

ABSTRACT

Title of Thesis:

“Quite Young Limbs that Bled”:
Accidents, Apathy, and the Failure of
American Aviation During the First
World War

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The advent of the First World War saw America’s first concerted attempt at building a world-class air service. Desperate to join the ranks of Britain, Germany, and France, it pushed poorly-built planes out of factories and poorly-trained cadets out of flying schools at an alarming rate. In this thesis, I argue that in blind pursuit of its goals, the United States air service ultimately doomed those whose efforts would bring the organization its prestige: the pilots. Aviators, especially non-combatants in roles such as training, testing, and ferrying, faced unavoidable death or harm every time they stepped into a plane, be it physically, emotionally, or psychologically. Despite their role as non-combatants, these pilots well understood that destruction would characterize their world, provoking emotional responses expected of those engaged in fighting on active fronts. Indeed, flying was a world of combat unto itself, and by war’s end, the Army Air Service had earned the dubious distinction of being the only arm of the United States military in which more men were violently killed in non-combat than in combat roles.

“QUITE YOUNG LIMBS THAT BLED”:
ACCIDENTS, APATHY, AND THE FAILURE OF AMERICAN AVIATION DURING THE
FIRST WORLD WAR

by

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For Marion

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Above all, I am grateful to my parents, whose love transcends. They have never failed to support me in my endeavors, nor did they hesitate to take a very bizarre detour to Mt. Moriah Cemetery during our recent trip to Philadelphia, so that I could visit Lieut. Kenneth Elliott, killed in a flying accident in 1918, and lay flowers on his grave. When my father asked how I knew Elliott, I told him it was a long story.

This thesis, and the beating heart at the center of it all, is that story.

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Introduction

*A handsome young airman lay dying,
And as 'neath the wreckage he lay,
To mechanics who 'round him came sighing,
These last parting words he did say:
"Two valve springs you'll find in my stomach,
Three spark plugs are safe in my lung,
The prop is in splinters inside me,
To my fingers the joy stick has clung;
Take the cylinders out of my kidneys,
The connecting rod out of my brain,
The crank shaft from under my back-bone,
And assemble the engine again."*

Pilot's Song, ca. 1918¹

The American pilot of the First World War was doomed.

Specifically, I refer to the non-combatant pilot: the man in training, the man ferrying planes across the Channel, the man with dreams of dogfights over the trenches, whose engine misses and fails a mile short of the frontlines. Perhaps he has seen combat, perhaps the closest he has come to it is the newspapers. At any rate, he is not actively engaged in fighting the enemy, or gathering information on enemy activities. He is, one might say, merely flying an airplane. Yet as we will see, there was nothing "mere" about flying planes during the First World War.

By "doomed," I refer to the condition of unavoidable death or destruction. The latter could take any number of forms, and while the destruction of bodies was perhaps the most

¹ Percival Gray Hart, *History of the 135th Aero Squadron from July 25 to November 11, 1918* (Nashville: Battery Press, 1990), 176-77.

visible of these, equally inescapable were the collapse of emotional and psychological forms of resilience, such as mental wellness, friendship, and the ability to successfully combat a fatalistic attitude. A non-combatant pilot might be safe from the destruction of one, but not all. He lived squarely in a world on the brink of disaster. This should, of course, sound counterintuitive. Why might a pilot, flying hundreds, and sometimes thousands of miles away from the frontlines, be consigned to the destruction of mind and/or body? One might reasonably suppose that combat and its attendant gunfire, anti-aircraft shells, and flying circuses led by German noblemen were the most dangerous aspects of military aviation during the First World War. The numbers, however, speak for themselves. During the country's nineteen months at war, approximately 164 American pilots died under combat conditions. Several times as many would die in accidents during the war and demobilization period, while thousands more would endure bodily injury—sometimes severe, sometimes life-altering. This is to say nothing of those who carried the burden of psychological and emotional trauma.²

On July 28, 1918, the *New York Times* published a list of names entitled “205 Fliers Killed in American Camps.” It illustrates in bleak visual terms the outrageous loss of life occurring on the flying fields in America. It overwhelms the page, saturating it with the names of the dead. Date of death precedes each name, confirming that some days were blacker than others. For example, February 23 proved particularly lethal. Its sun set upon the destruction of five bodies and the hearts and minds of unknowable others. June 4 saw four men die; so, too, did

² Though exact casualty numbers are difficult to obtain, combat numbers here are based on those cited in Arthur Sweetser, *The American Air Service: A Record of Its Problems, Its Difficulties, Its Failures, and Its Final Achievements* (United States: D. Appleton and Company, 1919), 54. Accident numbers are based on American deaths that occurred on American, British, and French flying or testing fields, as well as accidents reported on the Western Front (such as those suffered by Lieutenants Briggs Adams and Ralph Talbot.) Aviation Archaeological Investigation & Research maintains several databases of accident reports for the war years; its numbers are the primary, though not exclusive, basis for the figures found in this thesis.

March 14. The list was published on July 28. Two more pilots, George Kellar and Rolland Rose, died the next day, just shy of having their names immortalized in newsprint.

A short preface to the list taxes itself in defense of the bloodshed, claiming in its subtitle that the “Number Is Not Extraordinary in View of Quick Training.” And yet the list, black and looming and utterly dumbfounding, speaks for itself. Young men were dying at an alarming rate without ever having stepped foot on foreign soil. And they died in horrific accidents that the list cannot describe. They fell to earth in tailspins, in wingless machines, encased in flames. They spilled blood; they spilled brains. They lost limbs. They broke their spines and broke the hearts of the comrades who lifted them out of the wreckage. They died, they told themselves, so that others might live—so that the world, in Wilson’s immortal words, might be made safe for democracy. But who was benefiting from the deaths of these young men? Who could ascribe meaning to their lifeless bodies?

“What passing-bells,” as the war poet Wilfred Owen would plaintively ask, “for these who die as cattle?”³

It has long been a tendency of scholars to gloss over this black splotch in American history. It would appear, from the current writing on the subject, that these deaths occurred in something of a vacuum. This is especially so in the popular understanding of the war, where accidental deaths are often attributed to a primitive technology that had simply not been given enough time to mature. “During most of World War I, pilots stood a greater chance of being killed during training or in accidents than in combat,” writes Tom LeCompte in *Smithsonian*

³ Wilfred Owen, “Anthem For Doomed Youth,” in *The Poems of Wilfred Owen*, ed. Jon Stallworthy (New York: W. W. Norton & Company, 1986), 76.

Magazine, for example, and encouragingly enough. He then goes on to explain: “Aviation, after all, was only a few years old when the war broke out in 1914.”⁴ There is nothing necessarily *wrong* with such an explanation. Aviation was indeed a very young technology at the time, and the First World War pushed it through its growing pain years with great haste. But what happens when we take a closer look at the manufacturing processes for these young machines? Or the regulation surrounding their repair? What if we looked at the training programs for the pilots operating them? Were they well-prepared to fly? What *can* a closer look reveal to us? Such simple explanations always bear closer scrutiny, especially those that seem to claim, with a blasé wave of the hand, that “*That is just how things were back then.*”

The intention of this thesis is to push back against what I perceive as a general apathy toward the accidental deaths of hundreds of American pilots during the First World War. Although I am sure it is not meant with any ill-intent, the portrayal of their deaths as a sort of “necessary evil” accompanying the rise of the United States air service erases culpability and ultimately suspends the need for critical thinking. Nothing about the deaths of these young men was “necessary.” Burning alive in a wooden box hurtling toward earth was not “just how things were back then.” If the study of history can teach us anything, it is that nothing is preordained. It did not have to be the way it was, even if the path seems carved in stone. These tragedies unfolded because someone created the ideal conditions in which they were certain to happen, and then sat back and allowed them to do so.

⁴ Tom LeCompte, “The Few, the Brave, the Lucky,” *Smithsonian Magazine*, July 2008, accessed November 4, 2023, <https://www.smithsonianmag.com/air-space-magazine/the-few-the-brave-the-lucky-45053770>.

These tragedies unfolded because the United States military built the perfect Rube Goldberg machine for killing pilots, and then stepped back to let the machine run.

In this thesis, I argue that the United States military itself brought about the destruction of its non-combatant pilots. In pursuit of a world-class air service that could rank with those of its allies, the United States ultimately doomed the men who would bring the organization its prestige. The air service equipped its hastily trained cadets with poorly constructed machines, and did not think to provide them with safety equipment should something go awry. When it did go awry, on a daily and even hourly basis, the air service scarcely lifted a finger in response. Apathy toward its non-combatants turned the military inertial. No impetus could have forced it to move, save a lack of trained men to send overseas. This, however, would never be a problem for the glamorous air service. Throughout the many months of 1917-1918, thousands of young men would knock on the door of America's aviation section, desperate to share the skies with daring men like Mick Mannock and James McCudden, and to take on the flying circuses that so plagued the Western Front. The air service suffered, in many ways, from an embarrassment of riches—a gluttony of men. It had more pilots than it knew what to do with. What did it matter, then, if a few hundred fell screaming and burning from the skies?

I began with the assertion that the American non-combatant pilot of the First World War was doomed. But perhaps my phrasing is too passive. The 19 year old falling helplessly to earth, the fragile wings of his plane torn asunder, was not merely doomed. The United States military—in its apathy, in its negligence, in its complete disregard for his health, safety, and happiness—doomed him.

Historiography

As I have already noted, the issue of non-combatant pilot deaths, and particularly those that occurred in training, forms a fairly large lacuna in scholarship on the subject of aviation and the First World War. The neglect of the training period by scholars and writers is remarkable, yet not altogether surprising. The historiography on the subject of First World War aviation leans heavily into the realm of combat, with texts such as James Hudson's *Hostile Skies: A Combat History of the American Air Service in World War I*, Ian Mackersey's *No Empty Chairs: The Short and Heroic Lives of the Young Aviators Who Fought and Died in the First World War*, and Alex Revell's *Fall of Eagles: Airmen of World War One*. Even the seminal popular history *The Unsubstantial Air: American Fliers in the First World War* by Samuel Hynes, with its compassionate narrative spanning America's entry into the war to its ambivalent finish, scarcely even touches upon the subject of training, the very thing that would ultimately launch its lovable cast of fliers into the air. Browsing through journals like *Air Power History* or *Cross & Cockade*, one is hard-pressed to find scholarship devoted solely to training. It is equally difficult to find writing that takes accidents, in training or otherwise, as its primary focus.

There is, in histories of war both popular and scholarly, a bias toward the realm of combat. After all, this is where wars happen: on the battlefield, with hissing bullets and roaring artillery and pale-faced young men hauling themselves over the parapet. The plane is a *weapon* in the setting of combat, one would hope, rather than a self-destructive box or a momentary tomb. Combat, too, provides the setting for a compelling narrative. It is easy to tell a harrowing story of pilots engaged in mortal combat. Training is a necessary hurdle, a monotonous exercise. Training is merely the prelude to the real story.

But what if the story of training *is* the real story?

In narratives of combat, the focus is often skewed, placing outsized emphasis on the presence of an enemy force. The world shrinks down to the combatant pilots; little else matters but the “protagonist” facing down his enemy. In the realms outside of combat—that is, the vast majority of the time a pilot spent in the air or interacting with his machine—the focus shifts. One can finally see the enemy for what it really is, and in training this is particularly obvious. It is not the pilot in the other plane, but the plane in which you are flying. It is your own incompetence owing to poor training, and it is the fact that you are not protected, either by safety equipment or by the organization that tasked you with flying in the first place. The enemy of the American pilot was not, in the end, the German military—it was the military of the United States.

The subject of aviation accidents, too, has been largely ignored. This trend in the scholarship mirrors a similar historical trend, whereby accidents were originally reported—sometimes erroneously, other times with forceful purpose—as deaths in combat. Take, for example, the death of Lt. Briggs Adams, whose letters are the subject of analysis in Chapter 4. Adams died in an unwitnessed accident on March 14, 1918, his plane found wrecked in the middle of a field in France. His death occurred on active service, yet judging by the reaction of his hometown newspaper, this was a totally unacceptable manner of dying. An anonymous author in the March 23, 1918 edition of *The Montclair Times* goes so far as to declare that the official notification from the War Department (“multiple injuries resulting from an accident”) is erroneous, and that Adams had rather “died from wounds received while commanding his plane in the probably greatest air-fleet engagement of the war, when some eighty German machines

were destroyed or disabled.”⁵ This is patently false, and the author almost certainly knew it. But which tells the better story? Which story succors those left behind to grieve? The story of an accident, or of a glorious death in combat? Such obfuscations occurred often. Ralph Talbot, the first Marine aviator to earn the Medal of Honor, was also reported as killed in action.⁶ In reality, his engine failed on a test flight and burst into flames on impact with the ground.

I would be remiss if I did not mention the small amount of writing that does exist on this subject. Rebecca Hancock Cameron’s *Training to Fly: Military Flight Training, 1907-1945* was my first scholarly encounter with the subject, and an important one. Although Cameron’s book does not focus wholly on the First World War, it provided this thesis with invaluable ideas about how and why American military aviation training grew up the way that it did. Particularly helpful were Cameron’s chapters on the earliest days, when the military first put its vise grip on the enterprise of flying. It is important to note that the Air Force History and Museums Program published the volume, and so it shies away from making any bold claims about military culpability during the fatal years of training during the war. Regardless, it is the first official and definitive account of American military flight training, and, as far as I am aware, the only one.⁷

One of my most fortunate encounters while writing this thesis was with James Hamilton-Paterson’s *Marked for Death: The First War in the Air*. Although it takes the British flying services as its subject, the narrative, fraught with seemingly endless trials and tragedies, bears an amazing resemblance to that of the American air service during the war. (More on similarities between the British and American services in Chapter 4.) Hamilton-Paterson is a writer of

⁵ “Briggs K. Adams,” *Montclair Times*, March 23, 1918.

⁶ “Lieut Ralph Talbot of South Weymouth Killed,” *Boston Globe*, October 29, 1918.

⁷ Rebecca Hancock Cameron, *Training to Fly: Military Flight Training, 1907-1945* (Washington, D.C.: Air Force History and Museums Program, 1999).

astounding talent, and he does not shrink from the business of drilling down into tragedy so as to expose its roots to the light. This latter trait, more than anything, helped me to write my way into this project. The title of the book, *Marked for Death*, is drawn from the pen of Anthony Fokker, manufacturer of the wildly successful German planes that bear his surname, who once wrote that “Every man who went aloft was marked for death, sooner or later, once his wheels had left the ground.”⁸ I will discuss momentarily the primary sources that form the bedrock of this thesis, but suffice it to say that the vast majority of personal accounts written by American pilots paint a cheery picture of the devastation they endured on a daily basis. Consuming enough of these letters and diaries (and there were close to a thousand) is enough to convince anyone that training to be a pilot was the happiest business in the world. The Fokker quote, which Hamilton-Paterson takes as his guiding light, helped constantly to remind me that blood is darker, and more lasting, than ink.

Although little has been written about the subject of this thesis specifically, a number of books helped me to put it into a wider historical context. Dwight Messimer’s *An Incipient Mutiny: The Story of the U.S. Army Signal Corps Pilot Revolt* provided me with early examples of the military’s mismanagement of its air service, while books such as John Lancaster’s *The Great Air Race: Glory, Tragedy, and the Dawn of American Aviation* and David Sears’s *Such Men as These: The Story of the Navy Pilots Who Flew the Deadly Skies Over Korea* helped me to grasp the longer twentieth-century story of accidental death in military and civilian aviation.⁹ While looking for parallel cases of accidental industrial death during the early twentieth century,

⁸ James Hamilton-Paterson, *Marked For Death: The First War in the Air* (New York: Pegasus Books, 2016), epigraph.

⁹ See Dwight Messimer, *An Incipient Mutiny: The Story of the U.S. Army Signal Corps Pilot Revolt* (Lincoln: Potomac Books, 2020); John Lancaster, *The Great Air Race: Glory, Tragedy, and the Dawn of American Aviation* (New York: Liveright, 2022); David Sears, *Such Men as These: The Story of the Navy Pilots Who Flew the Deadly Skies Over Korea* (Cambridge: Da Capo Press, 2010).

I realized that none better fit the bill than the story of the American railroad. Mark Aldrich has covered this story extensively in his *Death Rode the Rails: American Railroad Accidents and Safety, 1828–1965*, as does Arwen Mohun’s *Risk: Negotiating Safety in American Society*.¹⁰

While the railroad is not thoroughly explored in this thesis, understanding its evolution (and attendant trials and tribulations) gave me a contrapuntal story of technological progress against which to set the story of the early airplane. The Mohun book also gave me a better and wider understanding of how Americans have approached risk throughout the last two centuries. This thesis strives to engage her work by examining how not only pilots, but also their families and loved ones on the home front, attempted (and oftentimes failed) to come to terms with the risk inherent in such a dangerous pursuit. Lastly, the work of Robert Wohl gave me a great deal of insight into the broader historical context of aviation, from its earliest days as an experimental European endeavor to its consumption by the American public as an electrifying form of spectacle.¹¹

Methodology

The lion’s share of pilot accounts that appear in this thesis are letters printed in hometown newspapers. These sources are invaluable for the insight they provide into the average pilot’s lived experience, and yet they have been sadly neglected by scholars until now. In the course of my research I studied nearly one thousand of these letters, and a great deal of my foundational knowledge of this subject comes from the pilots themselves. These men unwittingly became my

¹⁰ See Mark Aldrich, *Death Rode the Rails: American Railroad Accidents and Safety, 1828–1965* (Baltimore: Johns Hopkins University Press, 2006); Arwen Mohun, *Risk: Negotiating Safety in American Society* (Baltimore: Johns Hopkins University Press, 2013).

¹¹ See Robert Wohl, *A Passion For Wings: Aviation and the Western Imagination, 1908-1918* (New Haven: Yale University Press, 1994); Robert Wohl, *The Spectacle of Flight: Aviation and the Western Imagination, 1920-1950* (New Haven: Yale University Press, 2005).

teachers as they explained to their loved ones (and ultimately to me) every aspect of their training, testing, and instructing experiences, often in minute and loving detail. In the absence of scholarship on this subject, I am indebted to these men for their willingness to share their knowledge and passion for flying with the world—and beyond temporal and geographic bounds they scarcely could have imagined.

Nevertheless, there are clear limitations to these sources in almost every respect, limitations that have, from the very beginning of my research journey, filled me with trepidation. It occurred to me early on that these accounts had to navigate two major hurdles before they arrived in my hands. First, they had to be written in the form of a letter. This is the lesser of the two hurdles, as letter writing was nearly ubiquitous among pilots, and a great many used their correspondence as “journals, really, to be mailed,” as Samuel Hynes would put it.¹² Most men wrote to their families and closest friends, meaning they likely felt a large degree of comfort with regards to expressing themselves honestly. Still, it is obvious that there were limitations on what these men felt they could say. Most pilots clung tenaciously to the positive aspects of their training, testing, and instructing experiences, claiming health and happiness and overall wellness. They liked to complain, but mostly in a good-natured way, and always about things that didn’t actually matter, such as the excessive heat in Texas or the quality of the food at supper. It is clear that they did not want their families to worry about them. Even when they do mention the large numbers of accidents occurring on a daily basis, they do so casually, or they hurriedly assure their loved ones that they are being cautious, and that such misfortunes will not befall them. (“You may be sure I am going to be careful after this,” Lucian Carson wrote to his father after

¹² Samuel Hynes, *The Unsubstantial Air: American Fliers in the First World War* (New York: Farrar, Straus, and Giroux, 2014), 54.

watching his best friend die in a burning plane. Exercising care meant little when the system was rigged against these pilots—Carson would die months later in his own accident.¹³)

Confronted with such an immense wall of performed positivity, I looked to the outliers for clues. I looked for the written equivalent of Morelli's painted ears and toes. For every ten letters that spun things positively, I might find one letter that let the mask slip, either slightly or altogether. These honest letters were often painful to read; some were searing in their raw expressions of grief. And they reveal, I argue, the true lived experience of the average non-combatant pilot. After all, and as we will see, these young men underwent a panoply of emotionally and psychologically traumatizing experiences, from pulling the mangled bodies of their friends from the wreckage of planes, to surviving devastating crashes and collisions with no protective gear to shield them. For an emotionally mature human being, it would be well-nigh impossible to emerge from these daily devastations without bearing their burden in some way. The rare letters that express the difficulties of enduring such a strenuous lifestyle, I argue, bring us closer to the reality of life as it was experienced by those considered expendable by the air service.

I mentioned two hurdles standing between the pilots who wrote these accounts and myself. The second of these hurdles is their publication in the hometown newspaper. This condition severely limited the number of honest accounts I was able to discover, as I believe that negative emotionality (grief, rage, fatalism) and raw expressions of trauma were not likely to be printed, or even sent to the editor in the first place. For example: if a mother received a tear-stained letter from her son who had just lost his best friend in an accident, she was not going to

¹³ "Letters from and About Soldiers," *Hood River Glacier*, May 30, 1918; "Thousands Honor Lt. W.L. Carson," *Hood River Glacier*, August 15, 1918.

hurry it over to the newspaper office for all and sundry to read. Nor would she submit for publication the letter from her other pilot son who had just survived his own nearly fatal accident and could hardly hold a pen straight. Similarly, young men who failed to pass their ground school examinations, washed out of flight training, had trouble flying planes, or generally did not enjoy the experience of being an aviator, were also unlikely to have their negative accounts published in the local newspaper. As Simo Laakkonen writes, “Feelings of fear, shame, and various traumas related to wartime are the last issues to be publicly aired.”¹⁴ Wartime often demands of a nation’s citizens the maintenance of a stiff upper lip. The local newspaper played a significant role in encouraging this stoicism—and publishing rancorous accounts from the flying fields might have felt akin, at the time, to a seditious act. That even the small number of emotionally honest letters I was able to find made it through the cracks is something close to miraculous. An investigation into their presence in the historical record would bear fruitful analysis in the hands of another scholar.

Geographic and Temporal Limits

Although this thesis is concerned mostly with accidents that happened on American soil, they occurred in various places, including North America, Europe, and the bodies of water between them. Some American men died accidentally in Britain, like Donald Carlton, whose boyish slightness won him the nickname “The Kid,” or Russ Wheatley, who had the extraordinary misfortune of finding himself in a burning plane, landing it safely on a railroad track, and then being struck by a train, “the worst luck I have heard of in the war,” as his friend would later

¹⁴ Simo Laakkonen, “Polemosphere: The War, Society, and the Environment,” in *The Long Shadows: A Global Environmental History of the Second World War*, ed. Simo Laakkonen, Richard Tucker, and Timo Olavi Vuorisalo (Corvallis: Oregon State University Press, 2017), 18.

remark.¹⁵ Still others died on American training fields in France, like Casey Ingersoll, the youngest son of a milling machine magnate, whose family loved him so much they “spent a small fortune” searching for a cure to his pesky hay fever.¹⁶ This thesis privileges the experiences of those killed and injured on American soil from April 6, 1917 to November 11, 1918, as I feel they have not been sufficiently appreciated by scholars. It is hoped, nonetheless, that other historians will explore the myriad accidental deaths that occurred on foreign soil, and were, sadly, much less likely to be reported on during the war.

Significance

It is an unfortunate truth that excitement sells. Glamor, valor, and a glorious death have historically appealed to reading audiences, and highly fictionalized stories about pilots inspired by the Baron von Richthofen, Eddie Rickenbacker, and James McCudden have proliferated in the years since the Armistice. This was especially so during the interwar period, what Dominick Pisano calls “the age of the air hero,” during which Lindbergh made his famous flight, the combat-venerating and Academy Award-winning *Wings* played before the eyes of thousands, and the popular *Biggles* series was consumed by children and teenagers hungry for excitement during the years of the Great Depression.¹⁷

It has been said that fiction is a lie that tells the truth. It might also be said that fiction is a lie that tells the future. How the story of the first air war was told has, unfortunately, had its consequences. Children born in the 1920s and 1930s laid in their beds starry-eyed as they gazed

¹⁵ “How Thanksgiving Day Was Celebrated by Some American Aviators Abroad,” *Great Falls Tribune*, January 27, 1918; “How Wheatley Was Killed,” *News and Advance* (Lynchburg, VA), September 12, 1918.

¹⁶ Marvin L. Skelton, “Flight ‘C’, 148th Aero Sqn. USAS,” *Cross & Cockade Journal* 17, no. 4 (Autumn 1976): 268.

¹⁷ Dominick A. Pisano, *Legend, Memory, and the Great War in the Air* (Seattle: University of Washington Press, 1992), 12.

at the model Sopwith Camels and Fokker D.VIIs hanging from their ceilings. They pored over tales of adventure and glory in dogfights over the trenches. These children would age into the next generation of war pilots, circling the skies over Germany and the Pacific, and later North Korea, their still-undeveloped brains crammed with the sights and sounds of a wildly mythologized first air war.

These children were spoon-fed the giddy glories of aerial combat. The only time they saw a plane go down in flames was when it was shot down by a chivalrous foe, his silk scarf swimming on the slipstream behind him. Well-nigh inconceivable was the idea that a daring pilot should be bested by his own plane, incomprehensible the thought that a pilot's own country should be to blame for his death.

If those little boys and girls had known the truth about the real dangers of flying, would they have hesitated? Even for a minute? Even for a moment?

By this thesis I hope to return the lives to these forgotten pilots, and in doing so, to restore some measure of meaning to their tragic sacrifices. There is a warning lying hidden in them, for those who think to look. I hope, too, when possible, to make these men real to the reader, they who walked on air against their better judgment, as Seamus Heaney would say. It is alarmingly easy to allow casualties, in their appalling profusion, to become mere statistics, or worse, fodder for an argument. As I see it, a master's thesis, in the grand scheme of things, means very little. A life means everything. These young men are not simply their names and their tragic deaths; they were, at one time, someone else's world entire. It is important, then, even as sober-minded historians, to remind ourselves of the reality of these young men, of the tragedy of their short lives. Sitting down and really thinking about it, all of it—the innocence, the

terror, the broken legs and arms and spines, the broken families, the broken hearts—is enough to move even the most indifferent scholar.

We should be moved. It is important, even necessary, to remain open to what our emotions can reveal to us.

Note

Oftentimes I will refer to the aviation arm of the United States military as, broadly, the “air service.” This is for convenience and clarity’s sake, although the organization officially went by several different names before it became a discrete branch of the armed forces, the United States Air Force, in 1947.

Chapter I: A Pretty Scheme

“On the face of it, a pretty scheme enough—but it’s ruthless. When one thinks of all the lives, young fellows’ lives, it has cost us! It’s a fine, solid thing and we must bow to its authority, of course; but what a host of problems it presents!”¹⁸

Night Flight, Antoine de Saint-Exupéry

If the bloody history of American aviation is an edifice, then its cornerstone was laid on September 17, 1908. On that day in Fort Myer, Virginia, man-powered flight was still young, and controlled flight less than five years old. The latter had been born three hundred miles to the south in Kitty Hawk, North Carolina, coaxed into being by the Wright brothers on the sandy dunes of Kill Devil Hills. That first flight in the winter of 1903 had marked the beginning of an enterprise that would change the course of history. On September 17, the younger of the two brothers, Orville, was ushering in yet another new era in American aviation: the first use of airplanes by the United States military. It would mark the passage of a threshold in the history of flight, in ways intended and unintended. This chapter argues that the apathetic stance the United States military took toward its non-combatant pilots began early in its history; in fact, it was one of the very first traditions of the new air service. This apathy, I argue, was not born of murderous intent; rather, it was a byproduct of an unwieldy and unprepared bureaucracy, heavy with inefficiencies, and yet simultaneously plagued by a chronic lack of men, resources, and expert knowledge.

¹⁸ Antoine de Saint-Exupéry, *Night Flight*, trans. Stuart Gilbert (New York: Harcourt Brace & Company, 1932), 31.

Beginnings

Although the military's first real encounter with aviation occurred in September 1908, it had always had one hand firmly set upon the affair of flying. In fact, James Hamilton-Paterson, writing from the British perspective, suggests that "what had started out as an entirely civilian enterprise had been comprehensively hijacked by the military" by the time the First World War began.¹⁹ While it *could* be said that the military had "hijacked" aviation and pressed it into the service of conducting war, the period of time in which American aviation was a wholly civilian endeavor is quite small upon closer inspection. As early as 1898 the War Department was pouring funds into the work of Samuel Pierpont Langley, whose construction of heavier-than-air craft called "aerodromes" preceded by several years the machines of the Wright brothers.²⁰ During the first few years of the 20th century the Wrights built and tested their Flyers under their own auspices, but despite some early inaction on the part of the government (owing, possibly, to the repeated failures of Langley's inventions), the Wright flying enterprise, and flying in general, sat squarely within the sights of the War Department.

Militaries often latch on to new technologies, "hijacking" them as Hamilton-Paterson would say, and transforming them into weapons, or if not weapons, then other means by which war can be prosecuted. Although Hamilton-Paterson's term carries a decidedly negative connotation, aviation as a national endeavor would, eventually, have required the establishment of a bureaucracy tasked with regulating its functions as it continued to grow. Although American aviation interest groups did exist at the time, such as the Aero Club of America, these organizations were not sufficiently large enough to handle the responsibility of seeing aviation

¹⁹ Hamilton-Paterson, *Marked for Death*, 67.

²⁰ James Edgerton, *England and the Aeroplane: An Essay on a Militant and Technological Nation* (Basingstoke and London: Macmillan Academic and Professional, 1991), 1-2.

through its years of adolescent growth. Their resources, too, could not compare with those of the United States government. If any regulatory or supervisory scaffolding was to be built around the project of aviation, then, it would have to be done by the government.

Until 1908, the United States government did not have in its possession a single airplane. It had experimented with balloons and dirigibles—the Balloon Corps was established several decades earlier during the Civil War²¹—but it shied away from the relatively new arena of heavier-than-air craft, a hesitancy that would hamstring the efforts of the air service in the years to come. (“Conservatism has always been the watchword in our recognition and adoption of new implements of war, especially in times of peace,” Charles de Forest Chandler and Frank Lahm would later write, putting a positive spin on what ultimately boiled down to bureaucratic inertia.²²) In the final weeks of 1907, however, progress was made when the Signal Corps issued its first specifications for an airplane. It required, among other things, that the machine be designed to “carry two persons having a combined weight of about 350 pounds,” “have a speed of at least forty miles per hour in still air,” and “remain continuously in the air without landing” for at least one hour.²³ Orville and Wilbur Wright were the only party able to build such a machine. They signed the contract on February 10, 1908, and were required to perform trials to prove that their machine had met the Army’s specifications.²⁴

September of the same year found Orville in Virginia, piloting his Model A Flyer for an audience of Army officers, officials, and various civilian spectators.²⁵ The trials went off without

²¹ Bernard Nalty, *Winged Shield, Winged Sword: A History of the United States Air Force* (Washington, D.C.: Air Force History and Museums Program, 1997), 3.

²² Charles deForest Chandler and Frank Lahm, *How Our Army Grew Wings* (New York: Arno Press, 1979), 279.

²³ Chandler and Lahm, *How Our Army Grew Wings*, 296-297.

²⁴ Rebecca Hancock Cameron, *Training to Fly: Military Flight Training, 1907-1945* (Washington, D.C.: Air Force History and Museums Program, 1999), 18.

²⁵ David McCullough, *The Wright Brothers* (New York: Simon & Schuster, 2015), 190.

a hitch until the arrival of Lieutenant Thomas E. Selfridge, an artillery officer turned aviator with an extraordinary amount of experience in aeronautics. He was both a member of the Signal Corps Aeronautical Board and the Aerial Experiment Association; in other words, he was a member of the incipient military bureaucracy, and on September 17, 1908, its point man.²⁶ He was present at the trials to learn as much as he could about this fledgling endeavor, and to begin consolidating the bedrock of expert knowledge upon which a well-functioning bureaucracy is based. Wright disliked the lieutenant—he believed Selfridge intended to steal the design of the Model A—but agreed nonetheless to take him into the air.²⁷ Selfridge was thrilled to be accompanying Wright, reportedly smiling as he prepared to enter the machine. As he handed his coat and hat to a friend, he jokingly remarked, “I guess I won’t need them up there.” (Friends of Selfridge were later shaken by what they believed to be the prescience of his words.)²⁸

His carefree enthusiasm is reflective of an era in aviation, only minutes later brought to a close, in which no man or woman had yet died in a controlled-flight accident. (Others, including German pioneer Otto Lilienthal, whose apocryphal last words were “Sacrifices must be made!”, had died while flying gliders.)²⁹ Flying aircraft was for experimentation and innovation, not for dying. This is made overwhelmingly clear by the lack of safety equipment made available to either man before the flight. Selfridge and Wright wore no head protection, and the Wright Model A included no safety belts or harnesses. The lack of safety belts recalled the earliest glider built by the Wrights, in which the operator lay flat on his stomach.³⁰ A safety belt was

²⁶ Nalty, *Winged Shield*, 11.

²⁷ McCullough, *Wright Brothers*, 190.

²⁸ “Selfridge Told Friends Good-By,” *Washington Times*, September 18, 1908.

²⁹ Tony Reichhardt, “The Last Words of Otto Lilienthal,” *Smithsonian Magazine*, August 10, 2016, accessed April 12, 2023, <https://www.smithsonianmag.com/air-space-magazine/last-words-otto-lilienthal-180960084>.

³⁰ McCullough, *Wright Brothers*, 49.

superfluous in such a machine. If it crashed headlong, the belt would do little except prevent the operator from safely extricating himself from danger. As the glider evolved into the Wright Model A—in which the pilot now sat in an upright position—the lack of safety features persisted. It would take the intervention of future Chief of Air Service Benjamin Foulois in 1910 to pioneer the use of safety belts in aircraft.³¹ Unfortunately, a belt or harness could only do so much.

Whether Selfridge imagined he might die in a flying accident is uncertain. His previous flight experience included planes and dirigibles—he could claim the honor of being both the first Army officer to fly a plane and to die in one³²—and his work with the Aerial Experiment Association led to the design of his own plane, called the Red Wing.³³ During his flights he achieved heights of at least 75 feet.³⁴ Notably, several of his flights ended in crashes.³⁵ It would have been natural to Selfridge that a flight could, or perhaps should be expected, to end in a wrecked machine. (As Hap Arnold, future Chief of the Army Air Forces, would later comment, “There was such a small margin between a successful flight and disaster.”³⁶)

On September 17, Wright reportedly flew the plane between 75 and 125 feet in the air. Wright made three passes around the field, and was coming around for a fourth run, when a piece of the propeller snapped free and went flying through the air. The effect was immediately apparent. The machine floundered for a hundred feet, swung forward, and dropped straight to the

³¹ Dwight Messimer, *An Incipient Mutiny: The Story of the U.S. Army Signal Corps Pilot Revolt* (Lincoln: Potomac Books, 2020), 20.

³² Nalty, *Winged Shield*, 11.

³³ Chandler and Lahm, *How Our Army Grew Wings*, 174.

³⁴ Nalty, *Winged Shield*, 13.

³⁵ Chandler and Lahm, *How Our Army Grew Wings*, 176.

³⁶ Cameron, *Training to Fly*, 27.

ground. It landed with a catastrophic smash.³⁷ Officers descended upon the wreck and immediately set to pulling the men free. Wright suffered severe injuries, four broken ribs and fractures in his leg and hip, but remained conscious.³⁸ Selfridge, blood spilling from a gash in his forehead, did not stir, and would never do so again, dying in the hospital three hours later.³⁹ The cause of death, a fractured skull, ominously foreshadowed the accidents that would plague the air service during the war. For those who did not fall in burning planes (or jump from them), the head was the likeliest place of injury, being covered only by a leather flying helmet. Amazingly, this flimsy choice of headgear would not see significant change until the advent of jets (and their ejection seats) required the use of hard helmets.⁴⁰

Selfridge's death splashed ink across newspapers from coast to coast, presaging a popular trend in reporting during the First World War. From the very beginning, death by flying was a spectacle, devoured by the reading public. Newspapers devoted a great deal of ink to titillating headlines, emphasizing the drama of these crashes and their gory details, leaving little to the imagination. While papers in the D.C. area expressed varying degrees of interest in Selfridge, the airplane was already earning itself a reputation for failure. It was alternately a doomed beast and a mindless, destructive vessel, destined to end its journey through the air in catastrophe. A headline in the *Washington Times* notes that "[the] broken propeller deals death,"⁴¹ while the *Roanoke Times* imagines the machine as transport for destruction personified, claiming in a top-of-the-fold headline that "Death Rides on Aeroplane."⁴² A narratively-dense retelling of the

³⁷ McCullough, *Wright Brothers*, 191.

³⁸ McCullough, *Wright Brothers*, 192.

³⁹ "Last Flight of Wright Aeroplane Begins Just like Many Before It But Broken Propeller Deals Death," *Washington Times*, September 18, 1908.

⁴⁰ David Sears, *Such Men as These: The Story of the Navy Pilots Who Flew the Deadly Skies Over Korea* (Cambridge: Da Capo Press, 2010), 15.

⁴¹ "Last Flight of Wright Aeroplane."

⁴² "Death Rides on Aeroplane," *Roanoke Times*, September 18, 1908.

crash in the *Washington Times* imagines the machine as a “mad agent, a wild threshing thing,” finally “turned monster at last” when its wreckage seemingly devours the men inside it.⁴³ Wright and Selfridge are helpless victims, vanquished in the struggle between man and the machine he attempts to control.

Upon learning of the death of Selfridge, Wilbur Wright, then performing exhibition flights in France at Le Mans, was reportedly overcome with sorrow. Tears in his eyes, he admitted, “I had rather be killed myself than that we should be responsible for the death of Lieut. Selfridge. I feel that we guarantee all passengers against accident. When we have a passenger we always think first of his safety.”⁴⁴ It is hard to guess what Wright means by such a guarantee. As previously discussed, no safety features existed in the design of the Wright Model A, nor was any protective gear worn by or offered to Selfridge. Before the flight, Orville Wright was heard advising the lieutenant, “Just sit tight, and don’t move around any more than you actually have to,” but no further precautions appear to have been taken.⁴⁵

The Wrights were certainly more than aware of the possibility of an accident. The brothers had crashed their machines numerous times, emerging battered and bruised but never dangerously so.⁴⁶ Still, the two vowed never to ride together. They feared their combined deaths in a single accident would prevent the continuation of the work they had so long pursued as a pair, and as a pair alone.⁴⁷ Thus, it was not with willful ignorance or naive optimism that the Wrights took passengers into the air in a patently dangerous machine. If not that, then what?

⁴³ “Last Flight of Wright Aeroplane.”

⁴⁴ “Wilbur Wright Weeps,” *Washington Post*, September 19, 1908.

⁴⁵ “Airship Falls; Lieut. Selfridge Killed, Wright Hurt,” *Washington Post*, September 18, 1908.

⁴⁶ McCullough, *Wright Brothers*, 197.

⁴⁷ McCullough, *Wright Brothers*, 253.

The answer lay in a lack of precedent, a historical absence as dark and dense as a void. To guarantee against accidents is to live in a world where no person has ever died in such a way. It is true that others had died while flying gliders. But a crucial difference separates the glider from the airplane, the most crucial difference of all: the airplane can be controlled. It was control, or rather the illusion of control, that allowed the Wrights to so willfully disregard the potential for disaster. If the pilot was in control—if a serious, level-headed man was in control⁴⁸—then it was always possible to extricate oneself from an unsafe situation, and even to make guarantees of safety to passengers or potential pilots. Following the death of Thomas Selfridge, however, such guarantees were all very suddenly impossible to make.

The Early Air Program

The death of Thomas Selfridge has received minimal attention in histories of early aviation, despite the critical turning point it constituted in the story of man-powered flight. Bernard Nalty blandly interprets his death as the unfortunate end to a promising aeronautical career;⁴⁹ John Morrow merely notes a Lt. T.E. Selfridge “delay[ing] acceptance of the U.S. Army’s first airplane.”⁵⁰ The death of Selfridge is consigned to the status of a speed bump, or a minor tragedy. Yet it was so much more. It marked the passing of a threshold, the entry into a world where men (and eventually women) could reasonably be asked to serve their country in inherently dangerous machines where the possibility of death constantly loomed. It set the stage for what was to come; it fashioned the stereotype, in the original sense of the word, a fixed image

⁴⁸ Orville Wright did not believe women were capable of successfully piloting planes. See Eliza McGraw, “This Ace Aviatrix Learned to Fly Even Though Orville Wright Refused to Teach Her,” *Smithsonian Magazine*, March 22, 2017, accessed April 24, 2023, <https://www.smithsonianmag.com/smithsonian-institution/ace-aviatrix-learned-fly-even-though-orville-wright-refused-teach-her-180962606>.

⁴⁹ Nalty, *Winged Shield*, 13.

⁵⁰ John Howard Morrow, *The Great War in the Air: Military Aviation from 1909 to 1921* (Tuscaloosa: University of Alabama Press, 2009), 6.

feverishly reproduced. Selfridge was the first of hundreds of military aviators who would die the same accidental death during the growing-pain period of early aviation: in a faulty airplane, falling out of the sky. His death set the precedent. It was one of the first traditions in a service utterly devoid of them, and one that would persist well into the era of the First World War: death by flying, exorbitant coverage in the press, and then, ultimately, a disappearance into the national memory.⁵¹

Death did not deter the United States military from pursuing the Wright Model A, but this particular death was a shattering one. In losing Selfridge the Army had lost its most experienced aviator, whose knowledge and enthusiasm for heavier-than-air craft could hardly be replaced on short notice, if at all.⁵² This was a perennial problem in the early days of the air service. In the first decade of the 20th century, few men or women on the planet could claim hands-on experience in aeronautics; even fewer were commissioned officers in the armed forces of the United States. With every death—and there would be many—the air service experienced an exponential setback not only in men and materiel, but practical knowledge of flying as well.

Limited planes, limited men, and limited knowledge—add to that limited financial support from the government. The road to a successful air service was long and winding, and pitted with holes. The service was bedeviled by a laundry list of problems, namely “miserly funding, an indifferent Army, contentious manufacturers, and no serious threat to national security to spur development.”⁵³ The passage of time seemed to do little but exacerbate the sensation of spinning wheels. Two months after Selfridge’s death, as Benjamin Foulois would

⁵¹ Cameron, *Training to Fly*, 117.

⁵² Cameron, 19.

⁵³ Nalty, *Winged Shield*, 15.

note, the air service consisted of “one badly damaged airplane, eight unattached enlisted mechanics, one civilian mechanic, and one untrained pilot - me.”⁵⁴ Foulois spoke truly, although training would commence in earnest after the purchase of the Wright Model A by the Army in the summer of 1909, nearly a year after the original trials.⁵⁵ Along with the plane, the Wrights offered their own expertise in aeronautics, and were asked to train at least two officers in the art of flying.⁵⁶ The Signal Corps chose Frank Lahm and Frederic Humphreys, the former an experienced balloon pilot. When the issue of training grounds inevitably arose, Lahm suggested nearby College Park, Maryland, where 160 acres of mostly unobstructed land provided the ideal conditions for flight training: flat land and plenty of room.⁵⁷

Thus did the first military aviation training program in the United States begin. Instruction commenced in early October, with Wilbur Wright teaching Lahm and Humphreys the very basics of flying, including take-offs, landings, and turns. Two and a half weeks later, the two men were “soloing,” or flying on their own. Benjamin Foulois would follow suit, although receiving only a fraction of the instruction.⁵⁸ The program proceeded in like fashion, sans the contractually bound Wilbur Wright, as the next two years unfolded. A second Signal Corps school cropped up in San Diego in 1911 with the support and resources of Glenn Curtiss, whose planes would become the standard trainer for American pilots during the First World War.⁵⁹

Naturally, the early training program was rudimentary. Students flying Curtiss planes taxied their machines back and forth and took extremely low-level flights, rising only ten feet off

⁵⁴ Cameron, *Training to Fly*, 26.

⁵⁵ Nalty, *Winged Shield*, 4.

⁵⁶ Messimer, *Incipient Mutiny*, 18.

⁵⁷ Cameron, *Training to Fly*, 22.

⁵⁸ Cameron, 24-25.

⁵⁹ Nalty, *Winged Shield*, 18.

of the ground. Unlike Wright-trained pilots, those flying Curtiss machines did all of their work “solo,” the design of the aircraft allowing only one person at a time to control the plane.⁶⁰ The differences in design between Wright and Curtiss machines would prove problematic as time wore on. (As we will later see, it foreshadowed a more general lack of standardization that plagued the training program during the years of the First World War.) Those who trained on one type of plane remained bound to that plane—a Wright pilot could not fly a Curtiss plane, and vice versa. Versatility was practically impossible to achieve, and was not desired by pilots: more often than not, rivalries bristled between men devoted to one plane or the other, ultimately resulting in batches of Wright pilots and batches of Curtiss pilots.⁶¹

In addition to a lack of standardization, the training program was crippled by insufficient resources. Planes remained in critically short supply, with only a smattering of manufacturers—Wright, Curtiss, and Burgess—putting out planes, and slowly at that. At the same time the air service was continually bleeding trained pilots. This is because the pilots in training at this time did not actually belong to the air service: they were assigned to it from other branches of the United States military, and their assignments were limited. A provision dubbed the “Manchu Law” prevented officers from spending more than four years on detached duty, meaning that by the time a pilot had learned to fly, and to fly well, he was being removed from the air service.⁶² (Lahm and Humphreys returned to their original homes, the cavalry and the engineers respectively, in late 1909.)⁶³

⁶⁰ Messimer, *Incipient Mutiny*, 44.

⁶¹ Benjamin Foulois, *From the Wright Brothers to the Astronauts: The Memoirs of Benjamin D. Foulois* (New York: McGraw-Hill, 1968), 91.

⁶² Messimer, *Incipient Mutiny*, 16.

⁶³ Nalty, *Winged Shield*, 14.

The spring of 1911 saw the assembly of the air service's few active pilots at Ft. Sam Houston for the organization of the Provisional Aero Company.⁶⁴ Lieutenants Beck, Walker, and Kelly spent several weeks gaining flight experience there as the argus-eyed Benjamin Foulois looked on. The latter expressed his reservations over the adequacy of the Curtiss pilots' training, remarking, "It frightened me to watch them operate," as the pilots continued to make the same mistakes over and over again.⁶⁵ The training period would not last long. On May 8, Lt. Walker's plane stalled mid-flight and went plummeting toward the ground. Although he quickly righted the machine and managed to land safely, the experience proved traumatizing. He climbed out of the plane and never touched one again. Three pilots remained.

But not for long. Soon after Walker's terrifying mid-air stall, Lt. Kelly took to the skies for a practice flight. He rose to three hundred feet, and then began to descend again, apparently intending to practice a landing, that most difficult of skills to master. Instead of decreasing his speed for the landing, however, he appeared to be diving toward the earth at a significant clip. In the blink of an eye his plane struck the ground—"with a sickening, wrenching sound," a leitmotif in accounts of accidents to come—and rebounded, hurled back into the air by the force of the impact. Banking to avoid an encampment directly in his path, Kelly accidentally nicked the ground with his left wing, sending the plane into a pinwheeling crash. Lt. Kelly was launched from the machine. He died shortly afterward from an injury to the head, just as Selfridge did.⁶⁶

⁶⁴ Messimer, *Incipient Mutiny*, 36.

⁶⁵ Foulois, *Wright Brothers to the Astronauts*, 91.

⁶⁶ "Mortality in Army Aviation" (Official memorandum, Washington, DC: War Department, Office of the Chief Signal Officer, 1914), 3.

A board of officers would soon convene and blame the accident on Kelly, ultimately claiming he had made an “error in judgment... in selecting an unsuitable landing place.”⁶⁷ The mechanic in charge of Kelly’s plane agreed: it was the lieutenant’s fault for “bringing his machine to earth at full speed.”⁶⁸ Although the true cause of Kelly’s accident remains contested, this early tendency to blame the pilot rather than the plane would become a knee-jerk reaction in the decades to come, particularly during the years of the airmail service. Hap Arnold considered it a survival tactic in those precarious early days. “It was seldom the plane, or an unknown quantity in the air, but almost always the pilot, who was blamed for being in error,” he later wrote. “You *had* to believe that to keep up your morale.”⁶⁹ What might have begun as a survival tactic, however, quickly became an easy way to wash one’s hands of blame, particularly for those in positions of power. Already, in 1911, a lack of concern for pilot well-being was creeping in through the cracks. It would eventually crust over into full-fledged apathy.

Benjamin Foulois, it should be noted, came to a different conclusion about the circumstances of Lt. Kelly’s death. “Kelly died because he was poorly trained, inexperienced, and was flying an unsafe airplane,” he would later write in his memoirs. “Unfortunately, these were things he was personally unaware of, and so was his commanding officer and the other members of the investigating board. It was this same kind of basic ignorance about the essentials of aircraft maintenance and flying that would kill many more pilots in the years to come.”⁷⁰ By “many,” as we shall see, Foulois meant hundreds: hundreds upon hundreds of American pilots who would die needless deaths during the First World War, and who were forced by an inertial

⁶⁷ “Mortality in Army Aviation,” 3.

⁶⁸ Messimer, *Incipient Mutiny*, 41.

⁶⁹ Cameron, *Training to Fly*, 40.

⁷⁰ Foulois, *Wright Brothers to the Astronauts*, 94.

bureaucracy to repeat the same mistakes that had killed Kelly years earlier. Chapter 3 will discuss the particularly insidious problem of poor and unregulated aircraft maintenance, the likes of which Foulois blamed for Kelly's death.

Ultimately, aside from the loss in equipment and trained personnel, Kelly's death would change little. It did, however, result in the cessation of flying at Fort Sam Houston. Frank Coffyn, instructor for the Wright pilots, thought it a wise decision, as he believed San Antonio was highly unsuitable for flight training—ironic, considering Kelly Field, named for the man who hallowed its grounds, would open in San Antonio in 1917, and ultimately see thousands of cadets pass through its flying program.⁷¹ It was “Where Uncle Sam's Eagles Hatch,” as a cartoon would proclaim; it was, by war's end, the largest flying field in America.⁷²

Over the next three years, the air service strove to standardize its training program. The schools in College Park and San Diego continued to train pilots, preparing them for the license test administered by the *Federation Aeronautique Internationale* (FAI), until 1912, when the War Department officially established the military aviator rating for pilots.⁷³ (Until then, the FAI test provided the only qualification test available to American aviators.) Pilots were also increasingly sent to the factory schools at Wright and Curtiss, where they could gain experience in flight and machine maintenance.⁷⁴ As time went on, a desire for new and improved aircraft spread amongst pilots, especially as the vagaries of training took a toll on the Army's older machines. Landing remained the most challenging skill for student pilots to learn, and bungled

⁷¹ Cameron, *Training to Fly*, 41.

⁷² H.D. Kroll, ed., *Kelly Field in the Great World War* (San Antonio: Press of San Antonio Printing Company, 1919), 5; 24.

⁷³ Messimer, *Incipient Mutiny*, 63.

⁷⁴ Nalty, *Winged Shield*, 21.

attempts at touching down left planes in an almost constant state of disrepair. The Wright corporation responded to this need for new machines with the Wright Model C. It would become, very shortly, the deadliest plane in America—the original failing plane.

Between June 11, 1912, and February 9, 1914, twelve men would die in nine flying accidents. Of those accidents, two-thirds involved the Wright Model C, the common trait between them being the plane's tendency to swing nose-down when additional power was applied.⁷⁵ The nose-heavy Wright Model C quickly gained a reputation for its instability, and pilots grew increasingly wary of the plane. Only after the sixth fatal accident was it discontinued, when the air service condemned all pusher-type planes, including the Wright Models B and C.⁷⁶

One death was not sufficient, it seems, to call the Wright Model C's safety into question. Nor were two or three or four. Six men died—nearly half of all American pilots who had been killed in accidents—before significant action was taken against the failing machine. Orville Wright himself maintained that pilot error accounted for the accidents involving his planes.⁷⁷ Lt. Col. Samuel Reber (formerly at the head of the service) would agree with Wright's assessment, denying point-blank the defects inherent in the Wright Model C. The plane responsible for “seventy-one percent of fatal accidents” before the First World War had absolutely nothing to do with the deaths of those six men.⁷⁸ If anything, the pilots themselves were to blame.

“In my opinion, nearly every one of the above accidents was due to the pilots and not the machines,” wrote the Acting Chief Signal Officer in a memorandum entitled “Mortality in Army

⁷⁵ Messimer, *Incipient Mutiny*, 211.

⁷⁶ Messimer, 107. Pusher-type planes are those designed with the propeller and engine in the back; they “push” the plane forward, rather than pulling it (as tractor-type planes do, with the propeller and engine in front.)

⁷⁷ Juliette Hennessy, *The United States Army Air Arm, April 1861 to April 1917* (Washington, D.C.: Office of Air Force History, 1985), 91.

⁷⁸ Messimer, *Incipient Mutiny*, 211.

Aviation.”⁷⁹ Dated February 28, 1914, the document lists the details of eleven fatal accidents, from Selfridge in 1908 to Lt. Henry Post three weeks earlier, the final victim of the Wright Model C. In nearly every case, the probable cause of accident is attributed to pilot error. Even Lt. Joseph Park, whose accident occurred without witnesses, is blamed for his own death: “the accident was due *entirely* to the poor judgment of Lt. Park.”⁸⁰ (Emphasis mine.)

How were Signal Corps officers to account for such a dogged certainty? Earlier Hap Arnold spoke of blaming pilots instead of planes as a coping mechanism. But he spoke as a fellow pilot, someone who took to the skies in the same precarious planes that had just ended the lives of his friends and comrades. (A particularly harrowing accident would, eventually, cause him to give up flying for several years.)⁸¹ Arnold and his fellow pilots needed a psychological buffer to be able to climb into those dangerous planes on a daily basis. They needed to believe that they had some semblance of control over their own fates. (This desperate desire for control held many pilots in a vise grip, as the case of Briggs Adams, discussed in Chapter 4, will illustrate.) Non-flying officers, however, did not require such a suspension of belief in order to accomplish their work. General George Scriven, the man behind the mortality memorandum, argued merely that “in spite of short-comings and accidents the results obtained are believed to be fully commensurate with the means provided for the establishment of this new art in the Army.”⁸² Scriven, it should be noted, was not an aviator himself.

⁷⁹ “Mortality in Army Aviation,” 12.

⁸⁰ “Mortality in Army Aviation,” 6.

⁸¹ Nalty, *Winged Shield*, 26.

⁸² Hennessy, *United States Army Air Arm*, 103.

The Pilot Perspective

Did pilots recognize the precarity of their lives in this new and unpredictable service? It is safe to say that many did. Lieutenants Walker and Arnold fled aviation when its dangers became too real. Those who remained clung to what little measure of control over their lives they could by exonerating their failing machines. Of all the pilots, Lt. Eric Ellington—one of the victims of the Wright Model C—seems especially to have had a clear sense of what sacrifices might be asked of him by the fledgling air service. Ellington came to the air program from the cavalry, a fitting transition, as air services of the First World War would affectionately be called the “cavalries of the air.”⁸³ He proved himself a worthy pilot in short order, and quickly rose to the position of chief instructor at the school in San Diego. A highly proficient Wright pilot, Ellington knew the notorious Model C forward and backward. He wrote often to Grover Loening, the Aviation Section’s Chief Aeronautical Engineer, about his troubles with the machine.⁸⁴

It seems Ellington recognized that he was sacrificing more than his time and energy to the young air service. He briefly visited home in 1913, and on the eve of his departure, his sister wondered whether he should continue in such a dangerous line of work. Ellington replied, with an eerie prescience, that “somebody has to give their life for [aviation]. If I knew I was going to die, I’d still keep doing it.”⁸⁵ It is a haunting sentiment. What did Ellington mean when he spoke these less than reassuring words to his worried sister? Why did he imagine that anyone *had* to give their life for aviation, let alone him? Ellington’s willingness to die on behalf of a technology

⁸³ Thomas C. Parramore, *First to Fly: North Carolina and the Beginnings of Aviation* (Chapel Hill: University of North Carolina Press, 2002), 201.

⁸⁴ Tom Crouch, *The Bishop's Boys: A Life of Wilbur and Orville Wright* (New York: W. W. Norton & Company, 1989), 458.

⁸⁵ Parramore, *First to Fly*, 202.

that would readily kill him, and an organization that would equally readily blame him for his death, jars the modern mind. But the truth is that Ellington had learned by example how to understand and articulate his relationship to aviation. Ellington, and especially the air service itself, were operating on the basis of a precedent that had been set six years earlier, on the flying grounds at Fort Myer. In the new American air service, men would die in failing planes, and they would die unprotected—not by helmets, nor by the organization tasked with keeping them safe. They would know intimately the dangers of their work, having seen their comrades die in the same planes they now took into the air, and yet they would “still keep doing it,” in the words of Ellington. They would know, as we will see in Chapter 4, that they were “doomed” to the fate suffered by Thomas Selfridge, but they would have no recourse. Having entered into the American air service, they found themselves bound to a military bureaucracy incapable of taking care of its own men, a bureaucracy so heavy with inefficiencies that it would drag its pilots down with it.

On November 20, 1913, Ellington was killed while flying the doomed Wright Model C. His student, Hugh Kelly, who he was instructing at the time, died as well. Ellington would be the first of many instructors to die in the same plane as his pupil; Kelly the first to die with his instructor. Interestingly enough, the accident report acknowledges the Model C’s infamous defect—its eagerness to nose down—as likely having caused the accident. And yet, quite as expected, the blame is ultimately laid in Ellington’s lap: he had stayed too long in the air with a missing engine.⁸⁶

⁸⁶ “Mortality in Army Aviation,” 9.

Thirteen American pilots gave their lives to the cause of aviation before the First World War began.⁸⁷ At a glance, the list of names doubles as a list of training fields in the United States, as nearly every pilot on it gave his name to an airfield established during the war. Eric Ellington would become Ellington Field in Houston; Walter Taliaferro, the deadly Taliaferro Field in Fort Worth. Selfridge, the original sacrifice, reappeared in Mt. Clemens, Michigan, when Selfridge Field cropped up in 1917. These pilots became, quite literally, the ground upon which thousands of young men would train to fly, dedicated to the same cause as their predecessors. The first thirteen died so that hundreds of other, younger, bright-eyed men might die the same way: in a plane, falling out of the sky. A safer, perhaps more technologically advanced plane—but a failing plane nonetheless.

Conclusion

The first years of military aviation training in the United States were a fraught time. Beginning on September 17, 1908, the fledgling air service developed a chronic stutter, repeating the same mistakes over and over again, and in the process needlessly destroying its most precious assets: its pilots. The fact that a violent death marked the day on which the military bureaucracy attached itself to the project of aviation is quite fitting. The accidental death of Lt. Selfridge would prefigure the hundreds, and later thousands, that were to come during the wars of the 20th century, many if not all resulting from an apathy long left to fester in the upper echelons. If the history of the American air service is an edifice, Selfridge's death was the cornerstone, and a

⁸⁷ The fourteenth American—Corporal Frank Scott, who died in the same accident as Lt. Rockwell—was not a pilot. He was, however, the first enlisted man to die in an aviation-related accident.

heavy one to carry. Indeed, heaviness is to blame for much of what went wrong in those early days of military flying in the United States.

The air service was a leaden organization, weighted down by a laundry list of issues: lack of resources, a thin reserve of practical knowledge, no impetus for development, and a cohort of non-flying officers charged with the affairs of flying men. It is ironic that an organization comprised of so few trained men and so few resources could have been simultaneously so bloated with bureaucratic inefficiencies. The first years of a new and complicated endeavor are always difficult to navigate, of course, and the construction of an efficient bureaucracy is built upon a foundation of expert knowledge slowly accumulated over the course of years. The United States air service existed for less than a decade before the advent of the First World War, a very short period by organizational standards. But even still, the air service does not seem to have productively used this short period of time at all. Instead of investigating the causes of its proliferating accidents, its upper echelons chose to blame the pilots and exonerate their decrepit planes. Instead of cultivating the expert knowledge of such men as Benjamin Foulois, Hap Arnold, and Eric Ellington, air service officials ignored their concerns about safety and continued to place them in the seats of dangerous planes, with the end result anyone could have foreseen: the men either died, or survived traumatizing accidents that caused them to flee aviation forever.

Most bureaucracies are inertial by nature—once a pattern is set, they continue in that pattern of behavior forever. Change is difficult, and sometimes impossible, to introduce into a path seemingly carved into stone. The upper echelons of the United States air service were not peopled by evil men intent upon destroying the pilots under their charge, though their negligence gives such an appearance at first glance. They were, rather, operating on a precedent that had

been set on September 17, 1908, and that had been allowed to survive in the form of three dangerous and persistent behaviors: providing pilots with faulty, temperamental aircraft; refusing to supply them with safety equipment should something go awry; and lastly, but most subtle in its insidiousness, allowing its poorly and hastily trained cadets to take to the skies alone, where any misfortune imaginable was waiting to befall them. As we will see in Chapter 2, this bureaucratic aversion to change would become exponentially more lethal once the United States entered the First World War. Even the rapidly accelerating piling of bodies and wrecked machines could not alter the path of the juggernaut once it started careening down the hill.

Chapter II: A Burnt Child Touches Fire

*If there were any rules or regulations at Taliaferro Field, none of us had ever heard of them. There were no curbs of any kind on types of flying... with no restrictions on anybody or anything the death rate was out of all proportion even at this early date in the field of flying. There were 31 deaths in crashes in a period of 30 days during the time I was there.*⁸⁸

The Hawks that Guided the Guns, Lawrence Smart

On March 20, 1918, the *Orlando Sentinel* ran an article regarding the state of America's flying fields. It cast an admiring eye upon the aviators in training, particularly in Texas, where cadets went about their usual work, that is, falling out of the sky in their machines.

"Despite the number of men killed or injured in Texas aviation training fields," the *Sentinel* declares, with all the bravado newsprint can convey, "the several thousand student aviators in Texas have never lost their 'nerve.'" It goes on to describe the pluck of two injured pilots, one with a broken neck and the other missing nearly all of his front teeth. (It was, according to the latter, "[N]othing. I had all my teeth knocked out before in a fall.") The two pilots, despite their broken bodies, are eager to take to the skies again as soon as the doctor will let them. "The old adage that a 'burnt child dreads fire,'" the *Sentinel* sagely notes, "apparently doesn't apply to the young aviators in Texas training camps."⁸⁹

Apparently not, indeed—for by war's end, over half of all aviation-related deaths on American soil would have occurred on those very Texas fields.

In the last chapter, I endeavored to lay the groundwork of the violent debut of military aviation in the United States. Beginning with the death of Lt. Thomas Selfridge in 1908, the

⁸⁸ Lawrence Smart, *The Hawks that Guided the Guns* (Privately published, 1968), 13.

⁸⁹ "Young Aviators in Texas Are Not Frightened By Casualties," *Orlando Sentinel*, March 20, 1918.

Army permanently and painfully latched onto the enterprise of flying, providing aviation with a necessary bureaucratic scaffolding, while simultaneously failing to provide for the men who would bring American aviation its prestige: the pilots themselves. In the process, the military let solidify three dangerous behaviors ultimately characterized by their apathy toward pilot well-being: supplying pilots with faulty airplanes, refusing to provide them with safety gear should something go awry, and lastly, rushing cadets through a poorly-conceived training program doomed to churn out half-baked pilots by the hundreds. This chapter explores the latter of the three, revealing the dozen ways in which the United States air service failed its pilots before they ever left the ground.

Military Training in the United States

Before we examine the American flight training program, it is important to get a sense of the history of military training in the United States more generally. From its earliest days as an increasingly rancorous clutch of British colonies, the United States has always required of its armed forces military training of some form or another. Its goal was, and remains today, the “preparation of individuals from civilian life for the demands of military life.”⁹⁰ What this looked like has evolved a great deal over the course of time. Militiamen marched back and forth on the village green and toted their own muskets until systematic training of soldiers finally began in earnest during the Continental Army’s winter at Valley Forge in 1777. Based on the Prussian model, this training involved, among other things, “marching, firing, and tactical maneuvers.”⁹¹ It was the country’s first attempt at the standardization of military training;

⁹⁰ John W. Chambers, ed., *The Oxford Companion to American Military History* (Oxford: Oxford University Press, 1999), 728.

⁹¹ Chambers, 729.

unfortunately, it would not stand the test of time. Compulsory militia training faded away over the course of the next century, and whenever war erupted, recently enlisted soldiers tended to rely on the knowledge of their superiors rather than on a standardized manual or regimen.⁹²

The advent of the twentieth century finally brought about some progress, along with the introduction of a regular standing army. Training for a regular army soldier usually spanned over the course of nine months, and could include work in subjects ranging from close-order drill to target practice and combat firing. Every task a soldier undertook was designed to teach him “instant and unquestioned obedience to the orders of [his] superiors.”⁹³ As Henry Smith, writing from an officer training camp at Ft. Niagara, would say of his training, “We boys are being turned into mechanical toys of the first order.”⁹⁴ This honing (to put it mildly) of the mind and spirit would prove the most important facet of training for infantrymen during the early twentieth century.

The rapid inflation of military forces during the First World War required the truncation of this nearly year-long training period. Recruits flew through their training in less than half the time previously expected of regulars, and then shipped off to Europe, where further training often awaited them with the British and French armed forces.⁹⁵ Officer training camps, like the one Henry Smith attended, taught advanced courses in map making, signals, trench construction,

⁹² Chambers, 729.

⁹³ “1. Organization, training, and mobilization of a force of citizen soldiery. 2. Method of training a citizen army on the outbreak of war to insure its preparedness for field service,” War Department, Document No. 521, Office of the Chief of Staff, 17.

⁹⁴ “Letter From Henry.,” *New Oxford Item*, June 21, 1917.

⁹⁵ Chambers, *Oxford Companion to American Military History*, 729.

bayonet drill, and marksmanship, ultimately forging in a 16-hour-a-day furnace the men who would lead America's army of swiftly-trained recruits into battle.⁹⁶

It is important to emphasize here that although enlisted men (and even their officers) received hasty training during the 1917-18 period, this bull rush through the basics of military life would not ultimately decide their fates in France. Much of the knowledge that kept an infantryman alive was rather picked up in the immediate environment of the frontlines. Indeed, learning to keep one's head down while moving through a shallow trench, refraining from lighting cigarettes at night, or keeping one's rifle from being spoiled in the mud, often happened directly on the job. With the exception of the marksmen of the Marine Corps, most doughboys did not even need to *know* how to fire their rifles accurately, trapped as they were in a war dominated by artillery fire and its pell-mell destructive power. Their training could neither help nor harm them, in the end, as their work on the frontlines was mostly so unspecialized that it could be done by anyone.⁹⁷

As we will see later in this chapter, this was overwhelmingly not the case for pilots in training. No other weapon of the First World War required training as specialized as that of the airplane, nor specialist users of such a unique physical, moral, and educational pedigree. Unfortunately, pilots received a fraction of the training time that even the hastily-trained infantry did, while at the same time being set to a task that required exponentially more skill. While doughboys spent months preparing for France only to find themselves pinned to the earth for

⁹⁶ "Training the Doughboys," New York State Parks & Historic Sites, accessed February 16, 2024, <https://nystateparks.blog/2017/10/10/training-the-doughboys>.

⁹⁷ The lived experience of the average infantryman can be found in a number of autobiographical novels written by veterans of the war. For a few examples, see *Through the Wheat* by Thomas Boyd, *Company K* by William March, and *Three Soldiers* by John Dos Passos.

hours on end during an artillery barrage, or conveying food back and forth from the field kitchen to the frontlines, pilots with only weeks of training sat at the helm of the most technologically advanced machines in the world, one mistake away from falling out of the skies and to their deaths.

Progress (Or Lack Thereof)

In the three years between the mortality memorandum of Chapter 1 and America's entry into the First World War on April 6, 1917, alarmingly little had changed. Despite the growing possibility of the United States playing a role in the war in Europe, the Aviation Section of the Signal Corps remained small, underfunded, and under utilized. With only 65 officers, 1,120 enlisted men, and 55 training planes at its disposal, it quite literally limped into the war.⁹⁸ The United States, which produced the original airplane, had been outpaced by France, Britain, and Germany. The skies over France swarmed with technologically advanced planes like the French Nieuport, the British S.E.5, and the German Pfalz and Albatros.

Bernard Nalty has argued that the nascent air service lacked the impetus for production and training that only a war could provide, and this appears to have been the case. Development of the air arm proceeded at a ruinously slow pace in the years leading up to America's entry into the war, and only once the ax dropped on April 6 did the government finally recognize the dire state of its air service. The neglect of the American air service bode ill in a war that had taken to the skies as early as 1914 and had lingered there ever since. While German, French, and British aviators (with a smattering of Canadian- and British-trained Americans) fought, bombed, and conducted reconnaissance in technologically advanced machines, the United States could only

⁹⁸ Sweetser, *The American Air Service*, 54.

look on with the half-awed, half-envious gaze of a younger brother. It was time to act, and to act quickly.

The United States air service was still fighting its two perennial problems at dawn on April 6: lack of trained men and lack of planes. The latter issue was partially resolved, at least in the early stages, by the outsourcing of production to France, where airplane factories had long been churning out planes and plane parts. The problem of trained men proved thornier. Unlike planes, a skilled aviator could not be built in a few weeks' time on the factory floor. He required months of training, drilling, housing, feeding, bathing, recreation, and oversight in order to meet success in the skies over the Western Front. "The finished airman," wrote Arthur Sweetser in 1919, "is the tiny apex of an enormous pyramid."⁹⁹ For the staggering amount of oversight they required in order to succeed as effective soldiers, flying cadets were often called, quite fittingly, "embryo" aviators.¹⁰⁰

Before the question of manpower could be considered, however, the air service needed space—a great deal of it, and preferably on flat, even land with few obstacles, like trees, buildings, or telegraph poles, to cause mayhem for beginner flyers. It was clear that one section of the United States provided these conditions in abundance: the South, and in particular the state of Texas.¹⁰¹ Ultimately a little over a dozen facilities would be constructed in Texas, all but one situated on one of the legs of the so-called Texas triangle that connects San Antonio, Dallas-Fort

⁹⁹ Sweetser, 228.

¹⁰⁰ "Michigan News Brevities," *Lansing State Journal*, April 6, 1918: "After several months of instruction indoors due to the severe winter weather, embryo aviators at Selfridge field have resumed flying instruction." See also "Embryo Birdmen Killed By Fall," *Weekly Eagle*, (Wichita, KS), February 1, 1918.

¹⁰¹ "That is the one advantage of Texas flying, you can land wherever you want to; the country is as level as glass," wrote Raymond Gutzler, stationed in Houston. See "Former Warren Boy Describes First Flight In An Airship," *Warren Times Mirror*, March 26, 1918.

Worth, and Houston. These facilities constituted nearly half of the thirty fields that eventually cropped up across the United States between 1917-1918.

As mentioned in the previous chapter, one of first traditions of the nascent air service was the naming of flying fields in honor of fallen aviators. Of particular interest is Ellington Field, located eight miles outside of Houston, Texas. It took its name from Eric Ellington, whose grit and diligence could inspire the lowliest cadet, and around whose memory coalesced over 1,300 acres of land, hundreds of planes, and thousands of cadets with aspirations toward the skies.¹⁰² The flying fields were the air service's first attempt at laying the groundwork of its own history. With the names of the flying dead marked upon the ground it could not be said that the air service did not have its own martyrs, its past stippled with sacrifice. "[Ellington's] fate at that time was inevitable, according to cynics," Lieut. Stack writes in the introduction to the 1918 Ellington Field yearbook, "but for his devotion an enduring monument has been erected to his memory."¹⁰³ Indeed: *Lector, si monumentum requiris, circumspice*. But perhaps this gesture was not quite the immortalizing one it was intended to be.

Ellington's name was constantly evoked, living in the mouths and letters of the thousands of men who made their home on the field. He was simultaneously foremost and lastmost in their minds; he was both the pasture they stomped into dusty barrenness and the ground from which they took off in flight. It was to become a pattern, this memorializing impulse. Pilots were rewarded for their deaths by having their names grafted onto the institutions of the growing air service. Their identities as the catastrophic fatalities of a dangerous pursuit, as a result, gradually ebbed. Every time Ellington's name was spoken, it lost another grain of meaning. He was no

¹⁰² *Ellington 1918* (Houston, Texas: n.p., 1919), 3.

¹⁰³ *Ellington*, 3.

longer an individual whose life had ended in tragedy; his was not an example from which to learn. He was simply another tract of land in a state sprawling with them. He was, to the average cadet, nothing more than a field.

It was the first of many signs that the American pilot would, in almost every respect, play second fiddle to the enterprise of flying itself.

The Aristocracy of the Air

There is an irony here that should be noted. From the very beginning, the United States military sought to fill its air service with only the finest young men the country had to offer. Unlike its counterpart Great Britain—which drew substantially from its pool of monied, public school educated boys but was known to accept 16 and 17 year olds into its flying ranks seemingly without batting an eye¹⁰⁴—the United States held its future pilots to an inordinately high standard, ensuring that the country’s best and brightest were on the fast track to destruction. In many respects, America’s well-educated and well-to-do cadets were its most valuable assets. And yet their lives were thrown to the wind in pursuit of an air service that could compete with those of the British, French, and German nations.

As mentioned in the previous chapter, air services were considered, from their very inception, the heirs to the throne of the illustrious cavalry. In fact, many aviators originally began their careers as cavalymen, such as the ill-starred Eric Ellington, and the French ace Charles Nungesser, to name only two.¹⁰⁵ It was a natural passing of the mantle. Strategists originally

¹⁰⁴ Cecil Lewis, *Sagittarius Rising* (New York: Penguin, 1963), 8.

¹⁰⁵ Robert Wohl, *The Spectacle of Flight: Aviation and the Western Imagination, 1920-1950* (New Haven: Yale University Press, 2005), 16.

envisioned planes as tools of reconnaissance, as their superior vantage in the skies gave observers an unobstructed view of enemy positions. This role, filled by the cavalry in previous conflicts, would ultimately evolve as time progressed and the need to maintain air superiority required more offensive tactics. But the glamor of the “cavalries of the skies” remained. The image of the athletic, aristocratic cavalier was grafted onto the imagined legions of pilots who would take to the skies on behalf of Uncle Sam. This aristocracy of the air should, it naturally followed, be populated by those who fit the mold of the American aristocrat.

Or as close as one could come to it. Considered “the most expensive education in the world,” the opportunity to train as a military aviator was extended only to those who conformed to a narrow—and sometimes quixotic—standard.¹⁰⁶ The ideal American cadet should be an athlete who was “quick witted, punctual and reliable,” “accustomed to making quick decisions,” and preferably someone who could “ride well... sail a fast boat or handle a motorcycle,” according to General Squier, Chief of the Aviation Section.¹⁰⁷ Ideally he was a college student or college graduate, as this not only implied a good education but also membership among the middle or upper classes.¹⁰⁸ (This drained the candidate pool substantially, as only 3% of Americans of college age were enrolled in universities in 1917.¹⁰⁹) His socio-economic status would also mean that he was less likely to be troubled by the economic anxieties that may have gnawed at his working class counterpart. Think of it: a young man born into wealth could throw his life away with a guilt-free conscience, knowing his family could survive without him. A

¹⁰⁶ Cameron, *Training to Fly*, 114.

¹⁰⁷ Cameron, 115.

¹⁰⁸ “Nearly all the men in training are college graduates” at Ellington Field, according to H.C. Wade. See “Airman Returns from Ellington Field, Texas,” *Ogden Standard*, June 21, 1918.

¹⁰⁹ Thomas D. Snyder, ed., *120 Years of American Education: A Statistical Portrait* (Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, National Center for Education Statistics, 1993), 76.

miner or factory worker, financially responsible for his family, could not bring such a carefree attitude to potentially dying a needless death in the air.

The Aviation Section sought only white men for its exclusive branch of the service. White women, and men and women of color, were thus barred entry to the flying service from the very outset, despite the fact that as Fred Erisman notes, “Women, be they White or Black, have been a part of the American aeronautical scene almost from its beginnings.”¹¹⁰ Eugene Jacques Bullard, the first and only African-American to fly in combat conditions during the war, flew for the French flying services instead of the American, having been rejected outright by the latter.¹¹¹ Racial prejudice reigned in every branch of the United States military, meaning that Black men interested in aviation could only hope to be admitted as enlisted men assigned to manual labor on the flying fields, as in the case of Olin Branscomb.¹¹²

Finally, pilots should be in their early twenties, as these men were less likely to be attached to a wife and family. Younger men also, critically, had less developed brains. In a pinch, a 22 year old was more likely to take a chance than his 28 year old counterpart. Especially in the fast-paced, risk-stacked world of aerial combat, quick reflexes gave pilots a necessary edge, allowing them to out-maneuver even those flying more technologically advanced planes.

Instances of the ideal American cadet are readily found in the well-known examples of Hobey Baker and Hamilton Coolidge. A Princeton hockey star and Harvard varsity football player respectively, the two exemplified the kind of wealthy, aristocratic, and athletic men with

¹¹⁰ Fred Erisman, *In their Own Words: Forgotten Women Pilots of Early Aviation* (West Lafayette, IN: Purdue University Press, 2021), 3.

¹¹¹ Pisano, *Legend, Memory, and the Great War*, 93.

¹¹² “Aviation Worker Killed,” *Troy Messenger*, June 12, 1918.

which the United States longed to fill its flying ranks. The coterie of fellow pilots such men surrounded themselves with, including Elliott White Springs, Quentin Roosevelt (youngest son of the former president), and Richard Blodgett, also fit the American aristocratic standard to a high degree. The First Yale Unit, established by Yale students in 1916 as a precursor to the naval air reserve, has been called “The Millionaire’s Unit” for the monied elite of its original membership.¹¹³

Clearly those sought for the air service were, socio-economically speaking, the *crème de la crème* of the American white male population. They were the young men who would have composed the next generation of politicians, business executives, and military leaders had they survived the war, and thus the capital they represented for the country as a growing world power was significant. The air service chose these men for their intelligence and athleticism, their professionalism and gentlemanly bearing. Some of these traits would serve them as pilots, others were mere frivolities. None, however, would protect them from the dangers of a failing plane.

One could argue that the infantry sent equally promising young men into the trenches to die as platoon leaders and company commanders. The crucial difference lies, as always, in control. Men facing the aleatoric horrors of artillery fire in the trenches lived or died on the pin’s head of chance. They could not control where the next shell would land, nor could General Pershing. Airplanes, however, existed almost exclusively within the realm of control, and those charged with the procurement of the machines and their parts had absolute authority over where and how those parts were made. The problem of faulty planes, which will be discussed at length in the next chapter, ultimately came down to hastiness on the part of the United States

¹¹³ See Marc Wortman, *The Millionaires' Unit: The Aristocratic Flyboys who Fought the Great War and Invented America's Airpower* (New York: PublicAffairs, 2007).

government. Desperate to get planes and men into the air as quickly as possible, it ordered machine parts with a haphazard carelessness that would have shocked the men who flew the planes themselves if they had known. Manufacturers set to work building engines with the aid of faulty specifications, as in the case of the Le Rhone, which began to be produced guided by “very incomplete drawings and... inaccurate metal specifications.”¹¹⁴ The Clerget suffered the same fate, along with the perennial issue of almost immediate obsolescence: “When at last the Clerget blueprints and specifications were received here, they were so incomplete that satisfactory results could not be promised; by that time also the low-powered engine had become even more out of date...”¹¹⁵ When the wide range of manufacturers from Ford to Packard to Cadillac *did* receive correct specifications for the materials to be used in these engines, they bucked against what they felt were “unnecessarily rigid” guidelines for production.¹¹⁶ It is no wonder that engines failed on a regular and maddening basis on the flying fields.

The government’s lethal haste would also poison the body of the plane itself. Spruce, known for its strength, lightness, and resilience against impact, was the wood of choice for machines that would be battered about by the vagaries of training and combat. Unfortunately, the Pacific Northwest could only produce so much spruce so quickly. Substitutes like fir, “heavier and stronger than spruce but more subject to splintering,” began to find their way into planes made specifically for training purposes. Further concessions were made to keep up with demand, meaning a panoply of woods, from yellow poplar to Western hemlock to Eastern white pine, comprised the bodies of planes subjected to unimaginable stresses, including those induced by aerial acrobatics and unintentional tailspins. It is well to remember that if even one inch of wood

¹¹⁴ Sweetser, *American Air Service*, 171.

¹¹⁵ Sweetser, 173.

¹¹⁶ Sweetser, 182.

splintered or gave way at any place in an airborne machine, it could spell catastrophe for the pilot inside it. The government knew this, as did the men constructing the planes using specifications as incomplete and faulty as those building the engines.¹¹⁷

Thus it was that unsafe and unpredictable machines still found their way to the flying ranks with the bare minimum of safety apparatuses attached. The best and brightest of America's youth could be, and were, placed inside self-destructive matchboxes with total bureaucratic impunity. How could this be? "I guess the best way to look at it," wrote Hamilton Coolidge, summarizing the woes of every flying man who felt he was being treated like a chess piece, "is that we [aviators] are Uncle Sam's property."¹¹⁸

Schools of Military Aeronautics

Uncle Sam's property living on Uncle Sam's property: that sums up the condition of the average American aviator in training. Upon passing a rigorous physical examination—during which the famous Bárány chair was used, a device future Nobel Prize winner Cadet William Faulkner of the Royal Flying Corps would vividly describe in a letter to his parents¹¹⁹—cadets proceeded to the first stage of their training at one of the schools of military aeronautics hosted by universities across the country. From Princeton to the University of Texas to the Georgia School of Technology, these schools, colloquially known as "ground schools," served two purposes: to turn

¹¹⁷ Sweetser, 155-156.

¹¹⁸ Hamilton Coolidge, *Letters of an American Airman: Being the War Record of Capt. Hamilton Coolidge, U.S.A., 1917-1918* (Boston: Privately published, 1919), 86.

¹¹⁹ James Gray Watson, ed., *Thinking of Home: William Faulkner's Letters to His Mother and Father, 1918-1925* (New York: W. W. Norton & Company, 2000), 52. See also Cameron, *Training to Fly*, 115. The Bárány chair reproduced the disorienting effects of flight. Doctors sat candidates down on the chair and spun them around several times, usually blindfolded, and then asked them to perform certain tasks, such as walking a straight line.

civilians into soldiers, and to turn those soldiers into experts in aeronautics, all without ever leaving the ground.

For an average period of six to eight weeks (the number would vary over the course of time), cadets spent hours daily performing infantry drill, standing guard, and memorizing the various rules and regulations of the Army—much to the dismay of those with no prior experience in the military.¹²⁰ (Those who had enlisted in a hometown national guard unit and served on the Mexican border in 1916 may have fared better in this regard.) Aeronautical training exposed cadets to as many of the thousand aspects of flight, machine maintenance, and engineering as was possible in a period of only two months. The course at the University of Texas ground school, according to R.G. Walker, included classes in the following subjects:

Wireless, military law, gunnery (including the Lewis, Vickers, and Colt machine guns), engines (studying the Hall[-]Scott, Curtis[s] OX and VX, Gnome rotary, and Hispano Suez [sic] makes), aids to flight consisting of instruments, maps, meteorology, photography, miniature range, aerial observation consisting of artillery observation, reconnaissance and contact patrol. There were others but too minor to mention.¹²¹

Another cadet, Granville Guttersen, wrote home to his parents about an even longer curriculum, which included the following subjects: military law, military subjects, infantry drill, army regulations, hygiene, airplanes, rigging of airplanes, repair of airplanes, silhouettes of airplanes,

¹²⁰ Cameron, *Training to Fly*, 116.

¹²¹ “Letter from R.G. Walker,” *Hildreth Telescope* (Hildreth, NE), January 3, 1918.

nomenclature of airplanes, care of airplanes and engines, map drawing, map reading, meteorology, artillery observation, aerial observation, aids to flight, trap shooting, range shooting, bombing, automatic sight, machine guns, contact patrol, reconnaissance, instruments, miniature range, pin point location, wireless, radio outfits, and conventional signs.¹²²

Walker and Guttersen note that after finishing these lectures, cadets received a written examination. If a cadet did not pass the exam on his first try, he was either “washed out,” as the saying went, or held back a class. Failure could be an emotionally devastating experience. “When one sees men [...] sit down on their bunks and cry like babies,” Cadet Guy Warren wrote of those who had not made the cut, “it certainly makes one feel thankful that he was lucky.”¹²³

As is clear from the above lists, and from the short time frame in which the subjects were expected to be mastered, many men did not successfully progress to the flying stage of cadet training. It is a marvel that anyone did so, and speaks not only to the quick minds (or more likely, the memorization skills) of many men entering the flying service, but also to the frail foundation upon which the average American pilot’s education was based. Cadets spent little more than two months’ time learning an enormous array of subjects unfamiliar to the average 20-something of the time. Although each man brought a unique skillset to his education at ground school, no one but an already qualified pilot could hope to actually master, in any sense of the word, the variety of subjects tested on the final exam.

For instance, men who enjoyed tinkering with automobiles in civilian life may have excelled in the mechanical aspects of the curriculum, but what could their old Overland back

¹²² Granville Guttersen, *Granville: Tales and Tailspins from a Flyer’s Diary* (New York: Abingdon Press, 1919), 11.

¹²³ “Guy I. Warren,” *Sterling Kansas Bulletin*, September 26, 1918.

home teach them about firing machine guns, or the logistics of contact patrol? Former bookkeepers might have possessed skills in mathematics, but how could that help them to assemble an engine?¹²⁴ Cadets entering ground school encountered a world completely foreign to the one they had recently left as civilians. In a period of two months, they could only hope to absorb as much as possible and memorize the rest in order to progress to the next stage of training. Such a jam-packed curriculum was destined to create legions of young men who could parrot back military regulations but lacked anything resembling mastery over the subjects that would save their lives once aloft in a malfunctioning plane.

The cobbled-together curriculum also points to the multifarious nature of what was at that point a mostly untried approach to pedagogy. As the war progressed in Europe and the nature of aerial warfare continued to evolve, courses entered and left the curriculum of the average ground school at a startling pace.¹²⁵ (Note the five engine types Walker was expected to learn. This was not done in order to expose him to the various models in use, but because it was impossible to know what kind of engine would *still be in use* at the front, if and when he arrived there.) Classes graduating from the same school qualified in entirely different subjects, resulting in a pool of flying candidates with varying degrees of knowledge about salient (or no longer salient) aspects of the war in the air. Lack of standardization plagued the United States air service from its earliest days in which, as discussed in Chapter 1, pilots trained on either Curtiss or Wright machines, and could not access the skillset of the other group. This major flaw in the training program continued to rear its ugly head in the ground schools, and would persist as cadets progressed to primary flight training, where a panoply of plane types, instructors of varying

¹²⁴ “One of my classmates, who was [...] a successful lawyer, busted out because he could not get engines,” noted Cadet Guy Warren. See “Guy I. Warren,” *Sterling Kansas Bulletin*, September 26, 1918.

¹²⁵ Cameron, *Training to Fly*, 119.

levels of experience and talent, and a range of flying field environments nationwide in scope, awaited them.¹²⁶

If a cadet was smart, lucky, or resourceful enough to pass through ground school, he progressed to the first stage of flight training at one of several facilities constructed across the country. These flying fields began to crop up in late 1917, and would continue to be constructed until the end of the war in November 1918. They were miniature worlds unto themselves—the *Houston Post* would refer to Ellington Field as the “flying city”¹²⁷—and contained everything a young man might need in order to thrive physically, emotionally, and socially. At least, this was what was hoped. It would become quite clear in time, however, that no amount of magazines or Victrola records or movie nights in the YMCA hut, or lavish menus in the officer’s mess, could succor the young man faced with the grim realities of learning to fly.

Primary Flight Training

Flight training began with what was called “dual instruction.” The standard trainer, the Curtiss JN-4D (lovingly called the “Jenny”), was a dual-seat, dual-control plane that allowed two men to occupy, and take turns flying, the same machine. The instructor—usually a pilot who had just received his RMA, or reserve military aviator rating—sat in the front, while his student sat in the back. This was a necessary configuration, as the combined roar of wind and engine drowned out all attempts at verbal communication while aloft. Instead of speaking, the instructor would use predetermined hand gestures that the cadet, watching from behind, interpreted as different

¹²⁶ For just one example of poor training plane standardization, see “Letter From Henry.,” *New Oxford Item*, January 24, 1918; and “Ferris Pence Relates Some Experiences,” *Jewell County Republican*, March 8, 1918. Smith and Pence relate their experiences of having to relearn to fly when they were forced to switch over from a wheel control to a “joystick” control halfway through their training, as the controls were not standardized. As Pence writes, “I am now driving a stick control machine. I learned on a wheel control but changed when half through solo...”

¹²⁷ “Ellington Field to Increase Size,” *Houston Post*, January 10, 1918.

commands.¹²⁸ The two made all of their flights together this way. In time, the instructor would relinquish the controls entirely and allow the cadet to fly the plane himself.

This tandem approach to instruction was essentially a confidence-building exercise. As a cadet took his very first forays into the air, he could rest assured knowing that if he made a dangerous misstep (such as putting the plane into an unsafe configuration), or became lost or disoriented, his instructor could readily take over the controls. It was, in reality, a false sense of security. Due to a chronic lack of trained pilots, especially in the early days, and an ever-growing number of cadets pouring into primary flight training, men who had only just received their coveted wings found themselves in the instructor's seat with the life of another person in their hands. As a result, the skies over flying fields across the country steadily filled with just-qualified men and their novice students, ranging through the air like light-crazed moths. To make matters worse, instructors often paid the price for their own, or their students', lack of experience. A glance at the statistics shows an inordinate number of officers dying in accidents. Because of his vulnerable position in the front seat, if a plane went tail-spinning into the ground the instructor was invariably killed while his student in the back seat escaped with minor cuts and bruises.¹²⁹ Such accidents left even fewer trained men in the instructing pool, to say nothing of the number of men available to be sent overseas.

Instead of stemming the tide of incoming cadets, and thus building a smaller reserve of better-trained instructors, the air service continued to accept new men into the training program

¹²⁸ *Outline for Flying School Curriculum, U.S.A.*, Vol. 3, No. 130 (Washington, D.C.: Bulletin of the Information Section, Air Service, American Expeditionary Forces, 1918), 14.

¹²⁹ For just two examples, see the death of Lt. Kenneth Elliott, "Aviator Killed in Tailspin Accident," *Houston Post*, February 28, 1918; and the death of Lt. Marion Marmaduke Earle, "Town Pays Tribute to Her First Soldier Dead," *Lewisburg Journal*, March 22, 1918.

at a startling clip. The example of the University of Texas ground school demonstrates this well. The school opened on May 21, 1917 with a class of nine students. According to the original plan, only 200 students total would enter the school, with 25 students arriving in each class over the course of eight weeks. This was a manageable number of personnel, and would have seen an even smaller number of students pass onto primary flight training. However, owing apparently to the exigencies of war, the number of students ballooned rapidly from 500, to 1,200, to finally 6,000 in total over the course of its wartime operation.¹³⁰ It is well to remember that the ground school in Austin was only one of eight schools churning out equivalent numbers of hastily-trained cadets.

Such a decision to overwhelm the air service with men is bewildering, considering how very few pilots, relatively speaking, actually made the trip overseas to Europe. The statistics in this regard are bleak: only a little over one thousand men saw combat under the flag of the United States during the war, while a smattering of others offered their talents to the armed forces of Britain and France. Only one thousand men, flying 740 planes: this was the culmination of the education of tens of thousands of American cadets, the vast majority of whom never saw the Atlantic Ocean, let alone the battlefields of France.¹³¹ Considering how costly ground school and flight training were in terms of time, materiel, and lives—it was, after all, the “most expensive education in the world”—it is extraordinary that so many young men were put through the program in the first place.

¹³⁰ Kroll, *Kelly Field*, 165.

¹³¹ Maurer Maurer, ed., *The U.S. Air Service in World War I, Volume I: The Final Report and A Tactical History* (Washington, D.C.: Office of Air Force History, 1978), 17.

One could argue that ground school and primary flight training were, as one pilot would put it, “a process of elimination all along the way,” a slow culling of the not-quite-good-enough, and that such a process required excess numbers with which to begin.¹³² This is a sound argument, and perhaps a conquer-with-numbers strategy would have been viable were it implemented in a system where instructor and machine numbers matched those of the flood of incoming cadets. In reality, the air service struggled from day one to procure enough planes for its students, and enough instructors to teach them. By war’s end, American manufacturers had turned out a mere 7,000 planes—compare this number with the 2,000 combat aircraft per month the United States had hoped to produce¹³³—only half of which were available to students as training planes.¹³⁴ Bottlenecks, of course, ensued. A May 1918 film from Kelly Field shows two dozen students seated and lying on the ground, dressed top to bottom in flying gear, awaiting their turn with the single plane and single instructor already aloft. Their expressions of thinly-masked boredom say it all: this was a cadet training program ill-equipped to deal with the thousands of student fliers it had agreed to take on.¹³⁵

God Help the Boy in the Plane

Sitting around for hours at a time while waiting to go on a practice flight was, at best, a minor inconvenience, and at worst, an inordinate waste of time. Too few planes and instructors proved the incompetence of the air service, but its handling of flight training proved painfully, and oftentimes fatally, negligent.

¹³² “From Pence’s Letters,” *Our Booster* (Jewell, KS), March 1, 1918.

¹³³ Nalty, *Winged Shield*, 43.

¹³⁴ Nalty, 47.

¹³⁵ *Aviation Training in the United States, 1917-1918*, Motion Picture 111-H-1173 (Historical Film, No. 1173); Records of the Office of the Chief Signal Officer, Record Group 111; National Archives at College Park, College Park, MD.

As we have learned, dual instruction was a cadet's first step on his journey to becoming a proficient pilot. Unfortunately for him, it was also a short one. Lack of instructors, as well as the air service's punishing desire for immediate confidence in pilots, required cadets to move as quickly as possible through the dual instruction phase. On average, students received a mere four to six hours of dual instruction before progressing to solo flying (i.e. flying without an instructor.) Although cadets were officially allotted a total of nine hours in order to master the basics of flight with an instructor, it is clear from the available sources that the longer one spent in dual instruction, the worse his chances of proving a successful pilot in the eyes of the air service. Herbert Wade expected to fly alone after logging four hours with an instructor;¹³⁶ Ralph Jeremy, who would later die in a mid-air collision, spent five hours and twenty-two minutes in tandem training.¹³⁷ Ferris Pence noted that his fellow students at Ellington Field received only a maximum of *eight* hours dual instruction, and that those who did not master the basics in time were dismissed from the service.¹³⁸ A mere four to nine hours, it seems, thus separated a cadet from operating—and potentially destroying—a machine worth \$8,000¹³⁹ by himself, “vault[ing] the skies unhampered and alone, and work[ing] out a commission.”¹⁴⁰

The solo phase of flight training consisted of two stages, first solo and second solo, at the end of which a pilot took his RMA test and received his commission. It should be noted that solo flying did not always entail individual flying. In order to demonstrate a new skill, an instructor accompanied his cadet into the air to teach him how to perform it; however, once the lesson was

¹³⁶ “Herbert C. Wade Tells of the Requirements at the Aviation Schools of the U.S. Army,” *Ogden Standard*, January 19, 1918.

¹³⁷ “Ralph Jeremy Killed,” *Emporia Gazette*, May 9, 1918.

¹³⁸ “From Pence’s Letters,” *Our Booster* (Jewell, KS), March 1, 1918.

¹³⁹ “Patriotic New Yorkers, stirred by the increasing number of fatalities...”, *Burlington Weekly Free Press*, February 28, 1918.

¹⁴⁰ “From Pence’s Letters,” *Our Booster* (Jewell, KS), March 1, 1918.

over, it was the cadet and his plane against the world—or, as we will see later, the cadet against his plane against the world.¹⁴¹ Students roamed freely through the air above and around the flying field, following (or forgetting) a set of primitive air traffic rules that asked flyers to assume that “the pilot of the other machine will always do the wrong thing” and that “there is no right of way” so pilots “must be wide awake at all times, and prevent his machine from getting dangerously near another.”¹⁴² Naturally, students with only four to nine hours of flying time easily became lost, distracted, and disoriented by the whirl of dozens of planes passing above, below, and on every side. Just like in an automobile, an airplane came with its own fair share of physical blindspots, in addition to those caused by lack of experience. Planes piloted by barely-trained cadets passed within inches of one another, or nearly landed on top of each other. In an era when airplanes were only just beginning to be fitted with basic wireless technology, pilots flew in total isolation, unable to communicate with those around them or those in the rare observation tower constructed on the flying field.

As one could readily imagine, accidents ensued: daily accidents, hundreds over the course of a month, and in every conceivable fashion. “So many do get killed down here that one who gets through alright can almost be called a survivor,” the doomed pilot Robert Garwood would write.¹⁴³ Inexperience accounted for some accidents, but a great many would result from malfunctioning and poorly-constructed planes, as we will see in the next chapter. Nevertheless, air service officials appear to have been bewilderingly unconcerned by these losses. It was prudent for them to staunch the loss of planes and pilots, and fast: according to the Aero Club of

¹⁴¹ “Taking Lessons Up in the Air,” *Anaconda Standard*, June 7, 1918.

¹⁴² Outline for Flying School Curriculum, 9.

¹⁴³ Robert D. Garwood, “‘Up There’: Letters of a Flying Cadet Killed at Camp Benbrook,” *Scribner’s Magazine*, Vol. 64, July-December 1918, 603.

America, the death of a student aviator meant 23,000 dollars of government money down the drain, between a cadet's insurance (usually \$10,000), the cost of training, and the cost of replacing his wrecked plane.¹⁴⁴ Fatalities and their attendant costs continued to mount, and yet the air service remained wholly uncommitted to locating and addressing their underlying causes. Quick and easy fixes, it seems, replaced what should have been thorough investigation into the training and manufacturing processes. For example, rather than slowing down the training process and giving cadets ample time to gain their confidence in the air, the air service instead concocted a plan whereby it would employ athletic coaches (who would train cadets as if they were football team hopefuls), as the prevailing opinion was that a honed mind and body resulted in a successful pilot. Instead of investigating the faulty plane parts coming out of factories, or the lack of regulation surrounding aircraft repair on the flying fields, the air service instead wasted precious time pursuing flimsy claims of German espionage.¹⁴⁵ The United States air service was willing to do anything, it seems, except to secure a solid education and safe machines for the men under its care.

Conclusion

As we have seen, little changed in the years between the Mortality Memorandum of 1914 and America's entry into the First World War. The air service was, in some ways, intent upon preserving its original tradition of sending barely-trained men to their deaths in flawed machines. American pilots were doomed from the very start. While their brothers in the infantry received

¹⁴⁴ "Patriotic New Yorkers, stirred by the increasing number of fatalities...", *Burlington Weekly Free Press*, February 28, 1918.

¹⁴⁵ For athletic trainers see "Patriotic New Yorkers, stirred by the increasing number of fatalities...", *Burlington Weekly Free Press*, February 28, 1918. For German espionage investigations see "Autoists' Story Results in Probe," *Buffalo Times*, June 13, 1918, and "Vernon Castle is Killed This Morning," *Bucyrus Evening Telegraph*, February 15, 1918.

months of training to prepare them for a squalid and often sedentary existence in France, pilots received a mere six weeks of ground school and less than ten hours of dual instruction to prepare them to operate the most technologically advanced weapons in the world. If only those weapons had been built to the correct specifications and with materials that could withstand the pressures of flight.

Haphazardly chasing its dreams of a world-class cadre of pilots, the air service ensured that it was the only branch of the United States military in which more men would die in training than in combat, and which accounted for the vast majority of American accident-related deaths during the war. The next chapter explores the violent world of the non-combatant aviator, looking particularly at the brutal sight- and soundscapes of the American training fields. In its course, we will see the apathy of the air service harden into a fatal negligence, one that would readily sacrifice the minds and bodies of thousands of young men desperate to serve their country in the skies.

Chapter III: A World of Violence

Down and down it spun, falling clear of the clouds. Then it crumpled with a sudden flop, its wings tearing away and fluttering in the air while the body of it fell sheer. There would be no need to bury that young man; he would dig his own grave.¹⁴⁶

Winged Victory, V.M. Yeates

By way of the previous two chapters, I have sought to paint a picture of the negligence of the American air service in handling its flying men, beginning with the inception of military aviation in the United States, and ending with the country's entry into the First World War. The first two decades of American military aviation were clearly a fraught time, and an unfortunate one in which to be pilot. Lack of preparedness, a dearth of resources, flimsy ground and flight education, and an apathy toward the safety of its pilots characterized an endeavor which, from its very beginning, was destined to fail those young men taking to the skies on behalf of Uncle Sam. The United States Army proved time and time again that it would prioritize the creation of a world-class air service above all things, to the detriment of every man who still, by the end of it all, had the courage to haul himself into his machine and take off in flight. In this chapter I will explore the unique violences these men endured as pilots living and working outside of the combat setting. Particularly in training, exposure to a range of bodily, visual, and auditory stresses created a taxing environment in which to live and learn. The emotional and psychological effects of these stresses will be the subject of Chapter 4.

¹⁴⁶ Victor Maslin Yeates, *Winged Victory* (1934; reis., London: Grub Street Publishing, 2004), 219.

Death in Early 20th Century America

Because this chapter argues for the exceptionality of the deaths of these young pilots, it is important first to provide context regarding mortality in early 20th century America. At the turn of the century, death was no stranger to the average American household. It could strike in seemingly any form imaginable, though it most often manifested in the form of infectious disease. The turn of the century was a particularly interesting time for advances in medicine, as evidenced by the work of Lister, Pasteur, and especially Robert Koch, whose promotion of germ theory was “the vehicle by which science was introduced into medicine.”¹⁴⁷ Although mortality rates saw a significant decrease in the decades following the Civil War, Americans still frequently succumbed to diseases like tuberculosis, influenza, and (especially in the case of infants and young children) what Stephan Kunitz refers to as the pneumonia-diarrhea complex, caused by an amalgamation of bacteria and viruses.¹⁴⁸ Perhaps most relevant to the subject at hand, the increase in automobile travel, as well as the continuously growing railroad system, also contributed to a small but significant number of accidental fatalities among Americans. Arwen Mohun notes that by the year 1912, train-related accidents accounted for the highest number of accidental fatalities in America.¹⁴⁹ Two decades later, automobile accidents would take their place as the most common form of accidental death.¹⁵⁰

The average American’s understanding of death was also changing at this time. In *This Republic of Suffering: Death and the American Civil War*, Drew Gilpin Faust argues that in the

¹⁴⁷ Stephan J. Kunitz, “Mortality Change in America, 1620-1920,” *Human Biology* 56, no. 3 (September 1984): 579.

¹⁴⁸ Kunitz, “Mortality Change in America,” 561.

¹⁴⁹ Arwen Mohun, *Risk: Negotiating Safety in American Society* (Baltimore: Johns Hopkins University Press, 2013), 93.

¹⁵⁰ Mohun, 163.

mid-19th century, the American nation still held firmly to the ideal of the Good Death, wherein death occurred in the peaceful environ of the home, surrounded by loved ones. This ideal broke down with the outbreak of war in 1861, and continued to wither as the war progressed. All very suddenly, brothers and husbands were dying far from the home and its occupants, and they were dying in increasingly violent ways.¹⁵¹ Half a century later, it happened again. 1917-18 saw young men dying on battlefields across the ocean, and succumbing to influenza in crowded hospital wards thousands of miles from home. In the grand scheme of this mass profusion of death, aviators dying in accidents constituted just a small blip. And yet they were unique among the dying.

Unlike the influenza patients, the pilots died violently. Unlike those killed on the field of battle, they died by accident. Unlike those who died accidentally in the armed forces (by drowning, misfired rifles, or other incidents), their deaths were not unavoidable acts of God; rather, they happened as a result of organizational negligence, and they occurred in massive numbers. Dying, it is clear, was all too common in the second decade of the 20th century, especially for young men in the prime of life. But the young men dying, unprepared, in faulty airplanes, occupied a unique place among the dead, military or civilian. They died at the hand of another, but it was not considered murder. They died for the sake of their country, but they never saw the field of battle. They died on American soil—sometimes, like in the case of Lt. Louis Davis, before the eyes of family and loved ones—but it was not considered a Good Death.¹⁵²

¹⁵¹ Drew Gilpin Faust, *This Republic of Suffering: Death and the American Civil War* (New York: Alfred A. Knopf, 2008), 15.

¹⁵² “His Parents See Hero in Flight Fall to Death,” *Chicago Tribune*, May 13, 1918.

American pilots killed in accidents have, it would seem, the dubious distinction of being the largest population of soldiers to be destroyed by the United States military itself.¹⁵³

Accidents: A Brief Taxonomy

Thus far I have touched only lightly upon the frightening realities of the pilot in training. Chapter 2 ends with the assertion that daily accidents claimed the bodies, minds, and lives of cadets on the American training fields. The next section details the various kinds of accidents that occurred regularly among pilots of the United States air service. It is important to remember that these accidents did not only plague those in training, but every non-combatant pilot, such as those instructing, testing, and ferrying planes in England and France, among others. A pilot did not gain immunity from danger when he earned his commission and sewed the coveted wings onto the breast of his uniform. Although graduation from flight training might imply more hours in the air, and thus more experience, nothing could protect a pilot—as the mantra of this thesis goes—from the dangers of a failing plane. Because so many accidents occurred in training, however, this particular context will be the focus of this chapter.

Accidents occurred on a daily, even hourly, basis at the training fields. Every time a pilot took off—or attempted to do so—a swarm of risks descended upon him, usually in the form of incompetence, lack of confidence, poor or unpredictable weather, a malfunctioning machine, or all of the above. This may sound excessive, perhaps even like the premise for a Keaton bit, but it was not uncommon for a cadet with precious few hours of flying time to climb into a plane with a defective engine and take off into blustery, foggy, or soon-to-be stormy weather, and come hurtling out of the skies as a result of any of the above reasons. (Of this startling tendency for

¹⁵³ During the First World War. Other scholars will investigate parallel cases in the later wars of the 20th century.

pilots to fly in inclement weather, former airmail employee Charles Lindbergh would point out that “the Army spirit is to push on in spite of everything, and that is just what kills pilots in bad weather.”¹⁵⁴) Every one of the odds imaginable was stacked against the pilot in training: his environment, his machine, his own abilities, and even the organization to which he belonged.

It is important at this point to briefly describe the accidents to which these young bodies were subject. The intention is not to shock, but to provide insight into the violence of the world in which pilots in training lived and died.

Accidents could happen in any number of ways, both in-flight and on the ground. Wherever and whenever planes came into contact with human beings, risk increased exponentially. Among the most common causes of accidents was the tailspin, referred to by one cadet as “the old boy that takes most of the boys ‘west.’”¹⁵⁵ A tailspin occurred when a plane lost critical airspeed, turned nose down toward the earth, and began to spin around its center axis.¹⁵⁶ Any number of things could cause a tailspin—a dead engine, an unbalanced plane, an accidental touch of the controls, a particularly rough shove from the wind—making it one of the most feared configurations into which a plane might be put. When it occurred several thousand feet above the ground, with enough room in which to extricate oneself, a tailspin could prove harmless. However, many pilots purposefully flew close to earth. Whether a low cloud ceiling prevented high flying, or working with a bombardier required keeping the ground in sight, pilots

¹⁵⁴ A. Scott Berg, *Lindbergh* (New York: Putnam, 1998), 293.

¹⁵⁵ “Frank Fink Goes in the Clouds,” *Anaconda Standard*, December 8, 1918.

¹⁵⁶ John Lancaster, *The Great Air Race: Glory, Tragedy, and the Dawn of American Aviation* (New York: Liveright, 2022), 107-108.

sometimes found themselves falling in tailspins from an altitude of a mere two or three hundred feet.

Spinning into the ground claimed an enormous number of lives, often causing fatal injuries to the man sitting in the front cockpit. When the nose of the plane struck the ground, the engine went careening backward, crushing the person sitting directly behind it.¹⁵⁷ If for some reason the engine did not dislodge, the force of impact, like in a car accident, would send that person's body hurtling forward. Although pilots wore safety belts, they did not have the benefit of airbags or protective helmets. Fractured skulls feature prominently in the death certificates of these pilots, a result of the head striking against a hard surface, like the dashboard or the windshield.¹⁵⁸ As discussed in Chapter 2, this person was oftentimes an instructor, occupying the front seat for the benefit of his pupil.

Collision with the ground in one form or another resulted in the lion's share of accidental injury and death. Fire, although a slightly less common phenomenon, played an outsized role in the imaginations of pilots who feared the long fall to earth encased in flames. Billy Mitchell, Chief of Air Service during the war and often considered the father of the modern Air Force, put it thusly: "Horatius at the bridge and Leonidas at Thermopylae had no greater odds against them than these aviators in their flimsy airplanes loaded with the most explosive and flammable of liquids, gasoline, and unequipped with parachutes."¹⁵⁹ That gasoline readily caught fire when engines malfunctioned mid-flight, and quickly engulfed planes built of flimsy wood and linen.

¹⁵⁷ "Call Field Pilot Killed [in] Fall East of the Post Field," *Lawton News*, August 3, 1918.

¹⁵⁸ Texas Department of State Health Services, "Texas Death Certificates, 1903–1982," digital images, record for Peyton Conway March, Jr., 13 February 1918. See also records for Lt. Vernon W.B. Castle, Lt. Byron Jackson, Lt. Louis Davis.

¹⁵⁹ William Mitchell, introduction to "No Parachutes" by Alan Francis Winslow, *Liberty* 10, no. 8 (February 1935): 6.

The prospect terrified pilots, young and old. Even the seasoned veteran Eddie Rickenbacker, America's famous ace, dreaded "the slow torture of burning to a crisp," as he described it.¹⁶⁰ Fire would figure in the deaths of dozens of young pilots, some of whom chose to fall with their burning planes. Others, like Robin Bidwell, jumped. His "spectacular leap" from an altitude of one thousand feet was witnessed by hundreds of people, according to a local newspaper. Death upon impact with the ground was instantaneous.¹⁶¹

Flawed By Design

Although poor weather and inexperience caused their fair share of trouble, a large number of accidents shared an undeniable trait in common: a malfunctioning plane. Poorly constructed planes acted as the great equalizer, ensuring that all pilots, from the lowliest cadet to the expert ace, stood an excellent chance of dying in an exploding, wingless, or tailspinning machine. "They were terrible gimcrack planes we flew in then," recalls Somerset Maugham's traumatized pilot Larry Darrell in *The Razor's Edge*, "and you practically took your life in your hands each time you went up."¹⁶² No practically about it. Pilots made a very real gamble with their lives any time they came even remotely near a plane.¹⁶³

Even the smallest mechanical issue could spell death for an unknowing pilot, as planes like the Curtiss Jenny were "built so light and frail," and their parts tuned so precisely, that a slight imbalance anywhere in the machine could result in unforeseen difficulties.¹⁶⁴ The most

¹⁶⁰ Hynes, *Unsubstantial Air*, 84.

¹⁶¹ "Aviator Leaped to Death Near Rylie," *Texas Mesquiter*, August 9, 1918.

¹⁶² W. Somerset Maugham, *The Razor's Edge* (1944; reis., New York: Penguin, 1992), 251.

¹⁶³ In addition to those killed in flying accidents, many died as a result of being struck on the head by still-turning propellers, being hit by landing planes, and other seemingly unimaginable incidents. Mere proximity to an airplane could greatly increase one's likelihood of being hurt or killed.

¹⁶⁴ "'Cork' Myerly at Camp Dick," *Western Advocate* (Mankato, KS), February 22, 1918.

common failures usually happened in the powerplant. Engines routinely failed, either missing mid-flight, giving out entirely, or catching fire—or all three, in rapid succession. This occurred so frequently that negotiating engine failure was a critical part of a cadet's education during primary flight training.¹⁶⁵ “Bum” or “dead” engines, as they were called, often required pilots to make forced landings, regardless of whether the terrain appeared suitable to do so. Such landings invariably resulted in accidents. As one mechanic put it, “A pilot is pretty lucky to get down without a smash if his motor goes dead.”¹⁶⁶ A forced landing, however, was the best case scenario. Dead engines could result in loss of airspeed, causing the plane to stall and, in some cases, to go into a tailspin. Missing engines could readily catch fire, as could brand-new engines yet to be broken in, according to Lt. Ernest Love. “Quite a few have been burned up on that account [cutting out certain cylinders in order to slow one's landing]... it makes it very hard to work in a new motor properly,” he wrote from France, “and unless everything goes all right they will get too hot and burn up.”¹⁶⁷

The airframe and wings were just as susceptible to failure. Their critical structural supports often amounted to a few lengths of wire, and wings built of wood and linen crumpled under the kinds of stresses required by advancing flying techniques. “It really lends considerable excitement to your first acrobatic attempts,” Hamilton Coolidge wrote in his ever-cheerful way, “to be told beforehand that if you forgot and did the wrong thing at the wrong time the strain would probably be too great for the wings, which would promptly collapse.”¹⁶⁸ Such catastrophic failures baffled civilians unaware of the flimsiness of these machines. Rumors of

¹⁶⁵ Lawrence Smart, *The Hawks that Guided the Guns* (Privately published, 1968), 8.

¹⁶⁶ “‘Cork’ Myerly at Camp Dick,” *Western Advocate* (Mankato, KS), February 22, 1918.

¹⁶⁷ “Thrilling Tale of First Time Under Fire,” *Weekly Journal-Miner* (Prescott, AZ), September 25, 1918.

¹⁶⁸ Coolidge, *Letters of an American Airman*, 60.

German sabotage made consistent rounds during the war as fatalities mounted and the invisible specter of failing machines robbed grieving families of the catharsis that blame could provide. For instance, Lt. Walter Buck and his mechanic fell 4,000 feet to their deaths when the wings of their plane unexpectedly collapsed on September 7, 1918.¹⁶⁹ Air service officials attributed the accident to wire breakage, but years after his death Buck's mother would insist that his plane had been tampered with by German agents.¹⁷⁰ Although there is little evidence to suggest that tampering of this kind occurred, the idea ironically provided a salve for those experiencing anger and grief over the seemingly pointless deaths of their sons, husbands, and brothers. An unshakable belief in the infallibility of machines characterized not only civilians, but some pilots, too, as will be discussed in Chapter 4.

Compounding the misfortune of pilots saddled with faulty planes was the lack of safety gear available to them, specifically helmets and parachutes. Pilots typically wore soft leather helmets. While they provided much needed warmth in frigid high altitudes, they did not protect the head. Beginning with Thomas Selfridge in 1908, the use of hard, crash-resistant helmets might have saved the lives of hundreds of pilots who suffered head injuries in accidents. The parachute, that savior of bailing pilots, did not see service among American pilots, either, nor was it deployed in the British or French flying forces. It was, however, used extensively by balloonists, and late in the war, was used to drop British agents behind enemy lines. As James Hamilton-Paterson writes of this latter use, strangely high in the order of priorities, "Dropping spies was a properly warlike activity; preventing deaths was not."¹⁷¹

¹⁶⁹ "Another Aviator Killed with Buck," *Boston Globe*, September 9, 1918.

¹⁷⁰ Frances Buck to Connecticut Department of Historical Records, January 3, 1921, Connecticut WWI Military Questionnaires, 1919–1920. Connecticut State Library, Hartford, Connecticut.

¹⁷¹ Hamilton-Paterson, *Marked For Death*, 237.

Arthur Gould Lee, who flew for the Royal Air Force, wrote bitterly of this negligence on the part of the military organization ostensibly tasked with keeping him and his comrades alive:

I can't believe it. Little Ferrie, with his cheerful grin, one of the finest chaps in the squadron. God, imagine his last moments, seeing the ground rushing up to him, knowing he was a dead man, unable to move, unable to do anything but wait for it. A parachute could have saved him, there's no doubt about that. What the hell is wrong with those callous dolts at home that they won't give them to us?¹⁷²

The outlook was bleak for a pilot trapped in a failing machine. If his plane caught fire, lost power, or otherwise fell out of the skies, he had no choice but to pray and, literally speaking, to brace for impact. "Leon was flying last Saturday afternoon... in a very thick fog... [when] his motor went bad and his ship got into a tailspin," wrote Foster Strong of his bunkmate in May 1918, "Just before he crashed he covered his eyes and face with his arms, which probably saved his life."¹⁷³ The air service provided so little safety equipment to protect a pilot that his only shield against injury or death was his own body.

The problem of faulty planes ultimately came down to two things: a haste to push out planes unsuited for the rigors of advancing flying, and a lack of repair regulation once those planes were in active use. The latter proved especially dangerous for pilots, as regular usage caused planes to fall constantly into disrepair. While many mechanics came to aviation with backgrounds in the automotive industry, the delicate and specialized work of aircraft repair

¹⁷² Hamilton-Paterson, 233.

¹⁷³ "How Our Aviator was Hurt," *Paxton Record*, May 9, 1918.

required skills honed by years of experience, not mere months. This meeting of highly technical, high-stakes work with relative inexperience on the part of workers may have proven less disastrous had there been strong regulation in place. Unfortunately, mechanics did their work with precious little oversight. “I have charge of one plane, and three men under me,” wrote mechanic Alex Unruh, who worked as a farmer prior to enlisting. “I keep time on all flights made with that machine, the oil and gas used, and must also keep on the watch for any defects or repairs that are needed.”¹⁷⁴ Had Unruh (who was only a private) been the most accomplished mechanic in the air service, he still had three men working under him whose levels of experience would have varied wildly. Unruh did not possess panoptic vision with which to monitor each man, nor could he catch every one of those “defects,” especially those that may have appeared to have been fixed on the superficial level but would rear their ugly heads under the stresses of flight.

The dangers of unregulated plane repair are vividly described by Hamilton Coolidge, who spent several months in France testing machines destined for the front. In one frightening incident, Coolidge had just executed a landing when a vital part of his plane fell off:

As the ship rested on the ground [after landing] a puff of wind hit the rudder and it came unstuck! The hinge was carelessly welded on. Heaven only knows why it waited till I came down before coming off. That’s only one of the six cases like it, but it illustrates the kind of incident that develop[s] a fatalistic point of view and strangely enough it has just the opposite effect of

¹⁷⁴ “Fliers Are in Training,” *Hutchinson News*, February 14, 1918; U.S., World War I Draft Registration Cards, 1917-1918 for Alex J. Unruh.

making one worry. It merely inspires a calm feeling of dependence on one's Maker!¹⁷⁵

Coolidge, an optimist by nature, had an extreme perspective on the matter. For other men, the feeling of being unable to trust one's own machine or mechanics festered into stress, anxiety, and ultimately the fatalism to which Coolidge alludes, and which will be discussed in Chapter 4.

The Violence of Sight and Sound

Until now, this chapter has focused exclusively on the real and potential harms inflicted upon the bodies of pilots, particularly those in training. While bodily harm was a distressing reality of learning to fly, it was not the only aspect of training detrimental to a pilot's physical, mental, and emotional wellbeing. One did not have to be inside of a crashing plane to vividly experience the distress of an accident. Seeing and hearing it on a daily basis was enough.

While some scholars have written on the visual and auditory violences of the First World War, little attention has been given to those same violences in the non-combat realm of training. Yaron Jean's "The Sonic Mindedness of the Great War: Viewing History through Auditory Lenses" explores the novel soundscapes of the first truly modern war, in which soldiers learned by necessity to distinguish between "sounds of safety" and "sounds of danger," in the process acquiring critical self-preservation skills.¹⁷⁶ Dorothee Brantz explores the visual violences of the trenches in her "Environments of Death: Trench Warfare on the Western Front, 1914-18," in which she argues that the blasted environments of trench warfare significantly altered the way

¹⁷⁵ Coolidge, *Letters of an American Airman*, 113-114.

¹⁷⁶ Yaron Jean, "The Sonic Mindedness of the Great War: Viewing History through Auditory Lenses," in *Germany in the Loud Twentieth Century: An Introduction*, ed. Florence Feiereisen and Alexandra Merley Hill (Oxford: Oxford University Press, 2011), 53.

soldiers viewed their relationships to space and to one another.¹⁷⁷ These writings focus exclusively on the world of combat, where sensory perception was often a matter of life or death. Learning visual and auditory cues could increase a soldier's chance of survival, and thus seeing and hearing—normally passive activities—became active, accompanying one's efforts to survive.

The sight- and soundscapes of the training environment, by contrast, have received scant attention. Perhaps this lacuna reflects the common sense notion that training is meant to be a time for learning, one that takes place in a safe environment far removed from the actual dangers of combat. As this chapter has shown, this was overwhelmingly not the case. Death, injury, and their attendant sights and sounds manifested daily on the training fields, subjecting all within seeing and hearing distance to their potentially damaging effects.

Sightsapes

Disturbing visual encounters occurred on a regular basis on the training fields, where one was apt to witness accidents unfolding at any hour of the day. The sight of a plane plummeting toward earth, or two machines colliding, could be a stark reminder of the ubiquity of danger in a pilot's work, as witnesses tried and failed to imagine the experience of those inside the plane. Even time itself seemed a new and strangely malleable thing during these accidents. Earthbound witnesses experienced a new regime of death-time, wherein violent death unfolded at an excruciatingly slow pace. The long freefall to earth could take up to thirty seconds, an agonizing interval that

¹⁷⁷ Dorothee Brantz, "Environments of Death: Trench Warfare on the Western Front, 1914-18," in *War and the Environment: Military Destruction in the Modern Age*, ed. Charles E. Closmann (College Station: Texas A&M University Press, 2009), 69.

would have felt eternal to those watching from the ground. Time seemed to melt and become slippery; it was the inversion of the instantaneous death of the bullet or anti-aircraft shell.

John Grider described in his diary the horror of watching the planes of two comrades collide, burst into flames, and fall to earth:

God it was a horrible sight... [t]hey came down in a slow spin with their wings locked together and both of them in flames... As I sat there watching I kept trying to imagine what those poor devils were thinking about as they went spinning down into hell. It made me right sick at my stomach to watch.¹⁷⁸

The horror here is not in the mere witnessing of the event—it is anchored in the extension of Grider’s empathy toward his fellow pilots: how frightened would *he* be if it were *him* in the plane? The terror of such an idea is wrapped up in fact that it could, indeed, be him in the plane. It could be anyone in the burning, falling plane. No one was safe in the air service—not the lowliest cadet or the most senior ace—and the sight of machines hurtling out of the skies was a sobering reminder of this fact.

The most visually arresting element in the dangerous world of training was the plane wrecks. From flattened, “pancaked” planes to machines reduced to unintelligible rubble, wrecks were both momentary tombs and markers of past—and always potentially future—death. Wrecks signified the destruction that had caused them, as well as the physical, emotional, or psychological harm to which their former occupants had come. They were monuments to the

¹⁷⁸ John MacGavock Grider, *War Birds: Diary of an Unknown Aviator* (New York: Grosset & Dunlap, 1926), 75-76.

ever-lurking possibility of death. Anne Boyer says of monuments that they are “interesting mostly in how they diminish all other aspects of the landscape. Each highly perceptible thing makes something else almost imperceptible.”¹⁷⁹ Especially on the flat, empty plains of Texas, when a plane wreck sat on the horizon it reduced everything around it to backdrop. Wrecks captured the eye and the imagination; like those of trains and cars, they were impossible to ignore. This is most plainly observed in the impulse that aviators felt to photograph them.

Due to censorship rules regulating the flow of information between training fields and the home front, pilots were forbidden to carry cameras.¹⁸⁰ While some men respected this rule, others cheerily flouted it, eager to document the novel experience of being an aviator and to preserve the memory of their time in training. Recent innovations in camera portability only aided these men in their surreptitious documentation. Some filled entire scrapbooks with illicit photographs. Unlike individual pictures, which are likely to be lost or destroyed, several of these scrapbooks have survived until the present day, opening a rare, visual door into the world of aviation training during the First World War.

As John Berger notes in his seminal *Ways of Seeing*, “Every time we look at a photograph, we are aware, however slightly, of the photographer selecting that sight from an infinity of other possible sights.”¹⁸¹ So it is when one pages through the war scrapbook of Anas Tommy Economy, who was stationed at Love Field in 1918.¹⁸² The scrapbook is filled with over one hundred photographs from his time there, featuring scenes of work, play, and flight. Men in

¹⁷⁹ Anne Boyer, *Garments Against Women* (Boise: Ahsahta Press, 2015), 4.

¹⁸⁰ “Letter From Aviation School,” *Vermont Union-Journal*, June 5, 1918.

¹⁸¹ John Berger, *Ways of Seeing* (London: Penguin UK, 1972), 10.

¹⁸² Aviation Section, U.S. Army Signal Corps Love Field Scrapbook [Economy], NASM.2015.0003, National Air and Space Museum, Smithsonian Institution.

uniform pose for the camera, self-conscious; aerial shots show great swaths of chiaroscuro skies. Most strikingly, the book is frontloaded with images of wrecks. Some are truly gruesome-looking—in a few cases it is impossible to tell what the original plane looked like. Airframes are crushed, some with broken spines; engines lie exposed to the sun. Thick, thorny piles of wood assault the eye. Nowhere in the book is the density of wreckage so high as in the first few pages. Interestingly, pages filled with these violent images are intercut with pages depicting prosaic scenes—in many cases landscapes—as if to relieve the viewer of the tragedy of the shattered planes.

To use Berger's phrase, Economy not only "selected these sights" from the infinitude of others and decided to photograph them, he chose to give them a place of prominence in the memory book of his time in Texas. Before the photographs of his friends, before the lovely aerial views of downtown Dallas, before everything, are the wrecks. It is as if Economy wanted to get right to the point, without any preliminaries or beating around the bush: this was a time in his life when death happened often, and violently, and all around him—and nothing else could rise to that level of meaning or significance. After all, looking at these wrecks, it is only a short mental leap to imagining the men trapped inside of them. They are images infused with horror. We, as viewers, are lucky that the former occupants of these wrecks have been removed from sight. We do not have to bear witness to the original violence of these accidents. Fellow pilots, arriving on the scene to help extricate their comrades, were not so fortunate.

A particularly graphic depiction of the violence before the photograph is found in a letter from Lt. Manford Arnold, who was stationed at Call Field in 1918.¹⁸³ "Two machines collided

¹⁸³ "An Interesting Letter From Manford Arnold," *Turon Weekly Press*, March 14, 1918.

here yesterday,” the account quietly begins. “It was the worst thing I’ve ever had the misfortune to witness.” Upon seeing the planes come down, Arnold rushed to the scene by motorcycle with a hatchet in hand. He dove into the wreck and found one of the pilots hanging upside down from his cockpit, the lower half of his body trapped in the ruins. “He was the bloodiest sight I ever saw,” Arnold remembered. As his comrade cut away the broken wood and wire, Arnold held the wounded pilot on his shoulder. Blood quickly began to saturate his uniform. “When we got him out, Dr. McKnight said, ‘Lieutenant, I don’t know from the looks of you, which one is hurt.’ I might have also helped matters in that respect,” Arnold admitted, “as great big tears were rolling down my cheeks.”

By the time the first pilot had been sent away by ambulance, the man in the other plane had also been extricated. “He was the worst mashed up of the two,” Arnold writes. “He had one leg broken in two places, a deep cut on the abdomen, three broken ribs, a fractured shoulder, no teeth, and the end of his tongue gone...” The pilot, Arnold notes, was later reported dead. These graphic details recall the laundry list of injuries recited by the *Fort Worth Record-Telegram* when Lt. Loren Call, who gave Call Field his name, died in an accident only five years earlier: “The impact crushed both ankles, which turned aside, and the tibia bones pierced through the sole of his feet and into the ground. His right thigh was torn open... His chest was also crushed and skull fractured, and many minor bones were splintered.”¹⁸⁴ So little had changed since men died flying the lethal Wright Model C.

Dudley Steele, stationed at Ellington Field, also bore witness to the violence that even a seemingly minor fall could cause: “[His best friend Wayles Bradley] only fell about 100 feet, but

¹⁸⁴ “Military Birdman Drops To His Death In Practice Flight,” *Fort Worth Record-Telegram*, July 9, 1913.

forgot to cut his motor and his machine caught fire and burned him to a crisp,” Steele wrote in a letter home. “We all saw him climb out of his machine after it had hit the ground and was burning, and of course thought he was safe, when to our horror he staggered around for a second or two and then fell back into the flames, and before we could reach him he was literally cooked.”¹⁸⁵ The impact had caused the gasoline tank to explode, covering Bradley in blazing fluids.

Although it is rare for graphic accounts like Arnold’s or Steele’s to be found in letters published by hometown newspapers, it is likely that crashes often ended in violences to the body like those described above. Family and friends, already devastated by the loss of their loved one, were often denied the final farewell of an open casket, as in the case of Cadet Orrin Franks, another casualty of Call Field: “[Franks] was about to ascend for a higher flight when something went wrong with the motor, the gasoline ignited and exploded, undoubtedly burning him fatally before he reached the ground. He was catapulted fifteen feet from the machine when it dropped,” the hometown newspaper solemnly reported. “The body was badly burned by the flaming gasoline and the casket was not opened at the house nor at the funeral.”¹⁸⁶

Given the gruesome nature of accidents suffered by men like Franks, Bradley, and Arnold’s unnamed pilots, it may be well to ask: why did men stationed on the flying fields take photographs of wrecked planes? Perhaps, in some ways, it was an inversion of the classic memento mori. “Ever since cameras were invented in 1839, photography has kept company with death,” Sontag notes in *Regarding the Pain of Others*.¹⁸⁷ To photograph, to document—to keep

¹⁸⁵ “‘Skidding’ In The Air,” *St. Joseph News-Press*, February 14, 1918.

¹⁸⁶ “An Impressive Funeral,” *Clyde Enterprise*, April 4, 1918.

¹⁸⁷ Susan Sontag, *Regarding the Pain of Others* (New York: Farrar, Straus, and Giroux, 2003), 24.

death company—requires a living person wielding the camera. To witness death, then, is to evade it. The photographs that a pilot produced were a testament to his own survival. If he could take a picture of a wrecked plane, it meant that he had survived long enough to do so. Rather than reminding him (or the viewer) that he, too, would die, instead it was a reminder that he, perhaps miraculously, had lived.

Soundscapes

Like the many other industrial weapons of the First World War, aviation was an extremely noisy affair. Airplanes flying at every hour of the day and night turned the formerly quiet rural lands where training fields were constructed into hives of clamorous activity. Men shouted, propellers whirled, and engines roared. “The aeroplanes make so much noise you can’t hear yourself think half the time,” complained one enlisted man stationed at Kelly Field.¹⁸⁸

The soundscapes of the training fields were dense with noise, with pilots suffering the worst of the exposure. In her essay “Perspectives on the Acoustic Ecology of War,” Outi Ampuja defines noise as “sounds that are experienced as unpleasant, disturbing, or unnecessary.”¹⁸⁹ She contends that such unpleasant sounds, especially when they were loud or persistent, could have adverse effects on the mental health of the soldiers helplessly subjected to them. While pilots did have some control over how much time they spent in a plane, ultimately flying was their job, requiring them to spend hours at a time seated directly behind an enormously loud engine and propeller.

¹⁸⁸ “Army Life As Viewed By Red Cloud Boy,” *Commercial Advertiser* (Red Cloud, NE), January 2, 1918.

¹⁸⁹ Outi Ampuja, “Perspectives on the Acoustic Ecology of War,” in *The Long Shadows: A Global Environmental History of the Second World War*, ed. Simo Laakkonen, Richard Tucker, and Timo Vuorisalo (Corvallis: Oregon State University Press, 2017), 176.

The deafening noise of the engine appears often in accounts of pilots in training.¹⁹⁰ It was a powerful and damaging force, especially for pilots who did not wear and were not provided with hearing protection. Their thin leather helmets gave them a minor shield from the noise, but with the engine so close, it was akin to wearing tissue paper. And yet it was not only the roar of the engine that pilots endured. “The propeller and stay wires make a most deafening noise,” wrote one cadet, and in combination with the roar of the wind, it was impossible to hear anything the person in the other cockpit might be trying to say.¹⁹¹ As discussed in Chapter 2, this posed a problem for cadets and their instructors, who could not verbally communicate despite the fact that in a Curtiss Jenny they sat within arm’s reach of one another. Hand signals helped them circumnavigate this issue, but the fact remained that the immediate soundscape of the airplane mid-air was hostile to the basic necessities of a pilot’s work—including the ability to think clearly.

Constant exposure to noise could steadily diminish a pilot’s wellbeing. “The capacity of a person who is subjected to and stressed by noise to manage other potential stress factors is weakened,” writes Ampuja.¹⁹² All personnel stationed on a training field lived with the chronic, buzzing roar of engines. When night flying was instituted on certain fields, even the evening hours did not provide a break from the noise.¹⁹³ Combined with the regular stresses of work and flying (of which more in Chapter 4) the effect could be deleterious. And yet the incessant droning was not the only unpleasant, inescapable element of the training soundscape.

¹⁹⁰ For examples, see “Another Dixon Boy Writes of Experiences Aboard U.S. Airplane 2,000 Feet in the Air,” *Dixon Evening Telegraph*, January 23, 1918; “Describes First Airplane Flight,” *Portland Sunday Telegram*, February 3, 1918; “Letter from I.W. Pence,” *Steuben Republican*, May 29, 1918.

¹⁹¹ “Nebraskan in Air Service,” *Lincoln Nebraska State Journal*, May 26, 1918.

¹⁹² Ampuja, “Perspectives on the Acoustic Ecology of War,” 186.

¹⁹³ “Night Flying Begun at Ellington Field,” *Houston Post*, January 18, 1918.

Flying accidents, in particular those involving crashes or collisions, produced a tremendous noise upon impact. Airframes smashing into one another, propellers shattering against the earth, engines driven into the ground: the industrial noises were unmistakable, and could be heard from great distances away. Enlisted men and pilots on the ground did not need to witness these accidents in order to understand. “I didn’t see [the two planes] come together, but I heard that terrible grinding crash just 200 feet over the field,” wrote Lt. Manford Arnold of the collision at Call Field, “I knew what had happened and looked up in time to see the two machines tear apart—one minus the tail and the other minus the two right wings.”¹⁹⁴ James McCudden, Britain’s beloved ace, also wrote of “the awful crash which, once heard, is never forgotten.”¹⁹⁵

That “terrible, grinding crash” is a leitmotif in pilots’ letters and diaries, which record the noise the same way a soldier writing from the front might record artillery fire or the crack of a sniper rifle. It was a sound implying danger, both imminent and immediate, but unlike the infantryman in combat a pilot was unable to use auditory cues to improve his lot. The listening act was decidedly passive for those who could only helplessly look on as the planes of their friends and comrades flattened against the earth. It is true that the sound of a crash could impel fellow pilots to rush to the aid of the victims. But by the time they arrived there, little could be done except to pull the bodies from the wreckage and send them on to the hospital. Even before the soundwaves dissipated, the worst of the damage had been already done.

¹⁹⁴ “An Interesting Letter From Manford Arnold,” *Turon Weekly Press*, March 14, 1918.

¹⁹⁵ Ian Mackersey, *No Empty Chairs: The Short and Heroic Lives of the Young Aviators Who Fought and Died in the First World War* (London: Weidenfeld & Nicolson, 2012), 19.

Conclusion

The world of the pilot in training was one of violence: shattered bodies, shattered planes, and as we will see in the next chapter, shattered hearts and minds. It was, without doubt, a taxing environment in which to live and learn. Persistent negligence on the part of air service officials meant that a pilot left training either dead, injured, or a survivor overexposed to distressing sight- and soundscapes. The training fields, meant to be spaces in which pilots could safely learn to fly, resembled the realm of combat more than it did the classroom.

“The experience of the individual as long as he survived was nastier than ever before,” writes John Keegan of the mechanized First World War, “measured in terms of noise, general insecurity and the spectacle of the wounds inflicted by modern weapons.”¹⁹⁶ Although Keegan here describes the combat soldier, his words could just as readily apply to the aviator in training, whose ears were assaulted by the sound of collisions, who cultivated precious little certainty, and who witnessed, all too often, his comrades torn asunder by one of the most modern of all weapons: the airplane. Chapter 4 will explore the emotional responses of non-combatant pilots to the daily devastations described here.

¹⁹⁶ John Keegan, *War and Our World* (New York: Vintage Books, 1998), 56-7.

Chapter IV: The Ghost in the Machine

STARKEY: Henderson, ours is not to reason why. It's yours but to do as you're told... and die.

SINCLAIR: Yeah, and that's why all of us are already dead.

STARKEY: No, that isn't correct.

HENDERSON: Yes, it is. We're doomed, aren't we? So we're dead.

FISHER: The problem is, I don't know if we're dead or not.¹⁹⁷

We Bombed in New Haven, Joseph Heller

Until now, this project has only minimally featured the perspective of those who braved the failing planes. It is time, then, to hear from the pilots themselves. In light of what we have learned, it is well to ask if these men recognized the precarious ledge they walked, or the abyss that lie beyond it. Did the average flying man know that, due to circumstances mostly beyond his control, his fate would be one characterized by destruction? Was he aware that his body might be injured or destroyed, and if not his body, then his psychological or emotional well-being? Did he realize that his closest friends, some of whom had been with him since his first days of ground school, would be killed, and that he would be forced to mourn not only the destruction of those bodies, but also the social support system they represented?

This chapter argues that the answer is yes. Non-combatant pilots not only accepted, but *expected* their fates, sometimes wielding fatalistic attitudes against the proximity of death, and other times succumbing to emotionality and grief. Close inspection of the historical record shows that this behavior is remarkably similar to the behavior of those who flew in the dangers of actual combat. Defensive postures like fatalism, or acute responses like stress, anxiety, and grief, characterized many combat pilots' reactions to the work of flying the frontlines.

¹⁹⁷ Joseph Heller, *We Bombed in New Haven* (New York: Samuel French, 1969), 18.

Like the doomed pilots in Joseph Heller's *We Bombed in New Haven*, non-combatants found themselves trapped inside of a circular narrative that repeated itself unceasingly, day after day. As we learned in Chapter 3, the spectacle of accidents ran on a daily, even hourly, loop. Such regular reminders of danger's ubiquity wore on the emotional and psychological well-being of pilots, inflaming the scourge of fatalism so detrimental to the morale of any soldier, flying or otherwise.

Like Heller's pilots, non-combatants during the First World War knew that they were doomed. They were training, instructing, testing, and ferrying planes hundreds (and sometimes thousands) of miles away from the frontlines, and yet a casual glance at their behavior might suggest that they were living and working under combat conditions. This chapter explores the emotional and psychological worlds of those non-combatant pilots exposed to the daily destructions described in Chapter 3. By exploring these previously unexamined aspects of the average pilot's lived experience, I argue that the United States air service not only continually exposed its flying men to bodily harm, but also to emotionally and psychologically distressing conditions on a regular basis.

The Emotionality of Flying

More than any other weapon of war, the airplane provoked an extraordinary range of emotional responses from its users. Man-powered flight was still only a little over a decade old when American men went into training, and the novel experience of being not only airborne, but sustainedly so from a great height, amazed and impressed new pilots. While many would casually claim that it was more or less like driving a car, the experience bore little resemblance to

any earthbound activities possible at that time.¹⁹⁸ Flying was without comparison; it was something close to miraculous. Aviators were doing “what has, since time commenced, been considered a dream and impossible.”¹⁹⁹

Still, pilots managed to wrest language from the matchless experience of flight. Letters written from the training fields to family and friends back home brim over with descriptions of flying, some breathless, others affecting a cool nonchalance. Editors of hometown newspapers often preened over having a townsman in the air service, and were only too happy to publish these accounts for all to read. At a time when few had even seen an airplane in person let alone flown one, the descriptive letters of pilots gave the average person back home a vivid glimpse into the world of flying. Family, friends, and neighbors “experienced flight vicariously” in this way, as Robert Wohl would write of the general public’s closest contact with flying in the 1920s and 30s, dominated in those decades by aviation stories told via film, comics, and magazines.²⁰⁰ Pilots in training during the war provided one of the first precursors to these renderings of the spectacle of flight. And as evangelists of a new technology, they simply could not be matched.

Flight clearly could induce exultation. Looking back on his first experience in the skies, Charles Lindbergh called flight a “strange, unmortal space, crowded with beauty, pierced with danger.”²⁰¹ Flying heightened the senses, and made the familiar unfamiliar. Life and its meaning took on an entirely new importance. Indeed, the experience of being so high above the world provoked “pale blue dot” reactions from some pilots, who felt that the earth, so mundane in its

¹⁹⁸ For comparisons to automobile driving, see “First Trip in an Airplane,” *Enterpriser and Vermonter*, February 14, 1918; “Soldier Letters,” *Kiowa News-Review and the Kiowa Record*, March 15, 1918; “A Soldier’s Diary,” *Concordia Empire*, July 18, 1918.

¹⁹⁹ “Graphic Description of First Airplane Flight,” *Chattanooga News*, July 15, 1918.

²⁰⁰ Wohl, *Spectacle of Flight*, 4.

²⁰¹ Berg, *Lindbergh*, 64.

everyday garments, was something approaching the sublime when seen from a higher vantage. “This certainly is a pretty world to look upon,” wrote one pilot, “Beauty is no name for it. You have never laid your eyes on as beautiful an object as this world of ours is from 3,000 feet in the air.”²⁰²

Yet not every pilot experienced the euphoria of being airborne. The strange, literally topsy-turvy world of flying caused unpleasant reactions among even the steeliest men. Sickness in flight, for example, affected many cadets. The disorienting rolls, spins, and turns an aviator learned over the course of his training dizzied and nauseated a great number of hopeful pilots. “I had taken my dinner up with me, and it was a good one, too, but it beat me back to the ground,” one pilot jokingly wrote after a sudden nose dive took him by surprise.²⁰³ Others were less amused by the ever-lurking possibility of sickness, as the ensuing vomit was likely to be caught by the wind and blown backward. “The observers ride in the front seat,” one pilot wrote, rather resignedly, “so [we] get the full advantage of their being sick in flight.”²⁰⁴

Stress and Nervous Strain

While flying took a significant physical toll on the beginning aviator, those effects often abated with time and adjustment. Less likely to abate over time was nervous strain, a condition that most if not all pilots experienced at some point in their careers, to a greater or lesser degree. The historian Lynsey Shaw Cobden examines this subject in the context of the British Royal Flying Corps in her article “The Nervous Flyer: Nerves, Flying, and the First World War.” In it, she contends that aviators were thought to be “medically different” by medical officers who, over the

²⁰² “Creston Boy in Texas Camp,” *Columbus Telegram* (Columbus, NE), August 9, 1918.

²⁰³ “News of Men in the Service,” *Morning Register* (Eugene, OR), April 21, 1918.

²⁰⁴ “Now in Advanced School,” *Middlebury Record*, June 13, 1918.

course of four years of war, oversaw the treatment of more than 3,000 RFC men thought to be suffering from nervous disorders.²⁰⁵ Flying ultimately revealed itself to be an activity with a vast potential for hewing down the nerves. As Cobden quotes an Air Board Research Committee (Medical) member saying, “flying takes a man into an element for which he was not specifically developed by nature.”²⁰⁶ A document circulated by the War Department in early 1918 entitled “Sickness of Aviators and the Selection of Military Pilots” also touches on this subject. In it, the act of flying is said to cause, after time, an “excessive fatigue, numbness, headache,” “a pulse too fast or slow,” and “a self-reliance [that] is severely shaken.”²⁰⁷

Whether it was over the battlelines of France or the never-ending pastures of Texas, simply controlling an airplane at a high altitude could gradually wear down a pilot. However, when the basic activity of flight was combined with the stressors of sight and sound (as discussed in Chapter 3), the inability to trust one’s machine, the ever-lurking possibility of death, and, in the case of instructors, the responsibility for another person’s life, that base level strain could balloon rapidly. As Outi Ampuja contends, stress caused by external factors ultimately weakens a person’s ability to manage further stress.²⁰⁸ Pilots strained by frightening or disturbing experiences while on non-combat duty found it difficult to perform even the most basic tasks.

A series of letters from Allen Chapman, a cadet stationed at Call Field in Wichita Falls, Texas, illustrates this difficulty. In a letter dated March 24, 1918, Chapman begins his message

²⁰⁵ Lynsey Shaw Cobden, “The Nervous Flyer: Nerves, Flying, and the First World War” *British Journal for Military History* 4, no. 2 (February 2018): 123.

²⁰⁶ Cobden, 137.

²⁰⁷ “Sickness of Aviators and the Selection of Military Pilots,” *Information Furnished for the Use of the Army and Navy and Authorized Civilians in the Service of the Government*, Vol. 17, Sketch No. 960. From Reports, Studies, and Memoranda Relating to Military Aviation, 1917-1918, National Archives at College Park, College Park, Maryland.

²⁰⁸ Ampuja, “Perspectives on the Acoustic Ecology of War,” 186.

by noting that he hasn't "been feeling so very well" lately because he has "been getting too much flying" practice. A week later he recalls the deaths of three cadets, one in a burning plane (the aforementioned Orrin Franks); he also notes that nearly forty airplanes were "put out of commission" on a single day of flying, meaning at least twenty of his comrades experienced accidents on that day. His next letter, dated April 4, narrates the death of a fourth pilot, Lt. Byron Jackson, and the injuring of the cadet in the plane with him.²⁰⁹

On the day in question, Chapman happened to witness Jackson's plane go into a tailspin. The plane smashed into the ground, and Chapman hurried to the ensuing wreck, immediately beginning to tend the cadet while he waited for the ambulance to arrive. (Jackson, presumably sitting in the front seat as all instructors did, was killed on impact.) Chapman describes the scene in detail, noting that the cadet's "left arm was broken and his left leg was caught in the wreckage," and that the cadet was clearly in shock, babbling in a half-conscious state. When the ambulance finally did arrive, Chapman's superior officer told him to ride back with the doctor. "I guess he thought the sight had affected my nerves," Chapman mused.²¹⁰

It seems that this was, in fact, the case. Shortly after the incident, Chapman experienced his own unfortunate string of accidents: he blew out a tire while attempting to land, made a forced landing, and was caught beneath his airplane when a heavy wind blew it onto its back. Having recovered from the latter incident, he surveyed his damaged plane "with a combined feeling of shame for my bonehead and disgust for Texas' ideal climate conditions," as he would

²⁰⁹ "About Our Boys in Camp," *Morning Union*, April 11, 1918.

²¹⁰ "About Our Boys in Camp."

write to his parents with characteristic sarcasm. A few lines later, however, he would quietly admit, “the sight of the day before... had really kind of unnerved me.”²¹¹

Chapman draws a clear connection between his inability to perform and the stress of having witnessed firsthand the death and injuring of two fellow pilots. Unacknowledged, but still accumulating behind this acute strain, are the chronic effects of flying (“I haven’t been feeling so very well”) and of experiencing the daily piling up of wrecked planes and injured men, sometimes dozens in a single day. As difficult to endure as this string of events sounds, it only comprised three weeks in the life of an average cadet like Chapman. Some non-combatant pilots spent up to *nine months* training, instructing, or testing planes in these same conditions. Even without the pressure of enemy pilots roaming the skies or anti-aircraft fire bursting all around one’s plane, the experience of being an aviator could be traumatizing. One further example shows the extremes to which non-combat flying could push a pilot already weakened by the stresses of day-to-day life.

Carl Moses was stationed at Chanute Field in Rantoul, Illinois, during the early days of 1918. While flying one day at several hundred feet, his plane collided with another, sending him and his machine hurtling toward the ground. Moses sustained severe injuries in the accident, requiring him to take an extensive furlough in order to recover.²¹² Two months later he had apparently regained his physical health, as he was placed on flying duty again, this time at Ellington Field in Houston. Although his body had healed, it would become abundantly clear that the memory of the collision still lived vividly in his mind. One day in early spring, Moses witnessed the collision of two planes over Ellington Field. The sight reportedly caused him to

²¹¹ “About Our Boys in Camp.”

²¹² “Ayer Locals,” *Hollis Times*, January 18, 1918.

collapse.²¹³ Moses was immediately excused from flying, and, “his nerves having not returned to normal condition” several months later, he was ultimately discharged from the military.²¹⁴

Moses presents an interesting case study. It is clear that a collision was among the most devastating accidents a cadet was liable to witness or experience. The impact of the two planes colliding would have significantly jarred their occupants; the crunch of wings and fuselage would have been deafening. A helpless fall to the ground resulted in a second catastrophic impact, and could kill or injure those who had survived the initial collision. Because this kind of accident involved two dual-seat planes, there loomed the possibility of four casualties total, making collisions the costliest breed of accident both in terms of lives and materiel. Although collisions plagued smaller fields like Park Field in Tennessee, they were liable to happen anywhere, even on the large, sprawling fields in Texas.

As is abundantly clear, the correspondence between the collision Moses physically endured, and the one he witnessed in Texas, is not coincidental. The sight of the colliding planes resurrected a traumatic memory for him, triggering a drastic somatic response—a collapse, and possibly loss of consciousness. Although not all survivors of accidents reacted so acutely when exposed to familiar stimuli, it can be reasonably supposed that most experienced a degree of strain in the wake of their accidents. This means that, considering it was a rarity to have gone through training without being in at least one accident, nearly all non-combatant pilots flew burdened by the weight of memories that were as disturbing, more or less, as those of Carl

²¹³ “Ayer Locals,” *Hollis Times*, March 8, 1918.

²¹⁴ “Ayer Locals,” *Hollis Times*, August 23, 1918.

Moses. Unlike their counterparts in France, however, they did not have the hardships of combat to blame for their struggles.

Fatalism

While doctors assigned to the air service saw to the physical needs of American pilots, it is not clear that they provided specialized care for those suffering from poor or degrading mental health. With little to no recourse to professional help, some non-combatant pilots succumbed to fatalistic attitudes, overwhelmed as they were by daily exposure to seemingly pointless death and destruction, and disturbed by the mathematical probability that they, too, might be in the next failing plane. The French polymath Pierre-Simon Laplace had written a century earlier about probability as a kind of razor-honed common sense, the appreciation of what “right-minded people feel by a sort of instinct, often without being able to give a reason for it.”²¹⁵ In some cases pilots became *convinced* that they would be the very next person to die. Unfortunately, some were shortly proven correct.

Fatalism is a well-known scourge of soldiers overexposed to the dangers of combat. Pilots on the frontlines often suffered in this regard, especially when their missions took them too close to the ground, where they could easily be picked off by a well-aimed rifle or machine gun bullet. A record of the terrors and resulting fatalism of frontline work is found in the 1934 novel *Winged Victory* by V.M. Yeates, a former pilot in the British flying services. Though the account is lightly fictionalized, with names and dates swapped or fabricated in some places, the emotionality of combat flying as experienced by Yeates during his months of frontline work is

²¹⁵ Pierre-Simon Laplace, *Philosophical Essay on Probabilities*, trans. Andrew I. Dale (New York: Springer, 1995), 124.

vividly portrayed. The narrative follows Yeates' stand-in, Lt. Tom Cundall, as he navigates the world of flying and dying on the Western Front, the latter of which occurs with increasing regularity as time passes. Cundall's bunkmates are all eventually killed in action, and their replacements are also killed; the more dying that occurs around him, the more convinced Cundall becomes that he will be the next to die. The torment of this certainty drives Cundall to total despair. He is often found swinging between grim determination and the passivity of one who knows his fate is settled, all inside of the same paragraph:

He woke up as usual between two and three o'clock. He felt as if broken glass was in his blood-stream... [h]is blood carried the broken glass into his brain; he lay impotent against the forces of night. He must endure. Death seemed waiting in the darkness. He must endure. He dozed and dreamed that he was wandering and searching, always wandering and searching.²¹⁶

The novel itself is over four hundred pages of slowly accumulating fatalism, crescendoing at the moment, pages from the end, when his best friend is finally killed in action. Cundall is left completely alone at the novel's end, tormented by the ghosts of his former comrades.

American pilots on the Western Front also experienced their fair share of stress, grief, and fatalism. Best friends and squadronmates failed to return from patrols, went down behind enemy lines, or burst into fragments of flaming linen and wood after a well-aimed anti-aircraft shell found its target. "The bad part of this game is the large number of your friends who are killed," wrote combat pilot Harvey Conover in his journal during the St. Mihiel Offensive. "It has now become so common that you accept the news of the death of a friend as you would the

²¹⁶ Yeates, *Winged Victory*, 444.

outcome of a baseball game... You can't help wondering, however, when your turn will come."²¹⁷ Lance Holden, a pilot with the 95th Aero Squadron, put it more bluntly: "How can one help being an utter fatalist... It looks like certain death. Just a question of time."²¹⁸

Although non-combatant pilots did not face the antagonism of enemy pilots or anti-aircraft fire, they lived in much the same conditions of danger and uncertainty. The latter reigned powerfully over the training and testing fields, where the aleatoric nature of combat replicated itself in the form of untrustworthy planes. Just as an infantryman or combat pilot could not guess when he might be hit by a shell, the cadet or testing pilot did not know when his plane might suddenly fall to pieces despite being cleared for flying by his mechanic. The senseless, unpredictable destruction of men and planes created antagonistic environments for those men flying far from the zones of combat.

The smaller scale of such environments exacerbated this feeling of being surrounded by constant death and destruction. When one flew in combat, the entirety of the warzone presented itself as open for use. Combat pilots could ascend to extraordinary heights in their technologically advanced machines; they could range across enemy territory if they so chose, or wander about behind friendly lines. The world was, in effect, their oyster. This is to say that much of the disaster that could befall a combat pilot could occur out of sight, and especially out of hearing range. One was not necessarily forced to witness a comrade's plane catching fire, or his engine failing, or his wings crumpling like paper. One did not have to witness, as did cadets

²¹⁷ Hynes, *Unsubstantial Air*, 231.

²¹⁸ Hynes, 231.

standing on the grounds of the training fields, what Stephen Graham called “the lurid spectacle” of the aviator’s slow death in the skies.²¹⁹

As one might expect, the daily destruction of planes, and the close friends flying them, bred fatalism among non-combatants. Despite being hundreds, and sometimes thousands, of miles away from the frontlines, non-combatant pilots expected to die. Lieut. E.B. Sullivan, having been notified of the death of a comrade and friend, reportedly remarked, “Well, I guess I’ll be next.”²²⁰ Several days later his plane would malfunction and go hurtling into the ground, bursting into flames upon impact and killing Sullivan and his mechanic outright.²²¹ Some months earlier, Lt. Raymond Templeton, mourning the loss of his best friend, Duke, wondered resignedly about the possibility of his own death in training. “Will the chain be broken?” he wrote to Duke’s parents, referencing the fact that Duke’s own best friend had recently been killed in an accident, “Or am I next?”²²² Templeton would die in a flaming, malfunctioning plane only three months later.²²³

That these two men did indeed die after making these fatalistic remarks is not bad luck or coincidence; I do not present their cases to underscore the “dramatic irony” that scholar Paul Fussell suggests is so characteristic of the First World War. I argue, rather, that the fatalism and eventual deaths of Sullivan and Templeton call attention to an unsettling truth: that the United States air service endangered its non-combatant pilots to such a degree that a man could resignedly say “I’ll be next,” and, chances were, he would be correct.

²¹⁹ Stephen Graham, *The Challenge of the Dead: A Vision of the War and the Life of the Common Soldier in France, Seen Two Years Afterwards Between August and November, 1920* (London: Cassell and Company, 1921), 119.

²²⁰ “‘I’ll Be Next,’ Sullivan Predicted,” *Daily Oklahoman*, July 8, 1918.

²²¹ “Aviators Burned to Death In View of Hundreds of People,” *Daily Ardmoreite*, July 8, 1918.

²²² “How Duke Earle Met His Death,” *Lewisburgh Saturday News*, March 23, 1918.

²²³ “Brownsville Boy is Killed in Airplane,” *Albany Daily Democrat*, June 29, 1918.

“I wonder if I’m next?”²²⁴ “I guess I’ll be next.” “Am I next?” The fatalistic chorus resounded on the training and testing fields. Note that these men did not remark, “I guess I will die,” or “Will I die, too?” They believed that death was both imminent and immediate; it followed them every time they hauled themselves into their planes. They would be *next*. After all, if their friends had died—men who were just like them, who had gone through the same training as they had—then it only made sense that they were just as likely to be killed. “When you hear of or see the death of one of those who fought by your side and lived exactly the same life, you receive a direct blow in the flesh before even understanding,” wrote Henri Barbusse in his memoir of the war, *Under Fire*. “It is truly *as if you heard of your own destruction*. It is only later that you begin to mourn.”²²⁵

Death prevailed over the non-combat zones to such an inordinate degree that some men became obsessed with its possibility. The next section analyzes the letters of Lt. Briggs Adams, whose death in an accident on March 14, 1918, came after nearly a year of intense rumination over its outsized presence in his life.

The Anxious Pilot: A Case Study

The case of Lt. Briggs Kilburn Adams offers a rare glimpse into the anxieties of the pilot-in-training. Adams was a prolific letter writer, whose “epistolary classic,” as he jokingly referred to it, was collected in a slim volume and published only months after his death. Adams received both his ground and flight training with the Canadian arm of the Royal Flying Corps, and spent time in Ontario, Fort Worth, Texas, and various camps in the United Kingdom before arriving on

²²⁴ “Two Fliers Killed at Sill,” *Kansas City Times*, February 8, 1918.

²²⁵ Henri Barbusse, *Under Fire*, trans. Robin Buss (1917; reis., New York: Penguin, 2004), 275. Italics are mine.

the Western Front on March 1, 1918. Only two weeks later, he would die of injuries sustained in an accident caused by an unknown mechanical failure.

Adams spent nearly his entire career as a pilot in training. Of the 62 letters collected in the volume, only five were written from the Western Front; put another way, beginning on August 8, 1917, when he first reports for training, Adams spends a total 219 days in the air service, only 14 of which are spent in “actual” combat conditions (which he almost certainly did not see owing to the poor weather.) As a result, only 6% of the experience recorded in his letters occurs outside of the training environment.

The letters are invaluable for the access they grant into the world of First World War aviation training. Adams was a competent writer, and his letters are often highly descriptive, rhapsodizing on the sensory experiences of flying and yet struggling with what he claims to be the impossibility of putting the novel experience of flight into words. Often writing to his parents, Adams patiently explains his work as a pilot, rendering in fine detail the maneuvers he learns, the challenges he faces, and his ever-growing confidence as an aviator. Growing alongside his confidence in his own skills, notably, is a belief in the infallibility of the machines he flies. He often refers to his faith in his own abilities and in his plane as a tandem pair, believing them to be, quite reasonably, the key to his survival: “With a good machine, good flying, and good shooting, my chances are better than the average of coming back.”²²⁶

Most evident of all in the letters, however, is a relentlessly critical gaze, which Adams levels upon his comrades with an intensity that borders on callousness. Men live and die in

²²⁶ Briggs K. Adams, *The American Spirit: Letters of Briggs Kilburn Adams, Lieutenant of the Royal Flying Corps* (Boston: Atlantic Monthly Press, 1918), 51.

Adams's estimation based on their skill as pilots. Below-average fellow students are referred to as "dubs" and "boneheads" who will get "picked off easily" because they want for talent.²²⁷ It is "their own fault" when men die in accidents,²²⁸ and many of his comrades die simply because they "lack the nerve."²²⁹ Sympathy is almost non-existent in the letters. Adams is convinced of the infallibility of the well-trained body and mind: if an accident happens, it is because the pilot was being stupid or reckless, and that is all. The machine, too, is blameless, a wholly unacknowledged variable of the life-death equation; similarly unacknowledged is the dead pilot's perspective, which Adams substitutes for his own observations (i.e. what he is able to see from the ground.) If an accident was caused by mechanical failure, Adams would never know it, and dead pilots cannot make reports. Thus, it was always the pilot's fault. It must be the pilot's fault, or the reliability of the machine might be called into question, a possibility with which Adams seems unable or unwilling to reckon.

This inability to come to terms with the reality of flying's dangers bristles throughout the letters, disguised as quasi-blithe remarks about the possibility of his own demise. It is obvious that Adams is constantly thinking about death. He expends an extraordinary amount of ink on the topic, which is remarkable, as he almost never calls the spade by its true name. The following is a list of euphemisms Adams uses in his letters to refer to the possibility of his death: an "examination"; his "course"; "eternal leisure"; "bad luck"; "trouble"; being "detained"; "pushing up the daisies"; "the Event"; "if I should fall"; and, perhaps the most telling in its circumlocution, "if... I just stopped being conscious." Adams talks about death with a constancy bordering on the pathological; rarely does a letter go by in which he does not mention the

²²⁷ Adams, 36.

²²⁸ Adams, 49.

²²⁹ Adams, 36.

possibility. He talks about it so often that one might be forgiven for, at first glance, imagining Adams was a combat pilot enduring the dangers of the frontlines.

This kind of hyperfocus, of course, does not happen in a vacuum. Adams's obsession with death is a direct result of his being constantly brought face-to-face with it. He peppers his letters with stories of the accidents he is forced to witness week after week, from collisions to tailspins and seemingly everything in between. When he travels to Fort Worth for further training, especially, an extraordinary number of Canadian RFC cadets are killed in accidents, so many that the Fort Worth training fields developed a distinct reputation for bloodletting.²³⁰ The culture of death seeps heavily into Adams's letters. Of course he cannot stop talking about it—death was a regular visitor to the flying fields, with a presence that was impossible to ignore.

One might think that such overexposure to death and destruction would engender empathy. For Briggs Adams, this is not the case. In several instances he stops just shy of calling his comrades cowards for allowing themselves to be killed in accidents, declaring (with no evidence to support his claims) that they are too easily “scared and rattled.”²³¹ This callousness is unwarranted, but it is not inexplicable. It would appear that Adams simply cannot allow himself to admit that his comrades—and, by extension, Adams himself—have no real control over whether they live or die. They can train their minds and bodies to the utmost—they could be pilots skilled beyond all measure—but at the end of the day it is the machine that will decide their fates. Adams seems to be unable to reckon with this fact. (“*I can't* be killed at flying now,”

²³⁰ The RFC came to Texas following an agreement between the United States and Canada that provided flying grounds for Canadian aviators during the cold winter months in exchange for instructional work with American squadrons. Because the Royal Flying Corps believed that cadets should learn stunt work as early as possible in their careers (the better, supposedly, to prepare them for combat), unqualified men were often sent up in planes by themselves to do complicated aerial work that they could not handle. Many men died as a result.

²³¹ Adams, 38.

he insists to his mother at the end of his primary flight training.²³²) His belief in himself and in his machine, and his criticisms of the failures of others, are nothing less than defensive postures against a perceived complete and utter lack of control. While the letters read as callous, even heartless, in reality that posturing is a thin, spiny shell covering the emotion at the center of it all: anxiety.

Only once does Adams come close to reckoning with the inherent fallibility of the airplane. The passage is worth quoting in full, not least because it is one of only two times in the entire volume in which Adams actually uses the word “death”:

I am feeling rather badly off to-night in consequence of a most unfortunate accident to-day in which I was really a contributing cause, if indirectly. You see, I was the first pupil in the squadron to fly one of the new machines, and I gave a pretty good exhibition to these Englishmen of what American blood can do. So another Canadian [Thomas Le Messurier] next furthest advanced to me naturally wanted to try the same things, and as a result, the machine collapsed, both wings falling off 4000 feet up, and he was killed. A perfectly wonderful fellow,—jolly, and liked by every one. You wouldn't have felt so badly about it if he had been shot down at the front, for there is so much satisfaction in such a death, or even if he had been killed doing something foolish or stunting close to the ground. Those accidents happen frequently, and we just shrug our shoulders and carry on. But this was absolutely no fault of his. Furthermore, it happened in the same machine I had stunted in,

²³² Adams, 38.

and, while these are war machines, built to stand anything, I feel perhaps I may have strained something which gave way under the stress this time. Of course I am in no way responsible, but it does bring it pretty close to me, and I feel terribly about it.²³³

This is a fascinating moment in the letters. If it is not Le Messurier's fault, and it is not Adams's fault either, then whose is it? If inanimate objects could bear responsibility, it would appear to be the fault of the brand-new combat plane, which one would suppose should be able to handle the stresses of stunt flying. But of course in the end it is the military that supplies the airplanes. The death of Thomas Le Messurier occurred under the auspices of the Royal Flying Corps, an organization well-known for its flagrant destruction of pilots. ("England," a *New-York Tribune* reporter speculated, "is satisfied if it develops twenty-five fliers among one hundred cadets," where the remaining seventy-five cadets were either killed, injured, or lost their nerve.²³⁴) It was thus impossible for an American to train as an aviator in an organization that would prioritize his well-being and survival. Negligence ran rampant in both the American and the British air services, the two organizations an American was most likely to seek out for training. The choice between nations could be, as Tom Crouch notes, "a matter of life and death" for a pilot-to-be, though in the end it appears that an American cadet was doomed regardless of where he went to learn to fly.²³⁵

²³³ Adams, 73-74.

²³⁴ Louis Lee Arms, "Over the Sport Trail," *New-York Tribune*, April 12, 1918.

²³⁵ Tom Crouch, *Wings: A History of Aviation from Kites to the Space Age* (New York: W. W. Norton & Company, 2003), 165.

Military and Civilian Reactions

It is difficult to obtain a clear understanding of the United States military's reaction to the carnage unfolding on its flying fields. Documents pertaining to the air service that are held at the National Archives relate mostly to the work being done by combat aviators, and those that do relate to the flying and testing grounds are frustratingly opaque. Newspapers, however, contain glimmers of the truth. The *New-York Tribune*, for instance, published an article called "Larger Air Fields To Reduce Number of Cadets' Deaths" on February 28, 1918. The article discusses the War Department's plans to expand the flying fields in order to reduce the number of collisions occurring. It is a bizarre priority, considering how large most of the flying fields already were (excepting the small Park Field in Tennessee.) The article goes on to note that "all things taken into consideration, however, War Department officials feel that the number of accidents has not been unduly large." One wonders what would have constituted "unduly large," considering accidents occurred on an hourly basis, as many pilots have noted in their letters. "The number of accidents has made no difference in the personnel of the Aviation corps," the article continues. "Not only their morale continues unimpaired, but this country, officials say, remains the only country in the world which has a surplus of aviators."²³⁶

The article appears right above a short dispatch from Houston entitled "Jersey Flier Killed Day After Getting Commission."²³⁷ The pilot in question, 19 year old Kenneth Elliott, died in a tailspin at Ellington Field. The War Department claimed that "morale continues unimpaired," while sitting in offices hundreds of miles from the flying fields, where men, like Elliott's best friend Lt. Marion Marmaduke Earle, walked around in a devastated haze, and tried

²³⁶ "Larger Air Fields To Reduce Number of Cadets' Deaths," *New-York Tribune*, February 28, 1918.

²³⁷ "Jersey Flier Killed Day After Getting Commission," *New-York Tribune*, February 28, 1918.

not to look at the empty seat next to them in the officer's mess.²³⁸ Lt. Raymond Templeton, mentioned previously, would go into a panicked spiral after Earle's own death in a tailspin less than three weeks later. Would the chain of death be broken? Templeton had asked. Apparently not, because the United States was "the only country in the world which has a surplus of aviators." The War Department could do whatever it pleased with its pilots, or, more pertinently, *not* do anything at all. Where two died, eight could replace them. The hydra-headed air service, literally speaking, had more men than it knew what to do with.

That final sentence in the *Tribune* praising the surplus of aviators may contain a key to the problem of military apathy. When it came to manpower, the United States air service had on its hands an embarrassment of riches. One man violently killed in a crash meant almost nothing to a bureaucracy interested only in having enough men to send overseas (which it did, and always would.) More bothersome were the thousands of dollars in insurance paid out with every death, and the replacement of wrecked machines. In any case, the old adage "actions speak louder than words" is relevant here. If the War Department or the Army had been disturbed by its exorbitant non-combatant losses, they made no effort to show it. Parachutes did not see service among men forced to jump from their burning planes; hard helmets did not protect the heads of those slammed into their windshields by force of impact. The average length of ground school education did increase, but only by a few weeks, and primary flight training continued to push new pilots into the air alone as quickly as possible. Death, in its immense profusion, apparently had become banal. It was business as usual in the United States air service.

²³⁸ "How Duke Earle Met His Death," *Lewisburgh Saturday News*, March 23, 1918.

Civilian reactions to the carnage, when they appeared at all in print, varied. For just two examples, the *Anaconda Standard* contains what appears to be an indictment of the air service, rendered in one mystifying fragment: “Light, light to the utmost, light on the dark and devilish doings in the war department’s aviation corner.”²³⁹ This is almost certainly in reference to the high casualty rates on the flying fields, as the United States air service had not yet made significant contributions on the Western Front at time of publication. The *Lewiston Daily Sun*, on the other hand, insists that “[t]here is, no doubt, a creditable story to be told about the War Department’s aviation work.”²⁴⁰

More than anything else, one is struck by the overwhelming lack of response generated by the American public during the war, and how tepid that response is when it does appear in the historical record. This was no matter of public ignorance. Beginning, as ever, with Lt. Selfridge in 1908, newspapers across the country sunk their claws into the vein of accidents occurring regularly at the flying fields, never shying away from sensational headlines such as “Aviators Burned to Death In View of Hundreds of People” or “Aviator is Killed as Mother Waits.”²⁴¹ The same accident might be reported in dozens of geographically unrelated newspapers, ensuring that men, women, and children from Portland, Maine, to Albuquerque, New Mexico, were well aware of the outbreak of accidental fatalities occurring on American soil. (For just one example, see the death of the aforementioned Lt. Marion M. Earle, which was reported in nearly 300 different American newspapers.) The reading public could not escape the specter of death by flying. Publications like *Leslie’s Weekly* and the *New-York Tribune* compiled weekly illustrated

²³⁹ *Anaconda Standard*, May 17, 1918.

²⁴⁰ *Lewiston Daily Sun*, March 20, 1918.

²⁴¹ “Aviators Burned to Death In View of Hundreds of People,” *Daily Ardmoreite*, July 8, 1918; “Aviator is Killed as Mother Waits,” *Fort Worth Record-Telegram*, June 19, 1918.

spreads presenting the names, portraits, and causes of death of individuals who had lately died in the service. One does not even have to look at the cause of death beneath the photographs of the young men bearing wings on their chests. It is nearly always “Killed, Airplane Accident.”²⁴²

How could it be that these needless deaths did not provoke outrage on the part of mothers, fathers, and friends? No protests appear to have erupted over the seemingly pointless fatalities; no riots ensued. Civilians kept mum, according to the available sources, or, if they felt the need to blame someone, they pointed their finger at imagined German agents. (That finger was, in fact, pointed at the air service itself, which stood behind all of the malfunctioning planes that caused such an outcry against German tampering.) Rarely, however, do civilians assign blame for these accidents. The most common response to the carnage is, instead, a stoic, oftentimes faintly patriotic, acceptance. “I expected it,” said the mother of Harold Kelley, who was killed in a tailspin at one of the Fort Worth fields. “Not that I had a premonition or anything of that sort. But so many of the boys are being killed. They told me there were no more casualties in the flying service than in the others, but I knew many were being taken.”²⁴³ The mother of Edgar Chapman, like many others who had lost children in the service, viewed the death of her son in the light of sacrifice: “If his life and his death make better men of the boys at Park Field, and of flyers everywhere, and if it inspires the young Red Cross girls in the State he loved, to be nobler women, then he will have done better work, maybe, than he could have done, even, by reaching the heights of the service he loved.”²⁴⁴ Although it is possible that these women privately reacted with anger toward the needless deaths of their sons, their public

²⁴² For example, see the June 2, 1918, edition of the *New-York Tribune*. All six aviators featured on the Field of Honor died in accidents.

²⁴³ “Patriotic Little Mother Tearless,” *Omaha Daily News*, June 20, 1918.

²⁴⁴ “Many Tributes Paid To Sergeant Chapman,” *Jackson Daily News*, June 23, 1918.

responses are muted, sedate. They are affecting the stiff upper lip required of all mothers and fathers by the state at war.

Friends reacted similarly. After naval aviator Walter Talaska was reported killed in an accident, a former classmate wrote to their alma mater, Holy Cross, expressing his regrets. “[Talaska’s brother] told me that his body was badly bruised, the neck broken and otherwise the whole body was smashed,” reported Matthew Lawlor, a fellow member of the class of 1917. “Surely, Father, it was a glorious ending for a promising son of our old Mother—Holy Cross.”²⁴⁵ A sentimental patriotism seeps heavily through the cracks of such responses, suffocating the ability, or even the desire, to look at these accidents with a clear and critical gaze. Lawlor even seems to equate the severity of Talaska’s bodily injury with the achievement of a special and higher glory, as if there is anything remotely glorious about being crushed inside of a seaplane and sinking with it, entombed, to the bottom of the Great South Bay.²⁴⁶

Herein lies another key to the military’s apathy, perhaps the most significant of all. The United States air service did not have to change its negligent ways because *nobody forced it to do so*. Mothers did not charge the government with negligence; sisters did not lay themselves down on airfield runways in protest. Fathers did not threaten lawsuits. Brothers, amazingly enough, sometimes *joined* the air service after the death or injuring of their sibling. The public did not rage against the military’s irresponsibility; when families exhibited any anger at all, they funneled it straight into claims of German meddling. It is certainly possible that new legislation in the form of the Espionage Act, and later the Sedition Act, had something to do with the

²⁴⁵ Matthew J. Lawlor, “A Note of Walter Talaska, ‘17,” *The Holy Cross Purple*, Vol. 31, March-June 1919, 23.

²⁴⁶ “Rochester Family Gives Second Son; Victim of Hydroairplane Accident,” *Democrat and Chronicle*, September 3, 1918. Walt’s younger brother John had been killed two and half months earlier with the Marines at Belleau Wood.

public's hesitance to criticize, as well as the direction in which it poured its negative energy. Easier to blame the enemy than to risk censure, or worse, from the government. As James Hamilton-Paterson writes of the British air service, "No parent or wife was ever going to sue the government for negligence, stupidity, or other culpability. It was wartime: the state could expend lives with impunity."²⁴⁷ Having a surplus of those lives, as in the American case, made it even easier to expend them without a second thought.

Conclusion

The letters of Briggs Adams end on March 11, 1918, three days before his death in a flying accident. That Adams spent his entire wartime epistolary career praising the infallibility of machines, only to die in a malfunctioning one, is tragic beyond words. That Adams spent nearly a year of his life ruminating anxiously over the very real possibility of his death in training, was unfortunately too common among young American pilots of the time. In what other branch of the United States military did soldiers on non-combat duty experience such anxieties over the close proximity of death? The air service outdid itself in this regard. By placing its hastily trained pilots in airplanes that could stall, catch fire, or lose their wings at a moment's notice, the air service proved itself unique among the United States military in its ability to place non-combatant men in harm's way—whether that was physical, emotional, or psychological harm.

From nervous strain to fatalism, from anxiety to grief, the air service forced its non-combatant pilots through a range of negative emotional and psychological experiences. Although they flew hundreds (and even thousands) of miles distant from the warzones, these pilots exhibited behaviors strikingly similar to those undergoing the hardships of combat flying.

²⁴⁷ Hamilton-Paterson, *Marked For Death*, 308.

Indeed, non-combat flying was a world of combat unto itself—one that a negligent and apathetic air service actively brought into being. In the end, no matter where an American pilot turned—to his home air service or that of the British—he could not escape what Hamilton-Paterson has called “that crackling bonfire of young men”: the ongoing destruction of boys who handed their lives over to the military for a chance to do what had, at one time in the not so distant past, been considered an impossible dream.²⁴⁸

²⁴⁸ Hamilton-Paterson, 308.

Conclusion

*They must have climbed the white mists of the morning;
They that have soared, before the world's awake,
To herald up their foemen to them, scorning
The thin dawn's rest their weary folk might take;*

*Some that have left other mouths to tell the story
Of high, blue battle, quite young limbs that bled,
How they had thundered up the clouds to glory,
Or fallen to an English field stained red.²⁴⁹*

“Per Ardua,” Pilot Officer John Gillespie Magee

This thesis takes its title from a poem by the adored poet-pilot of the Second World War, John Gillespie Magee.

Magee is best known for his immortal “High Flight,” which has lived improbable lives beyond the faded blue stationery it was scrawled upon, being burned on the tongues of thousands of first-year cadets at the United States Air Force Academy²⁵⁰ and toted into space on the Gemini 10 Flight.²⁵¹ It is the best-known and most widely beloved aviation poem ever written. It captures the rapturous, otherworldly experience of flight, its extravagant language mirroring the delirium induced by lack of oxygen at high altitudes. While “High Flight” is Magee’s most beloved poem, however, “Per Ardua,” quoted above, could claim the title of being his most prescient.

²⁴⁹ Roger Cole, *High Flight: The Life and Poetry of Pilot Officer John Gillespie Magee* (Herts: Fighting High Publishing, 2013), 57.

²⁵⁰ Heidi Holmstrom, “Celebrating Aviation with Magee’s ‘High Flight,’” *The Unwritten Record* (blog), December 10, 2013, accessed April 28, 2023, <https://unwritten-record.blogs.archives.gov/2013/12/10/celebrating-aviation-with-magees-high-flight>.

²⁵¹ Rebecca Maksel, “70 Years of ‘Slipping the Surly Bonds,’” *Smithsonian Magazine*, December 8, 2011, accessed April 28, 2023, <https://www.smithsonianmag.com/air-space-magazine/70-years-of-slipping-the-surly-bonds-2304171>.

Magee died, like the thousands of others who went before him, in a flying accident. His death in December 1941 recalls that of the unnamed pilot who has “fallen to an English field stained red,” leaving other mouths to tell of his sacrifice not on the field of battle, but on the soil of home. The early morning of December 11 found Magee (an Anglo-American serving with the Royal Canadian Air Force, much like Briggs Adams) completing a routine flight with his comrades above the cloud cover near Wellingore, England. Fuel tanks inevitably began to suffer, and so the flight, spying a hole in the cloud cover, started its descent in single file. What the wing leader did not realize, however, was that another routine flight was passing just below the clouds, and that he was sending Magee on a direct collision course with an Oxford trainer meandering at less than 200 miles per hour.

(“The disadvantage of coming out of the clouds in a vertical dive was that there might be someone flying just below one’s point of emergence, and in that case disaster would be complete,” writes V.M. Yeates in his *Winged Victory*, mentioned in Chapter 4. “The chance was nearly infinitesimal perhaps, but Tom thought his life too precious to be subjected to blind risks.”²⁵² Magee may have read the book, published as it was in 1934.)

The collision was catastrophic. The left wing of the Spitfire wrenched loose; both planes fell to earth, spitting broken parts. Magee managed to free himself from the cockpit and jump, but lacked the altitude for his parachute to deploy. When his body struck the earth, it left a hole as deep as a man’s arm.²⁵³ The pilot in the Oxford trainer, Aubrey Griffin, died during the initial impact. The deaths of the two 19 year olds were, unfortunately, a blip in the deluge of accidental

²⁵² Yeates, *Winged Victory*, 36.

²⁵³ Cole, *High Flight*, 82.

casualties suffered by pilots during the war. They were not the first, and they certainly would not be the last.

“I have become one of a group of men, who are all, to the last man, resigned to death and even anxious for it—or if not for death, at least for the chance of showing their mettle,” Magee would write sometime earlier while training in Canada. “Talk of the war is verboten among us. We speak only of the past and the present. The future for us does not exist.”²⁵⁴ A generation later, pilots still lived in a futureless tense, lashed to the immediate present like Odysseus to the mast of his ship. Although Magee is almost certainly referring to the dangers of combat, his words gain an undeniable prescience when read alongside the details of his own death. All who flew planes stood with their heels on the edge of the abyss. Among the American pilots and aircrew of the Second World War, over 15,000 died in training accidents alone; less than a decade later during the Korean War, a still undetermined number would die accidentally in technologically advanced planes from the F2H Banshee to the so-called “Ensign Eliminator,” the Navy’s F-4U Corsair.²⁵⁵

Other scholars will investigate the reasons for the exponential increase in accidental fatalities in later wars, though it is likely that those failures will look hauntingly familiar: men and women dying in faulty airplanes, and a military establishment inertial with apathy toward its pilots, in particular those with no immediate value in combat, or those assigned to non-combatant roles. (As an extreme example of this organizational apathy, the Women Airforce Service Pilots, commonly referred to as WASPs, engaged solely in noncombat work during the Second World

²⁵⁴ Cole, 27.

²⁵⁵ Mason Webb, “WWII’s Tragic Aviation Accidents” *WWII Quarterly* 9, no. 2 (Winter 2018): 13. For more on accidental casualties during the Korean War, see David Sears, *Such Men as These: The Story of the Navy Pilots Who Flew the Deadly Skies Over Korea* (Cambridge: Da Capo Press, 2010).

War. They did not receive recognition for their service until 1977. Thirty-eight of their members died in accidents.²⁵⁶) As far as the First World War goes, and as I have striven to show in this thesis, this apathy—and resulting negligence—could have deadly consequences. The United States air service was overwhelmingly to blame for the deaths of hundreds of young men during the country's nineteen months at war. It was responsible for the flaming plane of Robin Bidwell; the exploding engine of Raymond Templeton; the collapsing wings of Walter Buck. So, too, was it responsible for the psychological disintegration of Carl Moses, the fatalism of E.B. Sullivan, and the grief-shackled hearts of countless others.

Although the highly visible pile-on of accidental fatalities during the war gave the issue an illusion of suddenness, the air service had merely carried its old behaviors into wartime. Beginning with Thomas Selfridge in 1908, the military continuously failed to provide pilots with adequately safe conditions for training. This failure manifested most notably in the form of faulty airplanes—with the Wright Model C its poster child—but it also figured in the lack of safety gear with which pilots could protect themselves in the case of an accident. Parachutes did not see military service among aviators until the Second World War, and hard, crash-resistant helmets emerged only alongside the rise of jets and their ejection seats during the war in Korea. When a pilot inevitably crashed or made a forced landing, only a scrap of leather and a seatbelt stood between him and catastrophe. Unable to rely on protective gear, some pilots, like Leon Sharon, simply shielded themselves with their arms and prayed for the best.

Defective airplanes and lack of safety equipment are highly conspicuous forms of failure, but they do not wholly account for the high rates of accidental fatalities during the war. Less

²⁵⁶ “Women Airforce Service Pilots (WASP)”, U.S. Army, accessed January 9, 2024, <https://www.army.mil/women/history/pilots.html>.

visible, but equally insidious, were the multiple fronts on which the air service failed to prepare its pilots for the dangerous realities of flight. These failures greeted the new pilot from his very first day in the service. Ground school training comprised only two months of lectures in which cadets were expected to master an outrageous number of subjects, from engine maintenance to wireless communications and nearly everything in between. Ground school education was not standardized—curriculums changed constantly based on the ever-evolving war in Europe—which resulted in graduating classes educated in a sundry mix of subjects, not all of which continued to be relevant as time progressed.

If a cadet successfully passed his ground school examinations, he moved onto primary flight training, where a maximum of nine hours in dual instruction awaited him before he took to the skies alone. His instructor was, more often than not, a pilot who had just earned his commission, and who had probably only graduated from ground school two or three months before his student did. A chronic lack of planes and instructors (the latter being disproportionately lost in accidents, as their position in the front seat of the machine made them most vulnerable to death and injury) resulted in enormous bottlenecks that prevented men from crossing the sea to Europe. In the end, only a little over one thousand men flew for the United States during the war. Less than eight hundred American-made planes would follow them to the frontlines.

Passing the test for his commission did not, unfortunately, guarantee a pilot's safety. Due to the persistence of the aforementioned bottlenecks, men who had graduated from training often continued in roles of instruction, testing, or plane ferrying rather than moving on to the frontlines where most men longed to be. Amazingly, non-combatant pilots came face-to-face with even more death, destruction, and violence than did their combatant counterparts. The average combat

pilot did not see and hear his comrades die, and if he did, the prevailing wartime attitude of the “nobility” of death in combat could succor him. Non-combatants, especially those in training and instructing, could not be similarly consoled.

Daily (and even hourly) destruction played on a constant loop on the training and testing fields, leaving ugly wreckage and mangled bodies in its wake. Pilots rushing to the aid of fallen comrades endured the sight of broken limbs and bleeding faces; the sounds of crashing planes continually assaulted their ears. Between the unending industrial noise of engines and propellers, and the constant pile-up of wrecked planes and bodies, pilots could not escape the specter of destruction, nor the unshakable feeling that it would be their turn next. Grief and fatalism afflicted men who had witnessed the loss of one too many friends. Such reactions would mirror, to a startling degree, the behaviors of pilots who had endured the dangerous conditions of combat on the frontlines.

Life as a non-combatant pilot was considerably taxing, as I have striven to demonstrate. But it did not have to be so. Provided with safe machines, protective gear, and a sufficient education, hundreds of pilots may have lived to see the end of the war. Their skulls would have been protected from fracture; the wheels of their planes would have touched safely upon the ground. They would not have succumbed to fatalism, spiraled into post-traumatic stress, or suffered through the sharp brambles of grief. Accidents always attend the use of new and powerful technologies—it is an unavoidable fact—but the incidence of such accidents can be mitigated. In the case of the United States air service, mitigating the possibility of death was not a priority. Hundreds of Americans would die violently as a result of its apathy toward non-combatant pilots; thousands would survive the war but spend the rest of their lives burdened with grief, injuries, and post-traumatic stress. The United States air service had hoped to distinguish

itself during the Great War, and ultimately it achieved its aims. By endangering its non-combatant pilots to such an inordinately high degree, the air service emerged from the war as the only arm of the United States military in which a soldier was more likely to die on non-combat than on combat duty.

The lived experience of non-combatant pilots, and particularly the close examination of their emotional lives, are glaringly absent from both the historiography of America's role in the first air war and its popular mythology. With this thesis, I enter into conversation with such scholars as Robert Wohl and Dominick Pisano, whose excellent work primarily examines the "figure of the heroic aviator," from early pioneers like Louis Blériot to the catastrophically famous Charles Lindbergh. While this work is necessary and commendable, I worry that leveling one's gaze solely on the "heroic" pilot—civilian or military—risks overlooking those men who lived, worked, and died outside of contexts where classical notions of masculinity and heroism could be readily demonstrated for others. As noted in the Introduction, military aviation scholarship tends mostly to focus on the realm of combat, or in the civilian context, on such arenas of "daring masculinity" as transatlantic flight, barnstorming, and air racing. Rarely do scholars linger on the processes of training, which are generally considered a monotonous precursor to combat and other exciting forms of flight; so, too, are the experiences of instructors, airplane testers, and airplane ferrymen relegated to the margins of the scholarship. This is a great pity, as an examination of the lives of such men as these—which unfolded in realms considered quite ordinary—reveals the extraordinary joys and sufferings inherent in the daily work of pilots, and which have nothing at all to do with shooting down another plane, traversing the Atlantic Ocean, or doing gymnastic feats atop a Curtiss Jenny.

Relatedly, scholars like Wohl and Pisano tend to shy away from close examination of the emotional and psychological lives of pilots. This thesis makes an important intervention by investigating not only these aspects of the average pilot's lived experience, but by centering those of men who have been left out of the scholarship almost entirely: the non-combatants. Books and articles abound which examine the effects of wartime trauma on the lives of combatants, but none have taken the realm of training, for instance, as its focus. As this thesis reveals, the training environment was oftentimes more hostile to human life than was the Western Front, while offering none of the solace that a "noble" death in combat could provide. The emotional and psychological suffering of non-combatants was thus unique both in its intensity and in its isolation from societally prescribed forms of comfort. Studying the previously unexamined letters and diaries of non-combatant pilots has given me a direct, and often searing, look into these intimate aspects of their lived experiences.

Contained within the story of the First World War is one of the darkest chapters in American aviation history. Tragically, the specter of accidental pilot death continues to haunt the United States military today, and will forever bedevil it until its long history is brought close to the light, and there unflinchingly examined. In writing this thesis, I hope that I have cast my own share of light onto this dark history. I hope, also, to have borne the standard high for the forgotten dead of the war. When these pilots struck the earth in their planes, they disappeared into the wreckage for a long, long time. Pulling them out and dusting off their shoulders has been a privilege beyond words.

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Ogden Standard
Omaha Daily News
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