THE AMERICAN GLIDER PROGRAM OF WORLD WAR II

BY

KIRTIS WOODMAN

A THESIS

SUBMITTED TO ADAMS STATE UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

M.A. IN UNITED STATES HISTORY

FEBRUARY 2015

ADAMS STATE UNIVERSITY
COLORADO
Great Stories Begin Here

Adams State University
History, Anthropology, Philosophy, Political Science
Signed Title Page
Signifying Completion of Thesis

The American Glider Program of World War II
(Title)

A thesis prepared by Kirtis Woodman
(Student's Name)

In partial fulfillment of the requirements for the degree, Masters of Arts in Humanities: United States History, has been approved and accepted by the following:

Dr. Frank Novotny
Vice President for Academic Affairs

Dr. Richard D. Loosbrock
Chairperson of Thesis Committee

April 10, 2015
Date

Thesis Committee Members:

Edward R. Crowther, Ph.D.

Richard A. Goddard, Ph.D.

Richard D. Loosbrock, Ph.D.

To Robert Woodman and all of the Silent Winged Warriors

ACKNOWLEGDMENTS

There are a number of people without whom I would not have been able to complete this project. I would like to acknowledge the following people:

First, I would like to thank my thesis committee: Dr. Loosbrock, Dr. Crowther and Dr. Goddard. Thank you as well as for your support throughout the entirety of my work with Adams State. I feel as though I have grown immensely as a historian thanks to your guidance and tutelage.

I would also like to extend a special thanks to Don Abbe and the rest of the staff of the "Silent Wings Museum" in Lubbock, Texas for their time and access to the archives of the museum during my June 2012 visit.

Also, I would like to thank my family for your support. This project began as a labor of love with my late Grandfather Robert Woodman. After conducting an Oral History interview with him in 2006, I knew that I wanted to do justice not only to his story, but also to that of the entire glider corps. Grandpa, thank you so much for your service and for taking the time to share your story with me. To my parents, Steve and Trish, thank you so much for your love, support and encouragement.

Finally, my loving wife, Julie, and precious daughter, Annie, you are my life, inspiration and purpose. Thank you for your support, love and wisdom along the way.

TABLE OF CONTENTS

Chapter 1:

Introduction

The role of the airborne forces was one of the most highly debated aspects of World War II among allied commanders. In Europe, allied commanders were at odds with the role that airborne divisions should play in the war. Initially, it was believed that the airborne divisions could only play a small role in the war. There were two reasons that fueled this belief among military commanders. First, American entry into World War II meant fighting a total war but early on Americans had to do this with a limited amount of resources. These shortages meant that large-scale airborne operations would take a backseat to the air war and troop transportation.[1] The second reason behind the reluctance of military commanders to utilize large-scale airborne divisions in combat had to do with the risks involved in carrying out these operations. The Army Air Corps was reluctant to send unarmed aircraft behind enemy lines because of the risk it placed on men and materiel.[2] The allies reluctantly expanded their airborne forces after the defeat of the British in Crete.[3] When they committed their airborne troops to battle in Sicily, heavy casualties sustained nearly spelled an end to major airborne operations for the remainder of the war. The airborne divisions were kept alive, in part due to the urging of American General Omar Bradley. Bradley pushed for the use of the 82nd and 101st units to be utilized during Operation Neptune (the airborne part of Overlord).[4] After Neptune, airborne operations would be used in every remaining military engagement of the war in Western Europe.

In his book *Why the Allies Won,* historian Richard Overy argued that: "Air power did not win the war on its own, but it proved to be the critical weakness on the Axis side

and the greatest single advantage enjoyed by the allies."[5] While Overy argued for the importance of air power to the allied victory, the question remained: just how effective were the large-scale airborne operations? This question inspired debate regarding the impact of the airborne divisions on the war, but historians generally agree that while airborne forces stumbled in their infancy, by the end had overcome some major shortcomings to play a major role in the outcome of the war. The use of airborne forces in Sicily had been a disaster for the allies. This was due to inexperience of planners and men who attempted a night assault, high winds and a lack of proper training of pilots.[6]

The allies hoped to avoid the same casualties that they had sustained in Sicily with Operation Neptune, but they repeated the mistake of a night assault with poor accuracy. Despite this, they experienced more success than at Sicily due to the scale of the assault. Historian Max Hastings, in his account *Overlord* explains:

> While thousands of the men found themselves miles from their units and their objectives that night, they engaged the Germans wherever they encountered them. The great achievement of the American airborne forces on 6 June was to bring confusion and uncertainty to the Germans across the whole breadth of the Cherbourg peninsula. [7]

Due to heavy cloud cover and a large amount of enemy flak, thousands of men missed their drop points by miles. This confusion caused the Germans to delay the deployment of reinforcements to the beachhead, which ultimately bought the allies enough time to secure a foothold in Normandy. Omar Bradley argued that the "immense confusion and fear among the German defenders justified their (airborne troops) deployment."[8]

The next major use of airborne troops was Operation Market Garden, which ended with the famous defeat of allied troops in Holland. This operation, while a failure from a strategic point, was the largest and one of the most successful uses of airborne

divisions during the war. As historian John Keegan points out in *The Second World War*: "Market, the seizure of the bridges at Eindhoven and Nijmegen by the airborne divisions, proved a brilliant success."[9] Keegan is quick to point out that bad weather and logistical problems were the undoing of Market Garden.[10]

The airborne assault of the Rhine River near the town of Wesel known as Operation Varsity was also very successful. The allies managed to drop over 21,000 troops across the Rhine, despite the stiff resistance faced by German anti-aircraft batteries.[11] The anti-aircraft fire was so severe, that one British officer stated "this drop made Arnhem look like a Sunday picnic."[12] Once on the ground, allied troops faced much less resistance from the Germans who largely gave themselves up or retreated.[13]

While the airborne divisions experienced growing pains throughout the war, largely their performance improved with each operation. The allies repeated the mistake of Sicily by utilizing a night assault at Normandy, but the sheer scale of troops made the assault successful. The common factor for the success of both Market and Varsity for the allied airborne was that these operations were done in daylight, which made it easier for airborne troops to reach their objectives.[14] In September 1956, the United States Air Force Historical Division published a report on large-scale airborne operations in Europe in which they concluded that large-scale airborne assaults could be successfully executed and that Operation Varsity, Operation Market and Operation Neptune had demonstrated this.[15] The exploits of the airborne divisions during the war have been the focal point of numerous books, movies and television specials, but often times overlooked is the role that the glider pilots and their program played in the war effort.

Much as the glider program has oftentimes been overlooked by popular culture since the end of the war, so too has the program been largely overlooked by many academic studies of the war. Only a handful of books have been devoted to the glider program and many of those books were memoirs written by the pilots themselves. When looking at the few books devoted entirely to the program, three historical questions come up when looking at the glider program. The first question is how important was the glider program with regards to winning the war? The second question is how smooth was the creation and implementation of the glider program? Finally, what was the glider pilot experience like during the war?

With regards to the importance of the glider program to the war itself, two historians have attempted to in some way to address the level of importance. The first is James Mrazek, whose other works include multiple books dedicated to the role of air power in the war. Mrazek's account, *The Glider War*, was published in in 1975 and was the first book that attempted to tell the story of the glider program in an academic setting. Mrazek's account is critical of the United States glider program, and claimed that the Americans were too conservative with their use of the glider and as a result experienced only mild success.[16]

The other historian to tackle the glider program and its importance to the war effort was Gerard Devlin. Devlin's 1985 account *Silent Wings*, is the most thorough account of the program and argued in contrast to Mrazek that the American glider program represented a unique characteristic of the American military; that is, its ability and willingness to improvise and attempt new things all in an effort to bring about a total victory in the war.[17] Devlin also argues that the program was important because it forced

the Americans and the British to work in such close quarters that it further strengthened a bond that was forged during the war.[18]

W.D. Knickerbocker, a former glider pilot, addressed the question of the importance of the Glider Corps to the war effort in a unique way. Knickerbocker argued that while publications at the time of the war presented the glider program as a group of "suicide squadrons" the pilots were well trained and had a record high number of accomplishments by wars end. He continues: "I don't want to give the impression that we thought we won the war- rather, let us say, the Glider Corps was never large enough to wreck the Allied effort."[19]

The 1956 report: *Airborne Operations in World War II* concluded that the gliders were "principal means of reinforcement and of bringing in heavy equipment" but it was "a neglected step child" because they used up valuable space, men and wasted valuable resources.[20] While designed to be reusable, 80 percent of the gliders used in a combat operation could not be reused.[21] In contrast to these negatives however, the report also argues that the American glider, the Waco CG-4A, "had certain advantages that other types of assault craft have not achieved after 10 years of postwar experimentation."[22] It could land in smaller and rougher fields than assault planes, had no engine or fuel to catch fire and could be produced in large quantities for a cheap price.[23]

The second issue historians address about the glider program is the effectiveness of the implementation of the program. Of this issue, Mrazek again is extremely critical of the United States stating that the Americans had never "bumbled so horrible from the beginning to the end of a program."[24] Former glider pilot John Lowden argued, however, that while at times the program implementation was "careless, callous, or incomplete," it

represented a desire to achieve success and victory "in the days when winning wasn't everything: it was the only thing, no matter at times, what the cost."[25]

While a level of debate exists among academics regarding the importance of the program as well as the effectiveness of its implementation, there are several former glider pilots who have devoted time to addressing the third issue facing the historiography of the glider program. That is, the overall experiences of the pilots as well as the ways in which they felt about their time in the service. There have been numerous memoirs published by former glider pilots which help to clear the air regarding the role of the pilots in the war. In these memoirs, the pilots have demonstrated a sense of humor about the lack of recognition they have received in the academic world. W.D. Knickerbocker went as far as to call glider pilots "the bastards that no one wanted."[26] There is some truth to this point, as glider pilots were the only airmen who were expected to convert to infantrymen upon landing. As a result, many pilots did not know where they fit in. Regular pilots often scoffed at the glider pilots, while many infantrymen and paratroopers did not respect them as ground troops. This lack of respect made the pilots a very tight-knit group.

Generally speaking though, glider pilots enjoyed their time in the service (as much as anyone could). Their tight-knit nature was born not just out of their perceived lack of respect, but also out of a sense of pride in the way that they had served their country. John Lowden argued that the glider program had "magnificent contributions made, against brutal odds."[27]

The glider program was of value to the Allied war effort. This is evident with the fact that the Allies used gliders in every major military operation of the European theatre.

If they had felt that the program was not helpful in the war effort, it would have been scrapped very early. That is not to say the program was flawless. In fact, it was one of the most flawed programs the United States had during the war. As the war was waged, the glider program demonstrated the desire of the United States to try anything necessary to achieve a victory. Certainly the Americans were latecomers to the glider game, but their industrial might more than made up for their sluggish start. The program was not without its roadblocks and the pilots flew in extremely dangerous conditions. Through the experience, pilots forged bonds that would last a lifetime, demonstrated uncommon valor and courage and those who survived lived with the satisfaction that they had played a role in winning the war.

Milton Dank best sums up the glider program by sharing a favorite toast that the pilots often recite, which says:

> To the glider pilots- conceived in error, suffering a long and painful period of gestation, and finally delivered at the wrong place at the wrong time.[28]

The program was "conceived in error," because its creation was undertaken in response to the German program, which had been successful in Belgium and Crete, but was deemed as too costly by Hitler and never used again. The program "suffered a long and painful period of gestation" because of the hard times faced by American pilots and the fact the program would face extensive resistance by American commanders, which delayed the operational readiness of the program for three years. Possibly more so than any other program of the war, glider pilots faced an unprecedented amount of setbacks in combat. These mistakes led to all too often being "delivered at the wrong place at the wrong time."

Chapter 2:

Conceived in Error

The American Glider Program has often been criticized for the mistakes that its participants encountered and the haste in which the program was created. As historian James Mrazek said, the Americans were "johnnies come lately" who had never "bumbled so horrible from the beginning to the end of a program."[1] Indeed, the Americans were late their creation of the glider program and its implementation was not without setbacks; however, the American program lasted longer and participated in more operations than that of any other nation. Even though the program faced difficulties, it represented an attitude felt by all of the armed forces during the war. The glider program was conceived in error, but was created because it was believed the use of gliders would help the Americans win the war. The men who became glider pilots volunteered out of a desire to fly and hoped their contributions would help the war come to an end.

The delay of an American program is due to the fact that throughout the 1920s and 1930s, there was no need for the use of gliders in the American military. The closest that the Americans came to utilizing gliders in the military was in June of 1922. At McCook Air Field in Ohio, the U.S. Air Service conducted some experimental flights with pilotless gliders being considered for use as targets for anti-aircraft guns.[2] The results of the experiments proved to be uninspiring so the idea was abandoned. Later on that same year, the U.S. Air Service also experimented with a manned small glider, which was unable to stay in flight for a respectable length of time.[3] Some amateur gliding clubs were formed in various locations throughout the country, but in the minds of the American military, gliders were a novelty that had no use in their modern military. It

would take the success of the German glider program to coerce the Americans into action.

In 1919, the Treaty of Versailles ended the bloodiest conflict in the history of mankind to that point. World War I led to the loss of an entire generation of European men and allowed for the rise of totalitarianism in the years that followed. As a result of the Paris Peace Conference, the blame for the war was placed squarely on the shoulders of Germany. In the subsequent months and years, they would be forced to pay debilitating reparations and placed under severe restrictions by their allied counterparts. One of the provisions of the limitations placed on the Germans as part of the treaty of Versailles was that of Article 198, which stated that "The armed forces of Germany must not include any military or naval air forces."[4] This provision did not mention anything regarding the use of engineless aircrafts. In 1922, Hermann Goering outlined Germany's plan to become a major military power again, which included the introduction of the pilot training through the use of sports gliders:

> Our whole future is in the air. And it is by air power that we are going to recapture the German empire... First we will teach gliding as a sport. Then we will build up commercial aviation. Finally we will create the skeleton of a military air force.[5]

As a result of Goering's ambition and a growing sense of resentment on the part of the German people toward the Treaty of Versailles, glider clubs began popping up all around Germany over the next decade. Rudy Opitz, a German glider pilot during World War II, remarked on this: "if you prevent people from doing something that they want to do, they will find a way to do it. And that was the way in Germany that we started to approach flying."[6] The Germans became obsessed with the use of gliders. Soaring clubs with

experienced teachers became commonplace in high schools all over Germany.[7] In 1923, in hopes of aiding Germany's economic recovery following World War I, the Allied Control Commission (tasked with the enforcement of the treaty provisions) began to relax some of the more stringent provisions of the Treaty of Versailles to allow the revival of a limited civilian aircraft industry. Glider clubs and the manufacturing of small aircraft in German factories would later provide Hitler with a well-established pool of pilots. These pilots had an advanced understanding of how gliders could be used in the military.

While France and Great Britain were reeling from the depression that had hit in the 1930s, Hitler was investing time and money into the development of more technologically advanced war machines. Herman Goering was central to this rearmament process as he worked to redevelop the German Luftwaffe. Young German men identified themselves with the mystique of the Red Baron, the German pilot who had more kills than any other pilot during the Great War. These men dreamed of flying and welcomed Charles Lindbergh for the 1936 Berlin Olympics as if he were their own.[8] As the Luftwaffe grew in size, Hitler left room for the engineless aircrafts that had trained his new air force how to fly. Hitler wanted to use his technological advancements to take his enemies by surprise in an effort to gain a tactical advantage over the enemy on the battlefield. With this in mind, Hitler approved the creation of a German military glider. The German made DFS-230 became Germany's first military glider used in combat.[9]

Germany's invasion of Poland on September 1, 1939 marked the beginning of World War II. The allies anticipated another bloody trench war and waited along the Maginot Line for the Nazi assault. In Belgium, the government attempted to prevent another German invasion of their nation by building a huge fortress along the German

border known as Eben Emael. The defenses of Eben Emael seemed impregnable and the preparations seemed thorough. The massive fortification of concrete and steel of Fort Eben Emael consisted of six reinforced concrete walls, which enclosed a large grassy area. At the top of each wall were 12 rotating steel cupolas equipped with heavy artillery pieces and machine guns. Manning the fort was a force of 780 Belgian soldiers who lived in the air-conditioned quarters beneath the fort.[10] This fort, the Belgians believed, would provide a major hindrance to the German army in the event of a second invasion, buying them precious time until British and French reinforcements could arrive.[11]

To defeat the huge fortification and allow for the German army to march through Belgium, the German Luftwaffe turned to a never before used weapon of warfare: the glider. On May 10, 1940 at around five in the morning, German gliders towed to within a mile of Eben Emael were released and glided silently to a nice soft landing on top of the fort's grassy roof. There, the pilots turned infantry proceeded to the various casements and using hollow charges, blew up various defenses and cupolas, rendering the fort and its 780 defenders useless.[12] The attack on Eben Emael was the first use of glider planes in the history of warfare. The fact that 10 gliders carrying a total of 78 men were able to take down the fort saving an estimated 6,000 German lives demonstrates just how wildly successful this attack was.[13]

Gliding as a sport produced some enthusiasm in the United States beginning in the latter part of the 1920s. Its popularity, however, was miniscule in comparison to that of the Germans. The biggest reason for this was because the Germans were forced to invest their time and efforts into gliding because of the Treaty of Versailles, while the Americans were free to pour their time and energy into powered planes.[14] In 1929,

amateur glider pilots formed the National Glider Association in Detroit. A year later, the first national gliding meet was held in Elmira, New York. For the American military, though, gliders were a novelty. In 1930 and 1931, the National Glider Association invited the Army Air Corps to participate in their national meet. Both times the Army Air Corps declined and in 1931 Secretary of War Patrick J. Hurley wrote: "It is considered that the military values of glider flying is negligible, and that the expenditure of time and funds required to teach the art is not warranted."[15] By 1938, the American military had still not warmed to the idea that gliders could be useful as a military tool when in response to a suggestion that gliders could be used for bombing, the military released a statement which said the "towing of gliders as practical weapons is not of sufficient military value to warrant further consideration and development."[16] In June of 1940, following the capitulation of France, the U.S. Military Intelligence Branch of the War Department concluded that the Germans had used gliders in their assault on Eben Emael. This information piqued the interest of the Americans in the military value of gliders but did not force them into action. It would take further evidence for the Americans proving that glider planes were useful military tools.

On May 20, 1941 the Germans attacked British and Greek defenders on the island of Crete in the Mediterranean. Eager to redeem his Luftwaffe for its failures during the Battle of Britain, Herman Goering was prepared to unleash everything he had, including the use of 75 gliders, to defeat the heavily fortified Greek island.[17] The British were prepared for the assault but had no idea that the Germans were planning on using gliders. It came as no surprise to them when the sound of German planes began to fill the air. As the planes got closer, the noise became louder and soon the British realized that the

assault was going to be much larger than they had anticipated. The Germans pilots were shocked when they flew over the beach and had not been fired upon. When British defenders finally realized that the Germans were landing gliders, they unleashed a barrage of anti-aircraft fire. The anti-aircraft barrage set off a scene of chaos. Gliders were frantically released from their tow planes prematurely and attempted to find a place to land. Many hit rocks or crashed into the trees and one even flew into a bridge.[18] Several gliders managed to land, but they were sitting ducks for British troops and many of the soldiers in these gliders were killed before they could even get out of their planes. Still, a few German gliders had managed to land safely in their target landing site, a dry riverbed. These troops emerged from their craft and slithered into the brush, hoping to capture key British defenses.[19]

Hitler deemed the glider mission in Crete a huge disaster. Of the 22,000 paratroopers and glider infantrymen dropped on the island over 5,000 were killed.[20] Ironically, the chaos that was unleashed by British anti-aircraft fire and the unexpected use of gliders caused the British to be indecisive and hesitant during the rest of the battle and within a week, the island was lost.[21] The airborne forces used by Hitler had ultimately helped Germany capture Crete, but Hitler deemed the cost of manpower to be too high. As a result, Hitler never used large-scale airborne forces for the remainder of the war.

The Americans were unaware of the disaster that the German gliders had suffered during the Crete mission. All they saw were the results: a lightly armored airborne force attacked a mountainous island defended by a force twice its size and was victorious.[22] Since the information obtained by the War Department about the use of gliders at Eben

Emael, the American military brass, including General Henry "Hap" Arnold had begun to slowly warm to the possibility that gliders could serve a military purpose. On February 25, 1941, Arnold issued a report, which stated: "In view of certain information received from abroad, a study should be initiated on developing a glider that could be towed by aircraft."[23] In April, an American Military Attaché in Switzerland learned that the German General Staff had been telling Swiss staff officers about the importance being placed on their glider program.[24] Less than three weeks after the report the Americans learned of the fall of Crete. General Arnold then placed an order for experimental two place, eight place and 15 place gliders.[25] Unaware of the fact that the glider invasion had been deemed disastrous by Hitler and that he no longer intended to use them, Arnold moved forward with the establishment of an American glider program based on the importance he believed was being placed on gliders by the Germans. Arnold was not alone, though, in his misguided belief. Arnold's call to action was prompted in part because of a statement made by Winston Churchill following the loss of Crete.

> This is a sad story and I feel myself greatly to blame for allowing myself to be overborne by the resistances, which were offered. The gliders have been produced on the smallest possible scale, and so we have practically now neither the parachutists nor the gliders…a whole year has been lost.[26]

The Battle of Crete proved to be a turning point in the story of the military glider. It marked the beginning of the British and American programs, both fueled by the belief that glider and airborne forces were the reason for the loss of Crete. It also marked the end of the German program because Hitler believed the glider had held his forces back from obtaining a more decisive and swift victory.

Though his program was conceived in error and was a late-comer to the glider party, by October of 1941, General Hap Arnold had appointed a coordinator to the glider

program named Lewin Barringer, a civilian glider enthusiast who played a vital role in the development of the glider program. While Barringer played a vital role in the development of the program, the fact he was a civilian and proved how far behind the Americans were. The Army had long since dismissed the glider as a military tool and as result did not have any military personnel who were experts on the matter. Instead, the United States' experts on gliders were all civilians. The use of civilians caused a communication breakdown and delayed the development of the glider program according the General Frederick P. Dent Jr. Dent was the colonel in charge of the development of the glider at the Aircraft Laboratory at Wright Field in Dayton, Ohio and argued that

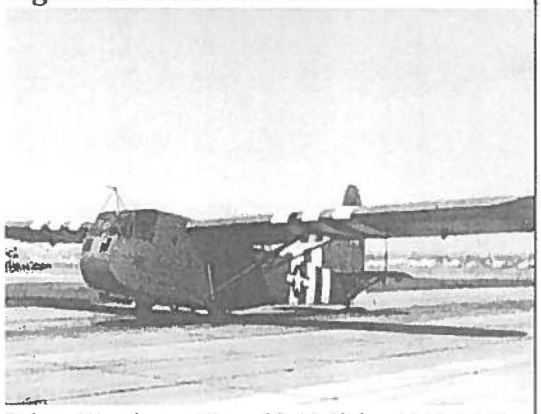
> He (Barringer) had spent quite a bit of time as a soaring pilot, but he knew absolutely nothing about the military. He did not speak the language; he had no idea what the military requirements were; and heading into the office he really did not give us much help.

After the laboratory created a design requirement, a call for proposals went out to 11 different aircraft companies and received favorable replies from five, including the Waco Aircraft Company of Troy, Ohio.[27]

When General Henry Hap Arnold instituted the glider pilot program, he commissioned officers from the Army Air Corps stationed at Wright Air Field in Ohio to begin testing prototypes for a military glider plane. One of Arnold's conditions for awarding the glider contract was that it needed to come from a civilian company not already producing powered aircrafts for the United States. The result of these tests was the creation of the CG-4A glider design from the Waco Aircraft Company out of Troy, Ohio (Figure 1). [28] The CG-4A was a cargo plane that could carry equipment such as a jeep or ammunition in addition to 12 troops.[29] The Army Air Corps then awarded 16 different companies contracts to begin mass production of the CG-4A design. Most of

these companies charged the government more than $25,000 per glider, however, the Ford Motor Company, thanks to its assembly-line efficiency, only charged the government $15,000 dollars per plane.[30] Ford would produce more gliders than any other company during World War II.

Figure 1: Waco CG-4A



Robert Woodman, *Waco CG-4A Glider*, 1942-1946.

The design of the CG-4A was simple, yet effective. The main products used were honeycombed plywood and canvass, but the plane had a cargo weight bearing capability of 4,060 lbs. Glider planes were towed up into the sky by a power plane, typically the C-47 Dakota. This plane attached itself to the glider by way of a 300 foot one inch diameter nylon rope.[31] The C-47 carried the glider across enemy lines, at which point the glider pilot would release the tow cable glide from as high up as 10,000 feet to the earth in about 15 seconds.[32] Though silent while in flight to the outside observer, these engineless aircrafts were anything but quiet for those sitting inside. Walter Cronkite, who served as a war correspondent during the war, flew in a glider during Operation Market Garden. In 1992, Cronkite penned the forward for former glider pilot John L. Lowden's book *Silent Wings at War,* and he likened his flight inside of a glider to that of "being inside of a drum at a Grateful Dead concert."[33] The glider's main appeal though, was what had allowed the Germans to be so successful in Belgium. That is, the ability to silently carry an entire squad of men and land them together. This saved precious time in combat, which was often wasted by paratroopers trying to regroup after

being separated during their drops.[34] A completed glider design was only half of the equation. In order to fly the planes, the army had to find men who were willing to do so.

Nearly, every surviving glider pilot carries a story with him that became legendary. After completing their training, like all other pilots, glider pilots would be awarded their wings. Glider pilot wings had a letter "G" in the center of them. The story goes that on a certain occasion, some power plane pilots were mocking a glider pilot. The powered pilots were asking the glider pilot what the letter "G" stood for on his wings (Figure 2). The power plane pilots concluded that it must have stood for "greenhorn" or "grounded," but the glider pilot retorted "the 'G' stands for guts!"[35] Thus became the standard for all of the nearly 6,000 men who flew gliders during the war. The men who became glider pilots during the war were of a mixed breed. Some were powered pilot washouts, others lacked the education to become powered pilots, some were unhappy with their current role in the army and still others were hamstrung into volunteering.

Figure 2: Glider Wings

Kevin Hein, *World War II Glider Wings*, 2015.

On December 7, 1941 the attack on Pearl Harbor made the war a reality. Declaration of war was followed by the immediate need for an expansion of armed forces. This meant that the glider program would be greatly expanded from a couple of hundred test pilots to first 1,000 men, then 4,200 men and finally 6,000 men.[36] Initially, the Army placed strict criteria on potential glider candidates, which included previous aviation experience with at least 30 hours of flying time in a civilian glider.[37] With the

declaration of hostilities, it soon became apparent that in order to meet General Arnold's call for a glider pool of 6,000 pilots, the requirements would need to be loosened significantly. Eventually, it got to the point where the Army adopted a policy in which all volunteers were taken. Anybody who wanted to become a glider pilot was accepted into glider school.[38]

Glider pilots were a rare breed. To fly voluntarily in an engineless aircraft with nothing between the pilot and the earth 10,000 feet below but some plywood and canvass, certainly took "guts." The pilots affectionately referred to themselves as "suicide jockeys" and even as "the bastards that no one wanted."[39] "Suicide jockey" was a term used by the pilots because of the inherent dangers of flying engineless aircraft behind enemy lines. "The bastards that nobody wanted" referred to the fact that glider pilots could not fit in with regular powered pilots, nor could they find lot with the infantry men they carried into combat, even though they themselves became infantrymen upon landing. In either case, glider pilots were a unique brand that came from a variety of different backgrounds. They did, however, share one common goal; they wanted to fly.

Robert Woodman was one such man who dreamt of flying. When the Japanese attacked the United States on December 7, 1941, Woodman recognized the act as transformative: "It changed our whole lives; I knew I had to go as soon as I could get in."[40] After waiting to enlist until after the New Year at the request of his fiancée, Woodman joined the United States Army on January 6, 1942. He enlisted in the Army because he wanted to fly. His lack of education would prevent him from becoming a pilot, but by enlisting in the Army Air Corps, he knew he would be given a chance to at least become a turret gunner.[41] After boot camp and basic armament training, Woodman

headed to Indianapolis to advanced armament where he began training to become a bomber turret gunner.

Unbeknownst to Woodman, the army was opening up cockpit doors. By the summer of 1942, the Army Air Corps began accepting men as volunteers to join the glider program. In an effort to entice men into joining the program, the Army promised all volunteers an automatic promotion to staff Sergeant upon entering the program which meant higher pay and the fast track to becoming a commissioned officer.[42] Robert Woodman became one of many volunteers, in fact, that the Army Air Corps began placing them into pools. Woodman was placed into a pool that was sent to a base in San Antonio, Texas for a few months before being shipped to Grand Forks, North Dakota to begin basic flight training. In Grand Forks, Woodman stayed in the dorms on the campus of the University of North Dakota. At this time, he felt like he had made the right choice in volunteering to fly gliders because he and the men in his pool ate like kings in the campus cafeteria. "It was really good; the best food I had while in the service."[43] By the time the fall came, Woodman and his glider pool were ready to begin the their glider training.

There were other men who decided to volunteer for the glider program because they were unhappy with the circumstances of their current situation within the army. Mel Pliner of Brooklyn, New York joined the Army after Pearl Harbor and hoped to get shipped overseas. During his civilian life, Pliner drove a laundry truck for his father's business. Pliner spent a great deal of time working on his truck, which gave him a skillset his superiors felt was very handy to have around. After a couple of weeks following his basic training, Pliner was reassigned to stay stateside as he worked on jeep and tractor

engines, and even spent time grating out runways. After two weeks of this kind of work, Pliner realized the only way he was going to see any combat was if he volunteered for the glider pool.[44] Sure enough, the plot worked, and Pliner was shipped off to Bowman Airfield in Louisville, Kentucky.[45]

Other men found themselves in the glider pool because they were forced into volunteering. One such man was John L. Lowden of Walla Walla, Washington. On a whim one night, he and his buddies decided they should enlist and "shop the services." Lowden, decided to join the Army because the Marine Corps required a four-year enlistment, which he deemed as too long and he did not like the Navy uniforms.[46] After being accepted into flight training school it appeared to Lowden as though he would become a pilot. He was initially assigned to the same unit that would execute the Doolittle Raids. After struggling during training with BT-13s, however, Lowden was washed out. Figuring that his flying days were over, Lowden became a quartermaster when his company commander called him into his office and offered him the chance to volunteer for the glider program. After declining his commanding officer's suggestion, Lowden was assigned to take inventory of GI blankets in a warehouse that reached temperatures in the 90s by mid-morning. After five days taking inventory, Lowden reconsidered the offer of his commanding officer and volunteered for the glider program.[47] Though the glider corps was an all-volunteer outfit, stories such as Lowden's were not uncommon as many pilots within the corps were pushed into the program as "handcuff" volunteers.

Often times glider pilots had extensive flying experience during their civilian lives before the war. When they entered the service they became a hot commodity during

the war. Barnstorming air shows became extremely popular in the United States after Charles Lindberg made his trans-Atlantic flight. Some of these barnstormers would go on to become glider pilots during the war. R.C. Moore, of Appomattox, Virginia and Louis Brough of Ann Arbor, Michigan fit this profile. Moore had barnstormed around the South and had his draft deferred for six months after Pearl Harbor. Moore, after being drafted became a combination pilot. During the war, it was not uncommon for American glider pilots to fly as co-pilots on transport C-47 Dakotas during their time overseas. This was done in an effort to keep their flight hours current, especially when there was a shortage of flyable gliders on base. For Moore, though, it was uncommon to fly as both the pilot of a C-47 and fly in combat glider missions.[48] More unusual than Moore's situation though, was the one that Brough found himself in on the eve of Rhine River invasion.

Louis Brough started flying in 1935 at the age of 15. He flew as a barnstormer and even had the opportunity to meet Charles Lindberg, flying with him during an airshow.[49] On the eve of the war, Brough was a co-pilot with United Airlines and joined the Army Air Corps in 1942. During the war, Brough spent his time as a pilot of a C-47 but logged a few glider hours while visiting a friend at a stateside base. On the eve of Operation Varsity, several squadrons were short on glider pilots. Seeing that Brough had logged a few hours while stateside, he was given a crash course on glider flight and flew in the Rhine campaign where he was wounded in the right arm.[50]

Though "conceived in error," once committed to the glider program, the Army Air Corps was willing to put the technological and industrial might of the United States behind the program. While often criticized for its late arrival in relation to other glider

programs, the Americans more than made up for their lack of experience with production and a willingness to do whatever it took to win the war. The training and implementation of the glider program would go on to "suffer a long and painful period of gestation," but as John Lowden argued:

> the careless, callous, or incomplete planning and implementation of glider-assault operations in the days when winning wasn't everything: it was the only thing, no matter at times, what the cost.[51]

The men who made up the glider pool would echo this sentiment, as many of them volunteered to fly gliders out of a desire to make it into combat. While the German invasion of Crete represented the graveyard for the German airborne infantry, it also represented the dawn of an American program that was willing to undertake and experiment with a daring new form of warfare in hopes of achieving victory. As a result of this will to win, gliders would be utilized in every major operation of the European war from the campaign for Sicily onward.

Chapter 3:

Suffering a Long and Painful Period of Gestation

The successful implementation of a glider force capable of achieving military surprise and an advantage on the battlefield was a slow and complex process that was nearly abandoned on multiple occasions. For the leadership, the program and the pilots themselves, the creation of the glider program where there were nearly no experts on combat gliders in the military became a "long and painful period of gestation."[1]

Once General Hap Arnold tapped Lewin Barringer to oversee the creation of the glider program, and the call for volunteers had gone out, the challenging task of training men capable of flying gliders into combat began. While there were essentially only four phases to the glider training process, the call for glider volunteers and the army's policy of accepting anyone who volunteered led to a series of unforeseen issues. Thousands of men volunteered for the glider program but a lack of training facilities, and more important, a lack of personnel to train pilots led to men being placed in large glider pools, where they would be forced to wait for their opportunity to train. Compounding the lack of quality instructors, the training process was also slowed by the delay in the construction of combat gliders for training. As a result, these pools swelled with men and the longer they waited the more issues with morale the army had to face. An Army Air Force historical study published in September 1943 reveals just how severe this problem had become. By the end of 1942, the glider program had enlisted 10,294 men. Of these men, only 1,451 had completed training, 5,585 were sitting in glider pools, and 3,285 were actually training. In all, the glider training process was moving at a slow pace of nine months.[2]

This protracted process led to morale problems within the glider pool. Many men who had volunteered for the program had done so because of the promise of a six-week training process and rapid advancement in the ranks.[3] While sitting in the pools, glider volunteers were often given no instruction, nothing to do and no explanation as to why their training was being delayed. Additionally, glider volunteers were often being moved from one glider base to another in an effort to keep the pools equalized.[4] In an effort to remedy the morale problem, students at the training facilities were placed into units where they began concentrated infantry drills, intensive physical training and by January of 1943, being granted 30 days of furlough time.[5] While these efforts helped to raise the morale of the men, none of them had the effect that the November 1943 announcement that all glider pilot graduates would attain the rank of "Flight Officer" upon graduation had. This newly created rank (now no longer used) meant more benefits and higher pay.[6]

Once pilots entered glider pilot training, they were sent to numerous training facilities around the country. The lack of experienced military pilots meant that largely civilian instructors would teach the initial training phases. The glider pilot training went in four phases. The first was a motor aircraft phase in which pilot trainees were taught the basics of flight. Glider students were taken into the sky in small aircraft where their instructor would turn over control of the aircraft to them and they would execute basic flying techniques. The instructor would then land the plane. The small aircraft chosen for this stage of training was oftentimes the L-3D Grasshopper: a tiny two person aircraft with a maximum speed of just under 90 miles per hour.[7]

The second phase of glider training was known as the "dead stick phase." During this phase, glider pilots were given control of a powered aircraft in the sky, but power to

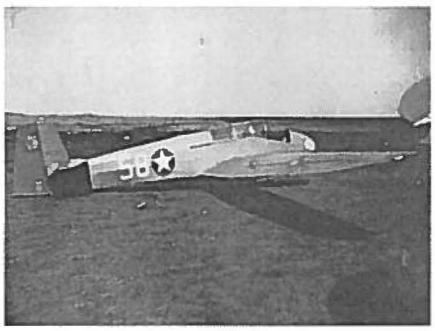
the engine was cut permitting the trainee to execute a few maneuvers in the sky before bringing the plane down toward the ground. Just before landing, though, the instructor would turn the power back on and have the trainee gain altitude again and the whole process was repeated until the instructor allowed the glider pilot to land the plane safely.[8]

When he began his motor phase in July 1942, Robert Woodman had no knowledge about airplanes. A lack of aviation knowledge, however, was only one of the obstacles with which Woodman and his fellow trainees had to contend. The North Dakota winter arrived early in 1942, and Woodman recalled how cold it was. "That was a different kind of cold; I've never been that cold in my life."[9] The glider pilot trainees attempted to keep themselves warm as they stood out in the middle of barren fields by using the only source of heat that they had: three 50 gallon barrels filled with gasoline that they lit on fire. In an era before pressurized cockpits, the pilots had to contend with the weather while in the sky as well.[10]

The third phase of glider training was known as the small glider phase, during which the glider students began to use actual glider planes for the first time. For this training, the Army found itself with another new and unique challenge. By August of 1942, the Army had only been able to locate and purchase a total of 61 sailplanes from around the country. As a result, the Army began converting small aircraft into gliders, by removing the engines as well as placing orders for new sail crafts from a variety of civilian companies (Figure 3).[11] During this phase, glider pilot trainees were towed up to the sky by a powered plane and given the opportunity to fly their gliders. These small gliders were so light, that glider pilots would utilize the thermal bubbles, invisible cells of warm air that rise from heated surfaces on the earth, to remain in the air for hours at a

time.[12] Woodman recalled being reprimanded by his flight officer for remaining in the sky well past the allotted time, but he and the other trainees were enjoying the freedom of flight too much to land earlier.[13]

Figure 3: Small Glider



Robert Woodman, *Small Glider*, 1942-1946.

Finally, after completing the first three phases of glider training, the soon-to-be pilots were sent to complete the Advanced Glider Program, often known as "transition."[14] In 1942, the first advanced school was located at Lockbourne Army Air Field in Columbus, Ohio. Here, the first class of glider pilots was trained. Many were powered pilots who had been recruited into the program. As a result of these men and their flying experience, the final phase of training only lasted two weeks.[15] As the need for more glider pilots emerged, "transition" time would greatly increase as many pilots came into the program with no flying experience. By 1943, nearly all glider trainees were sent either to Lubbock, Texas or Laurinburg-Maxton, North Carolina for the final phase of training.[16] During this phase, pilots flew simulated missions with the much larger CG-4A Waco glider. The CG-4A was much larger than the sailplanes used in small glider training. As a result, pilots had to work diligently in order to keep the plane in the air for more than a matter of minutes. The skilled pilot though, could keep the plane in the air for longer by executing a maneuver known as a lazy eight, or by finding thermals on which to climb.[17] Even after being stationed overseas, pilots were required to log training time. One glider pilot, Mark Bagley, successfully managed to keep his CG-4A in flight for an hour and a half while logging a training flight. After the capture of Sicily from the Germans, Bagley

was flying near Mt. Erice to deliver supplies to an orphanage. During the flight, Bagley noticed the unusually strong thermals near the mountain. The next day, he asked the pilot of his tow plane to tow him to an altitude of 7,000 feet. For the next hour and a half after release from the tow plane, Bagley enjoyed the freedom of flight:

> I did not think that a CG-4A could do that. It had a lot of drag, but got a lot of lift from those strong updrafts... I would advise any pilot who would like to set an endurance record in a sailplane to head for Mt. Erice.[18]

While Bagley's flight at Mt. Erice demonstrated the capabilities of the CG-4A in ideal conditions, when the payload of the glider was increased, either by adding men or supplies, the flight oftentimes lasted only a matter of seconds.[19]

At the Casablanca Conference in January of 1943, British Prime Minister Winston Churchill and American President Franklin Roosevelt decided the next allied offensive would be aimed at Sicily and Italy. This campaign, which Churchill referred to as "the soft underbelly of the crocodile," was meant to knock Italy out of the war, and guarantee Allied control of the Mediterranean and Middle East.[20] Operation Husky, or the invasion of Sicily would be the American glider program's first taste of combat. The airborne portion of the invasion, code named "Operation Fustian," was undertaken at night and conditions, including a very strong headwind, proved to be disastrous for the cargo heavy CG-4As.[21]

The glider mission was plagued from the beginning. British General Bernard Montgomery, fearful that paratroopers would not be able to conduct a successful assault at night decided that glider planes would lead the assault. The problem with this plan was that nearly all of the glider pilots in both the Army Air Corps and Royal Air Force were fresh out of training and had little to no experience flying gliders at night.[22] When

Colonel George F. Chatterton, commander of the British Glider Pilot Regiment expressed his hesitation with the battle plan, he was informed that he could either move forward with the plan or tender his resignation.[23] Compounding the problem of a lack of night flying experience was the severe shortage of British Horsa gliders as well as a shortage of American glider pilots. As a result, with only a month before D-Day, 30 American glider pilots were sent to Tunisia to train British pilots to fly the Waco CG-4A gliders into combat.[24] On the evening of July 9, 1943, a force of 136 American CG-4A gliders and eight British Horsa gliders left Tunisia flown by British pilots and with the 30 American pilots who had trained them to fly the gliders serving as their co-pilots.[25] Flying the 380 miles due East to their first checkpoint at Malta, the gliders and the their tow planes were forced to fly below an altitude of 500 feet to avoid enemy radar detection. Some planes, flying as low as 250 feet above the sea, were dampened with sea spray being kicked up by the high winds.[26] When they reached Malta, the planes made a hard turn north and headed for Sicily.

Upon reaching the coast of Sicily, heavy winds had caused a blinding dust storm on the coast, which made it nearly impossible to identify shore checkpoints for release of the gliders. Climbing to their altitude for release (the CG-4As between 1,000 and 1,500 feet and the Horsas 3,500 feet), the planes began to encounter stiff anti-aircraft fire. Having been instructed not to venture any closer to the coastline than 3,000 feet to avoid unnecessary casualties, many of the powered pilots began to panic, breaking formation and releasing their gliders far earlier than allowed for them to make landfall.[27] In the chaos that ensued, gliders began to be released at altitudes ranging from 1,800 feet to as

high as 4,000 feet. Some powered pilots panicked and turned back for Tunisia, forgetting to release their gliders. The result was several mid-air collisions.[28]

The chaos of the glider assault had disastrous results. Of the 136 Wacos used in the mission, 69 crashed into the ocean. An additional three British Horsas joined them.[29] Only 49 American gliders and five British gliders landed within a 10-mile radius of their intended landing zones. Ironically, every one of the powered planes that had towed the gliders to Sicily landed back in Africa safely. There were 605 listed casualties of the glider mission alone. A total of 326 were presumed to have drowned during the mission, among which were 88 British pilots and 13 American pilots.

Despite the extremely high casualty rate of the mission, several glider pilots and crews were able to make a difference during the battle itself. During the chaos of the night, some of the British pilots, feeling uncomfortable with the CG-4A gliders, turned control of their aircraft to their American co-pilots. One such pilot was Flight Officer Samuel Fine. After being released from an altitude of 2,500 feet, Fine remarked on the landing:

> It was one hairy night, believe me! I spotted a large field by the light of the half moon and landed safely, although we did a double ground loop when both wings hooked into trees. I had thirteen British troops aboard and before we could get out of the glider, Fascist troops behind a stonewall started firing at us. I was hit on the right shoulder and one of the first troopers out of the glider was hit too.[30]

As the British troops and Fine exited the glider, Fine was hit a second time, but not before he and the men he was with sent the enemy troops on a full retreat.[31] After Fine and his men reached their objective, the Ponte Grande Bridge, they were surrounded by Fascist troops and forced to surrender. While on their march however, they were able escape:

> As the enemy was marching us away along a dirt road through some woods, a British officer suddenly appeared from behind a tree right in front of us- he was at least 150 feet away- and took a shot with a pistol at the guard on point, smacking him right between the eyes. The other guards didn't know where the shot came from and while they were scurrying around among us, I grabbed two rifles from a couple of them. I tossed one to a trooper near me and the two of us shot every Fascist we could see. The rest of our captors were huddling in the woods behind trees and bushes and meekly surrendered.[32]

For his efforts, Flight Officer Fine was recommended for the Silver Star, but General H.L. Clark promptly dismissed his recommendation, in large part because of the widely held belief among American commanders that glider pilots were not capable of deeds on the battlefield that should warrant any serious recognition.

Meanwhile, British Glider Commander George Chatterton was released over the ocean without nearly enough room to reach land. While losing altitude, a searchlight focused in on his glider and machine gun fire destroyed his right wing. Crashing into the sea, Chatterton and his men were forced to swim to the shore where they were able to link up with a squad of Special Air Service troops. By daybreak, the squad had eliminated at least six Italian strongpoints, capturing 150 prisoners in the process.[33]

The disaster in Sicily was nearly the undoing of the entire allied glider airborne operations for the remainder of the war. The poor performance and excessive gliders casualties caused many policy makers to question the value of airborne forces. General Dwight Eisenhower lack of faith was evident:

> I do not believe in the airborne division... even if one had all the air transport he could possibly use, the fact is that at any given time in any given spot only a reasonable number of air transports can be operated because of technical difficulties.[34]

This conclusion put the future of the glider program in serious jeopardy. General Mathew Ridgeway and his subordinates still had faith in the use of large-scale airborne operations. After studying the operations, they were able to draw several important lessons. First, it was clear that releasing gliders over water by night was a mistake. Second, landing fields needed to be marked by lights or radio communication. Finally, it would be necessary for Troop Carrier Command to improve its training with regards to close formation flying.[35] General Ridgeway and his men concluded that the operation in Sicily should not be used as a fair measurement of the potential of airborne operations. Thus, Ridgeway would lobby for future utilization of airborne operations as the war continued. This was a decision that would have a major impact on the outcome of the war.

While the Ridgeway and his men continued to lobby for airborne operations, the glider program remained in serious jeopardy due to a tragedy that took place in St. Louis, Missouri. With the Sicilian disaster still fresh in the minds of American policy makers, on August 1, 1943 a ceremony was held at Lambert Field in St. Louis to commemorate the completion of the 65th Waco CG-4A glider produced by the Robertson Aircraft Company. At the ceremony, several dignitaries, including St. Louis mayor William Dee Decker, gathered to be passengers in the glider's inaugural flight.[36] A crowd of several thousand onlookers watched as the C-47 towed the glider to 3,000 feet before releasing the plane to land. Shortly after being released from its tow cable, a loud cracking noise could be heard as the right wing of the glider separated from the rest of the aircraft. The plane plummeted from 3,000 feet to the earth and everyone on board was killed instantly.[37]

The initial feeling among onlookers was that the crash was the result of enemy sabotage. After some time investigating, however, the Air Corps and FBI concluded the crash had been caused by a failure of a wing lift strut-to-fuselage fitting that had been manufactured by the Gardner Metal Products Company of St. Louis. (Ironically, the Gardner Metal Products Company had manufactured coffins before the war.)[38] Because of the crash, the War Department began to set up centralized schools for quality control inspectors and created a standardized set of tools for the measurement and inspection of fittings on the gliders.[39]

Crashes like the one in St. Louis were unfortunately common. While preparing for a training mission, Robert Woodman and his co-pilot got into a glider and Robert claims that the plane gave him a "funny feeling."[40] Woodman ordered his co-pilot to abandon the plane for a different glider. While in the air, the plane Woodman and his co-pilot had abandoned crashed, killing everybody in it.[41] When asked why he did not become a commercial pilot after the war like so many of his fellow glider pilots, Woodman replied "I just felt like my luck had run out and I wouldn't walk away from another crash."[42]

Accidents such as these put the glider program in serious jeopardy. Only a few weeks after the Sicily disaster and the St. Louis tragedy, General Hap Arnold and some of the other commanders of the Army Air Corps met at Laurinburg-Maxton Airfield in North Carolina. The purpose of this meeting was to determine the future of the glider program. Their host around the base was a former air showman turned glider pilot named Lt. Colonel Michael C. Murphy.[43]

Murphy had a long and distinguished career as a powered plane pilot that began in 1928. While serving as the manager of the airport in Kokomo, Indiana, Murphy

supplemented his income by barnstorming with his friends in his two-seated airplane on the weekends. He traveled around the Midwest and give short plane rides to anyone who could afford them, performing aerial acrobatics, wing walking demonstrations and parachute jumps.[44] Among some of his aerial exploits was a stunt in which he became the first man to take off and land an aircraft on a moving vehicle, as well as the first man to take off and land an aircraft upside down (the landing gear was mounted on the top of the plane).[45] Murphy was a showman, and even though he had only graduated from glider school a year earlier, there was no better man to save the glider program.

What has been dubbed the "Pea Patch Show" (because the field being used for the landing demonstrations were a pea patch cleared for the show), took place on August 4 and 5, 1943.[46] Murphy and his handpicked group of glider pilots went to work demonstrating a variety of glider landings and maneuvers. The show included water landings, landing in dangerously short fields, landings at extremely slow speeds. The crowd was especially impressed by the demonstration of a glider retrieval technique known as "snatching," during which a fully loaded CG-4A would be positioned between two wooden poles attached to a tow rope and retrieved by a low flying C-47. This "snatching" technique, it was argued, could be used to retrieve wounded soldiers from the front and deliver them back to hospitals.[47]

The highlight of the show though was the after dinner demonstration. After being loaded onto a bus, the VIPs were taken to the woods and seated in bleachers. As darkness began to fall, Murphy stood in front of the crowd and gave a lecture to the group about the characteristics of the CG-4A over the loudspeaker system. In the field behind Murphy, 10 CG-4A's landed in complete darkness. While answering questions from the

dignitaries, the gliders began to unload men and supplies as well as an Army band who, when Murphy instructed the lights to be turned on, began playing the Air Corp's marching song.[48] The crowd was amazed that the gliders had landed without being heard.

The "Pea Patch Show" undoubtedly saved the glider program. General Arnold was so impressed by the display, that he gave the glider program "priority one" for obtaining large varieties of construction supplies.[49] While the program had been saved by Murphy's exploits, in the aftermath of the Sicily disaster, it was still apparent to General Arnold and General Ridgeway that a reevaluation of glider training needed to take place. As a result, Murphy and other glider pilots began to develop new standards for glider pilot training. Among these new standards were adjustments of proper approach speeds for fully loaded gliders to around 55 miles per hour, proper landing techniques for dealing with obstacles in the field, and introduction of night training for glider pilots.[50]

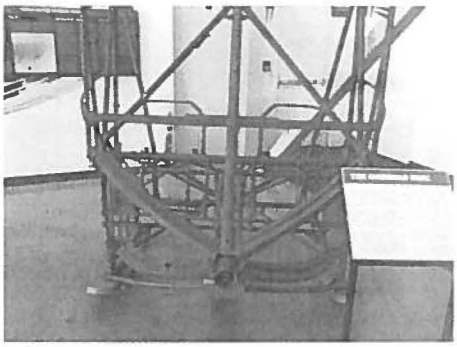
These changes were very unsettling to glider pilots who were fresh out of glider training. In mid-July 1943, Flight Officer Robert Woodman, a recent graduate from glider training in Lubbock and newly married, had received orders to be shipped overseas. Woodman and his fellow glider pilots were on a train heading for the east coast when they were stopped in Louisville, Kentucky and redirected to Bowman Airfield just east of the city. Rather than being shipped off to the European theatre, Woodman and his fellow pilots would spend the next eight months relearning how to fly the CG-4A.

> It was really unnerving. We had to relearn things that we had been taught previously. We also began night training and were not allowed to fly with any lights. We lost a lot of men during this time.[51]

In October 1943, the Army Air Corps also began to implement items intended to improve the survivability of the CG-4A as well as provide the pilot and co-pilot with

greater protection during rough landings. The presence of solid object on the landing surface of fields posed a major threat to the safety of the pilot and co-pilot. The CG-4A's cockpit was constructed, like the rest of the glider, out of canvas and steel tubing. When landing a glider at speeds in excess of 55 miles per hour, solid objects in the path of the CG-4A often times carved into the nose of the glider, breaking the legs of the pilot, or causing the glider to stick into the ground and flip.[52] In an effort to improve the safety of the landing conditions, the Army began to order a crash protection device that was built by the Ludington-Griswold Company of Saybrook, Connecticut. Dubbed the "Griswold Nose" this was a skid-like device that was mounted on the bottom of the fuselage and served as a glider equivalent to a cattle catcher (Figure 4). This simple device was credited with saving the lives of numerous glider pilots during the war.[53]

Figure 4: Griswold Nose



Kirt Woodman, *Silent Wings Museum Pictures,* June 18, 2012.

While efforts were taken to improve the training of glider pilots, as well as the safety of glider flight, the bottom line was that there were still some serious questions as to whether or not gliders could be used effectively in battle. The Sicily operation had proved to be a disaster for the airborne operations, and, just as Hitler had following the disaster in Crete, General Eisenhower questioned the value of airborne units in large-scale battles. Unlike the Germans, however, the United States and Great Britain did not let one poorly planned operation spell the end of the airborne operations. This would prove to be one of the best decisions the Allied commanders would make throughout the remainder of the war.

As for the American glider program, its pilots remained outcasts. The sudden introduction of new training left many of them unsettled. All the pilots could do was sit and wait for an opportunity to get into the war. Many pilots were unsure when and if that opportunity would come but hoped that if it did, they would be able to prove the value of their program.

Chapter 4:

Delivered at the Wrong Place at the Wrong Time

By spring 1944, the American glider program had already dealt with numerous setbacks and suffered through numerous growing pains, but it had not yet proved whether it could be of value on the battlefield. The disaster of Sicily had left many questioning whether the program should continue, but after Michael Murphy's exploits at the "Pea Patch Show" the program was given new life.

While the glider program was most heavily used in Europe, the first opportunity for American glider pilots to fly in combat took place in March 1944 in Burma. Following the attack on Pearl Harbor, the Japanese moved on Burma and forced the surrender of some 70,000 British colonial troops.[1] The Americans, understanding the importance of keeping the flow of supplies along the Burma Road into China, created Project 9, an airborne unit whose purpose was to provide support to the remaining British soldiers under the command of General Orde Wingate. Project 9, later renamed the 1st Air Commando Group would attempt to divide the Japanese defenses by landing men and supplies behind enemy lines to disrupt rail and river communications.[2]

On March 4 and 5, the 1st Air Commando Group participated in Operation Thursday, a mission during which 50 gliders would be towed 165 miles behind enemy lines to deliver men and supplies to two different locations. These supplies would be used to help build landing strips for future delivery of men and supplies via powered planes.[3] A shortage of powered planes forced the glider mission of Operation Thursday to employ a technique known as the "double tow" during which two Waco CG-4A's were towed by one C-47. Complicating the mission further was the fact that it was scheduled

for night and many of the glider planes were dangerously overloaded with men and supplies.[4]

When the planes took off from their fields in India all appeared to be going well. Only 15 minutes into the mission, however, two gliders broke loose before they even crossed the Indian border, landing somewhere in the jungle. The culprit of these premature landings was deterioration of towropes, which had been exposed to months of jungle weather.[5] At the first landing field, codenamed "Broadway" the first group of glider planes landed, avoiding some of the major obstacles that were not revealed in the aerial photographs. The Japanese had laid out old teak logs, concealed in the tall grass. As a result of these obstacles, all of the gliders that landed sustained damage, including to the radio, making it impossible to communicate with headquarters.[6] 37 gliders landed at "Broadway" and 17 were forced to land prematurely, either because of the bad ropes, or the fact that the British had ignored weight regulations when loading the gliders.[7] Despite these setbacks, however, most of the equipment was intact and the men went to work clearing the field for an airstrip.

Among those pilots who participated in Operation Thursday was actor Jackie Coogan, famous for his marriage to Betty Grable and his role as Uncle Fester on the television show *The Addams Family*. Coogan was one of the first gliders to land at an alternate site fifty miles south of "Broadway" known as "Chowringhee." After landing, Coogan was in charge of laying out smudge pots to guide the rest of the gliders coming in. Of the 13 gliders sent to "Chowringhee," all but one landed safely. The glider which failed to land safely contained the bulldozer needed to clear the field. When it crash-landed, it collided with a tree, killing everyone on board and destroying the bulldozer.[8]

Despite this setback, the fields at both "Broadway" and "Chowringhee" were prepared within 24 hours and troops and transport were rushed in. Eventually, glider pilots would haul in 2,000 mules, jeeps, artillery, boats and ammunition, which became invaluable in the transportation of supplies back to the Burma Road.[9]

In total, the Air Commandos would fly a total of 74 glider sorties in the China Burma theatre.[10] During this time, the glider pilots would participate in resupply missions, medevac by snatch plane and combat, fighting when Japanese aircraft destroyed their planes.[11] General Wingate summed up the role of the gliders in Burma when he thanked Major William Taylor, the commander of the glider detachment:

> I thank your glider pilots from the bottom of my heart. Without them we never could have been successful. Their skill and courage carried us through.[12]

While the Allies were still fighting Germany and Italy over control of the Italian mainland, preparations began, in September of 1943, for the airborne portion of what would come to be known as Operation Overlord. To aid the amphibious assault, the Allies called for three airborne divisions, one British and two Americans, to be used in the cross channel invasion.[13] By January 1944, these three airborne divisions were in England awaiting their role in the invasion. The role of these airborne forces would be to parachute and glide into opposite ends of the Normandy countryside to seize key terrain and disrupt the German defenses, helping to ensure the ability of the amphibious troops to secure a solid foothold of mainland Europe.[14]

By February of 1944, a total of 2,100 Wacos had arrived in England to be used in the assault, however, a lack of facilities and manpower made the task of assembling the Wacos nearly impossible.[15] A crash glider construction effort was undertaken and by the

middle of April, after working seven-day weeks, the glider mechanics had managed to construct 910 Wacos. There were concerns over the safety of the gliders because a team of civilians and army personnel who had no prior experience with the gliders had constructed them with limited direction. Those concerns were compounded due to the fact that only 288 of the gliders had been fitted with the Griswold Nose and other safety equipment, which had been ordered by the Army after the Sicily disaster.[16] Of even greater safety concern though, was that many American pilots learned that they would be carrying large caliber anti tank guns and heavy artillery pieces into France, and as a result, requested to fly the larger British Horsa gliders instead of the Wacos. Most of these pilots had little to no experience flying the Horsas.[17]

Poor aerial reconnaissance would be a major hindrance to the success of the glider landings at Normandy. Allied reconnaissance failed to uncover three major obstacles, which glider pilots had to deal with during D-Day. First, General Erwin Rommel, the officer in charge of the German defenses believed that the Americans and British would be using a large number of paratroopers and gliders in the assault so he had all suitable fields inland from the coast sowed with large wooden poles which became known as Rommel's asparagus.[18] The recon photos failed to show these poles. The second obstacles facing the glider pilots were the hedgerow barriers that separated the various farmers' fields throughout Normandy. The poplar trees, which made up these hedges could grow as high as 60 feet with bases of earthen bulwarks three to four feet off of the ground.[19] The final oversight of pre-D-Day reconnaissance was the fact that the major landing area for both the 82nd and 101st Airborne Divisions was a series of fields that were flooded. These landing fields lay between the Merderet and Douve Rivers and the

naturally flooded areas were so calm in recon photographs that Allied planners referred to the area as "the Prairie." Many American glider pilots were set to land in these fields and had no way of knowing how difficult it would be to come to a stop in these flooded fields.[20]

At 11:00 pm on June 5, 1944 pathfinder units whose job was to mark landing zones for paratroopers and glider pilots, left England for the cross channel invasion. Weather forecasts called for overcast skies, but the Allies believed the clouds would be above their flying altitude when they hit the French coast. The pathfinders were able to elude German radar and enter France undetected, however the cloud cover proved to be a much lower altitude than expected and many of the pathfinders failed to find their landing zones.[21] At 12:21 am on June 6, the first wave of the main airborne assault teams left England for the Normandy coast, completely unaware of the failure on the part of the pathfinder teams to accurately locate and mark any of the drop zones. When the paratrooper planes reached the Cotentin Peninsula, just east of their Normandy landing zones they dropped to an altitude of around 500 feet.[22] There, they were met with a heavy blanket of clouds and enemy flak. As the ground disappeared behind the clouds, the planes broke formation, flying either too high or too low for the paratroopers to safely jump. Desperately, the pilots began searching for the radio signals that the pathfinders were supposed to have set up to guide the planes to their designated drop zones, and when they failed to find them, many panicked pilots simply turned on their green jump lights and headed back to England.[23] As a result of the chaos, the paratrooper drops were widely scattered.

As for the glider portion of the airborne operations, the Americans flew a total of 292 CG-4As and 220 British Horsas beginning around 4:00 am on D-Day and ending on D-Day plus one.[24] The glider pilots were plagued by the very same issues that the paratrooper pilots had been plagued by.

Flight Officer Francis J. Zinser of the 437th Troop Carrier Group left in his CG-4A from Ramsbury, England in one of the first waves of the invasion and he remembers how bad the visibility was on that night:

> I had a hell of a time finding my proper position behind the tow plane because of low cloud cover and turbulence. I couldn't see a thing, not even my own tow plane. All there was to be seen was an eight-to-ten foot length of tow rope, and that was how I maintained my proper position, by the angle of that short length of rope.[25]

As Zinser got closer his landing zone, near St. Mere-Eglise, he describes how the darkness of the night impeded his landing:

> I released the towrope and turned toward my landing, but I evidently got a little too low in the darkness and I hit the top of the trees on the edge of the field. The trees tore off my left wing and we slewed around and hit the ground upside down. After climbing out of the glider, we met some of our own airborne troops who pointed my copilot and me toward the division command post where we acted as perimeter guards for a couple of days, after which we were dispatched to the beach and returned to England on a landing craft of some sort.[26]

In the early hours of D-Day sheltered under the wing of a CG-4A marked "The Fighting Falcon" two men stood anxiously awaiting their payloads to be secured and their mission to begin. One of these men was Brigadier General Donald F. Pratt, assistant division commander of the 101st Airborne. Pratt had been selected to glide into France to assume command of the 101st in Normandy.[27] Pratt's pilot was none other than Lieutenant Colonel Mike Murphy, the man who had saved the glider pilot at the "Pea

Patch Show" just ten months earlier. Murphy was nervous about the mission because he had just learned that "The Fighting Falcon" was carrying a jeep, four men and communications equipment, which put the payload in excess of 1,000 pounds heavier than the standard weight limit.[28] The plane took off from England at around 1:20 am on the morning of June 6. A couple of hours later, Murphy and his plane reached France. He recalled:

> It was a beautiful and peaceful night. The moon was shining down through the scattered clouds and you could see the tree line and the shapes of the fields. Then, about halfway across the Cotentin Peninsula, the German gunners woke up. We encountered heavy ground fire from that point to the landing zone. I remember watching the tracers making pretty bullet patterns in the dark and thinking of fireworks. Occasionally a bullet would ricochet off the jeep or hit our wings. I called the tow pilot and said, "These sons of bitches are aiming at you but they're not leading you enough and they're hitting me!" I spotted the railroad track that was only one-half mile from our field, so I said "so long" to the towplane and away we went. As we got down to glide speed and the noise of the slipstream dropped, we could hear the machine guns firing. The field I had selected was almost a thousand feet long but completely surrounded by fifty-foot trees. It looked easy because a fully loaded Waco can be stopped in two hundred feet. With my wheels locked and the glider pushed up on the nose skid, we slid for over eight hundred feet on the wet grass and smashed into the trees at fifty miles per hour.[29]

In the aftermath of the wreckage, lay the dead bodies of General Pratt and Murphy's co-pilot Lieutenant John M. Butler. As for Murphy, the crash had left the lower half of his body dangling from a hole in the left nose of the glider with two broken legs.[30] General Pratt became the highest-ranking allied casualty of D-Day. A dramatization of this crash was featured in the film *Saving Private Ryan.*[31] Upon crashing, Murphy, knowing that his co-pilot was dead, but uncertain of the status of General Pratt, was about to call back to the General when he heard the roar of a German

tank passing by his plane. The tank stopped briefly but soon continued on its way, assuming there could be no survivors in the crashed glider.

Just minutes after Murphy's crash, a second glider landed in the same field carrying Captain Charles O. Van Gorder, a Doctor assigned to the 326th medical company. Van Gorder had just exited his glider and was making his way to "The Fighting Falcon" when a third glider landed in the flooded field, and unable to stop in time, collided with Van Gorder's glider.[32] After eluding the same tanks that had just passed Murphy, Van Gorder tended to Murphy then found the body of General Pratt, who died when the weight of his steel helmet had broken his neck after shooting forward upon contact with the hedgerows.[33]

Other pilots were much more fortunate than Murphy had been during his landing. R.C. Moore was stationed just South of Bristol and left for Normandy in the early hours of D-Day. While preparing to enter the war, Moore stated that his adrenaline was so high, that he developed blisters all over his arms and feet. He also recalls his flight being "relatively smooth, until right before touchdown."[34] He continued:

> The Germans had dug square holes in the field I was headed into. They'd planted grass in the bottoms of the holes, so you couldn't see them from the air — it all looked nice and green. The Germans had also trimmed the cottonwood trees down so, from above, they looked like shrubs. But when we came in, they were trees, so we had to get over them and then try to land in these fields full of holes. I still had enough aileron control to kick it all the way out past the holes and set the glider down nice and easy. My job was to get the glider down safely, and stay with it until the equipment and troops were unloaded, then to get back to the beach any way I could.[35]

The gliders were able to successfully deliver around 90 percent of the nearly 4,000 troops who had boarded the aircraft in England. As for the dozens of tanks and anti-aircraft weapons they carried, only around 50 percent made it into France.[36] The

poor landing conditions often led to crash landings, as a result, the gliders and much of their cargo were often destroyed.[37] Just like the paratroopers, the gliders were also spread out due to the failure of the pathfinder mission. Many gliders missed their landing zones and had to improvise in new fields. Once on the ground, most pilots were forced to spend hours attempting to work their way through enemy occupied territories back toward the beachheads or to designated assembly points. Additionally, glider pilots were tasked with caring for a large number of wounded men.[38]

The D-Day glider mission was the last time gliders would be flown into combat at night. While the allies had learned many lesson from Sicily, the chaos that ensued was something the Allied high command did not want to see repeated in future missions. In total, the casualty rate for the American glider pilots was pretty low during D-Day. Of the 1,030 American pilots, 25 were killed, 31 wounded, 91 seriously wounded and 33 captured.[39]

One American pilot listed as a prisoner of war was Captain William J. Adams who had been captured after landing his British Horsa glider. On D-Day plus one, Adams learned that the men who were guarding him were Poles, Czechs and Russians that the Germans had pressed into service. Through a Polish paratrooper who had also been captured serving as his interpreter, Adams told his captors that they had better let him go because they were surrounded by thousands of airborne troops. Just then, a mortar exploded in the distance, giving his story credence. After some discussion, the guards informed Adams that they wanted to surrender. Later that day, Adams marched across American lines with 156 POW's and 10 liberated allied soldiers. The *Stars and Stripes* published a June 9 story calling Adams the "Sergeant York of Oratory."[40]

Despite the obstacles that the glider pilots faced during Operation Overlord, the mission proved that gliders could be used productively in combat. While Normandy would be the last instance in which gliders would be flown into combat at night, it would only serve as a stepping-stone to further glider missions. As the battle of Normandy raged on in the summer months, the allied planners decided to revisit a proposed invasion of Southern France, which had been scrapped prior to D-Day. In August of 1944, the allies launched an assault on the French Riviera called Operation Anvil, in hopes of relieving some of the pressure being placed on the allied troops in Northern France.[41]

The invasion of Southern France has often been deemed one of the most controversial missions of the European theatre because many people believed allied resources could be better served launching a similar mission somewhere in the Balkans which would have allowed the Americans and British to beat the Russians there.[42] Regardless of the thought process, Operation Anvil was one of the most effectively executed operations of the war. Originally scheduled for spring 1944, the operation had been cancelled in order to give priority in men and supplies to Overlord. When revitalized two weeks after Overlord had been launched, the planners of Anvil (which would later be renamed Dragoon) called for a scaled down version of the invasion of Normandy, which was going to utilize the U.S. Seventh Army, led by Lieutenant General Alexander M. Patch as the main amphibious assault team.[43]

While the British still favored an attack on the Balkans, the Americans argued that Dragoon was a necessity because they needed to capture the port of Marseilles to be used as a supply port for the all-out assault on Germany.[44] While the invasion of Normandy had been a success, the war in Northern France was not going as fast as the Allies had

hoped. Supply problems were already slowing down the Allies, and as a result, Dragoon was given the green light. D-Day was set for August 15, and on that day, nine pathfinder planes took off from a base in Italy at 1:00 am.[45] Much like had happened at Normandy, the pathfinders were unable to find their landing zones, this time, it was not cloud cover or enemy flak that hindered them, but instead a heavy fog which had settled in leaving only hilltops visible.[46] As a result of the fog, the pathfinder pilots were thrown off course and were searching for their landing zone 15 miles east of where they were supposed to be. When the pilots made their fifth pass, they spotted, incorrectly, their landing zones and flipped on the green jump lights. The pathfinder paratroopers jumped, landing so far away from the battlefield that it would take them until the next day to join the fight.[47]

Despite the lack of beacons to home in on, the parachute assault forces left Italy at 4:30 and made the most accurate landing of the entire war, landing an impressive 85% of their paratroopers in the correct landing zones.[48] At 8:00 am, some 12,000 of the 86,000 American troops from the Seventh Army began their landings at the beachheads. There, they faced light resistance and took the beaches relatively easily.[49]

As for the glider portion of the operation, there were two waves of gliders scheduled to land starting with Operation Bluebird, a contingent of 40 CG-4A's designed to land at the same time as the amphibious assault.[50] At 8:20, the first wave of CG-4A's flew above the French coastline; however, they were unable to release due to the heavy fog, which had hindered the pathfinders earlier. [51] After circling their landing zones for about an hour, the fog turned into a haze and the gliders released to their landing fields. When they arrived in their fields, they found that the aggressive actions of the British paratroopers led to the removal of Rommel's asparagus and mines (many of which were

never actually armed because the Germans did not have enough time to do so before the invasion began), making Operation Bluebird one of the lowest casualty landings of the entire war.[52] Of the 40 gliders that left Italy as part of the Bluebird mission, 33 landed in France with six gliders having aborted before reaching France due to mechanical failure of either tow plane or glider, and one plane having disintegrated in midair. No pilots were killed while landing although eight were seriously injured when their plane got hung up in the grape vineyards that surrounded the fields, flipping the CG-4As.[53]

At around 3:00 pm on D-Day, the second and larger contingent of gliders left the Italian coastline for France. Operation Dove was mammoth in comparison to Bluebird and consisted of seven serials of C-47s towing a total of 332 CG-4A's.[54] In the gliders, the payload consisted of a total of 2,025 infantrymen, artillery, vehicles, trailers, and ammunition.[55] Unlike the missions in Sicily and Normandy, the Southern France operation utilized a technique known as the double tow, during which the C-47 Dakotas would tow two CG-4As using different length towropes. This allowed the allies to deliver twice the payload with a limited amount of tow planes.[56]

General Paul Williams, the commander of the airborne operations and planner of the mission had meticulously mapped out the flight path of the serials so that they would be landing in 10-minute intervals. Trouble began when the one of the lead serials of the 332nd Group was forced to lower their airspeed and drop below their specified altitude to avoid colliding with the 551st Parachute Battalion that was crossing their flight path. [57] A second and much more serious mishap occurred when Dove's leading serial, the 442nd Group passed Corsica. The pilot of the lead glider informed his tow plane pilot that the tail of his glider was vibrating badly and he needed to abort the mission and land in

Corsica. The pilot of the C-47 veered off course without thinking to inform the rest of his serial and the other pilots followed, thinking that the mission had been aborted.[58] Once the glider had cut away from the tow plane to land in Corsica, the pilot of the C-47 noticed that the rest of the serial was still following him and made a course correction to get the mission back on track. Many of the tow planes had to slow to keep from overrunning the serials ahead of them, while several other tow planes had to speed up in an effort to catch up to their serials. These uncoordinated moves threw the timing of the entire mission off and General Williams' time intervals had been destroyed in a matter of 30 minutes.[59]

By the time the Dove flights had reached their designated landing zones chaos filled the skies. 1st Lieutenant Robert Woodman, who was flying a CG-4A full of six glider infantrymen as well as a trailer full of TNT and other explosives was one of the pilots who was stuck in the mayhem. He remembered:

> The flight was extremely turbulent because of the flights ahead of me, as well as the difficulty of avoiding the other glider attached to my tow plane. You really had to fly that glider.[60]

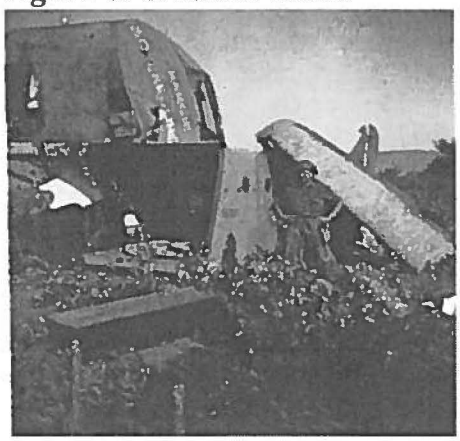
Woodman released from his tow plane and described the sky filled with "gliders everywhere." After witnessing several midair collisions, he located his landing field only to recognize that it was filled with Rommel's Asparagus, which had not yet been removed.[61] He pulled back on the wheel of the glider, in hopes of giving himself enough loft to find a new landing field when he noticed that the hillside surrounding his glider was relatively clear. Hoping to land on the uphill side of the hill, Woodman began to bring the glider down. As he neared the hill, he noticed that just below him was another glider aiming for the same spot. Woodman pulled back on the wheel again and was able

to clear the crest of the hill. After coming over the top he saw that the hill had enough clearance for the fuselage of his plane, but the wings were not going to clear the grape vineyards on either side of his glider. As he hit the downhill side of the hill his landscaper's eyes noticed something familiar. "It was the biggest peach tree I'd ever seen in my life, right in the middle of my landing path."[62] Woodman quickly turned the glider to the left and managed to collide with the tree with his right wing instead of the fuselage. As the right wing of his glider was sheared off by the tree, the left wing was sheared off by the grape vines. The CG-4A's cockpit was designed to open upwards so that men and equipment could be loaded into the front of the aircraft. During a landing, the co-pilot had control of the cockpit hinges and was supposed to unlock the cockpit so that if any of the cargo came loose during the landing and shifted forward, the pilot and co-pilot would be lifted up in the cockpit and the cargo would slide out the front door underneath. Woodman's co-pilot had been so frozen by the intensity of the landing that he forgot pull the cockpit release cord. Woodman recalled:

> That saved our lives because if he had released the cockpit door, our glider would've flipped over and we would have been crushed by the weight of it. Instead, the weight of the cargo forced the glider dig into the rich soil and bring us to a stop.[63]

Once on the ground safely, Woodman posed for a picture of him next his wrecked glider, which bore the name of his wife Margie on the side (Figure 5). Woodman's successful landing did not spell the end of his mission. His orders

Figure 5: Crashed Glider



Robert Woodman, *Crashed Glider*, 1942-1946.

were to investigate a nearby village and then find his way back to the allied lines the next day. Since the mission ended so late in the day though, Woodman and infantrymen he had carried in unloaded their equipment and made their way to an assembly point.[64] With orders to hold their ground until morning, Woodman and the rest of the unit dug foxholes and settled in for the night. Woodman's unit was somewhere between the German lines and the Allied lines so as they lay in their foxholes, they watched artillery fly over their heads all night. Two men, a few foxholes down had raided a local wine cellar and sat on the edge of their holes "hooting and hollering all night."[65] Meanwhile, the man next to Woodman, who had been warned earlier that his foxhole was too shallow, began to dig feverishly when the artillery barrage began overhead. When Woodman asked what he was doing, the man stated: "I'm digging this damn hole all the way to China!"[66]

The next morning, Woodman proceeded to follow his orders to go to a small abandoned French village with his infantrymen and neutralize any remaining opposition. After entering the village, Woodman was walking down the street. He took two steps and stopped. As soon as he stopped, a bullet hit right at his feet. Woodman claimed that his third step would have resulted in the bullet hitting him in the head.[67] Woodman recalled: "You just got the feeling that some people were supposed to make it and others weren't."[68] They never did see anybody in the small French village and all of the buildings were boarded up. Woodman never figured out from whom the bullet had come.

After leaving the abandoned village, Woodman's next job was to find a way to make it back to the allied lines. On his way back, he encountered a dead German soldier who had been on a motorcycle. After removing the body from the bike, Woodman attempted to start it. He soon realized that it was out of gas. After pushing the bike for

about a mile, he looked down and noticed that the gas tank had a bullet hole through it. Woodman never did explain how the German had died and hesitated to provide any further explanation of the incident.[69]

A few days after making it back to the allied lines, Woodman and some of the other men in his unit got an unexpected surprise. An unnamed glider pilot from his unit had gone missing during the landing. Woodman distinctly remembers this man having fallen asleep during the mission briefing and during the chaos of the landing, Woodman noticed that the same pilot missed his landing zone all together and flew off course, way behind German lines. Woodman and the rest of his unit had given the pilot up for dead.[70]

When the pilot landed, he and his co-pilot, as well as the infantrymen he was carrying got into a firefight with the Germans. All of the Americans were killed except for the glider pilot who was taken prisoner. The Germans confiscated the glider pilot's identification and side arm and he was held for a couple of days until the Germans who had captured him, surrendered to allied troops. Upon being freed, the glider pilot proceeded to confiscate every piece of identification and sidearm he could carry, he grabbed a bicycle and made his way back to the beach with an amazing story.[71]

Operation Dragoon was considered a huge success, but has been criticized by many American glider pilots because there was such little German resistance.[72] The principal objective of the allies was to capture the town of Le Muy and use it as a stepping-stone to Marseilles. Le Muy was captured by noon on D-Day plus one at a cost of one killed, 15 wounded.[73] Many pilots and men who participated in the mission believed that two battalions of paratroopers and a modest beach assault could have achieved the same objective. While the mission was deemed a huge success, casualties

during the Dove mission were extremely high at 11 glider pilots killed and 32 seriously injured, all with no enemy opposition during the approach and landings.[74]

Following the conclusion of Operations Anvil/ Dragoon most of the glider pilots were sent back to either England or Italy where they immediately began training as rumors swirled around as to what the next mission would be. Unknown to the pilots at the time was the fact that General Bernard Montgomery, convinced that the war could be won by Christmas, had begun to plan an unorthodox mission designed to strike the heart of Germany's industrial Ruhr area and Berlin from Holland. After much debate among allied commanders, (which included some choice words from General Patton toward Montgomery's plan) Supreme Allied Commander General Dwight Eisenhower gave Montgomery and Operation Market Garden the green light in late August 1944.[75]

Market Garden had two phases. Operation Market was the airborne phase of the invasion, and General Lewis H. Bereton, the commander of the newly created 1st Allied Airborne, was in charge of it. [76] This phase of the operation would be the largest airborne operation of the war, with a total of 35,000 troops to be used.[77] Three airborne units, the 82nd, 101st and the British 1st would capture important towns and bridges at Eindhoven, Nijmegen and Arnhem. The airborne troops would hold these locations long enough for the ground campaign, codenamed Garden, to overrun German defenses in a single thrust and allow for a rapid advance into Germany.[78]

Supply problems would plague the Market Garden from the start. The allies had captured the port city of Antwerp on September 4, hoping to use it as an additional supply port, but they had failed to eliminate all German resistance to allow resupplying of the allies during Market Garden.[79] The original battle plan also called for the deployment

of all 35,000 airborne forces on D-Day, but a lack of usable gliders and transport planes meant that the forces would have to be delivered in piecemeal, over the course of three days.[80] This meant that the allies would not have the element of surprise.

D-Day, September 17, 1944 was a sunny and clear day as the allied forces began to deliver their supplies and men into Holland around 1:00 pm. The German resistance was fierce as allied drops were contested from the start of the operation. R.C. Moore carried an anti-tank gun, ammunition and three support troops into Holland. He reminisced:

> This was a hard trip. About 80 miles of it was over enemy territory, and I had no co-pilot. So many glider pilots had been killed at Normandy that on subsequent trips, most of the aircraft carried only one pilot. We used canals for navigation on the flight in and there were these barges in the canals, and all of a sudden we realized there were German antiaircraft guns on the barges, and they started shooting at us.[81]

The antiaircraft fire from the barges would be short lived though. Shortly after catching some flak in his glider, the British Royal Air force arrived to provide cover. "I looked down and those gun barges had disappeared in a cloud of smoke, and there was no more flak."[82] R.C. Moore was able to set his glider down in a field and faced much less resistance once on the ground. In Holland, the landing was much easier, due to the fact that it was in daylight and the fields were so much bigger than they had been in Normandy.

For Flight Officer Thornton G. Schofield the mission was difficult from the time he entered Belgium all the way to the ground near the town of Zon. After watching his tow plane lose pieces of shrapnel nearly all the way to his release point, Schofield cut loose. He described what happened next:

> I was beginning to relax a little when my glider took a hell of a whack and I saw the left wing of another glider sweep over the top of mine. The other pilot must have been dead or dying when he slammed into the tail of my glider from the rear. We collided about 150 feet and my glider shuddered violently and then nosed down and dived toward the ground at an angle of about 75 degrees. First there was a terrifying crunch as we hit the ground and then an incredible shock when the jeep we were carrying slammed on me. I suffered a dislocated pelvis and left ankle, a broken leg and assorted other injuries. When I regained consciousness, I realized my head and left arm had punched a hole in the Plexiglas windscreen. It took a bunch of airborne troopers, working with axes and crowbars, about seven hours to free me from the wreck.[83]

The heavy German resistance proved to be effective. By the end of the day on D-Day, despite the fact that the allies had been able to land their divisions with far greater than expected accuracy, they had only made marginal gains in securing their objectives.[84] By the morning of D-Day plus one, the weather began to play a critical factor. While the weather in Holland remained clear, all over England and the English Channel, the fog had rolled in along with heavy rain, rendering the route to Holland unusable. After a four-hour weather delay, the allies began to send a total of 904 CG-4As and 295 British Horsa gliders into Holland as reinforcements.[85] The Germans hit the allies again with heavy ground fire. This time, it was more accurate than it had been before. Flight Officer Charles E. Slocum left England in a CG-4A, loaded with two troops and a jeep. He described his journey:

> All was progressing as well as could be expected until we reached the European mainland; then the flying of the tow planes of our serial began to deteriorate to avoid heavy enemy ground fire. Airspeeds were varying from near stalling to maximum redline (150 mph). At about twenty-five minutes from our Holland LZ, our flight began veering off course and we started to encounter even heavier ground fire. My tow plane went into a steep dive and my glider broke lose. By this time we were flying through a wall of fire, and I could see several tow planes going down in flames and crew members floating down in the chutes. Gliders were landing in all directions. After dissipating my excessive ground speed, I made a soft

> landing near the Reischwald Forest. We could hear a lot of firing but none of it was directed at us so we unloaded the jeep, hooked up a trailer out of the nearest glider, and headed for the Groesbeck LZ.[86]

By D-Day plus two, visibility grounded all flights except for a contingent of 385 CG-4As that were desperately needed to resupply the 101st.[87] The visibility was so poor that several gliders had to fly across the North Sea at altitudes of only 50 to 100 feet. Allied commanders recalled the last serial before it hit the English coast and combined with losses from weather, crash landings and even stiffer enemy ground fire only 60 percent of the men and artillery made it into action.[88]

By D-Day plus three, it was clear that the battle for the bridge at Arnhem had been lost. Poor weather and a lack of adequate supplies from the ground had doomed the Market Garden Operation.[89] In the end, the allies had launched Market Garden believing that the rapid retreat of the German army following the battle of Normandy would guarantee the success in Holland. Instead, that retreat, along with the poor weather had given the Germans time and men to move into position to stop the allied advance. Many of the Germans who fought against the allies in Holland had been redirected in their retreat back to Germany.[90] John L. Lowden, who flew a glider into Holland on D-Day plus four, summed it up like this:

> We were told in briefings that the war in Europe would end with the successful conclusion of Operation Market Garden. The outcome was in doubt by the end of day one. The Germans kicked our Allied asses good in less than a week. Our war would drag on for another six months and cost the Allies and additional 86,800 casualties in the Battle of the Bulge and Operation Varsity.[91]

After turning away the Allies during Market Garden, Hitler conceived what is considered by many historians to be his most controversial assault of the war. Working

in absolute secrecy, Hitler and his top aides planned a bold offensive aimed at recapturing the port city of Antwerp and driving a wedge between the Allied lines. His hope was to divide the Allied lines in two and force some sort of negotiated peace in the west which would allow him to redistribute his forced back to the Eastern front to try and stop the Russian assault.[92] The Ardennes Offensive would eventually push a large bulge into the stabilized Western Front, which is how the Battle of the Bulge got its name.

The assault began in the Ardennes Forest beginning on the morning of December 16, 1944 and the secrecy of planning succeeded in catching the allies completely off guard. The target of the initial offensive was three poorly supplied American divisions who were forced to retreat. This tore a huge line in the allied front and the Germans began making a run for Meuse River.[93]

To slow the German advance, Eisenhower was forced to throw its reserve troops from the 1st Allied Airborne Army into action. Just two weeks off of the front line in Holland, the 101st Airborne Division was sent into the town of Bastogne, a critical communications junction to defend against the German onslaught. Within a few days of their arrival, however, the "Screaming Eagles" soon found themselves surrounded by the Germans and supplies were running extremely low.[94] By December 22, the situation had become desperate when German officers presented an ultimatum to the Americans: "surrender or be annihilated."[95] To this commanding officer General Anthony McAuliffe famously responded "Nuts!" which angered the Germans who responded by delivering heavy bombing and artillery bombardment.[96]

In response to the situation, the allies ordered in resupply missions in the form of parachute drops and bombing raids against German panzer divisions from England. The winter weather worsened by Christmas however, and a lack of parapacks in France meant that supplies would need to be delivered by glider. On the morning of December 26, two volunteers from the 96th Squadron agreed to fly a resupply glider filled with supplies and a medical team into Bastogne. The glider, piloted by Second Lieutenant Charlton Corwin Jr. and Flight Officer Benjamin Constantino, landed safely in Bastogne.[97]

Later on that day, 19 other glider pilots left for Bastogne carrying more supplies, including some much needed gasoline. By the time they reached Bastogne, the German anti-aircraft fire had been stirred. Second Lieutenant Wilmer S. Weber was a co-pilot on one of the powered planes that flew gliders into Bastogne. He remembered:

> As we approached I saw we would have to fly through a curtain of intense flak to reach the landing zone. Planes were entering the flak area and actually disappearing. We entered the flak area and our pilot pulled up to try and get out of range, but our plane started to stall because of the drag of the glider we were towing. So the pilot dropped the nose again to regain airspeed. Then the left engine burst into flames and the pilot yelled "bail out!"[98]

Of the eight planes that flew into Bastogne, only three remained and the Germans captured Weber.[99]

In the second resupply mission of that day in Bastogne, nine of the 13 gliders, all carrying artillery shells for the depleted gun batteries, were shot down by heavy German flak. Second Lieutenant Mack Striplin flew one of the gliders that managed to land safely. Just before releasing from his tow plane, Striplin's glider was hit by enemy flak causing him to cut loose and head for the landing field without slowing down his speed to the recommended 60 miles per hour. He hit the ground on a slight down hill and his

breaks did little more than turn the glider into a sled on the snow. When he reached the end of the field, he soared off of the bank and a 15-foot drop, managing to stop only after plowing through a wire fence. When the glider finally came to a stop, he was only 10 yards from the gun battery that his shells were going to. His arrival was a welcomed sight by the battery crew, as they were down to their last 20 shells when Striplin landed.[100]

In total the mercy missions flown by the glider pilots into Bastogne would deliver 53 tons of supplies to the 101st Airborne.[101] The cost of delivery was extremely high though. Nearly half of the total aircraft sent into this battle, 17 tow planes and 15 gliders, were shot down by the heavy German defenses.[102] Despite the heavy cost, the resupply missions had helped buy the 101st time for Patton's third Army to breakthrough and relieve the pressure.

The Ardennes Offensive was the last offensive that Hitler was able to muster during the war. It cost the Germans dearly as he lost 220,000 men and 1,400 tanks and assault guns.[103] This loss would strip the Nazis of their strategic reserve divisions needed for a defense of Germany. By March of 1945, the allies were ready to make their final push into Germany and end the war. To accomplish this task however, they would need to cross the Rhine River and would call upon the glider pilots and airborne troops one final time.

On March 9, 1945, the 9th Armored Division of the First Army captured the Ludendorff Bridge at the German town of Remagen. The capture of this bridge gave the allies their first bridgehead across the Rhine.[104] All across the Rhineland, the Germans had been destroying bridges as they retreated further into Germany. 10 days after the

allies captured the Ludendorff Bridge, heavy German artillery and bombing forced the collapse of the bridge, cutting off the First Army who had already begun to push into the heart of Germany.[105] The First Army had managed to construct a pontoon bridge before the Ludendorff Bridge was destroyed, but it was soon overwhelmed with men and supplies heading across the river to keep the 35,000 men who had already crossed the river well supplied.[106] Casualties were beginning to pile up and with the crowded bridge; the Allies began utilizing the snatching technique to evacuate the wounded back to France.[107]

To relieve pressure from the First Army, General Montgomery's 21st Army Group would cross the Rhine River in the town of Wesel and begin their final push toward the heart of Germany. D-Day for Montgomery's river crossing was March 24, 1945 and it involved an amphibious assault across the river (Operation Plunder) by General Miles Dempsey's Second British Army as well as the use of two airborne divisions (Operation Varsity). [108]

By far the biggest issue with Operation Varsity was a lack of available personnel. The 1st Allied Airborne Army had a total of six divisions, four American and two British. The Battle of the Bulge had left the British 1st and the American 82nd and 101st Airborne Divisions unfit for battle. While three battle-ready divisions remained, a lack gliders and pilots meant the allies would only be able to field two full divisions for the assault.[109] As a result, in the weeks leading up to the mission, the allies began a desperate search for anybody with glider experience. Captain Louis Brough was one such man.

Louis Brough started flying when he was 15 years old. Before the war, Brough barnstormed with Charles Lindbergh and served as a co-pilot with United. When he

joined the Army Air Corps in 1942, Brough became a C-47 pilot. Before he was shipped off to Europe, Brough met up with a buddy of his who was training glider pilots stateside. During this time, Brough logged a few hours in a glider for fun. When his superior officers saw these hours just before Operation Varsity, Brough was assigned to serve as a co-pilot on a glider.[110] Brough was just one of roughly 500 powered pilots who were thrown into gliders as copilots during Varsity.[111] During his landing, his pilot and an NCO that he was carrying were killed and Brough was wounded in the arm. The wound would leave nerve damage so severe, that Brough would never be able to pilot a plane again.[112]

At 9:00 pm on the night of March 23, Operation Plunder was launched as the British began their assault across the Rhine. General Matthew Ridgeway, in an effort to avoid the mistakes made with airborne troops at Sicily and Holland had insisted that the British gain a foothold on the east shore of the Rhine before the airborne assault began.[113] At 6:00 am the next morning, the first wave of planes that would comprise Operation Varsity left their airfields in France and Belgium.[114]

As the gliders began their assault around 10:00 am they prepared for what they believed would be a vicious fight for control of the Rhine. The German High Command had issued orders to its forces to take no prisoners. As a result, the Americans were advised unofficially to do the same. John Lowden recalled the advice he and his men received during their Varsity briefing:

> A glider pilot asked, "What should we do if some Germans come to us with a white flag and their hands in the air?" The officer calmly said, "Take them someplace out of the way, like a house or barn and get rid of them. Either knife them or strangle them. But for Christ's sake don't shoot them. Some of their comrades might hear that and decide to fight it out rather than surrender.[115]

British ground forces, after securing a foothold on the east bank of the Rhine set up a smokescreen to allow their engineers to begin construction of a pontoon bridge. By the time the first wave of gliders arrived to their landing zones ten miles inland, the wind had pushed the smoke over the fields they were to use. R.C. Moore recalled his landing:

> the smoke screen had moved in 10 miles, right over our landing zone. When the light flashed on to cut loose from the tow plane, I couldn't even see the ground. I wasn't going to cut loose until I could see something down there. Anyway, I finally got the glider down … we were heavily loaded, so it only took a few seconds to set her down after we cut loose from the tow plane.[116]

The smoke proved to be a hindrance for the glider pilots, but it sat at about 300 feet above the ground, so as soon as the pilots got to that altitude, they were able to see their landing fields. The lack of visibility often led to close encounters with the enemy for the gliders and their crews. Kenneth Turner recalled:

> We lost sight of the ground and about a minute later cut loose and started for the ground. It seemed like we were only two three hundred feet in the air when we broke out. I can still see it clearly: there were two Germans sitting in a fox-hole with a machine gun looking right square at us. And there was a big corner post of this fence right behind them. We clipped the corner post barely missing their foxhole and slammed right into the side of a house. The soldiers in my glider went into the house to take care of the Germans.[117]

Just like in all of the other operations that they participated in, glider pilots were converted into infantrymen upon landing and unloading their supplies. Generally, they were to help unload their gliders then meet at an assembly area where they formed tactical infantry units and were given tasks such as guard duty, supply collection and protection of usable gliders from vandalism.[118] Occasionally, glider pilots would see combat on their way back to assembly areas or in an attempt to evade capture but because

of a general lack of respect for their combat training, as well as the fact that NCO's did not want to take orders from glider officers on the ground, the pilots were generally encouraged to avoid major combat. During Operation Varsity however, German units patrolled the landing zones the night after the glider landings which forced glider tactical infantry units to become involved in a number of engagements with German Company sized units.[119] The most famous of these battles became known as the "Battle of Burp Gun Corner," named for the small automatic pistols used by the Germans during the skirmish.[120] Flight Officer William K. Horn was one of the glider pilots who took part in the battle. He described the fight:

> The crossroads we were holding was at the intersection of Helzweg and Hessenweg. Three of the four corners were vacant lots so we had a clear field of fire. Then, all of the sudden, the German infantry started hyping themselves up with a weird sort of yelling and cheering and came at us in a Japanese banzai charge and we really poured into them. One of our glider pilots hit the first (of two) tanks with a bazooka shot and the tank started spinning around on one cleated track and backed over the mobile gun it was towing. The second tank followed the first one and both took cover between some brick houses. We were glad they were someplace where we could keep and eye on them. The German infantry had had enough by this time, I guess, and they pulled back too. The rest of the night was fairly quiet, but when daylight came we could see the extensive damage our fire had done. One lone German medic was out in front of us desperately trying to minister to a number of his wounded comrades but it was a losing battle.[121]

The pilots had killed 13 German infantrymen, wounded another 45 and captured 80 more. As for the pilots, the "Battle of Burp Gun Corner" had cost them three dead and two wounded. The *Stars and Stripes* published an article on April 1, which praised the men for their action, but no awards were issued to the pilots besides two Purple Hearts.[122]

Within four days of the invasion, by March 28, General Montgomery's forces had extended their line to a depth of 20 miles across and 30 miles into German territory.[123]

Operation Plunder/ Varsity had been a huge success. The allied glider pilots were sent back to England and France to await further orders, presumably a redeployment to the Pacific for the invasion of Japan. A month later, with the Red Army only blocks from his bunker, Hitler committed suicide, bringing the war in Europe to a close.

Chapter 5:

Conclusion

The end of World War II also spelled an end to the American glider program. New technology such as the helicopter and jet aircraft would replace the glider plane as the program faded to memory. What remained of the program after the war were a portion of the 14,612 gliders that had been produced during the war and the nearly 6,000 pilots who had been trained to fly them.[1] By November 1945, the United States government declared the leftover gliders were war surplus and began to sell them to the general public. These gliders, for which the government had paid on average $20,000 dollars, were sold off to the public for $75. The gliders sold very quickly because the crates the gliders were shipped in contained enough solid lumber to build a small ranch house.[2] The gliders were sold so quickly that the Army neglected to keep one for future display, prompting a worldwide search by the American Glider Pilot Association to find a CG-4A to restore for display in the Silent Wings Museum in Lubbock, Texas.

As for the men who had flown the engineless aircraft, they returned home to settle into their lives as civilians. Many thought that they could find jobs working for commercial airline companies or to get a job with U.S. Postal Service. There were discussions during the war that gliders could be used to haul mail and cargo from city to city in the post war world.[3] The most serious attempt to get a freight glider company off the ground after the war was made by the Wing Cargo Company of Philadelphia when it used two surplus gliders to pick up strawberries from Georgia and oranges from Florida in 1946.[4] Ultimately, it would be the trucking and railroad industries and their cheaper prices that would seal the freight glider industry's fate.

The dangers of glider flight were enough to convince many pilots to keep their feet on the ground after the war. When asked why he did not become a commercial pilot after the war Robert Woodman stated: "I just felt like my luck had run out. I had survived three crashes during the war and did not think I would survive another."[5] Woodman returned home to Lakewood, Colorado where he worked for the family landscaping company. John Lowden shared the same sentiments as Woodman:

> I'd been contour flying for three years and felt not the slightest inclination to thumb my nose at Lady Luck. I had managed to survive the war and wasn't about to end up smashed into a hillside or grove of trees or filleted by high power-lines on a joy ride. I never touched the controls of an airplane again.[6]

While the pilots settled into civilian lives after the war, the many stories of American heroics in the war began to be retold. For the glider pilots, though, their story never seemed to be much more than an after thought. In 1971, a group of these former pilots formed the American Glider Pilot Association. Their mission was to provide a forum for the interaction of glider pilots and to preserve the history of the program. In October 2002, the Silent Wings Museum opened near the South Plains Airfield in Lubbock, Texas, and included a fully restored CG-4A.[7] Eventually, the museum would add to its collection and is now home to another partial CG-4A, parts of the British Horsa glider, a variety of small training aircraft, glider memorabilia and at the entrance, a C-47 Dakota.

The efforts of the American Glider Pilot Association and the Silent Wings Museum to preserve the history of the program are in part due to the general lack of respect paid to the efforts of the glider pilots and their role in the war. Both during the war and after, glider pilots received very little appreciation for their efforts. Glider pilots

tended to joke about their lack of respect, referring to themselves in jest as "the bastards that no one wanted."[8] Despite this light-hearted attitude, time after time, glider pilots who had distinguished themselves in combat following their landings behind enemy lines were denied commendations. Even though they faced similar dangers, glider pilots did not receive the same hazard pay their paratrooper counterparts did. Powered pilots did not consider glider pilots to be their equals either. They mocked the "G" on glider pilot wings claiming that is stood for "greenhorn" or "grounded."[9] The Army agreed with the powered plane pilots as they created a special officer rank, that of "Flight Officer," specifically for glider pilot graduates. After graduation from flight school, powered plane pilots received the rank of Second Lieutenant.[10]

The lack of respect for their role in the war did not diminish the importance that the glider pilots played in it. The glider program participated in every major operation of the European theatre. They also delivered much needed supplies to help with the Burma Road in China as well as keeping the 101st Airborne operational in Bastogne. The program suffered numerous setbacks throughout the course of the war but the bottom line is that it became more effective with each operation garnering a higher level of success than the previous one. General Matthew Ridgeway summed up the importance of the glider program as follows:

> Most people today are not aware of the major contributions made to victory in World War II by glider-airborne troops and troop-carrier aircrews who delivered them to their target areas both day and night. The glider pilots themselves were a special breed of men. Modern motion pictures and television documentaries have made people aware of, if not intimately familiar with, the exploits and accomplishments of Allied paratrooper forces. But the same cannot be said of glider forces.[11]

The most frequent criticism of the glider program by historians was that it was the program was poorly planned and this poor planning led to unnecessary casualties and a general disregard for the safety of the pilots and crews. Most former glider pilots would generally agree with this assertion, but they would also agree that there were numerous jobs such as this one that were just as poorly planned and just as dangerous. That was the attitude of the United States during the war years. Most of the planners of the program would have argued the dangers were worth the risk because it was a time in which the Americans were willing to do anything and everything necessary to achieve victory.

The general experiences of the glider corps were similar to that of any other veteran groups in that they experienced good times and bad times, but overall glider pilots tended to remember their experiences with fondness. Their memoirs are full of stories, jokes and anecdotes that displayed the sense of humor glider pilots had about their time in the service. This sense of humor was meant to serve as both a distraction from the reality of the situation glider pilots faced, and as a way to pass the time. Flying engineless aircraft into combat was extremely dangerous, but glider pilots were willing to do it because they believed it was their duty to serve their country.

While they came from a variety of backgrounds with a variety of educational levels, glider pilots forged a common bond. As former pilot Milton Dank argued in his book *The Glider Gang,* the pilots were a mixed breed, but they all shared three things in common: They "wanted adventure, wanted to try something new- and above all, to fly."[12] While volunteering for the program allowed men the opportunity to fly, that came with the added danger of flying an engineless aircraft. In his book, Dank poses the question to

various pilots, "was the price paid by glider pilot casualties worth it?" The response that Dank uses to conclude his story is that of an unnamed pilot who stated:

> It was a job. We volunteered for it, we were selected for it, we trained for it, and finally we did it- and lost a lot of good friends. But in the end, it was just another lousy job that someone had to do[13]

NOTES
INTRODUCTION

[1] Omar N. Bradley, Clay Blair, *A General's Life: An Autobiography,* (New York, Simon and Schuster, 1983), 101.
[2] Ibid.
[3] Ibid.
[4] Ibid, 227.
[5] Richard Overy, *Why the Allies Won,* (New York, Norton and Company, 1996), 322-323.
[6] John L. Lowden, *Silent Wings at War: Combat Gliders in World War II,* (Washington D.C. and London, Smithsonian Institution Press, 1992),46.
[7] Max Hastings, *Overlord: D-Day and the Battle for Normandy,* (New York, Simon and Schuster, 1984), 77.
[8] Bradley, Blair, *A General's Life,* 247.
[9] John Keegan, *The Second World War,* (New York, Penguin Books, 1989), 437.
[10] Ibid, 438.
[11] Stephen E. Ambrose, *Citizen Soldiers: The U.S. Army from the Normandy Beaches to the Bulge to the Surrender of Germany, June 7, 1944 to May 7, 1945,* (New York, Simon and Schuster, 1997), 434.
[12] Ibid, 436.
[13] Ibid, 438.
[14] John C. Warren, *USAF Historical Study: No. 97: Airborne Operations in World War II, European Theatre.* (USAF Historical Division Research Studies Institute, 1956.), 196.
[15] Ibid.
[16] James Mrazek, *The Glider War,* (New York, St. Martin's Press, 1975), 19.
[17] Gerard M. Devlin, Silent Wings: The Saga of the U.S. Army and Marine Combat Glider Pilots During World War II, (New York, St. Martin's Press, 1985), xv.
[18] Ibid.
[19] W.D. Knickerbocker, *Those Damned Glider Pilots,* (College Park, Georgia, 1989: Static Line Books), vi.
[20] Warren, *USAF Historical Study No. 97,* 196.
[21] Ibid, 197.
[22] Ibid.
[23] Ibid.
[24] Mrazek, *The Glider War,*19.
[25] Lowden, *Silent Wings at War,* xiv.
[26] Knickerbocker, *Those Damned Glider Pilots,*1.
[27] Lowden, *Silent Wings at War,* xvii.
[28] Ibid 17.

Chapter 1

[1] James Mrazek, The Glider War, (New York, St. Martin's Press, 1975), 19.
[2] Gerard M. Devlin, Silent Wings: The Saga of the U.S. Army and Marine Combat Glider Pilots During World War II, (New York, St. Martin's Press, 1985), 18.

[3] Ibid.
[4] "Article 198,"*Treaty of Versailles,* June 28, 1919, accessed from http://net.lib.byu.edu/~rdh7/wwi/versa/versa4.html 28, December 14, 2010.
[5] Ibid, 27
[6] Rudy Opitz, *Silent Wings*, Directed by Robert Child, 2007.
[7] Devlin, *Silent Wings,* (New York), 17.
[8] *Ibid.*
[9] Paul Witkowski "Glider Assault on Eben Emael as an Archetype for the Future." *Infantry Magazine*. vol. 93, no. 2 (2004): 28-34.
[10] Devlin, *Silent Wings,* 33.
[11] Mrazek, *The Glider War,*21.
[12] Ibid.
[13] Ibid, 25.
[14] Devlin, *Silent Wings*, 18.
[15] Mrazek, *The Glider War*, 52.
[16] Ibid, 53.
[17] Milton Dank, *The Glider Gang: An Eyewitness History of World War II Glider Combat,* (Philadelphia and New York, J.B. Lippencott Company, 1977), 33.
[18] Ibid, 35.
[19] Ibid.
[20] Ibid.
[21] Ibid.
[22] Devlin, *Silent Wings*, 47.
[23] Mrazek, *The Glider War,* 53.
[24] Ibid.
[25]Ibid.
[26] Dank, *The Glider Gang*, 39
[27] Mrazek, *The Glider War*, 55.
[28] *Silent Wings*, Directed by Robert Child, 2007.
[29] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[30]*Silent Wings*, Directed by Robert Child, 2007.
[31] *Ibid.*
[32] *Ibid.*
[33] *Ibid.*
[34] *Ibid.*
[35] Mark Bagley, The G Stands for Guts: A Glider Pilot Remembers WWII,(Ashland, Oregon, Hellgate Press, 2008).
[36] Devlin, *Silent Wings,* (New York), 52.
[37] Ibid.
[38] Don Abbe, interview by author, Lubbock, Texas, June 16, 2012.
[39] W.D. Knickerbocker, Those Damned Glider Pilots, (College Park, Georgia, Static Line Books, 1989),1.
[40] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[41] *Ibid.*
[42] Devlin, *Silent Wings,* 55.

[43] *Ibid.*
[44] Mel Pliner, interview by Don Abbe, Lubbock, Texas, October 8, 2010.
[45] Ibid.
[46] John L. Lowden, Silent Wings at War: Combat Gliders in World War II, (Washington D.C. and London, Smithsonian Institution Press, 1992), 4.
[47] Ibid, 7.
[48] R.C. Moore, interview by Don Abbe, Lubbock, Texas, October 8, 2010.
[49] Louis Brough, interview by Dorie Schmidt, Lubbock, Texas, October 8, 2010.
[50] Ibid.
[51] Lowden, *Silent Wings at War*, xix.

Chapter 2

[1] Milton Dank, *The Glider Gang: An Eyewitness History of World War II Glider Combat,* (Philadelphia and New York, J.B. Lippencott Company, 1977), 17.
[2] Assistant Chief of Staff, Intelligence Historical Division, *Army Air Forces Historical Study No. 1: The Glider Pilot Training Program, 1941-1943,* (Washington D.C. Assistant Chief of Staff: 1943), 52.
[3] Gerard M. Devlin, Silent Wings: The Saga of the U.S. Army and Marine Combat Glider Pilots During World War II, (New York, St. Martin's Press, 1985), 61.
[4] Assistant Chief of Staff, Intelligence Historical Division, *Army Air Forces Historical Study No. 1: The Glider Pilot Training Program, 1941-1943,* (Washington D.C. Assistant Chief of Staff: 1943), 52.
[5] Ibid.
[6] Devlin, *Silent* Wings, 61.
[7] Don Abbe, interview by author, Lubbock, Texas, June 16, 2012.
[8] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[9] Ibid.
[10] Ibid.
[11] Devlin, *Silent Wings,* 58.
[12] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[13] *Ibid.*
[14] J. Norman Grim, *To Fly Gentle Giants: The Training of WWII Glider Pilots,* (Bloomington, IN, Author House Amazon Kindle Edition, 2009), location 2949.
[15] Ibid.
[16] Don Abbe, interview by author, Lubbock, Texas, June 16, 2012.
[17] Grim, *To Fly Gentle Giants,* location 2936.
[18] Mark Bagley, *The G Stands for Guts: A Glider Pilot Remembers WWII,*(Ashland, Oregon, Hellgate Press, 2008), 118.
[19] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[20] Devlin, *Silent Wings,* 76.
[21] Milton Dank, *The Glider Gang: An Eyewitness History of World War II Glider Combat,* (Philadelphia and New York, J.B. Lippencott Company, 1977), 85.
[22] John L. Lowden, *Silent Wings at War: Combat Gliders in World War II,* (Washington D.C. and London, Smithsonian Institution Press, 1992),46.

[23] Ibid.
[24] Devlin, *Silent Wings,* 84.
[25] Ibid, *86.*
[26] Lowden, *Silent Wings at War,* 48.
[27] Ibid, 49.
[28] Ibid.
[29] Ibid, 94.
[30] Ibid.
[31] Devlin, *Silent,* 92.
[32] Lowden, *Silent Wings at War,* 50.
[33] Ibid, *93.*
[34] Dank, *The Glider Gang*, 90.
[35] Ibid, 91.
[36] Devlin, *Silent Wings*, 112.
[37] Ibid.
[38] Ibid.
[39] Ibid.
[40] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[41] Ibid.
[42] Ibid.
[43] Devlin, *Silent*, 114.
[44] Ibid, 115.
[45] Ibid.
[46] Ibid, 118.
[47] Grim, *To Fly Gentle Giants*, location 3833.
[48] Ibid, location 3852.
[49] Ibid.
[50] Ibid, location 3872.
[51] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[52] Devlin, *Silent Wings,* 125.
[53] Ibid, 126.

Chapter 3

[1] John L. Lowden, *Silent Wings at War: Combat Gliders in World War II*, (Washington D.C. and London, Smithsonian Institution Press, 1992), 59.
[2] Ibid, 60.
[3] Ibid.
[4] James Mrazek, The Glider War, (New York, St. Martin's Press, 1975), 116.
[5] Ibid, 118.
[6] Ibid, 119.
[7] Lowden, *Silent Wings at War,* 61.
[8] Ibid.
[9] Ibid.
[10] James Mrazek, The Glider War, (New York, St. Martin's Press, 1975), 122.

[11] Lowden, *Silent Wings at War,* 63.
[12] Ibid, 64.
[13] Devlin, *Silent Wings*, 164.
[14] Ibid, 165.
[15] Ibid.
[16] Ibid, 171.
[17] Ibid.
[18] Ibid, 174.
[19] Lowden, *Silent Wings at War,* 67.
[20] Ibid, 69.
[21] Devlin, *Silent Wings,* 182.
[22] Lowden, *Silent Wings at War,* 70.
[23] Ibid.
[24] Ibid.
[25] Ibid, 71.
[26] Ibid.
[27] Milton Dank, *The Glider Gang: An Eyewitness History of World War II Glider Combat,* (Philadelphia and New York, J.B. Lippencott Company, 1977), 114.
[28] Ibid.
[29] Ibid, 117, 119-120.
[30] Ibid, 120.
[31] Devlin, *Silent Wings,* 187.
[32] Ibid.
[33] Ibid.
[34] R.C. Moore, interview by Don Abbe, Lubbock, Texas, October 8, 2010.
[35] Ibid.
[36] Lowden, *Silent Wings at War*, 70.
[37] Dank, *The Glider Gang,* 128.
[38] Ibid.
[39] Lowden, *Silent Wings at War*, 74.
[40] Devlin, *Silent Wings,* 209.
[41] Ibid, 211.
[42] Ibid.
[43] Ibid, 212.
[44] Lowden, *Silent Wings at War,* 83.
[45] Ibid, 85.
[46] Dank, *The Glider Gang*, 157.
[47] Ibid.
[48] Ibid.
[49] Ibid, 220.
[50] Lowden, *Silent Wings at War,* 86.
[51] Ibid.
[52] Devlin, *Silent Wings,* 221.
[53] Ibid.
[54] Lowden, *Silent Wings at War,* 89.

[55] Ibid.
[56] Ibid.
[57] Devlin, *Silent Wings,* 222.
[58] Ibid, 222-223.
[59] Ibid.
[60] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[61] Ibid.
[62] Ibid.
[63] Ibid.
[64] Ibid.
[65] Ibid.
[66] Ibid.
[67]Ibid.
[68] Ibid.
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Lowden, *Silent Wings at War*, 91.
[73] Ibid.
[74] Ibid.
[75] Devlin, *Silent Wings,* 229-230.
[76] Lowden, *Silent Wings at War,* 93.
[77] Ibid.
[78] Ibid, 93-94.
[79] Devlin, *Silent Wings,* 229-230.
[80] John Lowden, *Silent Wings at War,* 96.
[81] R.C. Moore, interview by Don Abbe, Lubbock, Texas, October 8, 2010.
[82] Ibid.
[83] Lowden, *Silent Wings at War,* 99.
[84] Devlin, *Silent,* 253.
[85] Lowden, *Silent Wings at War,* 100.
[86] Ibid, 101.
[87] Ibid, 104.
[88] Ibid.
[89] Dank, *The Glider Gang*, 193.
[90] Devlin, *Silent Wings,* 243.
[91] Lowden, *Silent Wings at War*, 96.
[92] Ibid, 118.
[93] Dank, *The Glider Gang,* 207.
[94] Ibid, 209.
[95] Lowden, *Silent Wings at War,* 124.
[96] Ibid.
[97] Ibid, 126.
[98] Ibid, 128.
[99] Ibid.

[100] Ibid, 129.
[101] Devlin, *Silent Wings,* 297.
[102] Ibid.
[103] Ibid, 299.
[104] Ibid, 300.
[105] Ibid, 301.
[106] Lowden, *Silent Wings at War,* 136.
[107] Devlin, *Silent Wings,* 301.
[108] Ibid, 304.
[109] Ibid.
[110] Louis Brough, interview by Dorie Schmidt, Lubbock, Texas, October 8, 2010.
[111] Lowden, *Silent Wings at War,* 140.
[112] Louis Brough, interview by Dorie Schmidt, Lubbock, Texas, October 8, 2010.
[113] Lowden, *Silent Wings at War,*142.
[114] Ibid,147.
[115] Ibid.
[116] R.C. Moore, interview by Don Abbe, Lubbock, Texas, October 8, 2010.
[117] Kenneth Moore, interview by Dorie Schmidt, Lubbock, Texas, October 8, 2010.
[118] Devlin, *Silent Wings,* 310.
[119] Lowden, *Silent Wings at War,* 148.
[120] Ibid.
[121] Ibid, 149-150.
[122] Devlin, *Silent Wings*, 331.
[123] Ibid, 332.

Conclusion

[1] Gerard M. Devlin, Silent Wings: The Saga of the U.S. Army and Marine Combat Glider Pilots During World War II, (New York, St. Martin's Press, 1985), 372.
[2] Ibid.
[3] Ibid.
[4] Ibid.
[5] Robert Woodman, interview by author, Lakewood, Colorado, March 13, 2006.
[6] John L. Lowden, Silent Wings at War: Combat Gliders in World War II, (Washington D.C. and London, Smithsonian Institution Press, 1992), 166.
[7] Don Abbe, interview by author, Lubbock, Texas, June 16, 2012.
[8] W.D. Knickerbocker, Those Damned Glider Pilots, (College Park, Georgia, Static Line Books, 1989), 1.
[9] Mark Bagley, The G Stands for Guts: A Glider Pilot Remembers WWII,(Ashland, Oregon, Hellgate Press, 2008).
[10] Devlin, *Silent Wings*, 61.
[11] Lowden, *Silent Wings at War,* xv-xvi.
[12] Milton Dank, *The Glider Gang: An Eyewitness History of World War II Glider Combat,* (Philadelphia and New York, J.B. Lippencott Company, 1977),18.
[13] Ibid, 260.

BIBLIOGRAPHY

Primary Sources:

Army Air Forces Historical Study No. 1. *The Glider Pilot Training Program, 1941 to 1943.* Washington D.C.: Assistant Chief of Staff, Intelligence Historical Division, 1943.

Bagley, Mark, and Marianne Stephens. *The G Stand for Guts: A Glider Pilot Remember World War II.* Ashland, Oregon: Hellgate Press, 2008.

Bradley, Omar N. and Clay Blair. *A General's Life: An Autobiography.* New York: Simon and Schuster, 1983.

Brough, Louis, interview by Dorie Schmidt. *World War II Glider Pilot Experiences* (October 8, 2010).

Dank, Milton. *The Glider Gang.* Philadelphia and New York: J.B. Lippincot Company, 1977.

Hein, Kevin. *World War II Glider Wings Photo.*

Knickerbocker, W. D. *Those Damned Glider Pilots.* College Park, Georgia: Static Line Books, 1989.

Lowden, John L. *Silent Wings at War: Combat Gliders in World War II.* Washington D.C. and London: Smithsonian Institution Press, 1992.

Moore, R.C., interview by Don Abbe. *World War II Glider Pilot Experiences* (October 8, 2010).

Pliner, Mel, interview by Don Abbe. *World War II Glider Pilot Experiences* (October 8, 2010).

"Treaty of Versailles." *Brigham Young University Website.* June 28, 1919. http://net.lib.byu.edu/~rdh7/wwi/versailles.html (accessed December 12, 2010).

Woodman, Kirt. *Silent Wings Museum Photographs.*

Woodman, Robert. *Personal Photographs from World War II.*

Woodman, Robert, interview by Kirt Woodman. *World War II Glider Pilot Experiences* (March 13, 2006).

Secondary Sources:

Abbe, Don. interview by Kirt Woodman. *World War II Glider Program* (June 17, 2012).

Ambrose, Stephen E. *Citizen Soldiers: The U.S. Army from the Normandy Beaches to the Bulge to the Surrender of Germany, June 7, 1944 to May 7, 1945.* New York: Simon and Schuster, 1997.

Devlin, Gerard M. *Silent Wings: The Saga of the U.S. Army and Marine Combat Glider Pilots During World War II.* New York: St. Martin's Press, 1985.

Grimm, J. Norman. *To Fly Gentle Giants: The Training of World War II Glider Pilots.* Bloomington, IN: Author House Amazon Kindle Edition, 2009.

Hasting, Max. *Overlord: D-Day and the Battle for Normandy.* New York: Simon and Schuster, 1984.

Keegan, John. *The Second World War.* New York: Penguin Books, 1989.

Mrazek, James E. *The Glider War.* New York: St. Martin's Press, 1975.

Overy, Richard. *Why the Allies Won.* New York: Norton and Company, 1996.

Silent Wings: The American Glider Pilots of World War II. Directed by Robert Child. 2007.

Warren, John C. *USAF Historical Studies: No. 97: Airborne Operations in World War II, European Theatre.* USAF Historical Division Research Studies Institute, 1956.

Witkowski, Paul "Glider Assault on Eben Emael as an Archetype for the Future." *Infantry Magazine* vol 93 no 2 (2004): 28-34.