

To Battle by Glider and Parachute: The Airborne Forces of the Second World War

Samantha Lemna

Honours Thesis in History at the University of Lethbridge
April 2014

Table of Contents

Introduction	3
Chapter One: The Evolution of Airborne Forces	7
Chapter Two: Small-Scale Airborne Operations	25
Chapter Three: Large-Scale Airborne Operations	40
Conclusion	62
Bibliography	72

Introduction

We are the men in chutes,
Tough men in jumping boots,
Jumping down to victory -
We are the paratroopers!
Hard hitting paratroopers jumping down to victory.¹

American paratroopers sang these words, only one of many that were sung by the airborne forces of the Second World War. The lyrics evoke the image of tough and elite soldiers which guaranteed success. Though these men did not always deliver victory, they played a distinctive and important role in the war.

The airborne of the Second World War consisted of parachute and glider forces. Air-landed infantry is also considered by some as ‘airborne,’ but they will not be included in the discussion here. This is because air-land troops require a captured airfield, and thus it is merely the transportation of troops behind friendly lines. By contrast, the parachute and glider troops would be landing into enemy-held territory, and have no immediate contact with friendly forces, with the possible exception of partisans. The delivery of soldiers by parachute and by glider both had their own particular advantages and disadvantages, as evidenced by their utilization in this conflict. It was also an entirely new form of warfare.

While some nations experimented with, or developed, these capabilities before the outbreak of war, other countries did not create their own until parachute and glider-borne troops were used against them in battle. The Soviet Union and Germany were the leaders of those nations in the former category, while the United States and Great Britain mostly pursued the latter course of action. Canada was another late-comer to airborne warfare, only raising the 1st

¹ Gerard M. Devlin, *Paratrooper!: The Saga of US Army and Marine Parachute and Glider Combat Troops During World War II* (New York: St. Martin’s Press, 1979), 662.

Canadian Parachute Battalion in July 1942, almost two years after the other Allied countries had become interested in developing their own airborne capabilities. This battalion had no glider elements and fought as part of the British 6th Airborne; though Canada's other military forces operated autonomously, albeit in conjunction with the British and other Allied forces. The 1st Canadian Battalion participated in the assault on Normandy in June 1944, the Battle of the Bulge in January 1945, and Operation Varsity in March 1945. These Canadian troops had the "proud record of never failing to take an objective assigned to it and, once taken, never losing it."² This was an exceptional record and reflected the effectiveness of airborne warfare.

Canada's behaviour towards their paratroops is a fitting example of the debate surrounding the effectiveness and necessity of airborne forces in the Second World War. Reluctant from the beginning, and despite their battalion's exceptional performance, Canada continued to have an unenthusiastic attitude towards airborne forces as a whole. As Bernd Horn explains,

the Canadian attitude to airborne forces has always been schizophrenic and driven by political purpose rather than by doctrine and operational necessity. The failure to properly identify a consistent and pervasive role for airborne forces led to a roller coaster existence, dependent on the personalities in power and political expedients of the day... the Canadian military and political leadership have never believed that airborne forces represented a credible national requirement.³

Thus the airborne was discounted as a viable fighting force by Canadian military and political officials before, during, and after the Second World War.

Other nations were skeptical of the usefulness of airborne forces as well. Before the outbreak of war, the value of airborne forces was seen only in the form of small groups of saboteurs. Even then, the value of such missions was considered questionable, particularly given

² Brian Nolan, *Airborne: The Heroic Story of the 1st Canadian Parachute Battalion in the Second World War* (Toronto: Lester Publishing Limited, 1995), 4.

³ Bernd Horn, *Bastard Sons: An Examination of Canada's Airborne Experience 1942-1995* (St. Catharines, Ontario: Vanwell Publishing Limited, 2001), 15.

the effort required to mount such an operation. Though other utilizations of this new form of warfare were imagined, many believed there was simply a lack of proper resources and technology to make these plans practical.⁴ The Soviet Union and Germany were the main nations to not subscribe to such thoughts. Germany was first to employ airborne forces in the Second World War, with their attack on Fort Eben Emael as they moved to invade Belgium. As other countries involved in the conflict developed and utilized their own paratroopers and glider-troops, the collective of airborne soldiers from all nations built a reputation for themselves. Though these men were not always successful in their missions, they would all demonstrate “courage, professionalism, selflessness, and tenacity,” and be considered as soldiers with “unparalleled performance and toughness.”⁵ Such attributes were supported by the victories found by such troops in even the most adverse conditions. Yet even despite this positive reputation, there were still those who disregarded the effectiveness and value of the airborne forces. In particular, Canada increasingly labelled para- and glider-troops as too risky; after the end of the war their airborne forces were limited to “emergencies or covert missions.”⁶

Doubt about the viability and effectiveness of airborne forces evidently existed. Yet many others also believed in their value. I argue that the airborne forces utilized in the Second World War were both effective and necessary. Beginning with the theory behind the delivery of soldiers by parachute and glider, I will establish the situation of airborne forces at the outbreak of war. The evolution of this form of warfare will be traced, as more nations developed their own airborne forces. I will then analyze the small-scale airborne operations of the war, an often over-

⁴ Gordon L. Rottman, *World War II Airborne Warfare Tactics* (New York: Osprey Publishing, 2006), 13.

⁵ Horn, *Bastard Sons*, 21.

⁶ Mark Matheson, “The Rebirth of Aerial Delivery,” *Canadian Military Journal* 2, no. 1 (Spring 2001): 44.

looked but absolutely essential aspect of the airborne forces. All nations utilizing para- and glider-troops began with small-scale experimentation and operations, and missions of this size were carried out by both Allied and Axis countries throughout the war. These operations are distinct from large-scale operations in several ways, and have close ties to partisan warfare, particularly those that were carried out on the Eastern Front. This utilization of airborne forces was quite successful, though perhaps less spectacular than the large-scale operations. In the latter that are the famous successes and failures of the airborne of the Second World War. I will examine various large-scale airborne operations and determine their status as successes or failures based off casualty rates, the completion of mission with regards to objectives, and the circumstances in which the parachutists and glider-troops carried out their tasks. I will focus on the airborne forces of Britain, Germany, the Soviet Union, and the United States. This emphasis is because these four nations most extensively utilized airborne forces; two developed their airborne capabilities before the war, and two nations did this after the hostilities began; together, the employment of airborne forces on the Western and Eastern Fronts of Europe as well as in the Pacific is covered; and these nations were involved in both small-scale and large-scale utilization of airborne forces. Finally, I will conclude with an overall evaluation of the airborne forces of the Second World War, and determine the fate of the paratroops and glider-men after the end of the war.

Chapter One: The Evolution of Airborne Forces

As Captain F. O. Miksche explained, “every military operation is a movement in time and space. The speed at which a movement can be executed is a condition of success. And speed is needed also for the attainment of another factor in success: namely, surprise.”⁷ In theory and when properly executed, airborne operations achieved the utmost advantages of speed and surprise. Airborne forces allowed for an attack on the flank or rear of the enemy; they were a form of ‘vertical envelopment’ that had not been possible in previous wars. This would “supplement the offensive action of mechanized forces and further guarantee the success of deep battle,” as well as be valuable when used in isolation of ground forces.⁸ This thinking originated with Soviet military planners in the late 1920s, and was soon adopted by the Germans as well.

The airborne forces of the Second World War were defined as those delivered into battle by aircraft, including by air-landing, glider, and parachute. As previously mentioned, this paper will only address glider and parachute forces, as they were the ones landing behind enemy lines. As James Gavin describes, the airborne soldiers

had to be capable of fighting at once against any opposition they met on landing. Although every effort was being made to develop the communications and techniques to permit battalions, companies, and platoons to organize promptly, we had to train our individuals to fight for hours and days, if necessary, without being part of a formal organization. Equipment had to be lightweight and readily transportable. Weapons had to be hand-carried. This meant that larger weapons had to be broken down into individual loads... [ammunition] had to [be in] man-size loads... a new scheme for issuing combat orders and coordinating the efforts of all troops had to be developed.⁹

⁷ Captain F. O. Miksche, *Paratroops: The History, Organization, and Tactical Use of Airborne Formations* (London: Faber and Faber Limited, 1943), 15.

⁸ David M. Glantz, *The Soviet Airborne Experience* (Fort Leavenworth, KS: US Army Command and General Staff College, 1984), 4.

⁹ James Gavin, *On to Berlin: Battles of an Airborne Commander 1943-1946* (New York: Bantam, 1984), 2.

This new form of warfare required a special soldier, as well as many adaptations to equipment and strategy. Most unique about the equipment utilized by the airborne was of course the glider and parachute.

Parachute and harness design varied between countries. The Soviet parachutes remained white throughout the war, as did the training parachutes of the majority of other nations. It soon became clear, however, that white parachutes were very easy to spot in certain theatres of operation, and so Britain, Germany, and the United States began utilizing non-white canopies: dark green and black, four-colour camouflage, and olive drab and three-colour camouflage, respectively. The canopy of the parachute was typically 6.7 meters to 8.5 meters (twenty-two to twenty-eight feet) in diameter. Initially this was made of the highest quality of silk to minimize the chance of tears, but as supply grew difficult in the war years, the Americans began to use rayon and nylon instead.¹⁰ The British also switched to ‘Ramex’ cotton parachutes and also adopted the nylon ones as well. This parachute, and others were composed of panels sewn together with silk or nylon thread, and had a small vent-hole at the top. The rigging lines that hung down from the canopy were also made of silk or nylon, and had a minimum breaking strength of 181 kilograms (400 pounds).¹¹ Where silk was used, whether as thread, rigging, or canopy, it was a specially selected untreated silk called *habuti*. The parachutes were relatively simple in design and operation, with a lifetime of eight to ten years. Every sixty days the parachute was unpacked, checked, and repacked; due to their obvious importance to the

¹⁰ Rottman, *World War II Airborne Warfare Tactics*, 26.

¹¹ Donald Featherstone, *Wargaming Airborne Operations* (South Brunswick & New York: A. S. Barnes & Company, 1979), 37.

paratroopers' safety, they were rigorously tested.¹² The image below depicts two American paratroopers from the US 82nd Airborne participating in a demonstration jump on 3 July 1943.



Figure 1. Source: *Airborne 1943*, photograph, 1943, World War II Signal Corps Collection, in "The First US Army Airborne Operation by Jay A. Graybeal, http://www.army.mil/article/3852/The_First_U_S_Army_Airborne_Operation/

The Americans and some Soviet paratroopers also had a reserve parachute, though the British and Germans did not. The reserve could only be used in jumps over 244 meters (800 feet). The lower the jump, the more accurately the paratroopers would land, and the less time they would be exposed to enemy fire. The lower drops also required the use of a static-line,

¹² Hal Goodwin, *Aerial Warfare: The Story of the Aeroplane as a Weapon* (New York: The New Home Library, 1943), 231-232.

which opened the parachutes automatically as the paratrooper leapt from the aircraft.¹³ This method was particularly utilized by the Germans.

The harnesses that were attached to the parachutes varied by country. The British harness was considered to be the best of the war. The fitting of the harness reduced the amount of jerking the paratrooper experienced upon the parachute opening, and it possessed a quick-release. This made it easier for soldiers to remove the harness, and also prevented the men from being dragged by the wind after landing.¹⁴ The German harness was very much the opposite of the British one: it was uncomfortable and jerked the paratrooper roughly when the parachute opened. It also caused the soldier to hang slightly faced downwards with no control over the parachute. This resulted in more injuries than necessary.¹⁵ The Soviets utilized a harness relatively similar to that of the United States, whose paratroopers were equipped with the T5 or T7 parachute. These strong and reliable parachutes both had a large canopy which resulted in a slow rate of descent and thus a straight and steady flight. The soldiers wore a three-point harness, which unfortunately gave a severe jerk when the parachute first opened.¹⁶ While similar in design and material, the parachutes and harnesses varied according to country, and each fit and positioned the airborne soldier in a slightly different way.

Gliders also varied in shape and size, and they also evolved in design throughout the Second World War. There were many experimental forms of the main gliders used in this conflict, but as there were very small numbers of these built, and even fewer that went into

¹³ Featherstone, *Wargaming Airborne Operations*, 37-38.

¹⁴ Nolan, *Airborne*, 26.

¹⁵ Featherstone, *Wargaming Airborne Operations*, 38.

¹⁶ Featherstone, *Wargaming Airborne Operations*, 37.

battle, only the most common gliders will be discussed. At the outbreak of the conflict in 1939, Britain and the United States had no military development whatsoever of this technology; there was no planes, pilots, or even doctrine.¹⁷ But the Soviet Union and Germany had envisioned a military use for gliders for years, and had begun their experiments in the early 1930s. The first glider to be used in the war was the German DFS 230, which carried two pilots and nine soldiers, and was usually towed by a Ju52. Its purpose was to deliver a small assault group by air whose members would land together and not be separated from their weapons. Later on this glider would have a parachute-packing installed in the tail and braking rockets attached to the those, both of which allowed for a steeper dive and a shorter landing space. The Germans also used another glider, the GOTHA GO242, which was bigger and able to transport larger weapons and more soldiers.¹⁸ The Soviets did not build as large a number of gliders, but did utilize the RF-8 (also known as the Antonov A-7), the SAM-23, and the Gribovski G-11. Figures 2-6 depict the British Horsa, the American WACO CG-51, the British Hamilcar, the German DFS-230, and the Soviet Union's A-7.

¹⁷ James E. Mrazek, *Airborne Combat: The Glider War/Fighting Gliders of World War II* (Mechanicsburg, PA: Stackpole Books, 2011), 2.

¹⁸ Featherstone, *Wargaming Airborne Operations*, 41-42.



Figures 2-6. Source: *Three Horsa Gliders Landing*, photograph, 1944, http://ww2bd.com/image.php?image_id=7003. United States Air Force, *CG-4A Glider in Flight*, photograph, 1943, http://ww2bd.com/image.php?image_id=6952. *Hamilcar Glider Loaded with an Universal Carrier*, photograph, unknown, http://ww2bd.com/image.php?image_id=7040. Toni Schneiders, *German DFS 230 C-1 Glider at Gran Sasso, Italy, 12 September 1943*, photograph, 1943, German Federal Archives. *Antonov A-7*, pencil drawing, <http://en.academic.ru/dix.nsf/enwiki/5554153>.

The British began their development of the military glider in 1940 with the Hotspur. This glider carried eight men plus two pilots, but little else. This aircraft was only used for training purposes, while its successors, the Horsa and the Hamilcar were deployed in many airborne operations.¹⁹ Appearing in 1941, the Horsa was 20.4 meters (sixty-seven feet) long with a twenty-seven meter (88 feet) wingspan. It usually carried twenty-five men in addition to the two pilots, as well as some supplies. Alternatively, the glider carried equipment into battle. It was generally considered to be an excellent aircraft, and was nearly inflammable; one of its drawbacks was that it had not been designed with jeep transport in mind. Thus it was a lengthy process to extract the vehicle from the side-door of the glider, which was all the more hazardous if the landing zone was under fire. The American glider-men also disliked it as they feared the

¹⁹ G. G. Norton, *The Red Devils: The Story of the British Airborne Forces* (London: Leo Cooper Ltd., 1971), 7-8.

splintering of the plywood craft.²⁰ The even larger Hamilcar was 20.7 meters (sixty-eight feet) long and had a 33.5 meter (110 feet) wingspan. It could carry over eight tons, and was used to bring heavy equipment that would be otherwise unavailable to airborne forces.²¹ The Hamilcars had side-doors and hinged tails and noses to enable quick unloading of the cargo; the Horsas had only side doors until later in the war, when they were also given hinged noses. Their landing speed was approximately 112 kilometers per hour (seventy miles per hour), and the pilots that operated the gliders belonged to the Glider Pilot Regiment.²²

The Americans used several variations of the glider named WACO. The WACO CG-41 (called the WACO Hadrian by the British) was the most widespread glider, and it carried equipment or fifteen soldiers plus two pilots.²³ This glider was regarded as one of the best of the war, but its major disadvantage was that it was too small to transport both a jeep and a trailer.²⁴

The majority of the soldiers in glider regiments were not volunteers, though many chose instead to become paratroopers; this was done “partly for money, partly for the glamour, but for some for fear.”²⁵ The situation of the glider troops is excellently summarized in the song of the ‘Glider Riders:’

Once I was infantry, now I’m a dope
riding in gliders, attached to a rope
safety in landing is only a hope,
and the pay is exactly the same.
We glide through the air in a tactical state,
jumping is useless, it’s always too late,
no ‘chute for the soldier who rides in a crate,

²⁰ Featherstone, *Wargaming Airborne Operations*, 146.

²¹ James M. Gavin, *Airborne Warfare* (Washington: Infantry Journal Press, 1947): 146.

²² Norton, *The Red Devils*, 8.

²³ Featherstone, *Wargaming Airborne Operations*, 45.

²⁴ Gavin, *Airborne Warfare*, 146.

²⁵ Martin Middlebrook, *Arnhem 1944: The Airborne Battle 17-26 September* (London: Viking, 1994), 30.

and the pay is exactly the same.
We fight in fatigues, no fancy jump-suits,
no bright leather jackets, no polished jump-boots,
we crash-landed by glider without parachutes,
and the pay is exactly the same.
We glide through the air with ‘Jennie’ the Jeep
held on our laps, unable to leap,
if she breaks loose, our widows will weep,
and the pay is exactly the same.
We work in headquarters, we sit on a chair,
we figure our tactics and take to the air,
we fly over Jerry and drop in his hair,
and the pay is exactly the same.²⁶

The glider-men received less pay and less training for an increased risk. They had no parachutes to save them if something happened in flight, and the chance of breaking up or flipping upon landing was very real. Yet, gliders were considered essential to the airborne forces of the Second World War. G. G. Norton explains that during this time period, “the weapons and equipment which could be dropped by parachute were very limited,” and so the gliders were necessary to supply heavier essentials, as well as offered a “quick and economical means of flying in reinforcements to support the initial parachute landings.”²⁷ Thus gliders were very important in keeping the lightly armed airborne forces defended, particularly against heavy weapons utilized by enemy forces who often surrounded them. Gliders also allowed a small number of troops to land together, which aided in organization on arrival or allowed for the increased survival of those in gliders that landed astray.

Paratroopers and gliders were utilized in both large- and small-scale military operations, and given a vast number and variety of objectives to obtain throughout the war. While paratroopers and gliders were also used in isolation, their original intended purpose was to be used as an offensive force in combination with ground infantry and mechanized forces. Thus the

²⁶ Ricard S. Gardner and James Lee McDonough, *Sky Riders: History of the 327/401 Glider Infantry* (Nashville: The Batter Press, 1980), v.

²⁷ Norton, *The Red Devils*, 7.

airborne was to be part of the vertical aspect of combined operations. The seeds of this idea date as far back as Napoleon, who believed that hot air balloons provided “an alternate means of striking at the English foe.”²⁸ In 1794 he established the *Compagnie d’Aérostiers*, which consisted of four balloons and their crews. An “aerial armada of these contraptions” was to be used in an imagined invasion of England.²⁹ Of course, this never materialized, but it is clear there existed thoughts of an air attack long before the twentieth century.

The First World War galvanized airborne development. The frustration with the war of attrition led the Americans to plan an airborne offensive involving paratroopers for the spring of 1919.³⁰ But with peace achieved before this plan was realized, the Americans lost interest in pursuing their own airborne capabilities, and it was the Soviet Union and Germany that began to truly develop the airborne in theory and practice. As David M. Glantz explained, while “the victors of World War I sought to make new weapons the slave of the defense and guarantee the status quo, those defeated -- Germany and the USSR -- turned to the new weaponry as a means to overturn the status quo.”³¹ Clearly the discrepancy in the adoption of airborne forces was reflective of who were the relative ‘winners’ and ‘losers’ of the First World War. While America, Britain, and Canada had confirmed their military superiority, this victory resulted in complacency and too much focus on the defense. This restricted these nations’ receptiveness to those military innovations not tested on the battlefields of the First World War, namely the use of airborne forces. The Germans and Russians, however, who had suffered grievously during and

²⁸ Bernd Horn and Michel Wyczynski, *Paras Versus the Reich: Canada’s Paratroopers at War, 1942-45* (Toronto: University of Toronto Press, 2003), 22.

²⁹ Horn and Wyczynski, *Paras Versus the Reich*, 22.

³⁰ Miksche, *Paratroops*, 19.

³¹ Glantz, *The Soviet Airborne Experience*, 3.

after the war, were extremely interested in improving their military strength drastically. These countries wanted to upgrade their position in the post-World War I international community. Thus the newly created Soviet Union and the drastically changed German nation were open to military innovation.

The receptiveness to the idea of the airborne was also fuelled by the conditions found on the eastern front during the First World War. It was characterized by vast distances, and thus had more movement than the attrition of the Western Front. This encouraged more offensive military thought and development. Therefore, while Germany learnt from the long battles in the west, it was their experiences in the east that “focused German attention on the possibilities inherent in using tactical successes to pursue large goals, such as encircling and destroying enemy forces.”³² But Germany first had to recover from the effects of the First World War and the harsh Versailles Treaty. It was not until the 1930s that the Germans really began developing their airborne forces.

General Kurt Student was the driving force behind the German *Fallschirmjäger*. It was his effort that established the airborne forces in Germany. As Correlli Barnett stated, the “German airborne force were almost the unique creation of this one man and were largely sustained by his continuing determination and drive, through a daunting succession of frustrations and disappointments.”³³ He was inspired to develop paratroops after witnessing the Soviet demonstration in 1935; a glider enthusiast, the idea for military gliders came even earlier.³⁴

³² Williamson Murray and Allan R. Millett, *A War To Be Won: Fighting the Second World War* (Cambridge & London: Harvard University Press, 2000), 20.

³³ Correlli Barnett, *Hitler's Generals* (New York: Grove Weidenfeld, 1989), 464.

³⁴ Correlli, *Hitler's Generals*, 466.

Student's expertise and determination saw him establish the German airborne force, and also allowed him to stay in command of it for the duration of the war.

Due to the Versailles Treaty's military restrictions on Germany, paratroopers were organized and trained as a Prussian police unit. On 1 April 1935 this formation became the General Goring Air Regiment, and officially became part of the Wehrmacht. Six months later the regiment was transferred to the Luftwaffe and began their paratroop training. From this point forward, the German *Fallschimjager* expanded in size. There was some debate concerning which wing of the military the paratroops belonged to: the Luftwaffe, who saw these soldiers as saboteurs, and the Wehrmacht, who saw parachutists and glider-men as infantry delivered in a new way.³⁵ By 1939, it was generally settled that they belonged with the Luftwaffe due to the use of gliders and the need for transport aircraft. General Student recognized the use of airborne forces as saboteurs and as infantry, but strongly favoured large-scale employment of his men.³⁶ In any case, the *Fallschimjager* were utilized in both small- and large-scale airborne operations.

The Soviet Union had similar offensive military interests as the Germans. Its military and political leaders were also influenced by the conditions of the eastern front and the great losses endured in both the First World War and the civil war following. The leading military theory that emerged was 'deep battle' (*gluboky boi*), which focused on attacking the enemy from the rear as well as the front.³⁷ The military leaders and theorists realized the "importance of manoeuvre, speed and surprise" and embraced "a belief in bold, aggressive action and ideology that

³⁵ Volkmar Kuhn, *German Paratroops in World War II*, trans. H. A. and A. J. Barker (London: Ian Allan Ltd., 1978), 9, 14.

³⁶ Horn and Wyczynski, *Paras Versus the Reich*, 27.

³⁷ Glantz, *The Soviet Airborne Experience*, 3-4.

inherently endorsed the offensive.”³⁸ It was with these ideas in mind that the Soviets pioneered the concept of vertical envelopment as part of deep battle in the 1920s, and they immediately began experimentation with airborne forces.

As airborne operations are extraordinarily complex, a lot of time, effort, and resources are spent determining exactly how to carry them out. The Soviets, the first ever to experiment with paratroopers, had to work out all of the details, fix all the problems that emerged, and establish standard procedures. Airborne equipment also had to be developed and produced, and the first domestic parachutes were available in April 1930. By 2 August of the same year, twenty-four parachutists were dropped near Voronezh from the heights of 500 and 300 meters in order to perform mock diversionary tactics in an enemy’s rear. This test was repeated in September 1930, and such was the success that the military was encouraged to continue and expand their experimentation.³⁹

In March 1931, a group consisting of a rifle company, a sapper platoon, a communications platoon, a light vehicle platoon, a heavy bomber squadron and a corps aviation detachment, complete with two 76mm guns, two T-27 tankettes, four grenade launchers, three light machine guns, four heavy machine guns, fourteen hand machine guns, and an assortment of light vehicles, transported by twelve TB-1 bombers and ten R-5 light aircraft was created to test procedures concerning the transportation of troops by air to seized airfields. A few months later a parachute component was officially created. After this, the airborne constantly expanded, with special purpose airborne detachments being established in many of the Soviet Union’s military districts.

³⁸ Horn, *Bastard Sons*, 26.

³⁹ Glantz, *The Soviet Airborne Experience*, 4-5.

By March 1933 there was an airborne training course in operation and by January 1934 there were almost ten thousand men in twenty-nine separate airborne battalions. By this point the command levels were defined, it was determined that parachute drops would be en masse because of the paratroops' light weaponry, and it was established that the airborne was to be used for "bold maneuvers to capitalize on the element of surprise and to effect speedy employment and rapid concentration of forces."⁴⁰ Training and testing continued throughout the 1930s, and techniques and tactics advanced steadily, despite equipment and aircraft shortages. Interestingly the Soviets did not train for cooperation between airborne and partisan forces and the depth to which the units were delivered to was limited, yet in the Second World War the airborne troops were often dropped very deep behind enemy lines and cooperated very closely with partisans.⁴¹

The Great Purges had a devastating effect on the Red Army, especially on its leadership, which affected the military's overall capability. In 1937, Stalin began his purge of his armed forces, liquidating many of those in command. Furthermore, he attacked any ideas about warfare that were not associated with himself.⁴² Many of those who had championed the airborne forces were killed, as were theorists of deep battle. This slowed the rate of development and improvement in the Soviet Army, which was a severe hindrance with war only a few years away. Even more critically damaging, was the shortage of good leaders, as those with any vision and ability had been eliminated. The problems that would become apparent to the Red Army during the Second World War were left for generally less talented and less experienced individuals to

⁴⁰ Glantz, *The Soviet Airborne Experience*, 5, 9, 13.

⁴¹ Glantz, *The Soviet Airborne Experience*, 9, 13.

⁴² Murray and Millett, *A War To Be Won*, 20.

solve, and they were further constrained by a vicious political climate.⁴³ But despite such setbacks, the airborne did continue to expand and progress as a fighting force.

In the first live demonstration of airborne troops in 1935 and 1936, the Red Army dropped its paratroopers near Kiev in front of many foreign political and military dignitaries. Two battalions with a total of sixteen light field guns landed in eight minutes and immediately occupied their objective, a small town. This fantastic sight resulted in much excitement surrounding the use of airborne forces, especially with Germany, who really began their expansion into this area of the military in 1936. Some countries were interested enough to launch a limited investigation into the use of airborne forces.⁴⁴ One example of this was the French: in 1938 they experimented with two airborne companies, but disbanded them right after the war began. Italy had also begun dabbling in airborne operations but their interest was soon lost.⁴⁵ Other nations treated the concept with outright scorn. The British, for example, were concerned over the “light nature of airborne forces,” and this kind of sentiment, combined with the unavailability of transport aircraft, the lack of desire for an offensive military, and the want to avoid war resulted in no development of such units in Britain before the Second World War.⁴⁶ Experimentation was non-existent in North America until after Germany demonstrated the prowess of airborne forces in 1940 with their successful capture of the fortress of Eben Emael.

Though the theory of airborne forces pre-dated the Second World War, few nations actually possessed any kind of parachuting and glider capabilities by 1939. Only the Soviet Union and

⁴³ Glantz, *The Soviet Airborne Experience*, 17, 23.

⁴⁴ Miksche, *Paratroops*, 18-19.

⁴⁵ Glantz, *The Soviet Airborne Experience*, 17-18.

⁴⁶ Glantz, *The Soviet Airborne Experience*, 18.

Germany had created and developed their own versions of an airborne force, the *vozdushno desantnye voiska* (VDV) and the *Fallschimjäger*, respectively. Britain and the United States had relatively little interest in developing their own airborne forces; this they would regret as they had to build them from scratch during the war. Thus there was first a delayed and then an accelerated development of airborne forces after the outbreak of war. A steep learning curve was experienced by all nations that employed paratroops and gliders in this conflict; this occurred because such forces had never been tested in real battle before; the military theory and tactics were relatively new and thus undeveloped; and, finally, as both sides established increasing airborne and anti-airborne capabilities, there grew a need to be increasingly creative in how these forces were utilized, as well as in how and when they were to be delivered.

As previously stated, it was only after Germany's debut airborne operations that such forces gained any real attention from Britain and the United States. By June 1940 Winston Churchill proposed developing a British airborne corps; Horn suggests that only a strong and stubborn character like Churchill, who greatly valued innovation and offensive action in warfare, could have managed to create such a innovative military force in an environment of tradition and convention.⁴⁷ Given the situation of the war for Britain at the time, isolated and alone against the seemingly unstoppable Third Reich, it may have been that even the most conservative Britons were willing to try a new method of warfare.

The difficulty of creating an airborne force with no experience, no properly fitted aircraft, nor even a military parachute was overwhelming. But the British designed and built what was required from the bottom up. Even simple matters such as the best way to drop the soldiers from

⁴⁷ Horn, *Bastard Sons*, 26-27.

the planes was experimented with and perfected. The Central Landing School was set up at Ringway Airport on 21 June 1940 and a month later the volunteers of No. 2 Commando were dropped for the first time from converted Whitley bombers. Gradually, the problems were solved and the chaotic became organized. By May 1941 the British were ready to carry out their first small experimental mission. For perspective, this was just before the German *Fallschirmjäger* participated in the massive Crete invasion. There was clearly a lag in the capabilities and size between the two airborne forces.

Crete galvanized the British to establish their airborne forces even faster, and in September 1941 the 1st Parachute Brigade was created, shortly followed by the 2nd and 3rd Parachute Brigades. The ill-suited Whitleys were also soon replaced by American Dakotas.⁴⁸

The British also developed their glider capabilities alongside their parachute forces. By the autumn of 1940, Britain's first military glider, the Hotspur, had been designed and produced; the Horsa and the Hamilcar would not be far behind in their development. In December 1941, the Glider Pilot Regiment of the Army Air Corps was formed in order to train glider pilots. The first regiment for these men to go to was the 1st Airlanding Brigade Group. All of these pilot-soldiers were officers or non-commissioned officers with infantry training. They were generally the men who formed the Divisional Commander's reserve after landing. Both the glider and paratrooper sections of the British Airborne continued to expand and develop. In just over two years, it went from being nothing but an idea held by a few and involved to be a true fighting force with exceptional men, a defined purpose, and successful action to their credit.⁴⁹

⁴⁸ Norton, *The Red Devils*, 2-3.

⁴⁹ Norton, *The Red Devils*, 8, 18.

As previously discussed, the Americans had considered utilizing paratroopers in 1919. As the close of the First World War prevented this plan from becoming reality, the airborne forces had mostly faded to obscurity. There were a few exceptions to this, however. A demonstration organized by Billy Mitchell in the 1930s saw six soldiers parachuting safely down to the ground, ready for battle three minutes later. This did little to impress the US Army. After witnessing the success of Germany's parachute and glider troops, however, America launched its own airborne training program in the May of 1940; they accelerated the program in May 1941. Hal Goodwin states that this delay may have even had benefits, as the US was "able to profit by the lessons learned abroad, saving time in training and methods which might otherwise have taken years to learn."⁵⁰ This may have been true, but the Americans were still delayed in utilizing their airborne forces when compared to the nations that had developed their airborne before the war began. The US's first airborne operation was in North Africa, in November 1942, over two years after Germany first utilized their paratroopers and gliders.

James M. Gavin claims that though airborne warfare was created by the Russians and developed "to a state of combat effectiveness" by the Germans, it was the Americans (and the British to an extent) who "refined and improved it and unleashed upon our enemies airborne forces of such power and perfection as even they had not dreamed of."⁵¹ This statement is an over-exaggeration certainly, but America did take its own path in the development of the airborne. They used different parachute harnesses and jumping techniques than the British, and contributed to the evolution of airborne tactics. For example, in a letter to the American Chief of

⁵⁰ Goodwin, *Aerial Warfare*, 229.

⁵¹ Gavin, *Airborne Warfare*, vii.

Staff George Catlett Marshall, General Dwight Eisenhower discussed his ideas concerning the ways in which paratroopers and gliders could be used:

The proper development of airborne operations lies one field in which we have real opportunity and capability to get ahead of the enemy... Mass in vertical envelopments is sound - but since this kind of enveloping force is *immobile on the ground*, the collaborating force must be strategically and tactically mobile... There must exist either the definite capacity of both [airborne and ground] forces to combine tactically, or the probability that each force can operate independently without the danger of defeat. An airborne landing carried out at too great a distance from other forces which will also be immobile for some time, will result in a much worse situation.⁵²

This letter was written in 1943, well into the war, and it demonstrated the complexity of employing airborne forces, whether they were combined with other aspects of the military or not. This passage also indicated the great potential of the airborne, and it was this potential that spurred its development.

The American and British airborne forces would have a steep learning curve as they participated in their first small- and large-scale operations. Ironically, they had just begun developing their airborne capabilities on the basis of Germany's successes when Germany itself began scaling its airborne operations back. The development of airborne forces was unique for each country, and each country would be forced to adapt and develop its techniques and utilization of paratroopers and gliders to the different terrains, climates, distances, objectives, and enemies they would encounter throughout the war.

⁵² Alfred D. Chandler, Jr., ed., 'To George Catlett Marshall, Secret, February 19, 1944,' in *The Papers of Dwight David Eisenhower: The War Years* (Baltimore and London: The Johns Hopkins Press, 1970), 1737-1738.

Chapter Two: Small-Scale Airborne Operations

While large-scale parachute and glider operations have had a greater place in the popular memory, small-scale airborne activity also had a featured role in the various theaters of the Second World War. The countries that utilized paratroopers and glider-men in this conflict all began doing so on a small-scale; given the need to perfect operational techniques and delivery methods for this new type of warfare, this makes sense. Despite these origins and the utilization of airborne forces on this scale throughout the war, there is ambiguity regarding the definition of small-scale. It cannot be defined based on the objectives, as both small- and large-scale operations share many immediate goals. For example, both were assigned to capture essential points such as bridges or high ground, and both were encouraged to disrupt the enemy's communication and supply lines as much as possible. Though the overall aims of an operation differed in some cases, the best way to differentiate between small- and large-scale is through the number of soldiers utilized. This number is arbitrary, as most sources are vague or do not give any numerical qualification of the scale of airborne activity. But for the purposes of this paper, small-scale operations shall be defined as those involving the parachute or glider delivery of eight hundred men or less. The top end of this number may seem rather large to be considered 'small,' but this is justifiable when compared to the 21,680 airborne soldiers deployed over the Rhine for Operation Varsity.⁵³ The extreme variation in the number of soldiers utilized for an airborne operation is evident.

Despite their more modest size, small-scale airborne operations were an essential component of the airborne forces. This is apparent by the number of successful small-scale drops

⁵³ Featherstone, *Wargaming Airborne Operations*, 93.

that occurred, of which specific examples will be examined in more detail. As a whole, this style of airborne combat has many parallels to partisan warfare, which begs the question if the paratroopers and glider-troops are behind-front-line infantry or saboteurs. This debate tends to put a box around the definition of airborne forces, and also leads to the argument of small- versus large-scale. Yet there is value in both, as evidenced by the small-scale airborne operations that were carried out in the course of the Second World War.

One of the most famous examples of small-scale airborne warfare is the German capture of Fort Eben Emael in Belgium. This was the second airborne operation of the war and one that greatly impressed the world. On 10 May 1940, forty-three DFS 230 Gliders with eleven officers and 427 men landed to capture three river crossings on the Albert Canal and the fortress itself. While all of the crossings were captured by midnight on the first day, one of the bridges had been blown. Most impressive, however, was that Fort Eben Emael was attacked by eleven gliders, nine of which landed atop the fortification. The eighty-five soldiers destroyed the guns and captured the entire fort, despite being greatly outnumbered, by the time the main German column made contact the next day. Six Germans were killed and twenty were wounded; an astounding success against large odds.⁵⁴ This use of airborne forces not only assured its acceptance and continued support by the Führer, it directly inspired other nations such as Britain and the United States to begin the process of creating their own parachute and glider forces. Though the German invasion of Crete a year later is more commonly cited as the reason for the creation of an Allied Airborne, the seed was clearly in this event, as explored in the previous chapter. This in itself is revealing of the importance of a small-scale airborne operation.

⁵⁴ Correlli, *Hitler's Generals*, 468.

Germany also carried out thirteen other missions of a similar size, seven of which came after the Crete invasion in May 1941, when the German *Fallschirmjäger* supposedly found their end even in apparent victory. For example, in July 1943, paratroopers jumped to reinforce German troops in Sicily. Due to the difficult terrain, this method of delivery was essential. In September of that same year, three impressive and effective uses of airborne forces occurred. First, a battalion was dropped on the island of Elba, which was captured without a single shot being fired. Second, a battalion landed on the Italian Army headquarters at Monte Rotondo after the nation's government collapsed, seizing the Italian general staff. They negotiated a cease-fire between Italians and Germans, and therefore stabilizing Italy enough for Germans to gain control of the situation unfolding in Italy.⁵⁵ Third, and perhaps most remarkable, was the glider rescue of Benito Mussolini from pro-Allied hands. He was hidden away in a heavily guarded and isolated prison atop a mountain that was normally only accessible by cable car. Twelve gliders with a total of 108 men would face 150 Italians who knew the surroundings and could use the hotel as a strongpoint. On 12 September, 1943, the gliders crashed onto a 'perfect meadow' which turned out to be a steep hill instead. Landing impossibly close to the hotel (as close as fifteen meters), the German glider-men stormed the building and quickly reached Mussolini. After the surrender of the troops, the ex-Italian leader was escorted out by plane along with a few of his new bodyguards. The rest stayed to secure the location and gather information. As Skoreny described it, "the surrender was speedily carried out... [the building] had also fallen undamaged into our hands. There had been a little fighting, but the troops had arrived to the second and the

⁵⁵ Mason, *Falling From Grace*, 39-40.

surprise had been complete.”⁵⁶ This operation was credited with making Mussolini’s rump regime possible and had significant propaganda value.⁵⁷ The small-scale employment of the *Fallschirmjäger* was incontrovertibly crucial to the German war effort.

The British had three key small-scale airborne operations. The first took place in Italy, with the Tragino Aqueduct as the target. Thirty-eight volunteers from the British No. 11 Special Air Service Battalion were selected. They were to destroy the aqueduct in order to disrupt the ports that were supplying the enemy forces in North Africa. Dropping just north of the objective on the night of 11/12 February 1942, the parachutists were short of weapons, explosives, and six men. This was due to one inaccurate drop and the failure of two supply containers to release from the plane carrying them. But by 0300 the aqueduct was destroyed and the soldiers were making their way to the submarine sent to retrieve them. The majority of the paratroopers were captured, the exceptions being one killed and one wounded.⁵⁸ Still, this first British airborne operation had been successful in achieving its objectives. Even more importantly, it gave the British valuable experience in this new method of warfare.

The next British use of airborne forces took place in Northern France, near the village of Bruneval, for which the raid was named. This operation was carried out in order to obtain information about the German radio-location device located there. The Bruneval raid was therefore valuable to the war effort in more than just airborne experience: as one soldier saw it, the examination of the German radar installation “might enable British installations to be

⁵⁶ Otto Skorzeny, *Skorzeny's Special Missions: The Autobiography of Hitler's Commando Ace* (USA: Greenhill Books, 1957): 72-81.

⁵⁷ Mason, *Falling From Grace*, 40.

⁵⁸ Norton, *The Red Devils*, 4-6, 249.

improved... it would certainly make it possible to discover how far the enemy had progressed, how accurate the process of detection had become, and, therefore, how great a risk British bombers flying to the attack would have to accept."⁵⁹ Success in this mission would result in greater knowledge of the enemy and better protection of the Allied troops.

The force selected for this operation was 'C' Company, 2nd Parachute Battalion from the British Airborne. The 120 men (though only 119 went on the actual mission) were divided into three equal groups. One group would take the shore defences, one group would take the radar station, and the last would act as a reserve and go where it was needed. They were to be retrieved by the Royal Navy on the beach at the conclusion of their mission. As planned the paratroopers jumped in the dark of 27/28 February, 1942, with all but twenty men arriving on their target. The radar station and nearby the house were captured easily, and the radar equipment was dismantled without opposition. This group, its mission completed, made its way to the beach. Here there had been more enemy resistance, and though the paratroopers struggled to capture the shore, by 0215 they had succeeded. The boats sent to recover the soldiers arrived, and at the cost of three killed, seven wounded, and six left behind, the Bruneval raid came to a close.⁶⁰ Despite slight scattering on the drop in, decreased mobility due to snow drifts, heavier than expected fighting at the beach, and the failure of the radio-location device (prevented communication with the Royal Navy), the paratroopers had been successful. The German radar equipment had been dismantled, photographed, and parts taken back to England for further study. Furthermore, the British had a

⁵⁹ Victor Dover, *The Silken Canopy* (London: Cassel Ltd., 1979), 20-21.

⁶⁰ Norton, *The Red Devils*, 11-14.

greater understanding of their own airborne forces and the ways in which they could be employed.

While the first two British Airborne operations of the Second World War consisted of parachutists only, the third would be carried out exclusively with gliders. Two Halifax airplanes, each towing a Horsa glider, were to travel four hundred miles to an isolated and difficult to approach landing zone near Vermork, Norway. After releasing their gliders, the airplanes were to make the long trip back to Great Britain. Meanwhile, the gliders filled with engineers would land, assemble, and march approximately five hours to their objective: the Norsk Hydro plant, the destruction of which was to delay the German creation of an atomic bomb. The men were meticulously trained and prepared; Norwegian agents successfully received a radio-location device in order to mark the landing zone for the incoming pilots. On 19 November, 1942, the two aircraft and their gliders, each carrying seventeen men, left Great Britain and flew to Norway, completely out of radio-contact. As the radio-location device failed, the Halifax crews were forced to navigate by map. Both successfully made landfall and found the landing zone. Unfortunately one plane was unable to clear the mountains after releasing its glider and crashed, killing the entire crew. The other Halifax managed to return home safely, after its tow rope broke because of snow cloud on the second approach to the landing zone. This glider crashed, with eight of its passengers killed on impact. Four were injured, and they and the five remaining soldiers were quickly captured; the injured men were poisoned and the healthy men were shot by the Gestapo. The other glider also crash-landed, killing three, and the rest of the glider-men were also captured and shot.⁶¹

⁶¹ Norton, *The Red Devils*, 14-17.

Though this mission was unsuccessful, it was not the failure of the British Airborne - in fact, this mission could not have even been attempted had such forms of warfare not existed. The objective would have been both physically and conceptually out of reach for the British; the attempt itself was a monumental tribute to the potential of the airborne forces. Philip Warner described the mission as such:

It was clearly a hopeless target for parachutists and would be almost impossible to hit with bombs. There did, however, seem to be a possibility that a glider-borne raid.... might reach and destroy it... Flying over Norwegian mountains and through valleys must inevitably be dangerous, locating the dropping zone exceptionally difficult and subsequent escape extremely arduous, if possible at all... [and thus it was unsuccessful because of the] failure of the landing device.⁶²

Thus the blame was placed on the radio-location device by Warner and many others. Though this operation failed, the airborne forces were still viewed as a force with a huge potentiality by British military and political leaders. The airborne capabilities of Britain continued to be developed, expanded, and finessed. Though the scale of the next missions increased, it was these three small-scale airborne operations that inspired them all.

The United States' employment of airborne mostly took form on an increasingly large scale. But this was not true in the Pacific theatre. It was here that America most extensively utilized airborne in small-scale operations. The 11th Airborne carried out many missions, dropping from island to island on very small, rough drop zones. possibly their most prolific jump was to liberate the Los Banos concentration camp. On 16 February, 1945 the 503rd Airborne Regimental Combat Team jumped into two minuscule and perilous drop zones, and they, with their reinforcements that arrived by boat, faced nearly five thousand Japanese. Despite the overwhelming odds, the Americans were victorious, and successfully liberated the camp. The operation had been planned with little notice, and in a few days, the American airborne had

⁶² Philip Warner, *The Secret Forces of World War II* (London: Granada Publishing Limited, 1985), 42-43.

“mounted a well-conceived, hit-and-run attack against considerable enemy opposition,” taking only three killed and two wounded.⁶³ The rest of the American operations that occurred on a similar scale faced similar issues, though generally with higher casualty numbers.

The Soviet Union did not utilize their airborne forces in their intended role during the immediate outbreak of the Second World War. Caught in the German onslaught, the Soviet Airborne fought instead as infantry, defending their homeland courageously. Highly successful as infantry, the Soviet paratroopers and glider-men were frequently used as such or even transferred to infantry units throughout the war. Yet their value in their original role was not forgotten, and the airborne forces were used to their true purpose a great number of times. All but two of these occasions were small-scale operations. While this was partially because of a lack of success with large-scale campaigns, it was also due to the extraordinary success achieved by the small-scale activities of the Soviet Airborne.

For example, on the night of 14/15 December, 1941, 415 paratroopers were dropped behind the German lines in order to create disarray and slow the retreat being made by the German soldiers. They blew bridges, cut communications, and disrupted rail and supply lines. For nine days the Soviet paratroopers were obstructive, and the Soviet high command was pleased with the results.⁶⁴ Shortly thereafter, in the beginning of January 1942, two battalions were dropped in the Medyn area to disrupt German logistical and communication networks, as well as to secure landing strips, cut highways and railways, and block the movement of German forces. Despite heavy anti-aircraft fire that resulted in an inaccurate parachute drop and

⁶³ Edward M. Flanagan, *The Los Banos Raid: The 11th Airborne Jumps At Dawn* (Novato: Presidio Press, 1986), 61, 127, 219.

⁶⁴ Glantz, *The Soviet Airborne Experience*, 114-115.

extremely heavy German opposition, all objectives were obtained and held. These men were not relieved until seventeen days after they had been dropped behind enemy lines. By that time, only eighty-seven men were left alive. The remainder had been killed by very poor weather conditions or during the ferocious firefights where the Russians had been vastly outnumbered and outgunned.⁶⁵

Less than a month later, approximately four hundred men were dropped near Rzhev in order to aid the encircled Soviet 29th Army. This number was supposed to have been as high as five hundred, but on the night of 16/17 February, 1942, at least one hundred paratroopers could not or would not jump into a drop zone that was literally on fire. Those that did descend into the firefight were forced to do so at a height of several hundred meters, which resulted in a greater number of landing casualties. The survivors of this battle covered the 29th Army's withdrawal until a successful link up was made with the Soviet 39th Army. David Glantz describes this operation as unique, "because its intent was simply to reinforce an encircled unit." He goes on to state that "whether 29th Army could have broken free of German encirclement without airborne assistance is a moot point [as] using such a small force for such a hazardous operation was indicative of the extremity of 29th Army's position."⁶⁶ The value attributed to even a small number of airborne forces by Soviet military planners, particularly in a dire situation, was clear.

There were more successful examples of paratroopers being utilized on an even smaller scale as well. In Odessa in September 1941, twenty-three parachutists were dropped thirty minutes ahead of seaborne forces. They landed and attacked a German communications

⁶⁵ Glantz, *The Soviet Airborne Experience*, 115, 117, 121.

⁶⁶ Glantz, *The Soviet Airborne Experience*, 128.

complex, taking a garrison out of action and blocking the route for enemy reinforcements. This forced two Rumanian divisions to withdraw and allowed for the safe evacuation of Soviet troops from Odessa to Sevastopol. Another illustration of the Soviet paratrooper's prowess was seen on 24 October, 1942, when forty paratroopers raided the Maikop airfield. Despite being vastly outnumbered, these men destroyed twenty-two and damaged twenty of the fifty-four German aircraft there that had been previously used to bomb Soviet positions along the Black Sea. Although fourteen were killed and the paratroopers were driven off the airfield, this raid resulted in some relief from bombing, and was excellent for morale.⁶⁷ These campaigns and many more like them were the small-scale airborne operations conducted by the Soviet Union throughout the conflict known to them as the Great Patriotic War.

The employment of small-scale airborne forces makes it evident that there were parallels between airborne and partisan activity during the Second World War. Partisan forces aided the airborne, who often similar performed saboteur tasks or were even sent to directly aid partisan groups. Their similarities and differences aid in placing a value on the airborne forces utilized in this conflict. Partisan warfare is defined as "self-contained acts of war mounted by self-sufficient forces operating within enemy territory."⁶⁸ This very definition could also be applied to airborne forces, small- or large-scale, though perhaps with the qualifier of 'limited' self-sufficiency. The airborne and the partisans also had very similar objectives in their operations. For example, the Soviet Union tasked its partisans with disrupting or destroying enemy transportation systems, headquarters and garrisons, supply dumps, communication lines, and airfields and aircraft. They

⁶⁷ Glantz, *The Soviet Airborne Experience*, 132.

⁶⁸ David Thomas, "The Importance of Commando Operations in Modern Warfare, 1939-1982," *Journal of Contemporary History* 18, no. 4 (1983): 689-717.

were also responsible for capturing or killing enemy agents, foragers, soldiers, political figures, and traitors. They were to conduct reconnaissance work also, including establishing exact locations of the enemy, tracking the movement and size of enemy forces and supplies, surveying the area surrounding the enemy, determining the amount and type of aircraft present, identifying defensive lines and their composition, reporting on bombing accuracy, and taking every opportunity possible to seize enemy documents.⁶⁹ Though the airborne forces' instructions were not often that specific nor so all-encompassing, they too could be utilized for such purposes. They often were, particularly for the disruption and destruction behind enemy lines. Another similarity shared between those in partisan and airborne units were the conditions in which they fought. Both were lightly armed, though the partisans even more so, as the airborne at least had the benefit of gliders bringing heavier equipment. Supplies ran out frequently for both parties, particularly those on the Eastern Front. They were both isolated and communication was not always possible.

There were differences too, of course. The airborne men had better training - and more of it - than the majority of the partisans, many of whom were ordinary citizens. The para- and glider-troops that did not have an intimate familiarity with their surroundings like the partisans did. But the two main differences between partisans and the airborne troops were the depth and intent to which they were deployed. The airborne missions were most often carried out relatively close to the front, whereas partisans operated from the front to very deep in the rear of the enemy; the

⁶⁹ Alexander Hill, 'Document 128: Order of the People's Commissar of Defence Number 00189 on the tasks of the partisan movement, 5 September 1942' in *The Great Patriotic War of the Soviet Union, 1941-1945: A Documentary Reader* (New York: Routledge, 2009), 199-200.

airborne usually operated in close coordination with other military forces, and generally expected to link up with these forces within days or a few weeks at most.⁷⁰

The relationship between partisan and airborne warfare is not arbitrary. It is important for three reasons. One, partisans and airborne soldiers had a working relationship. Partisans carried out reconnaissance missions that provided vital information to both airborne planners and airborne soldiers on the ground. They acted as guides, marked drop and landing zones, and sometimes fought alongside airborne forces. The Russians even viewed the airplane as merely a tool to deliver lightly-armed partisans behind enemy lines.⁷¹ Paratroopers were indeed sent to instruct established partisan groups or instigate partisan activity in a given area, particularly on the Eastern Front. Second, the relationship calls into question the definition of airborne forces. Often viewed as a type of easily-transportable infantry, their similarity to partisans reinforces their identity as an irregular force. Third, because of the relationship and similarities between partisan and airborne forces, it is possible to determine the value of airborne forces (particularly small-scale) based on the value of partisan activity to the war. The small-scale airborne operations share a greater resemblance to partisan warfare because of their overall size and scope of objectives. As Alexander Hill pointed out

anti-partisan operations did on numerous occasions... temporarily draw off troops from front-line service... partisan activity also undoubtedly tied down non-combat units... arguably far more significant than killing or tying down [enemy forces] was partisan disruption of German lines of communication [and later,] partisan units start[ed] to do significant damage to the German transportation network.⁷²

The airborne side of this coin was remarkably similar. The small-scale airborne attacks intended for the sabotage of the enemy's rear lines tied up troops and created confusion. Furthermore, they

⁷⁰ Glantz, *The Soviet Airborne Experience*, 113.

⁷¹ Gavin, *Battles of an Airborne Commander 1943-1946*, xiv.

⁷² Hill, *The Great Patriotic War of the Soviet Union*, 209, 211.

were “economical in terms of manpower, and they could be mounted by limited means and with more primitive techniques. Although their direct dividends were sometimes not readily apparent, their long-term influence mounted.⁷³ Thus despite the lack of scholarly literature connecting the partisans and the airborne, there clearly existed great similarities and a working relationship, particularly with small-scale airborne operations. Though partisan was but one role the airborne soldier could be expected to fulfill, it was a valuable one.

Small-scale airborne operations were employed many times throughout the Second World War by various nations. These missions often live in the shadow of the large-scale airborne triumphs - and failures. They may also be overlooked because of their small size, and apparent inconsequentiality in the greater picture of the Second World War. Yet the smaller-scale operations had many benefits. There was greater ease in obtaining transport planes and supplies due to the lesser size; it was easier for soldiers to assemble on landing as there were fewer planeloads/gliders and thus fewer chances of scattering; they possessed a greater surprise factor, as were less noticeable when dropping than a large force; a smaller force also meant it was easier to maintain secrecy; and of course, the men possessed all the rigorous training and tenacity attributed to airborne soldiers. All but the last quality increased as the number of soldiers utilized decreased.

General Dwight Eisenhower thought the airborne forces were best at their smaller size. Citing restrictions on the numbers of transports and the dangers of a scattered force, he explained, “I do not believe in the Airborne *Division*. I believe that airborne troops should be organized in self-contained units comprising infantry, artillery and special services, all of about

⁷³ Glantz, *The Soviet Airborne Experience*, 131, 133.

the strength of a regimental combat team.”⁷⁴ The Soviet experience with the airborne echoes this sentiment. As Glantz explained, the

tactical [small-scale] operations were more productive than their operational experiences. Because tactical operations involved smaller units (up to a battalion or a regiment) employed at more limited depths (twenty to thirty kilometers)... they were better suited to the Soviets' level of expertise and technology... high level command controlled such operations more closely, and the shallow depth of employment allowed better coordination between airborne and ground forces. The missions of units conducting tactical operations were limited in nature, and, hence, more easily attainable... they were of shorter duration [which] reduced logistical problems, increased the chances of airborne unit survivability, and produced better chances of tactical success. In addition, small groups of men were better able to escape enemy detection during landing and operation.⁷⁵

The assets of the small-scale airborne operation were clearly recognized. One other value of such exercises is that they acted as a sort of proving grounds for the airborne forces as a whole. All of the nations first combat-tested their new method of warfare on a small-scale first; this was both to prove their effectiveness and simply figure out the best way to employ this new kind of soldier. While small-scale airborne warfare also possessed its own validations, this role as tester did contribute significantly to the development of the airborne in the Second World War.

There were those who were against the utilization of airborne on a small-scale, though these individuals were more against the airborne in general. However there were drawbacks to a smaller airborne force. First, the smaller the force, the more easily it can be eliminated, and it is more heavily damaged by scattering and casualties, should these things occur. And like all airborne activity, poor weather, navigation and reconnaissance can greatly affect the outcome. The failures of small-scale airborne operations can be accredited to these reasons, as well as inexperience and poor planning (particularly in the case of the Soviets).

⁷⁴ Dwight D. Eisenhower, ‘To George Catlett Marshall Secret September 20, 1943,’ in *The Papers of Dwight David Eisenhower: The War Years*, by Aldred D. Chandler Jr., ed. (Baltimore and London: The Johns Hopkins Press, 1970), 1140.

⁷⁵ Glantz, *The Soviet Airborne Experience*, 113.

The true impact of small-scale airborne operations is hard to gauge for many reasons: each mission was so unique: each employed a varied number of soldiers; each had different objectives; each was carried out in a wide range of locations and weather conditions; the soldiers arrived by different methods and crafts; the opposition the men jumped or landed into varied; and finally, the casualty rates and objective achievements are not always available. Based on the casualty rates alone, the most successful was the German operation on the island of Elba, where not a single shot was fired; on the opposite end of the spectrum, there were multiple small-scale missions where the casualty rate exceeded fifty percent or all of the soldiers were captured. The figures available of the number of casualties do not allow for proper judgement of small-scale airborne operations as a whole. The final effect of a single mission is not always visible either, and so the small-scale airborne operations are best evaluated as a whole. The Soviets at least were “more satisfied with their tactical and diversionary operations and believed that those types of operations provided greater returns for manpower expended than did the large-scale airborne operations.”⁷⁶ Though the achievements of small-scale operations may have generally been less glorious, the legacy of the airborne has been continued not in the grand, overwhelming numbers of a large-scale display of paratroopers and gliders. It has been continued in the tactical employment of small-scale airborne forces.

⁷⁶ Glantz, The Soviet Airborne Experience, 114.

Chapter Three: Large-Scale Airborne Operations

The famous airborne battles of the Second World War - Crete, Normandy, and Arnhem for example - have received much attention from popular and scholarly media. These large-scale airborne operations have received both praise and criticism, and are the examples frequently cited in arguments both for and against the utility of airborne forces. Critics of large-scale airborne operations during the war (and of the airborne in general) stated that they occupied too many valuable resources and had too little effect for their human cost.⁷⁷ Yet there were many campaigns that involved the large-scale use of airborne forces, and many had success. Britain and America in particular utilized their airborne forces on an increasingly grander scale throughout the conflict.

Entire books can be - and have been - written about each of the large-scale airborne operations that took place in the Second World War. Defined in this paper as any offensive which included the use of at least eight hundred parachutists and glider-borne soldiers, such airborne operations had a monumental impact on the progression and conclusion of the Second World War. This is true of both the ‘failures’ and the ‘successes’ of the war. To demonstrate how this was so, the majority of the large-scale operations of the war will be summarized and analyzed by their objectives achieved, casualties, and circumstances. The tactical employment of large-scale operations will then be discussed, particularly their link with infantry.

The first ever use of airborne forces on a large scale was the German May 1941 offensive on the British-controlled island of Crete. Though the airborne had been previously used by this

⁷⁷ Dwight D. Eisenhower, ‘To George Catlett Marshall, Secret, February 19, 1944,’ in *The Papers of Dwight David Eisenhower: The War Years*, by Alfred D. Chandler, ed. (Baltimore and London: The Johns Hopkins Press, 1970), 1738.

nation on a smaller scale, it was this famous battle that demonstrated that the airborne could be expanded to much larger proportions than previously thought. The Germans emerged victorious, but at a terrible cost: 4054 dead, and 2800 wounded, including both paratroopers and air crew. Furthermore, the Luftwaffe lost 350 aircraft, at least half of which were the Ju52 transport planes.⁷⁸ It was the terrible cost of human lives that has been cited as the reason Hitler refrained from utilizing paratroopers and glider-men on a large-scale again. These numbers are also the source of questions over if Crete really was a victory and if airborne warfare was truly effective.

Operation Mercury, the codename for the Crete invasion, was enacted because of the bombing threat to the Romanian oil fields that Germany depended on. Due to the strength of the Luftwaffe and Germany's naval weakness when compared to the Royal Navy, the *Fallschimjager* were chosen for the attack.⁷⁹ The attack would be preceded by fighter-bombers, and occur in two waves due to a lack of available transport airplanes. A reinforced *Luftlande Strum* Regiment was to arrive by parachute and glider early on the morning of 20 May 1941. Their objective was to capture the Maleme airfield and nearby village. Also arriving at this time was the *Fallschimjager* Regiment 3 whose objective was the port town of Cania and to occupy a major road junction. In the second wave to arrive in the afternoon on the same day, *Fallschimjager* Regiment 2 was to capture the port and airfield at Rthymnon, and *Fallschimjager* Regiment 1's objective was the Heraklion, the largest airfield on the island, and a nearby town. As soon as one of these airfields

⁷⁸ Chris Mason, *Falling From Grace: The German Airborne in World War II* (Quantico, Virginia: United States Marine Corps Command and Staff College/Marine Corps University, 2002), 30.

⁷⁹ Murray and Millett, *A War To Be Won*, 105-106.

was secure, reinforcing infantry was to be sent; a small number of reinforcements by sea were also to land.⁸⁰

Unfortunately, not all went according to plan. Many of the Ju52 transport planes carrying the paratroopers and towing the gliders were shot down by anti-aircraft fire en route to the drop and landing zone. The others, evading the flak, scattered many of the parachutists. This led to some landing directly on top of enemy positions and the remainder had difficulty assembling. All of the regiments struggled to capture their objectives, a situation worsened by a lack of supplies due to the failure to recover the supply canisters also dropped.⁸¹ The fighting was incredibly fierce and the Germans and Allied forces were often at a stalemate. After the first day the Germans had managed to secure themselves somewhat, and forced the enemy to retreat. The foothold only became truly established after the New Zealander defenders retreated on the second night and left the Maleme airfield deserted. This allowed the Germans to seize the airfield and begin air-landing reinforcements. This tipped the battle in favour of the Germans. Therefore the island was captured due to German perseverance, British hesitancy, and perhaps a bit of luck. The British withdrew, leaving 13,000 killed, wounded, or captured. and the British evacuated themselves and their allies from the island.⁸²

This victory was achieved only with great difficulty. The very fact the Germans won was remarkable given the obstacles they had to overcome. This began with problems in the sky: the airfields were based on the Greek mainland, limiting the planes' flying distance. Another issue included the inability of the bombers to bomb the large number of targets presented by the island,

⁸⁰ Mason, *Falling From Grace*, 23-24, 27.

⁸¹ Miksche, *Paratroops*, 48-49.

⁸² Barnett, *Hitler's Generals*, 472.

due to the distance they had to fly to the targets from their bases and the sheer amount of objectives they were assigned. Even worse was the lack of enough transports for all of the men, resulting in the planes having to make two trips with a large delay in between, which removed the element of surprise. Heavy anti-aircraft fire was also a big problem, as it damaged or destroyed planes and gliders, as well as resulted in the scattering of parachutists. Because of this scattering, these men had a harder time assembling, and many jumped onto enemy positions. This was exacerbated by the rugged terrain and the fact the British were expecting them. They knew when they would arrive, what their targets were, and how many men they would deploy. The failure in security was surpassed by abysmal reconnaissance. The Germans expected and planned for approximately 5000 second-rate and poorly armed British and locals. Unfortunately for the Germans, there were 27,500 first-rate and well-armed British and 14,000 Greek forces.⁸³ The sheer fact that the greatly outnumbered Germans succeeded in their efforts is astounding.

This victory came at a cost. Out of 8300 German *Fallschirmjäger* deployed, 3674 were wounded or killed.⁸⁴ This is a casualty rate of 44.3 percent. The Luftwaffe, the seaborne troops, and the Italians that participated in the invasion also suffered casualties, but will not be included in the casualty rate because, with the exception of the transport plane crews, they were not considered as part of the airborne aspect of this operation. This casualty rate is high; the number of men injured or killed was a great loss. Yet the Germans inflicted an even higher casualty rate of 47.3 percent on the British forces. Given that the Germans were outnumbered five to one and

⁸³ Mason, *Falling From Grace*, 20-23.

⁸⁴ Barnett, *Hitler's Generals*, 472.

encountered seemingly insurmountable complications, it is surprising that they were not annihilated, let alone that they managed to capture the island.

Crete is often cited as the last German airborne operation of the war. This is false. Seven airborne operations were carried out before May 1941, and seven were carried out after. As Chris Mason explained,

Crete was indeed the last large-scale parachute operation. However, despite a two-year hiatus from May 1941 to May 1943, Nazi Germany conducted the same number of airborne operations after Crete... as it had before... while the scale of these operations was smaller, the success rate... was substantially unchanged. 88 percent of the operations up to and including Crete accomplished their assigned missions while 83 percent of those conducted after Crete did so. It would be more correct to say that Germany used airborne operations with great success early in the war, undertook a two-year re-evaluation and adjustment program after Crete, then used them successfully again at the end of the war on the smaller scale dictated by Germany's defensive posture... and her rapidly shrinking resources.⁸⁵

To label Crete a failure and the death of the German *Fallschirmjager* is unjust. As stated above, the Germans continued to use the airborne forces. The fact they were not employed again on a large-scale was due to the losses suffered: there were simply not enough men to mount such an operation. As paratroops and glider-pilots required more training, it took time for the forces to rebuild. By that time, as Mason stated above, Germany was lacking the resources and was on the defensive; the airborne is most definitely an offensive weapon.

One of the impacts of Crete was that it spurred the British and Americans to continue the development of their own airborne forces, as well encouraged the employment of the airborne on a larger scale. Tested by the British on a small-scale beginning in early 1942, the first American airborne assault was during the invasion of North Africa; two of the three British operations were relatively successful, while the Americans succeeded in capturing their objectives (two airfields) despite a myriad of weather- and navigation-related problems en route. The next use of airborne

⁸⁵ Mason, *Falling From Grace*, 45.

forces on a large-scale by the British and Americans was their invasion of Sicily, which began on 9 July, 1943.

Operation Husky, as the invasion of Sicily was codenamed, was a combined operation with both air and amphibious elements. The Americans contributed 3405 men from the 82nd Airborne, who were to parachute down and seize high ground behind the invasion beaches to use as an airhead and block enemy reinforcements; they were also to deny the enemy use of an airfield, control the road junction, and destroy enemy communications. This locality was heavily defended, with mines and pillboxes.⁸⁶ The British contributed elements of the 1st Airborne, who were to mark landing zones, capture various objectives including the Ponte Grande (a main bridge across a canal) and Primosole Bridge. Unfortunately, disaster struck these forces even before they landed.

The weather for this operation was truly awful. It blew many of the transport planes off course, which resulted in the widespread scattering of the airborne forces. The 82nd Airborne was scattered along a sixty mile strip. Omar Bradley recalled that, “for more than a week after the drop stray paratroopers crossed over into our lines from the villages and fields into which they had jumped far beyond the drop zone.”⁸⁷ But even worse affected were the gliders involved in the operation. Many were released prematurely, and just over half of the British gliders fell into the ocean, where many men drowned. The rest were widely scattered. The weather also caused an additional problem: because the wind had shifted the airplanes’ flight path so drastically, friendly anti-aircraft fire occurred.⁸⁸ The loss of troops due to flak (both enemy and friendly) and

⁸⁶ Gavin, *Airborne Warfare*, 1.

⁸⁷ Omar Bradley, *A Soldier’s Story* (New York: Henry Holt and Company, 1951), 126.

⁸⁸ Norton, *The Red Devils*, 27.

being lost at sea was a great detriment to the plan, and in conjunction with the wide dispersion of the rest of the airborne forces, victory seemed unlikely. Yet this scattering of soldiers had the benefit of panicking the enemy, and the paratroopers and glider-men took advantage of their situation, plundering the enemy, demolishing bridges, and severing communications at every opportunity. The British also courageously captured the Primosole Bridge and held it; the Ponte Grand bridge was captured by eight officers and sixty-five men, but by the time the amphibious force linked up with them (later than had been planned), the remaining four officers and fifteen men had been forced to retreat.⁸⁹

The Sicilian operation was successful in the sense that the Allies took the island, and the airborne contributed by obtaining the majority of their objectives, disrupting communication and logistical lines, and creating confusion and panic amongst the enemy. The airborne had blocked access to the beachhead, and thus prevented the Germans from pushing the amphibious forces back.⁹⁰ The 1st British Airborne suffered 454 killed, 240 wounded, and 102 missing. The casualty rate for these troops was thus 38.4 percent.⁹¹ The Americans suffered a casualty rate of over twenty percent.⁹² Many of these casualties were a result of crashing into the ocean and incidents of friendly fire; those para- and glider-troops that did make landfall inflicted far higher casualty rates on the enemy.

The operation in Sicily is best described as a learning experience. As Major General (then Colonel) James Gavin recalled, at Sicily “we learned what could be done by parachute troops

⁸⁹ Bradley, *A Soldier's Story*, 127.

⁹⁰ Brian L. Davis, *US Airborne Forces: Europe 1942-45* (London: Arms and Armour Press, 1974), 6.

⁹¹ Norton, *The Red Devils*, 249.

⁹² Bradley, *A Soldier's Story*, 133.

and troop carrier pilots, but, more important, we learned what they could not do.”⁹³ This was largely because airborne warfare was a new method of fighting; it was unprecedented by anything else in Britain and America, and both nations had to build their forces and techniques from scratch during the war. One development tested at Sicily was the deployment of pathfinder forces, in the form of the 21st Independent Parachute Company (British Airborne). These troops were specially trained and flown by particularly experienced pilots. They were to mark landing and drop zones, particularly through the use of radio-location devices, and aid the soldiers landing in assembling.⁹⁴ Their performance in Sicily ensured their deployment in subsequent airborne operations.

Sicily also demonstrated the need for increased navigational training for the pilots, and the importance of the transport planes keeping their course even if under heavy flak. It was also affirmed that parachutists should be dropped directly on an objective, rather than having them dropped further away and having to fight their way to the target.⁹⁵ Thus the airborne operations in Sicily allowed for the better utilization of this form of warfare, as well as aided in the capture of the strategically important island.

As America and Britain were developing and beginning to utilize their airborne forces, the Soviet Union was also employing the airborne that they had begun developing before the war. The first large-scale operation that the Soviet Airborne took part in was at Rzhev-Vyazma. The details of this operation are not fully known, as they were not available until the fall of the Soviet Union; furthermore, this operation was a very confusing and lengthy affair. What is known is that

⁹³ Gavin, *Battles of an Airborne Commander*, 80.

⁹⁴ Gavin, *Battles of an Airborne Commander*, 50.

⁹⁵ Nolan, *Airborne*, 66.

the overall goal of the offensive was to complete the encirclement of the 9th German Army and the 4th Panzer Army. Units from the 4th Soviet Airborne Corps were dropped on the 8 January 1942 with the objective of completing the encirclement of German troops and cutting the Smolensk-Vyazma railroad (a major supply channel for the Germans).⁹⁶ Other elements from this and other airborne forces were deployed later on to supplement these forces and to carry out diversionary tactics. Unfortunately, the operation was an absolute disaster. The Soviet Airborne ended up becoming encircled by the Germans, whereupon they fought for *four months* until they finally broke free and managed to rejoin the main Soviet forces. Of the approximately 14,000 men who jumped into Vyazma, only around 4000 survived the ordeal.⁹⁷

The failure of the longest airborne operation in history can be blamed on the Soviet High Command who organized it. These planners “ignored the weather, potential aircraft combat losses, and the possibility of aircraft mechanical failure.”⁹⁸ There was an extreme shortage of transport planes, forcing the attack to come in waves; in any case the surprise factor was already lost because of the atrocious security surrounding the operation. There was also a lack of air support, as only nineteen out of the promised 102 fighters were available. Furthermore, the little reconnaissance available was abysmal. Poor navigation by poorly trained pilots also resulted in the scattering of paratroops, whose assembly was already hampered by the deep snow and difficult terrain.⁹⁹ The *Stavka* were condemned as being over-ambitious, and not providing enough focus or support for the airborne forces. This situation was worsened by bad weather and

⁹⁶ Albert Seaton, *The Russo-German War 1941-45* (New York: Praeger Publishers, 1970), 237.

⁹⁷ Glantz, *The Soviet Airborne Experience*, 29, 90.

⁹⁸ Glantz, *The Soviet Airborne Experience*, 47.

⁹⁹ Glantz, *The Soviet Airborne Experience*, 46, 48.

a lack of proper training for the soldiers. As Albert Seaton asserted, “troops were thrown into battle piecemeal without preparation, commanders being goaded and harried forward... Reconnaissance was poor and artillery support uncoordinated with other arms... the use of airborne troops... was a failure since they were committed in too great a depth, their tasks not being in accordance with their capabilities.”¹⁰⁰ Despite attempts to rescue these airborne forces, they failed as the rescuers were not faring much better. Thus the Soviet employment of airborne forces can not be considered a failure because of the airborne forces themselves, but as a result of bad decisions by high-level Soviet commanders and planners.

The failure of the *Stavka* to properly plan an airborne operation was further evidenced by the second and last large-scale Soviet operation of the war. This was the Dnepr Operation, taking place in September 1943. Soviet airborne forces were utilized to overcome the obstacle presented by the Dnepr River, upon which the Germans were trying to stabilize the front. The airborne’s direct objective was to secure a bridgehead across the river, and prepare it to allow the main Soviet forces to cross; they were also to prevent the Germans from having access to the river in their assigned pocket. The airborne were supposed to be much better supported, with continued reconnaissance, bomber-support, the dropping of communication units, and promises of increased artillery support and supply aircraft. The large main force was to be preceded by small numbers of paratroopers who were to prepare the drop and landing zones and make contact with partisans in the area.¹⁰¹ But despite the greater effort put into the success of this mission, there were problems from the beginning.

¹⁰⁰ Seaton, *The Russo-German War 1941-45*, 240.

¹⁰¹ Glantz, *The Soviet Airborne Experience*, 91, 94-95.

Because of an insufficient number of railroad cars, the airborne soldiers were unable to assemble at their assigned airfields on time, and the supplies and equipment required for the operation were also delayed. Bad weather also prevented the assembly of all the necessary transport aircraft. The drop was delayed a day, to the night of 24/25 September 1943, and the first jump was also reduced from three to two brigades - which also resulted in the change of drop zones and objectives. Not enough information was supplied to the troops, who lacked essential supplies to complete their missions anyways. Furthermore, the reconnaissance had failed to materialize due to bad weather; the German forces were thus underestimated when in fact they were very strong. The problems continued when the parachutists were once more widely scattered over a thirty by ninety kilometer area with a large enemy presence. The airborne force was annihilated by the Germans as they landed and shortly thereafter; in order to survive, the paratroopers essentially became partisan, abandoning the objective of seizing a bridgehead and defense perimeter. Further troop deployment was suspended.¹⁰²

Not all was lost. The surviving paratroopers, numbering in the thousands, conducted many attacks against German targets. While some of this action was for their own survival (such as stealing supplies), they also cut communication and transportation lines, and even attacked German positions. On the night of 12/13 November 1943, the Soviet airborne forces that had contact with the main forces participated in an operation meant to advance the Soviet Army across the Dnepr River. The paratroopers were given objectives near the banks of the river,

¹⁰² Glantz, *The Soviet Airborne Experience*, 96-97, 100, 102.

attacking without artillery support but with the asset of speed and surprise. The attacks were largely successful, and the Soviet main forces were able to cross the river.¹⁰³

Again, as with Vyazma, the operation faced insurmountable obstacles before it even began. The failure of the Soviets to provide the materials and serviced they promised is what doomed their large-scale airborne missions. While some of this was due to the bad weather, there was a general inability to properly reconnoiter the enemy, co-ordinate combined operations, and materialize the resources needed for such enormous objectives. These issues were hardly exclusive to the airborne forces of the Soviet Union. It is also important to note that while the Soviet Union refrained from employing large-scale airborne assaults for the rest of the war, they did continue to effectively utilize small-scale airborne forces. Thus it is clear that the reasons for large-scale airborne failure was not the result of airborne being an unsound tactic, but the Soviet Union high command being unable to adequately support and organize such huge operations.

As the Soviet Union was failing in carrying out large-scale operations, the other Allies were utilizing their airborne forces with much better results. After Sicily, the next major airborne operation was in Italy; however the 1st British Airborne here were delivered amphibiously due to a shortage of aircraft. The American 82nd Airborne, however, did arrive in the traditional airborne fashion. The battle at the Salerno beachhead was not going well for the American Fifth Army, who were in danger of being pushed back to the sea from which they had arrived. To prevent this, elements of the 82nd Airborne were very quickly assembled and deployed on the night of 13/14 September 1943. Lead by pathfinders who marked the drop zones, the men were dropped at two locales: Salerno and Avellino. The Salerno operation progressed extremely well, with the

¹⁰³ Glantz, *The Soviet Airborne Experience*, 104-105.

paratroopers jumping accurately onto their drop zones and their presence bringing the battle back in favour to the Allies. The airborne men were very effective: they quickly captured their objectives and distracted the enemy. The operation at Avellino had more problems; few paratroopers reached the correct drop zones and were instead widely scattered. Despite this, the airborne forces disrupted the Germans as best they could by destroying bridges, mining roads, cutting communication lines, attacking small enemy columns, and killing German messengers. Approximately 510 out of the 640 that jumped down to Avellino returned to friendly forces.¹⁰⁴ Both Avellino and Salerno groups continued to fight with the ground forces until the capture of Naples.

This employment of large-scale airborne forces was instrumental to the success of the invasion of Italy. As Major General Gavin recalled after the war, “the airborne troops had a decisive influence on the final outcome of the Salerno operation as a whole. At a moment when the scales of defeat and victory were in balance, the weight of the airborne reserves tipped them to the side of victory.”¹⁰⁵ The Avellino operation was also considered valuable as it prevented even more German reinforcements from overwhelming the beleaguered Americans. The capture of Salerno gave the Americans a firm foothold on the Italian mainland, and the overall invasion marked a true commitment to a second European front by the Americans and British. The use of large-scale airborne forces would play a large role in the expanding of this front over the next few years.

¹⁰⁴ Gavin, *Airborne Warfare*, 29-32.

¹⁰⁵ Gavin, *Airborne Warfare*, 31.

The invasion of Normandy, France, codenamed Operation Overlord, was the next time large-scale airborne forces were employed. The overall objective of the airborne in this operation was to protect the flanks of the amphibious assault by blocking advancing Germans from the beaches, through seizing strategic points and causing disarray amongst the enemy. The American 82nd and 101st Airborne Divisions were to protect the right flank, dropping near Saint Mere-Eglise; the British 6th Airborne (including the 1st Canadian Battalion) were assigned the left flank and were to drop north-east of Caen.¹⁰⁶ The Germans had erected many anti-airborne defences, including large poles to obstruct glider landings, mined fields, and the flooding of potential drop zones. Yet landing zones for both parachutists and gliders were found, and very early on 6 June 1944 all three Allied airborne divisions, preceded by pathfinder units, made landfall.

The darkness of an early morning landing allowed for the benefit of surprise and a certain amount of protection, though there was some German anti-aircraft fire. The darkness coupled with wind and cloud also resulted in the scattering of troops; but enough landed where they were supposed (or near enough to get to their rendezvous points) to carry out their missions. Because “surprise was so complete, and the assault was delivered with such speed and precision,” the British 6th Airborne quickly succeeded in capturing their all-important objectives.¹⁰⁷

Elsewhere, the US 82nd Airborne’s soldiers were widely scattered: only one fifth of the force had been dropped accurately. Despite this, these men accomplished all of their assigned missions and continued fighting for thirty-three consecutive days without relief.¹⁰⁸ The story of the American 101st Airborne Division was much the same. By the end of 6 June, only 2500 out of

¹⁰⁶ Norton, *The Red Devils*, 64-66.

¹⁰⁷ Norton, *The Red Devils*, 69.

¹⁰⁸ Gavin, *Airborne Warfare*, 62-63.

6600 men had been assembled, demonstrating just how scattered the parachutists and glider-men were. Yet they still managed to capture all of their objectives and hold them until the ground forces linked up with them.¹⁰⁹ The widespread landings of the gliders and paratroopers was actually a benefit to the operation, as the Germans could not determine their objectives and believed the airborne forces to be much more numerous than they actually were.

The large-scale use of airborne forces in the invasion of Normandy was thus very beneficial to the success of the operation, arguably a major turning point of the Second World War. On 10 June 1944, Field Marshal Rommel commented that the Allied

Parachute and airborne troops are employed in such numbers and with such flexibility, that the troops they engage are hard put to it to fight them off. Where they drop into territory not held by our troops, they dig in immediately and can no longer be dislodged by infantry attacking with artillery support.¹¹⁰

These words demonstrate respect for the fighting ability and effectiveness of Allied airborne forces. Even those who had possessed doubt about the airborne were proven wrong with this operation. For example, Air Chief Marshal Sir Leigh-Mallory urged Eisenhower to cancel the airborne aspects of Operation Overlord on the account that the casualties would far outweigh any benefits; after the success seen in Normandy, Leigh-Mallory wrote a letter of apology.¹¹¹

The triumph did not come without a cost, however. The British 6th Airborne suffered 820 killed, 2709 wounded, and 902 missing (though approximately 450 men returned).¹¹² The American airborne casualty rate on the first day of fighting did not surpass twenty percent.¹¹³ Yet

¹⁰⁹ Gardner and McDonough, *Sky Riders*, 35.

¹¹⁰ B. H. Liddell Hart, ed., *The Rommel Papers*, trans. Paul Findlay (New York: Harcourt, Brace & Company, 1953), 477-478.

¹¹¹ Carlo D'Este, *Decision in Normandy* (New York: Konecky & Konecky, 1994), 166.

¹¹² Norton, *The Red Devils*, 249.

¹¹³ Bradley, *A Soldier's Story*, 278.

it is impossible to argue that this cost is too high without then questioning the entire coastal invasion of Normandy, as the losses on the beaches were higher than those found in the airborne. In fact, it was the paratroopers and glider-men who prevented the death toll of the seaborne invasion from climbing even higher. By capturing and holding their objectives, the Allied airborne forces blocked the Germans from reinforcing other units at the beachheads; furthermore, the airborne distracted the enemy and prevented effective communication between units. Thus it is evident that the airborne forces played a large role in Normandy, aiding in the very success of the overall mission.

In order to fully fix the problem of troops scattering, airborne forces would only be dropped during the day for the rest of the war. As Omar Bradley, commander of the US First Army, explained, “The dispersal had so shaken our confidence in nighttime airborne operations that we never again attempted a nighttime drop.”¹¹⁴ After several major operations with this problem, the shift to day-time operations is understandable.

While the airborne enjoyed success in their deployment in the south of France in Operation Dragoon, the rest of 1944 was overshadowed by the infamous Market-Garden Operation that was launched in September of that year. The 1st British Airborne, and the American 82nd and 101st Divisions were to establish a narrow corridor in Holland. This would jumpstart the stalled Allied advance, open an avenue for provisions, and put the Allies in an excellent position to take the resource-rich Ruhr region and enter Germany. Indeed, the benefits of a successful operation in Holland would mean the prospect of the war ending in 1944, and would have resulted in several post-war advantages as well: “the Russians would not have had the favourable bargaining

¹¹⁴ Bradley, *A Soldier’s Story*, 278.

conditions which they wielded at the Yalta Conference in February 1945.”¹¹⁵ These positives combined with sheer frustration with the frequently cancelled operations (due to weather and the advancement of ground forces) pushed the continuation of the assault of Market-Garden.

The overall objective of the operation was to secure a route for the British XXX Corps through to Arnhem, and so achieve the advantages listed above. This was to be done by the seizure of major bridges along the route. The American 101st Airborne Division would land at Eindhoven, just north of the XXX Corps’ position; the US 82nd Airborne would land and capture the bridges at Grave and Nijmegen, farther north; and finally, the British 1st Airborne, with the 1st Polish Independent Parachute Brigade, were to secure the route through Oosterbeek and Arnhem. While a bold and innovative plan, this operation was doomed to failure from the very beginning. J. F. C. Fuller explained, “the snag in the operation was that the resources in transport aircraft demanded four separate lifts. This, in view of the uncertainty of the weather, was a tremendous handicap.”¹¹⁶ Market-Garden seemed to be successful on the first day, as the 101st Airborne successfully achieved their objectives, and the 82nd Airborne had captured the Grave bridge and were working on their Nijmegen targets. A small group had reached the Arnhem bridge, but only held one end. But by the second lift, surprise had been lost, the weather worsened, and troops were tied up defending landing zones instead of achieving objectives.¹¹⁷ This situation was worsened as the Germans organized and counter-attacked. The British were supposed to hold their positions for less than forty-eight hours; instead they held it for three days and four nights

¹¹⁵ Middlebrook, *Arnhem 1944*, 442.

¹¹⁶ J. F. C. Fuller, *The Second World War 1939-45: A Strategical and Tactical History* (London: Eyre & Spottiswoode, 1948), 343.

¹¹⁷ Norton, *The Red Devils*, 93, 107-108.

with less than a battalion. This was because the 82nd Airborne failed to capture the bridge over River Waal, north of Nijmegen, and so the XXX Corps was delayed. Finally on 20 September, that bridge was taken and the XXX Corps advanced. However, the British 1st Airborne's situation was so dire that they were withdrawn on 25 September, after losing around 7000 men in killed, wounded, and missing.¹¹⁸ The operation had failed.

There are countless books describing the events at Arnhem and attempting to explain why the operation failed. Brian Nolan asserted that it was distance that doomed the operation: the airborne forces were too far from their objectives, as well as too distant from supporting infantry and artillery.¹¹⁹ Douglas E. Delaney asserted that surprise was lost because the airborne drops occurred over several days; the 1st Airborne was dropped too far away from its objective; the route XXX Corps was to take was too narrow and vulnerable; and the Germans were much stronger and more organized than anticipated. Furthermore, he stated that the fact the ground forces managed to advance ninety-five kilometers in nine days despite obstacles such as blown bridges and German opposition was "no small accomplishment."¹²⁰ Martin Middlebrook had a long list of reasons for the failure at Arnhem. These included the operational planners' over-optimism, the failure to appreciate the strength of the Germans, the decision to bring the airborne headquarters (particularly since they arrived on the first day, occupied valuable glider-space, and contributed nothing), the refusal to consider a night drop, the decision to drop the troops too far from their objectives (due to worries over anti-aircraft defenses and proper landing zones), and

¹¹⁸ Fuller, *The Second World War 1939-45*, 343.

¹¹⁹ Nolan, *Airborne*, 144.

¹²⁰ Douglas E. Delaney, *Corps Commanders: Five British and Canadian Generals at War, 1939-45* (Vancouver: UBC Press, 2011), 40.

the inability to deliver all of the troops on the same day, the failure to utilize the Dutch Resistance and general population more fully, the lack of support from bomber aircraft, the lack of priority given to the 82nd Airborne's objective of the Nijmegen bridge, the failure of the commanders to convince the British soldiers of the necessity of speed in order to capture the Arnhem bridge, the failure to accept the Polish commander Sosabowski's advice which led to the sacrifice of the 4th Dorsets, and the lack of push by the XXX Corps.¹²¹

This last piece of criticism was echoed many times over. The commander of the XXX Corps, Brian Horrocks, replied to this saying, "my Corps has been accused of being slow. I can assure you that there was more desperate urgency about our operations in this battle than in any I have ever fought."¹²² To hold the advancing infantry responsible for the failure of Operation Market-Garden was unjust. This was equally true of blaming the weather, as Montgomery did after the battle.¹²³ It was not a single factor that resulted in the disaster of Market-Garden, but a multitude of them.

This operation was inarguably a failure overall. The British had delivered approximately 9000 troops near Arnhem, and less than 2500 returned.¹²⁴ One soldier recalled his experiences at Arnhem, "each man was weary to his bones, and miserable, and most were wounded. Yet they were filled with such great spirit that they could never be defeated."¹²⁵ It was this kind of spirit combined with the fighting prowess of the airborne forces that allowed them to accomplish what

¹²¹ Middlebrook, *Arnhem 1944*, 442-444.

¹²² Horrocks, Brian. Introduction in *The Red Devils*, by G. G. Norton, ii.

¹²³ Bradley, *A Soldier's Story*, 418-419.

¹²⁴ Bradley, *A Soldier's Story*, 418-419.

¹²⁵ Leo Heaps, *Escape from Arnhem: A Canadian Among the Lost Paratroops* (Toronto: The Macmillan Company of Canada Limited, 1945), 63, 65, 76.

they did in Market-Garden. Though Arnhem was abandoned, “the corridor was held against repeated attacks, and this in itself was a considerable achievement, because it included the important bridges over the Maas and Waal, as well as adding considerably to the security of Antwerp.”¹²⁶ This operation under-estimated the enemy opposition; over-estimated the Allied ability to deliver, supply, and link up with the airborne forces; overreached the capabilities of the airborne forces; and everything that could go wrong, seemed to do so.

Even after the disaster of Operation Market-Garden, the American and British did not shy away from utilizing airborne forces. The final major large-scale airborne operation of the Second World War was Operation Varsity, where the British 6th Airborne and US 17th Airborne aided ground forces in crossing the Rhine River and into Germany. Deployed on 24 March 1945, they seized high ground and road junctions as well as targeted German strongpoints, aiding the advance of the ground forces.

This operation represented the pinnacle of large-scale airborne operations in the Second World War. It was the most successful. The lessons of all the previous airborne assaults had been learned. As James Gavin pointed out, “rarely, if ever, in history has man made such rapid strides in the development of an entirely new form of military technique.”¹²⁷ The drops were mostly very accurate, all objectives were taken, and the link-ups between airborne and ground forces were quick.¹²⁸ The British 6th Airborne Division had 347 dead, 731 wounded, and 313 missing, though most of the missing returned later. The American 17th Airborne Division had 393 dead, 834 wounded, and 80 missing, though some turned up later. These two divisions captured at least

¹²⁶ Fuller, *The Second World War 1939-45*, 345.

¹²⁷ Gavin, *Airborne Warfare*, 137.

¹²⁸ Featherstone, *Wargaming Airborne Operations*, 94.

4000 prisoners, and killed and wounded another thousand.¹²⁹ Thus the airborne inflicted much more damage than they received; they accomplished all they were meant to; and they participated in the operation that finally brought the Allies into Germany.

The use of large-scale airborne assaults in the Second World War was varied. Such forces were also utilized purely as infantry throughout the war, particularly by the Soviets. For example, after the Germans launched Operation Barbarossa, the airborne units that had been developed before the outbreak of war were committed to the desperate defense of the nation. Only after six months would the Soviet airborne troops really be utilized for their true purpose.¹³⁰ The Germans also utilized the airborne as regular ground forces, as did the Americans and the British. Sometimes “wartime realities demanded that airborne forces be used repeatedly as infantry in ground fighting along the front.”¹³¹ In addition to the Soviets, the Germans, Americans, and British all employed their airborne forces as regular ground infantry throughout the war. Yet these troops were more than just mere infantry soldiers transported to battle by parachute or glider; they were special troops with high levels of training, who had to deal with their own unique challenges as they participated in a wholly new kind of warfare.

The instances discussed above were not the only large-scale use of airborne forces in the war, and the descriptions above are but a cursory glance at complex operations. There is much debate over the exact influence of the airborne forces, but it is evident that they played a large role in this conflict, and contributed to the progression of their respective nation’s war aims.

¹²⁹ Napier Crookenden, *Airborne at War* (UK: Ian Allan Ltd., 1978), 143-144.

¹³⁰ Glantz, *The Soviet Airborne Experience*, 16.

¹³¹ Glantz, *The Soviet Airborne Experience*, 34.

Large-scale airborne operations were the most famous (or infamous) of this new form of warfare, and they played a major role in determining the value of airborne operations.

Conclusion

The evolution of airborne warfare occurred in a very short time frame, particularly in Britain and the United States. At the beginning of the Second World War, only Germany and the Soviet Union had an established airborne force of any significant size. These troops had not been truly battle-tested, nor used in any large scale. The war saw the expansion and refinement of para- and glider-troops in these two countries, while other nations pursued the creation and betterment of their own airborne capabilities. Equipment and doctrine evolved, though the high standards of fitness, courage, and proficiency expected in the soldiers of the airborne did not falter. By the end of the war, the airborne had played a part in a great variety of operations in both the European and Pacific theatres of the war. The airborne were useful and effective forces in the Second World War. They allowed for progression when a frontline became static and provided essential aid for those troops involved in amphibious landings. The airborne were able to “leap over enemy territory and appear literally out of the blue in areas hitherto outside the war zone. They move[d] with such unrivalled speed that the defender [could] not counter them with any form of ground transport which [was] available.”¹³² This made these forces a great asset.

The airborne forces of the Second World War consisted of both parachutists and glider-troops.¹³³ Both had their strengths and weaknesses. The parachutists were trained to an absolute elite standard, whereas the soldiers delivered to battle in the gliders received little additional training. This was reflected by inequalities in dress, equipment, and pay. Considering the risk for glider-troops was equal or more to that of parachutists, this was quite unfair. The discrepancies

¹³² Miksche, *Paratroops*, 56.

¹³³ As previously mentioned, air-landed troops were also considered by some to be ‘airborne,’ but as they were delivered to airfields held by friendly troops, they were not addressed in this paper.

between these two airborne arms slowly moved towards pay and equipment equalization in the war years, at least for those in the airborne forces of Britain and America.

Parachutists and glider troops complemented each other in the Second World War, and both were necessary for the overall effective utilization of airborne forces. While paratroopers fit the more popular idea of airborne, the gliders were truly essential. Though more limited than parachutists in where they could land, the gliders brought crucial firepower and transportation equipment. The asset of the glider is best described by James E. Mrazek:

Gliders could carry a squad, a platoon or a company in a single load. They discharged units ready to fight, not scattered over a landscape in the way paratroopers landed... Gliders were also cheap to manufacture... they could double or triple the amount of men or cargo a single aircraft could move through the air. Most important of all, the glider was silent. Stealth was its trademark, and the terror it spread was a psychological advantage of unsurpassed importance.¹³⁴

Of course, this psychological and stealth advantage also applied to the parachutists. The paratroops also had the advantage of being able to land in more diverse places than gliders could. Larger operations involved both glider- and paratroops. Smaller missions carried out during this conflict sometimes utilized only one of these airborne arms. This was a testament to the value of both glider and parachute soldiers.

The airborne could be utilized on two different scales: small-scale and large-scale. The former is generally less known, for their tasks were less overwhelming and their impact was achieved through an accumulation of distractions and disruptions to the enemy. All of the countries utilizing airborne forces began with small-scale operations in order to test and finesse these new forces. It was these types of missions that were initially envisioned as the sole purpose of airborne soldiers, thus making such forces a form of air-delivered partisan unit. This was largely due to the limitations of available aircraft and the logistical and command difficulties

¹³⁴ Mrazek, *Airborne Combat*, 281-283.

associated with larger airborne groups.¹³⁵ Though these obstacles were solved as the war progressed small-scale airborne warfare was continually utilized, particularly by Germany and the Soviet Union.¹³⁶ In such operations, soldiers disrupted communication and transportation lines, destroyed or captured supplies, attacked convoys and patrols, performed reconnaissance missions, and generally wreaked havoc in the enemy's rear. They also carried out special tasks such as when the German *Fallschirmjäger* rescued Mussolini from his remote imprisonment.

Some felt that the value of small-scale airborne operations was questionable, as the damage inflicted on the enemy was light and not worth the effort it took to plan and conduct the missions.¹³⁷ Despite these doubts, airborne forces utilized this small-scale were effective and important in the Second World War. Reserves that would have otherwise been transferred to the front lines were kept occupied and much-needed supplies were delayed or were never to arrive. The disruptions bought friendly forces valuable time and damaged the enemy's organization and overall preparedness. Important information was gathered and communicated to military planners. Though individually these actions may seem small, as a cumulative group they had a great impact.

The large-scale employment of airborne forces is more popularly known. These were the massive drops of parachutists and gliders, mostly in conjunction with attacking ground forces. They represented one arm of combined operations participating in a massive push forward. The airborne soldiers' tasks were to seize bridges, airfields, roadways, and high ground to aid in the advance; they also took out key enemy defensive positions and blocked enemy reinforcements.

¹³⁵ Glantz, *The Soviet Airborne Experience*, 16.

¹³⁶ With the exception of the Soviet Union, which continued to struggle with the logistic aspect of airborne warfare.

¹³⁷ Rottman, *World War II Airborne Warfare Tactics*, 13.

The value of such actions were clearly evident in operations such as the invasion in Normandy. These larger drops were championed with great enthusiasm by some. For example, in America, each subsequent airborne operation was “planned to be as bold and in as large a mass as resources and the air situation then existing [would] permit.”¹³⁸ There was no restraint to their size but the amount of men, aircraft, and supplies. The confidence in this type of warfare held by many of the military planners was clear.

The practicality of large-scale airborne drops was questioned by some, however, especially in the beginning of war. Initially, this was mainly due to the sheer logistical effort that would be needed to mount such operations. Some continued to doubt the feasibility of these airborne missions, particularly in the immediate aftermath of the Allied invasion of Sicily, which saw soldiers landing far from their objectives and transport planes being shot down by friendly fire.¹³⁹ The disaster of Operation Market-Garden and the struggle that was the invasion of Crete also encouraged doubt. Yet these operations and others that many consider to be failures all have a common factor: distance. This was either the distance from the drop and landing zones to the objectives, the gap between the airborne and friendly forces, or both. This tied in to the factor of surprise. When airborne forces took too long to reach their objectives they lost the asset of surprise. As these men were lightly armed and often out-gunned and out-numbered, the lack of preparedness by the enemy was essential. The lack of a quick link-up with ground forces also put the airborne operation at risk, as it gave the enemy time to regroup. This could result in a further lack of supplies for airborne forces and even a failure to link up. Thus the best utilization of

¹³⁸ Eisenhower, Dwight. “To George Catlett Marshall, Secret, February 19, 1944,” in *The Papers of Dwight David Eisenhower: The War Years*, ed. Alfred D. Chandler Jr. (Baltimore and London: The Johns Hopkins Press, 1970) 1738.

¹³⁹ Nolan, *Airborne*, 65

large-scale airborne forces was evidently seen when they were part of a truly combined operation, dropped in sufficient proximity to their objectives and friendly forces.

Other factors affected airborne performance in the Second World War. The Soviet Airborne was especially plagued with problems which made it impossible for them to mount successful large-scale operations. The biggest issues the Soviet Union faced was in its command and leadership. As David M. Glantz explained,

Few senior commanders were capable of conducting strategic operations requiring the integration of airborne forces into the complex overall combat scheme of deep battle. Airborne forces also suffered from the general equipment deficiencies of the red Army and the deployment problems of other forces. Elite and well trained, airborne units did, however, manage to avoid some of the problems that plagued other Soviet units. Airborne unit commanders generally led well in combat.¹⁴⁰

Though the Soviet Union was the first to truly realize the potential of airborne forces, the Great Purges of the late 1930s removed many of those military pioneers from their positions. Other nations also struggled with a lack of experience with airborne forces, given the newness of the method of warfare. Another major obstacle to effective airborne operations was the logistical elements. The amount of available planes, flight crews, fuel, and supplies affected the outcome of these missions, as did the organizational skill of the planners who had to get all of these materials where they needed to be. The Soviet Union suffered greatly in this area, with a general lack of planes and properly trained flight crews. They also endured chronic supply problems and chaotic transportation that often resulted in the supplies failing to reach where they were needed on time or even at all. This negatively impacted their airborne operations.

Germany too suffered from logistical and supply issues, particularly later in the war as their number of planes and men began to fall irreversibly. This was the largest reason Germany did not mount another airborne operation like Crete. As Chris Mason described, Germany “used

¹⁴⁰ Glantz, *The Soviet Airborne Experience*, 16.

[the *Fallschirmjager*] successfully again at the end of the war on the smaller scale dictated by Germany's defensive posture on all fronts and her rapidly shrinking resources.”¹⁴¹ With the tide of the war beginning to turn, the men and planes could not be amassed anywhere in preparation for such a large-scale airborne attack. All of the airborne forces were affected by restrictions on the radio and navigational technology.¹⁴² Accurate dropping of parachutists, re-supply and communication could be difficult.

Logistics and supplies were less of a problem for the British and the Americans, as they had effective and experienced planners. They were also backed by the massive industrial war complex found in the United States. However, it is important to note that there were still shortages. A lack of transport planes complete with properly trained crew did result in some airborne missions having to be delivered in multiple lifts. This was a detriment to the operation as it resulted in a loss of surprise that was so essential to the triumph of the airborne.

Good weather and good information were also needed for successful airborne operations. Unfortunately, both of these conditions were not always met before an airborne operation was launched. Such was the case in Operation Market-Garden and in the two large-scale Soviet airborne operations. Bad weather delayed subsequent lifts to Arnhem, and bad information resulted in the British Airborne being unaware of their dire situation. The Soviets were dropped in the dead of winter with bad reconnaissance; this resulted in many being captured and killed as they landed in places that had a strong German presence. They were further hampered by the deep snow. However, the conditions of good weather and good reconnaissance for a successful

¹⁴¹ Mason, *Falling From Grace*, 45.

¹⁴² Rottman, *World War II Airborne Warfare Tactics*, 13.

attack were not exclusive to the airborne. Ground and air forces required these to varying degrees based on their objectives in order to be successful. Furthermore, the airborne forces often overcame situations where these prerequisites were not met. The unexpected was dealt with in an extraordinary fashion by the para- and glider-troops. This was demonstrated repeatedly throughout the Second World War, as all airborne missions inherently experienced more unanticipated events and situations. This was the result of the strenuous selection and training process, as well as the encouragement of innovation and independence found in the airborne forces.

Overall, the airborne utilized in the Second World War were effective fighting forces. The parachutists and glider-troops were an essential part of their respective armies and played a pivotal role in the war. They aided in great forward advancements by occupying enemy forces and capturing important points in the enemy's rear. They contributed in smaller ways through disruption, diversion, and information-gathering. Both large- and small-scale airborne operations were carried out with great success, but like other arms of the military, the airborne also experienced its share of failures. It cannot be expected that such a new form of warfare would have been executed without setbacks, and it is remarkable that the airborne evolved as it did in such a short timeframe. These airborne soldiers collectively endured extraordinary circumstances and demonstrated exceptional courage. Though the concept of airborne forces was new and far from infallible, as I. F. Stone stated, "It may be a gamble but sometimes the greatest gamble in war is not to take a gamble at all."¹⁴³ This gamble paid off in the Second World War and afterwards as well.

¹⁴³ I. F. Stone, "Capital Thoughts on a Second Front," *The Nation* October 3, 1942, from *The War Years 1939-1945: A Nonconformist History of Our Times* (New York: Little Brown & Co, 1990).

The airborne forces of Britain, the Soviet Union, and the United States continued to exist after the Second World War, though they were reduced in size and reorganized after the conflict came to a close. Germany was completely de-militarized, which resulted in the temporary demise of the defeated nation's airborne forces. The downsizing that occurred in Britain and the United States was in line with a general decrease in military strength after the war came to an end. In the Soviet Union, however, the airborne forces were intentionally relegated to an auxiliary role in the immediate post-war years. According to David M. Glantz, this was due to Stalin's personal opinions concerning war and the airborne, as well as the absence of sufficient resources and technology to carry out airborne operations.¹⁴⁴ Theoretical study of airborne warfare continued, however, which would benefit later utilization of such forces.

Besides size reductions, the most immediate postwar change to the airborne forces of these nations was the phasing out of the glider. British military leaders decided that the nation's airborne divisions would be all-parachute, with gliders used only for carrying the heavy loads necessary to support the paratroops.¹⁴⁵ This was followed by other countries as well. Volkmar Kuhn, a clear advocate of glider warfare, explained that the replacement of the glider was due to "technological shortcomings, production, supply and delivery problems and less than far-sighted military leadership."¹⁴⁶ The glider became obsolete quite quickly after the war, as airborne forces and operations grew smaller and technological advances in aircraft occurred. They were not used

¹⁴⁴ Glantz, *The Soviet Airborne Experience*, 136.

¹⁴⁵ Norton, *The Red Devils*, 133.

¹⁴⁶ Mrazek, *Airborne Combat*, 281.

in battle again, and by 1953, 1957, and 1959 the United States, Britain, and the Soviet Union had respectively ceased using gliders for military purposes.¹⁴⁷

Parachutists continued to be employed, however. In the Korean War, the United States' 173rd Airborne Division participated in two jumps and were also involved in the war in an infantry role.¹⁴⁸ The US Airborne also saw action in the Vietnam War, with the 101st and 173rd Airborne Divisions, as well as the 1st Air Cavalry. By the time of this conflict, the airborne had evolved. Helicopters became common, adopting what was termed 'airmobile tactics.' This strategy was to use helicopters to "find the enemy, carry troops to battle, provide them with gunship support, position artillery, carry out medical evacuation, and provide communications and resupply."¹⁴⁹ Thus the helicopter utilized speed, secrecy, and surprise to successfully carry out its mission. This built off of the characteristics of the airborne that had been developed in the Second World War. The helicopter adapted the best aspects of the airborne forces that existed before it, such as the ability of the glider to deliver soldiers together and to carry heavier loads. The helicopter benefitted from the improvements in military technology, and was thus more able to defend itself and deliver its cargo more accurately than the transport aircraft of the 1940s. The delivery of troops by helicopter (and by plane) became the norm, and even non-airborne troops were delivered into battle through this method. Therefore, though the traditional Second World War airborne battles may not be what is seen today, the airborne has an even larger role in today's military. It is simply not always labelled 'airborne.' Furthermore, even with the

¹⁴⁷ Rottman, *World War II Airborne Warfare Tactics*, 58-59.

¹⁴⁸ Andrew Wiest, *Essential Histories: The Vietnam War 1956-1975* (New York & London: Routledge, 2004), 33.

¹⁴⁹ John L. Bell Jr., "Air Mobility," in *Encyclopedia of the Vietnam War: A Political, Social, and Military History* (Santa Barbara: ABC-CLIO, 2011).

emergence of the helicopter, the conventional airborne have not disappeared. Parachute drops continued to occur during the Vietnam War and after. Britain, Germany, Russia, and the United States all possess parachute elements within their militaries, as do many other nations.

The initial reductions airborne strength, the demise of the glider, the advent of the helicopter, and the changed reality of war today do not represent the failure or termination of airborne forces, but rather the evolution and modernization of them. The airborne has successfully adapted to the immense number of technological advances and the corresponding changes in warfare. F. O. Miksche predicted in 1943 that, “airborne troops should continue to have a purpose even after this war is over. An international army or police force will find them of essential value, for as they can be transported quickly in large numbers, they can nip in the bud any local incursion or conflict which threatens to upset the general peace.”¹⁵⁰ This prediction has been realized, for this is the role the airborne fulfill today. Airborne forces are thus a valuable asset for a nation to possess, as they provide a quick, strong response to any situation, anywhere in the world. The airborne’s continued existence both in its traditional and evolved form clearly demonstrates its value both in the past and in the present.

¹⁵⁰ Mischke, *Paratroops*, 17.

Bibliography

Airborne 1943. Photograph, 1943. World War II Signal Corps Collection. In “The First US Army Airborne Operation by Jay A. Graybeal. http://www.army.mil/article/3852/The_First_U_S_Army_Airborne_Operation/

Antonov A-7. Pencil drawing, unknown. <http://en.academic.ru//dix.nsf/enwiki/554153>.

Bell, John L. Jr. “Air Mobility.” In *Encyclopedia of the Vietnam War: A Political, Social, and Military History*. Santa Barbara: ABC-CLIO, 2011.

Chandler, Alfred D. Jr., ed. *The Papers of Dwight David Eisenhower: The War Years*. Baltimore and London: The Johns Hopkins Press, 1970.

Barnett, Correlli. *Hitler's Generals*. New York: Grove Weidenfeld, 1989.

Bradley, Omar. *A Soldier's Story*. New York: Henry Holt and Company, 1951.

Crookenden, Napier. *Airborne at War*. UK: Ian Allan Ltd., 1978.

D'Este, Carlo. *Decision in Normandy*. New York: Konecky & Konecky, 1994.

Delaney, Douglas E. *Corps Commanders: Five British and Canadian Generals at War, 1939-45*. Vancouver: UBC Press, 2011.

Devlin, Gerard M. *Paratrooper!: The Saga of US Army and Marine Parachute and Glider Combat Troops During World War II*. New York: St. Martin's Press, 1979.

Dover, Victor. *The Silken Canopy*. London: Cassel Ltd., 1979.

Featherstone, Donald. *Wargaming Airborne Operations*. South Brunswick & New York: A. S. Barnes & Company, 1979.

Flanagan, Edward M. *The Los Banos Raid: The 11th Airborne Jumps At Dawn*. Novato: Presidio Press, 1986.

Fuller, J. F. C. *The Second World War 1939-45: A Strategical and Tactical History*. London: Eyre & Spottiswoode, 1948.

Gardner, Ricard S., and James Lee McDonough. *Sky Riders: History of the 327/401 Glider Infantry*. Nashville: The Batter Press, 1980.

Gavin, James M. *Airborne Warfare*. Washington: Infantry Journal Press, 1947.

- , *On to Berlin: Battles of an Airborne Commander 1943-1946*. New York: Bantam, 1984.
- Glantz, David M. *The Soviet Airborne Experience*. Fort Leavenworth, KS: US Army Command and General Staff College, 1984.
- Goodwin, Hal. *Aerial Warfare: The Story of the Aeroplane as a Weapon*. New York: The New Home Library, 1943.
- Hamilcar Glider Loaded with an Universal Carrier*. Photograph, unknown. http://ww2bd.com/image.php?image_id=7040.
- Hart, B. H. Liddell, ed. *The Rommel Papers*. Trans. Paul Findlay. New York: Harcourt, Brace & Company, 1953.
- Heaps, Leo. *Escape from Arnhem: A Canadian Among the Lost Paratroops*. Toronto: The Macmillan Company of Canada Limited, 1945.
- Hill, Alexander. *The Great Patriotic War of the Soviet Union, 1941-1945: A Documentary Reader*. New York: Routledge, 2009.
- Horn, Bernd. *Bastard Sons: An Examination of Canada's Airborne Experience 1942-1995*. St. Catharines, Ontario: Vanwell Publishing Limited, 2001.
- Horn, Bernd and Michel Wyczynski. *Paras Versus the Reich: Canada's Paratroopers at War, 1942-45*. Toronto: University of Toronto Press, 2003.
- Kuhn, Volkmar. *German Paratroops in World War II*. Trans. H. A. Barker and A. J. Barker. London: Ian Allan Ltd., 1978.
- Mason, Chris. *Falling From Grace: The German Airborne in World War II*. Quantico, Virginia: United States Marine Corps Command and Staff College/Marine Corps University, 2002.
- Matheson, Mark. "The Rebirth of Aerial Delivery." *Canadian Military Journal* 2, no. 1 (Spring 2001): 43-46.
- Middlebrook, Martin. *Arnhem 1944: The Airborne Battle 17-26 September*. London: Viking Publishing, 1994.
- Miksche, F. O. *Paratroops: The History, Organization, and Tactical Use of Airborne Formations*. London: Faber and Faber Limited, 1943.

Mrazek, James E. *Airborne Combat: The Glider War/Fighting Gliders of World War II*. Mechanicsburg, PA: Stackpole Books, 2011.

Murray, Williamson and Allan R. Millett. *A War To Be Won: Fighting the Second World War*. Cambridge & London: Harvard University Press, 2000.

Nolan, Brian. *Airborne: The Heroic Story of the 1st Canadian Parachute Battalion in the Second World War*. Toronto: Lester Publishing Limited, 1995.

Norton, G. G. *The Red Devils: The Story of the British Airborne Forces*. London: Leo Cooper Ltd., 1971.

Rottman, Gordon L. *World War II Airborne Warfare Tactics*. New York: Osprey Publishing, 2006.

Schneiders, Toni. *German DFS 230 C-1 Glider at Gran Sasso, Italy, 12 September 1943*. Photograph, 1943. German Federal Archives.

Seaton, Albert. *The Russo-German War 1941-45*. New York: Praeger Publishers, 1970.

Skorzeny, Otto. *Skorzeny's Special Missions: The Autobiography of Hitler's Commando Ace*. USA: Greenhill Books, 1957.

Stone, I. F. *The War Years 1939-1945: A Nonconformist History of Our Times*. New York: Little Brown & Co, 1990.

Three Horsa Gliders Landing. Photograph, 1944. http://ww2bd.com/image.php?image_id=7003.

Thomas, David. "The Importance of Commando Operations in Modern Warfare, 1939-1982," *Journal of Contemporary History* 18, no. 4 (1983): 689-717.

United States Air Force. *CG-4! Glider in Flight*. Photograph, 1943. http://ww2bd.com/image.php?image_id=6952.

Warner, Philip. *The Secret Forces of World War II*. London: Granada Publishing Limited, 1985.

Wiest, Andrew. *Essential Histories: The Vietnam War 1956-1975*. New York & London: Routledge, 2004.