense of duty helped bring success; and success strengthened the duty concept. Thus, the duty concept, combat effectiveness, and military effectiveness were mutually reinforcing. In the uncertain years, combat effectiveness was degraded due to strategic misjudgments; the duty concept seemed to stay strong, but there were indications that it wore down at the margins. Thus, the duty concept followed where both combat and military effectiveness led. In the years of defeat, this trend accelerated. Strategic misjudgments increasingly degraded combat effectiveness. This degradation ultimately caused the senior fighter generals to rebel openly against their service chief, but to no avail. Although there were noteworthy acts of individual bravery during this period, the revolt of the fighter generals represents both a supreme expression of duty to conscience on one hand and a deep questioning of the political object of duty on the other. The erosion of morale had finally reached the duty concept of the fighter pilots. The most Nazi inculcated leaders of the German armed services had plotted treason and opted out of the Nazi vision of duty. The major conclusion from studying the Luftwaffe in World War II is that a strong sense of duty can indeed magnify combat effectiveness; but a prolonged and severe degradation of combat effectiveness will eventually degrade or even undermine the strongest sense of duty. In short, at the tactical and operational levels, duty was well developed and maintained and effectively linked to combat effectiveness. At the grand-strategic level, National Socialist ideology produced an enthusiasm that magnified combat effectiveness in the early years of the war. But successive grand-strategic mistakes ultimately ground down the machine, just as Clausewitz would have predicted.

Chapter 3

Crates of Thunder: Duty and Combat Effectiveness in the USAAF

*On we flew through the strewn wake of a desperate
air battle, where disintegrating aircraft were
commonplace and 60 chutes in the air at one time
were hardly worth a second look.*

Beirne Lay Jr.

In the years leading up to World War II, the United States Army Air Forces (USAAF) viewed the application of airpower much differently than did the Luftwaffe. American airmen advocated high-altitude strategic bombing. They believed it held forth the promise of decisive results. This factor played a large role in the USAAF duty concept and the air war over Europe. This chapter examines the USAAF's duty concept both prior to and during the war. As with the previous chapter on the Luftwaffe, it also assesses the manifestations of duty and how well the leadership maintained a sense of duty and linked it to combat effectiveness.

This assessment is divided into a prologue and three chronological periods. The prologue analyzes the USAAF's doctrine development and buildup leading into World War II. This provides insight into why the USAAF went to war the way it did. The first chronological period is titled "the months of promise" and covers events to the end of 1942. These months represented the boundless, but untested, promise of strategic bombing. Heralded by General Billy Mitchell, strategic bombing was the dominant airpower theory in the United States. The theory appealed to a nation that wanted to avoid a long war of attrition, such as World War I had been for the Europeans. Mitchell stated, "The influence of air power

on the ability of one nation to impress its will on another in an armed contest will be decisive.”¹

The second section, “the years of the grind,” began in the spring of 1943, as the first raids into Germany encountered stiff resistance, and continued until the success of Operation Argument in the spring and summer of 1944. These years were the trial-by-fire for USAAF bomber crews. The benefits and deficiencies of strategic bombing became clear, as did the effects that sustained combat had on aircrews. The USAAF leadership had to maintain the duty concept of quintessentially American aircrew who approached the war with a workmanlike attitude of “finishing the job” so they could go home. This does not imply that the Americans were blind to the importance of their efforts to win what they viewed as a war against tyranny and evil, but it highlights the difference in approach between Luftwaffe and USAAF airmen. Their team focus also distinguished them from the more individualistic German airmen.

The last period is titled “the years of triumph” which covers the period from spring 1944 to May 1945. Here, the sustained strategic bombing campaign, coupled with long range fighter escort, prevailed over the Luftwaffe. It epitomized the kind of war Americans were well-prepared to fight, and one in which their pragmatic duty concept ultimately gave them great advantages in terms of combat effectiveness and morale.

Prologue

The USAAF developed its strategic bombing doctrine from the teachings of prominent airpower theorists such as the Italian, Giulio Douhet, and the American, Billy Mitchell. Both men believed that airpower could be a decisive factor in war. Douhet stated that

¹ William Mitchell, *Winged Defense: The Development and Possibilities of Modern Airpower—Economic and Military* (New York: Dover Publications, 1988; Tuscaloosa: University of Alabama Press, 2009), 214. Citations are to the University of Alabama edition.

To have command of the air means to be in a position to wield offensive power so great it defies human imagination... In short, it means to be in a position to win. To be defeated in the air, on the other hand, is finally to be defeated and to be at the mercy of the enemy, with no chance at all of defending oneself, compelled to accept whatever terms he sees fit to dictate. This is the meaning of the “command of the air.”²

In the late 1920s, when the airplane represented a relatively new technology, Douhet believed that a country’s inability to defend its vulnerable centers of government from attack from the air would lead to its capitulation. This notion found its way to the United States through General Billy Mitchell. Mitchell echoed Douhet’s argument but modified it to focus on military targets, “Air forces will attack centers of production of all kinds, means of transportation, agricultural areas, ports and shipping; not so much the people themselves. They will destroy the means of making war.”³ Mitchell further stated that “The influence of air power on the ability of one nation to impress its will on another in an armed contest will be decisive.”⁴ The USAAF went into World War II with these ideas firmly in mind.

In fact, the Army Air Corps (which became the USAAF in 1941) spent 1939 and 1940 organizing, training, and equipping a force to conduct strategic bombing. In *Winged Shield, Winged Sword: A History of the United States Air Force*, Bernard Nalty noted that, “The air arm needed equipment of every sort—bases, ranges, and men—and it needed them simultaneously.”⁵ The numbers of all these things increased

² Giulio Douhet, *The Command of the Air* (New York: Coward-McCann Inc, 1942; Tuscaloosa: The University of Alabama Press, 1998), 23. Citations are to the University of Alabama edition.

³ William Mitchell, *Winged Defense*, 16.

⁴ William Mitchell, *Winged Defense*, 214.

⁵ Bernard C. Nalty, *Winged Shield, Winged Sword: A History of the United States Air Force* (Washington, DC: Air Force History and Museums Program, 1997), 176.

starting in 1939 and peaked in 1945. America invested heavily in training aircrews for the bomber force, which would comprise the dominant element within the USAAF. Unlike the German equivalent that focused almost entirely on combined arms, United States airpower theory followed a largely strategic doctrine. This notion found its way into the Air War Plans Division plan for the “overall production requirements required to defeat our potential enemies,” or as it is was commonly known, AWPDP-1.⁶

AWPD-1 posited that “if the air offensive were successful, a land offensive might not be necessary.”⁷ The plan recommended three lines of action against Germany. The first line of action was the disruption of German electric and transportation systems, destruction of petroleum resources, and direct attacks against morale by attacking population concentrations. The second line of action, although it came first in order of execution and was considered an intermediate objective of overriding importance, was the neutralization of German air forces through either attacking the Luftwaffe bases or destroying resources required for the production and repair of aircraft. The last line of action was against the enemy’s submarine, land-sea craft, and invasion ports. AWPDP-1 also stated that the best way to attack these targets was through precision daylight bombing.⁸ The Air War Plans Division thus took the theory of strategic bombing and turned it into a plan.

The Joint Board was skeptical of the AWPDP-1 assertion that victory through airpower alone was possible. It stated that “only land armies can finally win wars.”⁹ Despite this skepticism, the USAAF went to war with the belief that strategic bombing was a war-winning strategy. While

⁶ Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force 1907–1960* (Darby: Diane Publishing, 1989) 109.

⁷ Robert Futrell, *Ideas, Concepts, Doctrine*, 109.

⁸ Robert Futrell, *Ideas, Concepts, Doctrine*, 111.

⁹ Robert Futrell, *Ideas, Concepts, Doctrine*, 112.

the USAAF equipped for war in 1941, the American public required convincing that any war was a necessary venture.

Seven months before Pearl Harbor, a number of contradictions divided American popular opinion about a prospective war. Public opinion polls in May 1941 showed that “68 percent believed it more important to help Britain than stay out of the war, 79 percent wanted to stay out, and 70 percent felt that he [Roosevelt] had either gone too far or already gone far enough on Britain’s behalf.”¹⁰ Protected by oceans on both sides and friendly neighbors to the north and south, the United States was afforded a security not shared by the potential allies across the Atlantic. This was all to change. The Japanese attack at Pearl Harbor on 7 December 1941 proved that “Americans could no longer measure their [safety] in terms of miles on a map.”¹¹ Once the blow had been delivered, American involvement in the effort was assured, but who to attack was not.

Many in the United States naturally felt that the Japanese were the real enemy, and that the weight of effort should therefore fall on this likely foe in the Pacific. The political recommendation was to the contrary, with Admiral Harold Stark asserting that “The issues in the Orient will largely be decided in Europe.”¹² Stark’s succinct findings laid the basis for the Anglo-American “Germany First” strategy.¹³

Roosevelt understood that a majority of Americans wanted war with Japan.¹⁴ But he also understood the plight of the United Kingdom and the Soviet Union, and the need to support the European front. Through his political skill, Roosevelt ensured that the weight of American

¹⁰ Eric Larrabee, *Commander in Chief: Franklin Delano Roosevelt, His Lieutenants, and Their War* (Annapolis: Bluejacket Books, 1987), 62.

¹¹ Franklin D. Roosevelt, ‘Message to Congress May 16th 1940’ *The Public Papers and Addresses of Franklin D. Roosevelt* (8 vols., London, 1938-1945, IV), p. 199.

¹² Eric Larrabee, *Commander in Chief*, 49.

¹³ Eric Larrabee, *Commander in Chief*, 10.

¹⁴ James MacGregor Burns, *Roosevelt: The Soldier of Freedom 1940-1945* (New York: Harcourt Brace Jovanovich, Inc., 1970), 210.

effort started with Europe and then shifted to the Pacific. But before combat operations could begin, America had to marshal its strength. Ground forces took years to form and concentrate.

During this period, Russia and Britain bore the brunt of keeping German forces occupied. In particular, Russia's leader, Joseph Stalin, wanted assurances from Roosevelt that America was committed to the war. The bombers of the United States Army Air Forces and an autumn 1942 invasion of North Africa represented the only such assurances Roosevelt could provide at that time.¹⁵ While Roosevelt worked to shape the national will for a difficult war, American air leaders considered the moral fibre required for strategic bombing.

Although the Germans saw the Battle of Britain as representing a failure of strategic bombing doctrine, the British and Americans interpreted those failures as being particular to the Luftwaffe's flawed execution. Thus, they proceeded with the belief that its true capacity was yet to be reached. But in order for the United States to make strategic bombing a reality and ensure adequate strength to fight against Germany, a large crew force had to be developed to man the bombers rolling off the production lines.

The USAAF paid close attention to the selection of its aircrews. This selection process was designed to find men who could withstand the neuropsychiatric pressures of war. Psychiatric evaluations were conducted in order to eliminate any candidate with mental disorders, and men were selected who were suitable for flight operations.¹⁶ Some of the desirable characteristics were eagerness to fly, youth, resolution, tenacity, and a willingness to take risks.¹⁷ The medical board attempted to identify aptitude scientifically. But courage, a component of aptitude, needed danger to be measured, and the examination room was not a

¹⁵ James MacGregor Burns, *Roosevelt: The Soldier of Freedom*, 103.

¹⁶ Mark Wells, *Courage and Air Warfare*, 5.

¹⁷ Mark Wells, *Courage and Air Warfare*, 5.

place of particular danger. The true measure of these men would be tested in 1942 and 1943; in the meantime, the doctors deemed them worthy for combat duty.

America was mobilizing its military might. Its aircraft were primarily heavy bombers such as the B-17 to carry out the strategic bombing doctrine. While crew selection was rigorous, crew training often was not, especially in the early months of America's involvement. Alan Levine's book, *The Strategic Bombing of Germany*, notes that "Many units were only partly trained. The pilots were inexperienced at flying in formation at high altitudes. Many radio operators could not send or receive code. Many gunners were untrained; some had never even fired their weapons."¹⁸ Moreover, units were trained in near-perfect conditions, such as straight and level flight on clear, sunny days and, most importantly, with no enemy resistance.¹⁹ Essentially, aircrews trained without paying attention to the multitude of things that can go wrong — what Clausewitz called friction.²⁰ The crews were trained in theory, but the realities of war had yet to be experienced.

The resources marshaled for the war were impressive. The USAAF went from training 300 men a year in 1939 to 50,000 a year in 1944. The force eventually expanded to 2.4 million men and 80,000 planes.²¹ Many of these men flew against the most dangerous Axis air force in the world on the belief that their untested doctrine, skills, and duty concept were superior to those of the Germans. A strong belief that they were fighting for freedom and a good cause further strengthened their sense of duty.

¹⁸ Alan J. Levine, *The Strategic Bombing of Germany* (Westport: Praeger, 1992), 7.

¹⁹ Martin Bowman, *USAAF Handbook 1939-1945* (Mechanicsburgh: Stackpole Books, 1997), 81.

²⁰ Carl von Clausewitz, *On War*, 119-120.

²¹ Alan J. Levine, *The Strategic Bombing of Germany*, 71.

To summarize the prologue, United States involvement in World War II gave the USAAF a means to test the theory of strategic bombing. Before the theory could be tested, the aircraft and crews had to be marshaled quickly. This resulted in insufficient training for many of the crews. This is in contrast to Germany, which had spent the years prior to World War II training and equipping its air force, developing a professional cadre, and testing theories regarding its doctrine in battle conditions such as the Spanish Civil War, where the Condor Legion learned valuable lessons about air warfare. The USAAF went to war with men who believed in what they were fighting for. In most cases, they approached the task as a workman would. There was a job to do, and it was everyone's responsibility to go and do it. Once the job was over, the men could go home. But, like their Luftwaffe counterparts, these men had a love of flying and believed they were providing a means to win the war.

The Months of Promise: Late 1942

On August 17, 1942, an inadequately trained USAAF bomber force conducted its first raid against occupied France. The target was a repair facility in the Rouen-Sotteville marshalling yard. Only half the bombs fell within the target area, and neither side suffered any casualties.²² So began the United States bomber offensive.

In her book, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945*, Tami Davis Biddle states that, "A fundamental assertion that became central to the Anglo-American thinking about long-range bombing was that modern, complex, urban-based societies are fragile, interdependent, and therefore peculiarly vulnerable to disruption through aerial bombing."²³

²² Alan J. Levine, *The Strategic Bombing of Germany*, 78.

²³ Tami Davis Biddle, *Rhetoric and Reality In Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton: Princeton University Press, 2001), 7.

The USAAF developed its air strategy around strategic bombing, with this notion that air forces had the unique capability to attack targets deep within enemy territory and achieve decisive results. When the United States entered World War II, it began bombing strategic targets in Germany. The Air Corps Tactical School (ACTS) placed great confidence in the notion that “The bomber will always get through” And deliver its payload accurately, and the school’s graduates carried this confidence with them into battle.²⁴

The truth was a somewhat grimmer reality. The bombers did get through, but only with significant losses in terms of aircraft and aircrew. Early predictions regarding bombing accuracy and its effects were overly optimistic and lacked validation in the field. The daylight bombing campaign against Germany proved to be a harsh test for American bombers. Chances for surviving after 25 missions were just over 25 percent early in the war.²⁵ These improved as German defenses eroded, but the promise of decisive results through strategic bombing proved false.²⁶

The men who had chosen to fly the bombers believed that they were going to make a difference in the war as a whole. They went to war partially to fight for a cause, because their country asked them to but mostly because, once they won, they could come home.²⁷ This is in contrast to the Germans who had no distant secure home to return to, the Nazi ideology demanded either victory or at least a negotiated peace. This section examines the rigors these men faced in war and how their

²⁴ This quotation originally came from Stanley Baldwin’s speech, “A Fear of the Future” which he gave to the British Parliament in 1932.

²⁵ Mark Wells, *Courage and Air Warfare*, 101.

²⁶ In April 1944, 371 heavy bombers were lost for the month, which represented the highest bomber losses for the war. By fall of 1944, survival rates more than doubled in Europe. Richard G. Davis, *Carl A. Spaatz and the Air War in Europe* (Washington DC: Center for Air Force History, 1992), Statistical Appendix 7, Heavy Bomber and Day Fighter Crew Losses, June 1943 to August 1945, 589.

²⁷ Mark Wells, *Courage and Air Warfare*, 210.

initial expectations for strategic bombing and quick victory affected their sense of duty and combat effectiveness.

The USAAF made its first attempt at bombing in August 1942. The target was Rouen France, which was within the coverage of RAF spitfire fighter escort. Martin Bowman's book, *Clash of Eagles*, is a compilation of World War II diaries and first-hand accounts of USAAF and Luftwaffe missions flown during World War II. One account from this book detailing the bombing of Rouen stated that while the flight conditions were near perfect and enemy resistance was nil. As one aircrew member noted, "Our aim was reasonably good but you couldn't describe it as pinpoint bombing. We still had a lot to learn."²⁸ This accurate insight indicates that early bombing was inexact and that even in good conditions, numerous missions were required to destroy or disable a target. The British had discovered this in 1941. The Butt report, commissioned by Churchill's chief scientific advisor, sought to verify RAF night bombing accuracy and, hence, effectiveness. The report uncovered that almost 50 percent of the bombs dropped between May 1940 and May 1941 fell in open country.²⁹ The report also stated that only one in five crews bombed within five miles of their target.³⁰ The other lesson learned in late 1942 was that bombers were susceptible to damage and destruction from both flak and enemy fighters.

The B-17 Flying Fortress was designed to act as part of a flying formation known as a combat box. Each aircraft bristled with .50 caliber machine guns on the tail, fuselage, and nose. When flown in tight formation, the B-17s' guns provided cover for the others in formation. The Luftwaffe quickly discovered that the greatest weakness of this

²⁸ Martin Bowman, *Clash of Eagles: USAAF 8th Air Force Bombers Versus the Luftwaffe in World War 2* (South Yorkshire: Pen & Sword, 2006) 9.

²⁹ M. W. Kirby, *Operational Research in War and Peace: The British Experience from the 1930s to 1970* (Operational Research Society Great Britain. Imperial College Press, 2003.), 135-137.

³⁰ Tami Davis Biddle, *Rhetoric and Reality*, 195.

defensive configuration was a blind spot in the nose where only hand-held guns could be used.³¹ The Flying Fortress could be beaten, and bomber crews that had been secure in their ability to defend against the enemy prior to the war suddenly felt vulnerable. Moreover, while Spitfires offered infrequent escort coverage over targets in France, they lacked the endurance to accompany the bombers into Germany. Because the B-17 was supposed to be a self-defending platform, the USAAF had not devoted a great deal of effort to developing a long-range fighter escort. Thus, the aircrews' ability to endure was partly undermined by the deficiencies of doctrine and equipment.

Despite the USAAF's deficiencies, it had survived first contact with the enemy. In the words of one bomber pilot, "We were no longer novices at this terrible game of war. We had braved the enemy in his own skies and were alive to tell about it."³² As bomber pilot Bert Stiles stated in his diary, "Well, we're not virgins anymore."³³ The year 1942 ended with more raids and increased enemy resistance, but the worst was yet to come: 1943-1944 were years filled with heavy losses that had a direct influence on aircrew morale, but not on their underlying duty concept. The USAAF still held firmly to its duty of defeating Germany, but day-to-day morale suffered due to the low chances of survival in the skies over the Reich.

In summary, the months of promise were represented by decent duty concept but limited combat effectiveness. The promise of decisive strategic bombing was steadily undermined by the German ability to defend against the Allied bombing onslaught—an onslaught that was often inaccurate and therefore only marginally effective at this point in the war.

³¹ Alan Levine, *The Strategic Bombing of Germany*, 81.

³² Martin Bowman, *Clash of Eagles*, 9.

³³ Bert Stiles, *Serenade to the Big Bird* (New York: W.W. Norton & Co, Inc., 1947), 31.

The Years of the Grind, 1943 to Early 1944

USAAF aircrews began showing signs of fatigue in late 1942. This fatigue was magnified by increased operational tempo and correspondingly high attrition rates. The morale among these men was directly related to their likelihood of survival. In short, the duty concept among USAAF aircrews was manifested in their ability to endure. Bombing raids deeper into enemy airspace were beginning based on the belief that the B-17s could operate as a self-defending unit. The first half of 1943 was spent bombing targets in France and marshaling the strength of the USAAF bomber force. More crews and equipment flowed into England. When sufficient bombers and crew had rallied, the first major bombing raid against a German target deemed crucial to the war effort occurred. The 17 August raid was against Schweinfurt and Regensburg.

These raids had significant meaning for two reasons. The first was the scale of the operation: Just over 370 bombers flew. The second was the loss of life. In the Schweinfurt raid, 60 bombers were downed and 601 men were killed, captured, or interned.³⁴ This mission was flown with insufficient fighter escort, deep into German territory against well trained and alerted German air defense. The 100th bombardment group bombed the ball bearing works there. Lieutenant Colonel Beirne Lay described the situation in his after-mission report:

After we had been under constant attack for a solid hour, it appeared certain that the 100th Group was faced with annihilation. Seven of our group had been shot down, the sky was mottled with rising fighters and it was only 1120 hours, with target-time still 35 minutes away. I doubt if a man in the group visualized the possibility of our getting much further without 100% loss. I know that I had long since mentally accepted the fact of death, and that it was simply a question of the next second or the next minute.³⁵

³⁴ Alan Levine, *The Strategic Bombing of Germany*, 101.

³⁵ Headquarters, 100th Bombardment Group. Personal Report on the Regensburg Mission, 17 Aug 1943, Call # 520.056-211, IRIS # 01075610, USAF Collection,

By this time, each man had to complete 30 combat missions before he could return home. Flying into wave after wave of fighters and flak, the men who returned were visibly shaken and needed rest. Lay addresses the issue under the “recommendations” section of his report, “30 combat missions [should] be reduced to 25 for crews that have engaged in deep penetrations. It takes a rugged constitution to stand up to the missions like Regensburg and even the toughest crew members were badly shaken by nearly two hours under persistent attack...I doubt if 20 such normal missions would take the same amount out of a man as one stint to Regensburg.”³⁶

Lieutenant Colonel Lay’s description of this event provided insight into the manifestation of duty. These were men who knew fear in the face of near-certain death. Regardless of how they felt, they pressed on with their mission. The influence of leadership cannot be overlooked here. Lay recounts a story of how leadership was capable of steadying courage. He recommended Major Clay Cleven for the Congressional Medal of Honor. Cleven, when confronted with major damage to his aircraft, a major fire, and loss of personnel, was able to prevent his crew from bailing out, and to salvage the bomber. Major Cleven replied to the copilot’s intense desire to bail out with, “You son of a _____. You sit there and take it.”³⁷ These words had a calming effect on the remaining crew. They returned to their duties. Cleven, if he knew fear, refused to show it; this forced the rest of the crew to marshal their courage. He showed that the crew could endure, and they did.

AFHRA, Maxwell AFB AL. The incidents leading up to and included in this report were later made into the movie, “Twelve O’Clock High.”

³⁶ Headquarters, 100th Bombardment Group, Personal Report on the Regensburg Mission, 17 Aug 1943, Call # 520.056-211, IRIS # 01075610, USAF Collection, AFHRA, Maxwell AFB AL.

³⁷ Headquarters, 100th Bombardment Group. Personal Report on the Regensburg Mission, 17 Aug 1943, Call # 520.056-211, IRIS # 01075610, USAF Collection, AFHRA, Maxwell AFB AL.

The bomber crews continued to fly because they felt they could endure the hardships of combat. The individual reasons each man flew could be traced back to a number of factors including pride, glory, and nationalism to name a few. But, as one airman stated to USAAF psychiatrists, the reason the aircrews continued to fly mission after mission was, “So I can go home!”³⁸ Endurance was the mechanism to reach the end result—home. War diaries and letters home constantly refer to how many missions a crewmember had left.³⁹ For every mission completed, a crewmember was one step closer to home. Courage came from unit cohesion, good leadership, and the belief that home was 30 combat missions away. Schweinfurt represented the costliest mission the USAAF had flown to date, with a 16 percent loss rate. The follow-up raid in October 1944 was also a disaster, and the notion that the B-17 was a viable self-defending platform was thoroughly disproven. The USAAF ultimately realized that these conditions made prosecuting the war far too costly. Fighter escorts were needed in order to lower bomber attrition rates.⁴⁰ The raid against Schweinfurt represented a doctrinal turning point in the USAAF. In order for the men to endure, they had to know that 30 missions represented an obtainable number. Without fighter escort, 30 missions was a formula for death—survivability would drop to well under 25%.⁴¹

The unescorted approach to strategic bombing proved unworkable. The bombing results at Schweinfurt and Regensburg were impressive but transitory. Major General Curtis Lemay, who was Commander of the 4th Bombardment Wing and had personally led 146 bombers against Schweinfurt, later wrote, “That... plant was completely out of action — briefly,” this statement highlighted strategic bombing’s limitations.

³⁸ Donald Miller, *Masters of the Air*, 136.

³⁹ Donald Miller, *Masters of the Air*, 134-136.

⁴⁰ Tami Davis Biddle, *Rhetoric and Reality in Air Warfare*, 224.

⁴¹ Mark Wells, *Courage and Air Warfare*, 101.

Without the ability to carry out persistent and heavy attacks while keeping casualties low, the Americans could not do the level of damage required to undermine entire segments of the Reich's war industry. In addition, the enemy gets a vote in deciding when he is beaten, and the Germans had cast a firm "No" vote with their tenacious defense of the skies over Schweinfurt and Regensburg.⁴² Put simply, the toll the Luftwaffe took on unescorted heavy bombers was simply too high for the men of the USAAF. They could not sustain the attrition that occurred over Schweinfurt. The men who did survive were battle weary, suffering from operational fatigue, or in some cases outright physical and psychological exhaustion. These deficits in morale required replenishment.⁴³

The maintenance of aircrew devotion to duty occurred in two main areas: rest and furloughs. The major USAAF approach to replenishing a man's sense of duty was sleep. As one psychiatrist noted, "It is... much easier to adjust to a terrifying experience with the attitude 'it happened two days ago' than to have to immediately face the situation with all its recent memories and impressions."⁴⁴ The way in which USAAF doctors described combat-related psychological issues was meant to establish that neuropsychiatric disorders were a condition which, if detected in sufficient time, could be treated. The two terms used to describe aircrew psychoneurosis were operational fatigue and operational exhaustion. Of the two, fatigue was the milder condition. Operational fatigue "partly

⁴² Donald Miller, *Masters of the Air*, 200.

⁴³ The two terms used to describe aircrew psychoneurosis were operational fatigue and operational exhaustion. Of the two, fatigue was the milder condition. Operational fatigue "partly connoted the physical strain on aircrew." Operational exhaustion on the other hand was far more severe and was used to describe "cases which had progressed to the more severe levels of emotional disorder." Mark Wells, *Courage and Air Warfare*, 79.

⁴⁴ Donald W. Hastings, David G. Wright and Bernard C. Glueck. *Psychiatric Experiences of the Eighth Air Force, First Year of Combat, July 4, 1942-July 4, 1943* (New York: Josiah Macy, Jr. Foundation, 1944), 180-181.

connoted the physical strain on aircrew.”⁴⁵ Operational exhaustion on the other hand was far more severe and was used to describe “cases which had progressed to the more severe levels of emotional disorder.”⁴⁶ The Eighth Air Force instituted rest homes in England that facilitated aircrew relaxation. The goal was to identify operational fatigue before it became operational exhaustion.⁴⁷ The other remedy was unique to the aircrews. Whereas the army was fighting the Germans day and night or marching to fight the Germans, and the Navy was dependent on port calls, the air forces were based close enough to civilization that their diaries are filled with stories of Cairo, London, and Paris. The stories often appear more akin to a vacation travel log than a war diary. Tales of belly dancers and tours of Roman ruins are in juxtaposition to men trying desperately to survive skies laden with flak, fighters, and death. The 17 May 1943 diary entry of First Lieutenant Will S. Arnett illustrates the effects these furloughs had on aircrew morale, “The Group surprised us with a four-day vacation Friday for some unknown reason... We just got back and I'm feeling like a million dollars after getting a lot out of my system and being in civilization for a few days.”⁴⁸

In order for the psychiatrists to treat operational fatigue, the USAAF aircrews had to accept fear as a common condition of combat operations. In the USAAF, acknowledgement of fear was not taboo among bomber crewmembers. Becoming “flak-happy” was a matter of when, not if. For example, Bert Stiles, a bomber pilot at the start of the war related an encounter with a drunken co-pilot that was suffering from the stress of flying. His crewmates remarked, “That baby’s got it bad...

⁴⁵ Mark Wells, *Courage and Air Warfare*, 79.

⁴⁶ Mark Wells, *Courage and Air Warfare*, 79.

⁴⁷ Mark Wells, *Courage and Air Warfare*, 80.

⁴⁸ Will S. Arnett, “B-17 War Diary” (Transcribed by Steve Green), http://www.greenshouse.com/Seaton_Diary_files/index.htm. (accessed 3 May 2010) (Chicago, 17.356)

He won't last much longer. He's seen too many guys go down."⁴⁹ The co-pilot was in need of help. Whether he received it or not was up to the leadership. Fortunately, the actions taken by commanders and doctors were generally but not completely successful.

The manner in which the USAAF dealt with the psychological casualties of the war was as important as how they dealt with those that were salvageable. Not every airman was able to weather the stresses of combat. Some men chose to claim asylum in neutral countries, while others suffered from neuropsychiatric breakdowns that were broadly categorized as LMF. The USAAF treated these cases much more leniently than the British, who insisted their aircrews maintain a "stiff upper lip." Significant dereliction of duty was met with removal from flying and entry into the Army, the Royal Navy, or the coal mines.⁵⁰ Sometimes, when American airmen were not salvageable, they were removed from combat operations or sent home. This represented a loss in training and combat readiness for the bomber crews left in theater but was balanced against the negative effects these men could have on those around them.

While the relatively enlightened American treatment was generally more beneficial to the individuals involved, it also represented a mechanism for aircrews to shirk their duties. This led to some problems in morale such as airmen who were relieved of combat duties being assigned to staff duties and then, due to their proximity to the higher leadership, receiving promotion earlier than their combat brethren. This caused resentment on part of aircrews that were capable of and willing to fly combat missions.⁵¹ This led the USAAF to evolve their approach to LMF throughout the course of the war, although there was never a

⁴⁹ Bert Stiles, *Serenade to the Big Bird*, 20.

⁵⁰ Mark Wells, *Courage and Air Warfare*, 197.

⁵¹ Mark Wells, *Courage and Air Warfare*, 166.

universally agreed-upon policy regarding the identification, cause, treatment, and recovery of LMF.⁵²

The USAAF instituted a policy in June of 1943 to discourage shirking where men deemed to have lost their moral fiber were subject to court-martial and dishonorable discharge. The charges were based on violations of the articles of war. There are few recorded instances of men, particularly officers, receiving this discharge, but it did happen.⁵³ This practice produced an increased vigilance in maintaining crew morale before it reached LMF.

Ultimately, however, the men who returned to flying had to know that they had a way to fulfill their duty at an acceptable level of risk. The horrendous losses of Schweinfurt during the August 1943 raid and again in October marked a turning point in bombing doctrine. The USAAF entered 1944 with a new operational concept. Reinforced with long-range fighter escort, in February of 1944 the USAAF began deliberately to bait the Luftwaffe fighter defense forces by going after aircraft production and manufacturing plants—targets the Luftwaffe had to defend. The goal was to break the Luftwaffe. The operation, called Big Week, lasted from 20 to 26 February. It was in fact the opening phase of the larger Operation Argument, which sought to destroy the Luftwaffe and gain air superiority over the Third Reich.⁵⁴

The United States Strategic Bombing Survey (USSBS) estimated that Big Week cost the Germans two months of production, or approximately 2,000 planes.⁵⁵ This was not the long-term effect hoped for by strategic bombing advocates. Germany was able to disperse much of its aircraft manufacturing and salvage the tools in the destroyed

⁵² Mark Wells, *Courage and Air Warfare*, 168.

⁵³ Mark Wells, *Courage and Air Warfare*, 170.

⁵⁴ Donald Miller, *Masters of the Air*, 254.

⁵⁵ United States Strategic Bombing Survey, "Summary Report European War", 30 September 1945, Call #168.7045-58, IRIS #127189 (USAF Collection, AFHRA, Maxwell AFB AL),

factories, although this had a profoundly negative effect on efficiency and the availability of spare parts. The true victory for Big Week was in killing Luftwaffe pilots. “The heavy bombers served as the anvil on which the escort fighters hammered the Luftwaffe fighter force.”⁵⁶ The bomber crews’ ability to endure was secured by the fighter escort.

To summarize the years of the grind, the USAAF bomber force fell short of the pre-war predictions regarding training, effectiveness, and defensive superiority. The USAAF leadership entered the war with the belief that strategic bombing would likely force an early capitulation of Germany. Early bombing efforts showed that precision bombing results, even in daylight conditions, were well below pre-war expectations. While devotion to duty entering the war was high, bolstered by the belief that these men were flying in the latest and most technologically advanced aircraft and had received, in theory at least, the most advanced training, the grim realities of German fighters and flak were beyond anything training could replicate.

USAAF airmen saw strategic bombing as a duty, and this duty had an end-point — 30 combat missions. Completing these was central to an airman’s fulfilling his duty. The men of the USAAF were not just protecting the homeland by taking the war to the European Axis powers; they were also fighting for American interests in the world, buttressed by an ideal that originated with the President and was enforced by the leadership. The leadership in turn understood that the men’s sense of duty was a resource that had to be cultivated and maintained. Rest was often used to remedy operational fatigue, but for some it was not enough. The men who suffered from LMF were removed, at first awkwardly, and later more carefully and discreetly so as not to jeopardize the morale of those who kept flying. Lord Moran’s ideas about the various manifestations of courage and the need to refill the courage are prevalent

⁵⁶ Alan Levine, *The Strategic Bombing of Germany*, 121.

throughout the bombing campaign of the USAAF. The aircrew wrote of the exhaustion they felt after each combat sortie, but they also wrote with equal passion about their time off and times on leave, indicating that while the fighting was rough the outlets to recover from it were also relatively easy to find.

The USAAF sense of duty was predicated on the aircrews' ability to endure. Endurance became almost impossible in late 1943 due to the heavy losses. The USAAF approached aircrew endurance from both the crew perspective and the operational method of applying airpower. From the crew perspective, operational fatigue and exhaustion were treated as common medical conditions, which were curable. The Americans also modified their doctrine and operations to increase the chances of survival. Long-range escort fighters had two effects, defending the bombers and ultimately breaking the Luftwaffe's ability to resist. These two approaches gave aircrews the ability to endure and to fulfill their duty. The USAAF recognized both issues and eventually addressed them appropriately. Unescorted deep-penetration bombing also evolved to include long-range fighter escort, and crew morale was treated as a medical condition. Devotion to duty was ultimately linked to the ability to endure.

The Years of Triumph, Spring 1944 to 1945

Strategic bombing was not the decisive instrument of the war, but it was significant in many important respects. One of the most important targets of the war for the USAAF was Germany's oil production. With Germany's dwindling capability to defend the skies above its homeland came greater bombing efforts by the USAAF, especially against oil plants. Like all industrial nations of the time, the Third Reich relied heavily on oil—not just in terms of providing fuel, but also in the production of synthetic rubber, a key component in engineering aircraft and other vehicles. Unfortunately for the German war effort, oil shortages were pervasive. The USSBS stated that

Production from the synthetic plants declined steadily and by July 1944 every major plant had been hit. These plants were producing an average of 316,000 tons per month when the attacks began. Their production fell to 107,000 tons in June and 17,000 tons in September. Output of aviation gasoline from synthetic plants dropped from 175,000 tons in April to 30,000 tons in July and 5,000 tons in September. Production recovered somewhat in November and December, but for the rest of the war was but a fraction of pre-attack output.⁵⁷

Consistent bombing ensured that production levels were well below German requirements. “For lack of fuel, pilot training, previously cut down, was further curtailed... many panzer units were lost when they ran out of gasoline. In February and March of 1945 the Germans massed 1,200 tanks on the Baranov bridgehead at the Vistula to check the Russians. They were immobilized for lack of gasoline and overrun.”⁵⁸

The relative success of Big Week and the decimation of German petroleum production ultimately led to Allied air superiority over Germany by the summer of 1944. Escorted bombers were capable of striking targets anywhere in the Reich. The remainder of the Luftwaffe, deprived of materials and manpower, succumbed rapidly to the USAAF. Earlier neuropsychiatric discharges had been directly related to the near suicidal loss rates of 1943.⁵⁹ When airmen saw survival as a realistic outcome, morale quickly recovered and neuropsychiatric incidents correspondingly decreased.⁶⁰

To summarize the years of triumph, the combat effectiveness of the USAAF was good. By focusing on oil and transportation, the bomber crews were able to further decimate the German war machine. This resulted in fewer Luftwaffe planes and thus an increased survival rate of

⁵⁷ USSBS, “European Summary,” 3.

⁵⁸ USSBS, “European Summary,” 2.

⁵⁹ Donald Miller, *Master of the Air*, 277

⁶⁰ Mark Wells, *Courage and Air Warfare*, 174.

Allied bomber crews. The improved chances of survival had a direct effect on the morale of the aircrew.

Summary

As one could anticipate, the dynamics of linking devotion to duty with combat effectiveness are much different for the victor than they are for the vanquished. Both the systematic attempts to determine aptitude for flying and the pre-war American doctrine of strategic bombing represent flawed and incomplete but useful attempts to prepare men and thought processes for the rigors of war. In the early months of bombing, the practical methods of strategic bombing were found to be rather inadequate but not seriously tested; and devotion to duty held up reasonably well. The traumatic deficiencies revealed in the Schweinfurt and Regensburg attacks both degraded combat effectiveness and eroded morale. But a new operational method and enhanced techniques for dealing with the psychological stresses of combat reversed both adverse trends by mid-1944. The conclusion that emerges is, however, similar to that of the Luftwaffe experience. Although a strong duty concept can magnify combat effectiveness, combat ineffectiveness can have a seriously degrading effect on an air force's morale. If left untended, a degraded morale can also lead to a corresponding failure of a duty concept. In the German example, duty was called into question by significant erosion of morale. In the American example, duty was undermined by men who were physically incapable of fulfilling their duty due to LMF. If left unattended, LMF could become epidemic. In the American case, the problem was not strategic but operational – a flawed doctrine did not work in situations it had not fully envisioned. Thus, enlightened operational-level leaders were able to remedy combat effectiveness and restore devotion to duty by adapting the flawed doctrine to the new realities it faced. In short, combat effectiveness had a greater influence on devotion to duty than devotion to duty had on combat effectiveness.

Conclusions and Implications

In the end it is only people that count, all the people in the whole world. Any land is beautiful to someone. Any land is worth fighting for to someone. So it isn't the land. It is the people.

Bert Stiles

Conclusions

The purpose of this thesis has been to discover how well the Luftwaffe and the United States Army Air Forces developed a duty concept within their aircrews and translated that duty concept into combat effectiveness. It examined the linkages between the somewhat intangible notion of duty and the tangible effects of combat.

The baseline for what duty is and why it is important came to light in the first chapter. Duty is simply doing what is right in the face of adversity; in war, this means in the face of death. Therefore, in war, courage is a requirement for doing one's duty. Courage is a finite commodity – the depletion of a man's courage can lead to mental breakdown. It is up to the commander to keep a watchful eye on a warrior's bank of courage, expending it only when necessary and replenishing it when able. Regardless of how strong a man's duty concept is, if he suffers from a neuropsychiatric breakdown, he will be unable to perform any duty. Thus, if a nation's duty concept is weak and there are no mechanisms in place to replenish courage, combat effectiveness may suffer. Alternatively, the properly developed duty concept is an ingredient of combat effectiveness.

Combat effectiveness derives from the ability to link one's insights into a particular situation to the execution of the task at hand. This is true at all levels of war. Of the resources available to a commander, the force's devotion to duty is one of the most perishable. A force that suffers from a weak duty concept is unlikely to be effective. Alternatively,

a force that is motivated by a strong sense of duty is more likely to be effective.

In many respects, the Luftwaffe and the USAAF were similar. Both air forces represented young services populated by young airmen. Both services attracted men who loved flying and viewed warfare as a hunt or a game. The German political leadership viewed the Luftwaffe as the darling service critical to the success of the blitzkrieg. The American political leadership invested significantly in the hope that strategic bombing would be a war-winning strategy. Throughout the war, it became apparent to both air forces that a strong duty concept could magnify combat effectiveness. Conversely, combat ineffectiveness could have a seriously degrading effect on an air force's duty concept.

Having said this, it is useful to review how the two air forces were different. The Luftwaffe was a crucial component to the combined-arms "blitzkrieg" tactic. The USAAF was founded on the theory that strategic bombing represented a war-winning strategy. Luftwaffe pilots fought initially for the Führer and continental conquest and later for national survival. The USAAF crews were flying to end what they viewed very firmly as a just war, and then to go home. The devotion to duty was therefore manifested in very different ways. The Luftwaffe fought a war to right the wrongs of the Treaty of Versailles and return Germany to its former glory. Further, it engaged in an inherently aggressive and racist campaign to remake Europe in Germany's image and eradicate "undesirable" peoples. The USAAF fought a war because the country asked them to and because its young airmen believed it was the right thing to do. They wanted to support the Anglo-American West's effort, along with the Soviet Union, to defeat Nazi tyranny, and so they answered this call. But once in the war, they wanted to get it over with and return home. While both air forces had a strong sense of duty, the war had very different effects on each.

The Luftwaffe's fanatical sense of duty was not enough to overcome a poor grand strategy and the systemic problems of training and production. Duty proved very important at the operational and tactical levels of war. But it could not overcome the deleterious effects of a deeply flawed Nazi grand-strategic design. The USAAF discovered that unescorted strategic bombing was not a war-winning strategy and that the costs incurred in terms of aircraft and crewmembers were too high. The USAAF had the resources and insight to change its doctrine to help the larger Allied forces achieve the grand-strategic effects necessary to win the war. The USAAF made the conscious decision to change its operational methods to correct the problems faced in the middle of the war. Where the Luftwaffe capitalized on its airmen's duty concept early in the war but squandered it at the end, the USAAF essentially squandered lives in the middle of the war but redeemed themselves by early 1944.

The reason the two services were similar in many ways, even if the bases of their duty concept were so different, has to do with the new and deadly aircraft technologies at their disposal. The men attracted to this technology were thrill seekers regardless of nationality. In regards to the implementation of the technology, the Luftwaffe developed its doctrine around tested techniques in Spain and later Poland. The single-minded fascination with this type of warfare, however, proved to be a key cause of Germany's undoing. The USAAF, on the other hand, developed its doctrine based on an untested theory. While strategic bombing fell short of being a war-winning strategy, it did give the United States the flexibility to engage the Axis in combat until the army could concentrate the necessary forces to engage on the ground. The key difference was in the ability to adapt during the course of the war. The Luftwaffe, with its failed strategic insight, was unable to upgrade its aircraft in order to effect a more balanced airpower strategy. The USAAF realized that strategic bombing was not war-winning but was beneficial in seriously

weakening the enemy. Moreover, the USAAF had the resources and manpower not only to continue bombing, but to also protect those bombers with fighter escorts. Furthermore, they had both the good sense to pause when things went horribly wrong in mid-late 1943 and the good fortune and good insight to craft an effective response in early 1944. The result was the destruction of the Luftwaffe, Germany's oil and transportation infrastructures, and the *Wehrmacht's* near-total loss of strategic, operational, and tactical mobility.

Implications

An Airman's sense of duty is a relatively enduring motivator. The stronger the sense of duty, the more apt he is to continue performing regardless of adversity. But this study has shown it has finite limits. Morale is a fleeting ideal that is subject to change based on prevailing conditions. USAAF aircrews fought because they believed in their country and their service. When the enemy failed to capitulate as a result of strategic bombing, the men suffered in morale but for the most part continued to do their duty.

Duty and combat effectiveness are linked. Both can exist, even succeed, in spite of the other. A weak duty concept can be compensated for with sound leadership and ample resources. Similarly, a well-developed duty concept, steeped in tradition and learning, is able to make up for deficiencies in leadership and resources. The nation that is capable of nurturing both is apt to have a war-winning force; this is as true now as it was in World War II. Understanding why the troops fight or why they think they fight is a crucial step in developing not only a duty concept, but also the critical foundations of a military institution. By providing that institution with the means to build and rely on a firm sense of duty, the effects of morale — positive or negative — are easier to control. This is not to say they disappear. No war is free of declines in morale, but a strong duty concept gives airmen a belief in the justness of their cause and, ultimately, the strength to endure. For the airmen of

World War II, aircraft quality played a key role in sustaining morale and, by extension, a sense of duty. Having the most modern aircraft and the best tactics proved important, as we have seen in the two air forces' respective experiences early and later in the war. If aircrews were using outmoded equipment with outmoded tactics, not only were they prey to the enemy, they were also likely to see their morale and thus their duty concept suffer. But operational flexibility was also important, as evident in the long bombing pause the Americans took until they found a solution to the unsustainable losses of Schweinfurt and Regensburg. At the end of the day, the Americans outperformed their German opponents in maintaining a strong duty concept and combat effectiveness through a sound grand strategy, operational and tactical flexibility, and increasingly significant qualitative advantages in aircraft and aircrew.

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