Born in the Jungles of Burma

Born in the Jungles of Burma: Behind Enemy Lines in the China-Burma-India Theater of Operations

By

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CHAPTER ONE

ORIGINS

By the 1960s, the United States Army had developed a method of troop deployment that could place forces in any seemingly inaccessible place via aircraft while providing for their every need until their missions were accomplished. Air mobility became an accepted doctrine for the Army, and although the helicopters were vulnerable to ground fire, they still enabled the air cavalry units to be highly effective and versatile for whatever job they were called upon to do. This air mobility development required a beginning. It did not just happen in the jungles of Vietnam. When and where did United States' forces theorize and implement the concept of air mobility? And how did the commanders take theory and put it into actual use? The following pages trace this development, revealing in considerable detail a story that has remained beneath the radar for over six decades.

The introduction of heavier than air craft in appreciable numbers was during the First World War, and this is where the story begins. During World War One, General William Mitchell of the United States Army Air Service devised a plan to end the stalemate on the Western Front. He would drop thousands of troops by parachute behind enemy lines and then use them to attack the rear of the German trench lines. Given the relatively primitive nature of aircraft, their minimal ranges and carrying capacities, and the newness of parachutes available in 1912, this audacious plan had merit, but little practicality. Happily, for the men who may have been earmarked for this adventure, the war came to an end before the plan could be implemented.[1]

After the war, William Mitchell wrote books advocating the development of air power. However, nowhere does he mention the dropping of troops by parachute and the necessary supply and support of these troops. His recommendation to General John Pershing, Commanding General of the American Expeditionary Force, never went beyond the talking stage of putting troops behind enemy lines and providing for them. Could Mitchell perhaps have seen no purpose in pursuing that line of thinking and let the matter drop? Had the war continued into 1919 and beyond, it would then

have required a great deal more planning, including the proper support of thousands of troops behind enemy lines or caught behind enemy lines without a direct line of communication or supply.

Prior to 1940, the use of paratroopers and/or glider troops placed behind enemy lines was little thought of until the German Army did it. That development meant that all major armies of the 1940s had to have paratroopers of some kind. After the 1941 campaign against the British on Crete, following a successful use of air-landed glider-borne troops and paratroopers, Adolf Hitler forbade the future use of these troops because of the enormous number of casualties sustained in Crete.[2]

On October 23, 1941, a letter from the Civil Aeronautics Administration to Brigadier General Oliver P. Echols, then Acting Chief of the Air Corps, informed him that following Congressional approval, and "based on the alleged success of the Germans in landing men and supplies in Crete by means of trains of gliders towed by airplanes, that it now became necessary for the Army Air Corps to provide a reservoir of pilots trained in handling gliders having flying characteristics similar to those required of troop carrying gliders."[3]

The United States Army, with a paratrooper school at Fort Bragg in North Carolina and at Wright Field in Dayton, Ohio, did carry out some experiments concerning parachutes and paratroopers in 1940 and 1941. However, did the Army at any time give thought to the possibility of putting troops down somewhere far behind enemy lines? And following that deployment, what efforts would be necessary to sustain those forces so as to prevent them from being annihilated shortly thereafter?

By the middle of 1942, both the British and Americans had laid the groundwork for the development of airborne units: the British, the 1st and 6th Airborne Divisions, and the United States, the 82nd and 101st Airborne Divisions, with more to follow. These units played an important role not only in the invasion of Sicily in July of 1943, but they would also serve significantly in the invasion of Normandy in June of 1944. However, in both campaigns, these airborne troops were not put behind enemy lines for more than a few days at most. Their missions were to cut off reinforcements, capture strategic bridges or crossroads, or disrupt the rear just long enough to enable the ground troops to link up with them.

Even in the ill-conceived plan designed and developed by Field Marshall Bernard Law Montgomery known as Operation Market-Garden to take place in northern Holland in September of 1944, the airborne troops of the American 82nd and 101st and the British 1st Airborne Division were supposed to hold onto their respective bridgeheads only a few days until the arrival of ground forces. These lightly-armed paratroopers

could not possibly withstand a heavy armored response on the part of the Germans, or keep them away from the five bridges, the capture of which was the key to success in this operation. As witnessed by the near complete destruction of the 1st British Airborne Division, the Allies showed an inability to secure the wellbeing of the paratroopers behind enemy lines.[4]

Yet, the European Theater of Operations was first in line for most U.S. military resources (following discussions with Winston Churchill while he was at the White House over the Christmas holiday in 1941). Given that the flying and dropping of troops behind enemy lines was an exceedingly difficult task fraught with enormous danger, what chances of success did airborne units have if they were down the line in allocation of scarce resources as was the case for all Allied units in the China-Burma-India Theater of Operations? There was no question that the bulk of Allied resources were focused on the European and Pacific theaters. Was it at all possible for troops placed behind enemy lines to succeed in any other theater of operations, with substantially fewer resources?

To answer that question, it is necessary to return to the United States in the period just prior to the war in Europe and investigate what, if anything, was done by the United States Army in the realm of supply and support of troops behind enemy lines. Was it possible for the men of the United States Army Air Force to be sent to an extremely inhospitable place and commence operations with little or no training, or did such units at least acquire a modicum of understanding of and capability to perform their mission prior to their orders to ship out?

Based on the available records, it would seem that little if anything had ever been done or even conceived of about the supply and support of troops behind enemy lines solely by air transport. However, in the case of developing a new type of aircraft that might prove useful for the purpose of just such a mission, in 1924 the United States Army Air Corps received a proposal for the urgent need of developing helicopters. This proposal pointed out that from a military standpoint, “Helicopters will first of all be the connecting links between different parts of an army. By their ability of being able to fly over rivers and mountains and to land almost anywhere, helicopters will establish communication between military posts that cannot be reached by horse, motor-cycle, automobile or aeroplane.[sic]”[5] What the proposal does not point out, however, is that a slow-moving, low-flying aircraft would most likely be extremely vulnerable to ground fire and certainly could not survive in any but an environment of complete air superiority.

Although this proposal might have seemed farfetched, the experience of the United States Marines in Nicaragua between 1926 and 1933 added impetus to the development of such an aircraft. Marine garrisons had been placed throughout the Nicaraguan countryside ostensibly to protect American personnel and interests. Some of the more isolated outposts in the remote northern province of Nueva Segovia required a different method so as to be kept in contact with their base and be supplied on a regular basis. Marine aviators were assigned the task to keep these outposts replenished and to some extent protected.[6]

Initially, the Marines' DeHavilland biplanes were too small and their range too limited to be of much use. However, by August of 1928, the Marines put into service three tri-motor Fokkers capable of carrying as much as 1,300 pounds of cargo. Everything from cigarettes to mules were delivered by air and some of the more remote outposts received their payrolls in this manner.[7] To communicate with the aircraft in the absence of radio sets and receivers, pilots were instructed to interpret a prearranged display of cloth panels enabling a ground unit to "call for supplies, air support, medical assistance, or simply inform the pilot that there was no change in the situation."[8]

These methods proved extremely valuable in not only maintaining continual contact between remote units and headquarters, but perhaps for the first time in aviation history, the Marines pulled off an evacuation of critically injured men from the field and delivered them to medical facilities that ultimately saved their lives. This may have indeed been the precursor of the doctrine of air supply and support from the jungles of Central America to the jungles of Burma and ultimately to the jungles of Vietnam. In fact, in another instance in which amphibious planes were used to fly wounded out from a sandbar in the middle of a river, it was observed by both Marine and naval officers that a solution to the inaccessibility of the jungle environment called for a craft that had a high lift capacity and needed only a minimum of runway for takeoffs and landings. What they proposed was an aircraft that used rotary wings--a helicopter or an autogiro.[9]

Although the full practicability of helicopters would not be seen until much later, the development of such an aircraft continued. Due to the massive shrinkage of all United States forces in the two decades between the wars and the subsequent reduction in funding, it would not be until July 1940 that the Army Air Corps approved a contract to build the first experimental rotary wing aircraft, designated the Platt-LePage XR-1 twin rotor helicopter with the capability of carrying a 1,200 pound load. The delivery date of the XR-1 was to be March 14, 1942. The Air Corps had

also contracted with Vought-Sikorsky for a single rotor helicopter, designated the Vought-Sikorsky XR-4, with a load capacity of 550 pounds. The delivery date for the XR-4 was January 10, 1941, at a cost of $50,000 per aircraft.[10]

By June 18, 1942, the United States Army Air Force (USAAF; its designation changed from Corps to Air Force in the spring of 1942), following flight demonstrations at Wright Field, had determined that the XR-4 was the helicopter most likely to be accepted in the future.[11] In fact, the USAAF was enthusiastic enough about the XR-4 to give the go-ahead to Vought-Sikorsky to build a slightly more powerful version of the XR-4, designated the XR-5, at a total cost of $650,000.[12] It was determined that the helicopter would be useful for many purposes: convoy duty; coastal and harbor patrol; observation and fire control; liaison and communication; ambulance duties; and, with the installation of low pressure floats in place of wheels, the helicopter would be able to land on water, marsh land, snow, or ice.[13] Apparently the authorities in Washington had enough insight to realize the possibilities of the helicopter, but perhaps what was needed was the appropriate environment to test the true potential of these rather peculiar looking aircraft.

During the 1930s, the Air Corps was also looking into development of various other types of aircraft, specifically for the ferrying of troops and/or supplies. In response to the success of the Germans in Europe in 1940 and 1941, the Air Corps began to consider the training of pilots to fly gliders. This training would provide a pool of pilots specifically trained "in handling gliders having flying characteristics similar to those required of troop carrying gliders, rather than the characteristics of the soarers [sic] used by glider enthusiasts."[14]

By June of 1941, the U. S. Navy had begun to draw up designs for both a landplane glider and a seaplane glider and by July was prepared to accept contract bids from various manufacturers. However, the Navy did not yet have plans to begin any sort of glider pilot training.[15]

In July, 1941, the Assistant Secretary of War for Air recommended that a conference be held for the specific "purpose of discussing the problems of loading and stowage in cargo type aircraft (that apparently did not include gliders) of certain articles used by parachute troops, air-borne Infantry, air-borne artillery, Engineers, and other units of an air-borne Task Force."[16]

It was not until November, however, that a proposal by the Assistant Secretary of War for Air called for a conference "of all interested Arms and Services, to determine future requirements for parachutes, for personnel and aerial delivery."[17] This conference would then determine

"the basis for specifications for future development, comment on the suitability of existing designs, and discuss quantities for future procurement in order to avoid future shortages.[18]

The Waco Aircraft Company was contracted to construct "two 15-place gliders, which will be capable of carrying internally the standard jeep and a crew of six men."[19] In fact, the Air Corps had discovered that with only a slight alteration the 15-place glider could be capable of carrying: "a.15 troops or, b. A standard jeep and 6 men or, c. A 75MM. Howitzer."[20] The glider was apparently destined to play an integral part in the overall scheme of things for the Army Air Corps. One of the questions that remained was just exactly what that part was going to be.

Believing that in the near future an airborne assault of some sort was inevitable, the Chief of the Materials Division of the Air Corps submitted a listing of the available containers that were on hand for aerial delivery in January of 1941. There were three types of containers to deliver both dry and wet payloads in the field. These containers, Types A-3, A-4, A-5. equipped with either a standard silk or cotton parachute, were capable of delivering safely to the ground all sorts of liquids such as water and gasoline, as well as such fragile items as rifles and radio equipment.[21]

To enhance the Air Corps' flexibility, studies were conducted on the possibility of using either B-17 or B-24 bombers as tow planes for gliders. At first glance, using recently developed heavy bombers as tow planes would seem to be a waste of resources, since strategic bombing was the only available tool to the Americans to hit back at Germany months before our ground forces would see combat. However, what the planners had in mind was the possibility of using these heavy, four-engine bombers to tow three gliders simultaneously.[22] What was apparently not considered was the possibility of controlling three ungainly and difficult to fly aircraft without causing a possible three way mid-air crash, and also the loss of the bomber. In addition, this memorandum had requested information available from other countries on gliders and glider training.[23]

Throughout 1941 and into early 1942, the United States Army Air Corps was only just beginning to evaluate numerous ideas and theories on some sort of mobile air warfare to be used in conjunction with the disposition of ground troops from one point to another. In response to a letter to President Franklin Roosevelt about the head start that Germany enjoyed in the training of glider pilots,[24] the Assistant Secretary of War for Air responded on June 15, 1941 by saying that, "The Air Corps believes in the efficacy of glider-borne troops and is conducting a glider program to this end. Also, the Air Corps is in the process of training military personnel to operate cargo type gliders Consequently, it is believed that

there exists in the Air Corps, adequate development, procurement, and training organizations to satisfy its likely glider needs."[25]

The Air Corps throughout 1941 had been conducting experiments and developing ideas that might prove useful at some later date if war broke out. As far back as the summer of 1940, the Armored Force Board at Fort Knox had been directed to commence studies followed by actual tests of the dropping of supplies by parachute. And by the summer of 1941, the net results of those tests and studies was the establishing of the practicability of supplying ammunition, fuel, food, and water by airplane using burlap parachutes and without special packaging."[26]

When war broke out, the armed forces of the United States no longer had the luxury of studying theories over the long term. To emphasize that point, in a letter of January 30, 1942 to Major General Walter R. Weaver, George H Davis, (an aircraft designer during WWI and after, then an investment banker from NYC) stated, "There is no time in this war emergency to do experimental work on improving the design of glider trailers,"[27] or even the planes that pulled them. Since the war was on, now was the time to decide exactly what equipment the Air Corps required, and how to maximize its use.

The equipment on hand by February 1, 1942, was essentially that which the Air Corps would be using throughout the war. Not only did the United States have the best cargo plane available, the Douglas DC-3 (designated by the military as the C-47, but it also had the heavier twin-engine C-46, the four-engine C-54 and the C-87. To do light transport work and to carry one or two passengers, the Air Force had liaison planes.

These light liaison planes had been undergoing flight tests in conjunction with Army maneuvers as early as April of 1941. Although these aircraft were slow, lacked any armor protection, and carried no weapons, their slow speeds and maneuverability enabled them to get in and out of tight spots that larger aircraft were unable to penetrate. Perhaps their vulnerability would prove to be a major liability in Europe (but it was not known at that time exactly what the weaknesses and strengths of the aircraft were in actual combat conditions), but in an environment such as the jungles of the Pacific islands or of Burma and Malaysia their seeming maneuverability might prove advantageous.

Based on the satisfactory operation of these aircraft during trials, the Assistant for Procurement Services recommended that the Army procure at least a dozen of them to be made available to the Air Force Combat Command. Following delivery of the aircraft in September 1941, a number of problems surfaced, including poor vision backwards and upwards, but it was determined that at minimum some two hundred of

these planes be ordered as soon as possible. Piper Company, Aeronica Company, and Taylor Aircraft were chosen as the contractors for the Air Force's liaison aircraft. Shortly thereafter, Lieutenant General Delos C. Emmons (Deputy Chief, Army Air Corps) recommended that some 1,000 of the aircraft be produced. But because no funds were available (and indeed the Air Corps was running a deficit of over $300,000,000 by November of 1941), the enthusiastic endorsement of General Emmons was drastically altered by budgetary realities. As of November 10, an order was issued for eighty liaison aircraft with Taylorcraft given an order for twenty, Aeronica obtaining an order for twenty also, and Piper obtaining 50% of the order with a request for the delivery of forty aircraft.[28]

As the United States mobilized in late 1941 and early 1942, many aspects of the use of the resources available to the Air Force still required consideration. Major General George C. Kenney indicated in a letter to General Arnold (USAAF commander) dated April 25, 1942, that as troops moved forward or were placed behind enemy lines "they will receive fuel, ammunition, crews, food, etc., brought in by air."[29] Yet, what was left unanswered at this critical juncture was how this was to be accomplished most efficiently, with the least amount of risk. There existed the aircraft and the personnel to do the job, but it was still necessary to create a system of air supply and support.

Less than two months after Kenney's letter to Arnold, the War Department had released to the public, for the sake of public relations, the results of the launching of an airplane by a new "Air Pick-up System." A demonstration was held at Wright Field indicating the feasibility of a non-stop glider pick-up system. The glider was placed behind two uprights some two hundred feet back, attached by a towline. The tow plane approached the pick-up point in the same manner as if the pilot were about to land his plane. Reducing his airspeed to between 95 and 120 miles per hour, the pilot leveled off as he came near the uprights. With his pick-up arm lowered and the hook at the end fully extended, the pilot glided in toward the suspended tow line at a height of between twelve to fourteen feet. "At the moment of contact ... the cable reel inside the plane is permitted to spin freely to pay out additional tow-cable to cushion the initial load imposed by the dead weight of the glider on the ground. Gradually the reel-brake is applied, the glider accelerates smoothly, and by the time the speeding tow-plane has leveled off, the glider is airborne."[30]

This successful demonstration used a Stinson light monoplane as the pick-up plane and an XTG-3 as the glider. Although these planes were not meant for combat use, Saturday, May 30, 1942 marked the first time in aviation history that the theory of picking up light aircraft from relatively

inaccessible areas by aircraft in flight became a reality. In fact, this operation may be considered the point of departure from theory to practice. Although the test took place in optimal, non-combat conditions, the demonstration proved the efficacy of placing troops practically anywhere conditions warranted, and then the ability to remove those troops when their mission had been completed.[31]

To accentuate that point, on July 25, 1942 Colonel W.D. Eckert (Executive for Control, Production Division, Air Corps) wrote a letter to the Chief of the Production Division of the USAAF about plans for the glider program. Based on projections for the coming year, the Air Force had been allowed to authorize the construction of 6,400 gliders, whereas projections for the numbers of gliders needed for the period from January 1, 1943 to June of 1944 were in excess of 41,000. And this projection was based on the premise that the gliders would be towed by either four-engine bombers or four-engine transports. However, if twin-engine medium bombers or transports were to be used, an additional 10,800 gliders was called for.[32]

Colonel Eckert had failed to realize that the heavy bombers of the United States Army Air Force, the B-17 and B-24, were not going to be allowed to tow gliders along with the rest of their duties. However, what the Air Force would have available would be the workhorse of cargo transport and the towing of gliders throughout World War Two: the C-47. In conjunction with the C-47, Colonel Eckert expanded his thoughts on the subject to include the usefulness of gliders. He indicated that gliders should be used as: 1) Full troop-carrying gliders for combat purposes; 2) As cargo-carrying ships between advance bases and permanent bases; 3) As personnel transports; and 4) As hospitals for evacuating the wounded."[33] Colonel Eckert summarized the versatility of gliders and the extent of their uses within the framework of a war. Not only could gliders be used in an offensive nature but rather than leaving them idle once their precious cargoes had been debarked, gliders could provide the means for perhaps the fastest and safest ways of getting seriously wounded personnel away from the battlefield to a properly equipped surgical hospital before the men would succumb to their wounds.

By April, 1942, the United States Army Air Force contracted with a number of manufacturers for the production of gliders. Companies as diverse as the Ford Motor Company, using their own designs based on parameters provided by the Air Force (1,000 gliders, model CG-4A at a cost of $18.9 million plus 15% for spare parts), Cessna (1,000 gliders designated the Waco model at a cost of $16,962,500.00 plus 15% for spare parts), the AGA Aviation Corporation (120 units at a cost of $2.2 million

plus 15% for spare parts), the Babcock Aircraft Corp. (102 gliders, model CG-4A at a cost of $1,887,503.88 plus 15% for spare parts), and the Gibson Refrigerator Company (an order for 363 Waco CG-4A gliders at a cost of $6,912,128,75 plus 15% for spare parts) were given orders for gliders.[34] It was obvious that gliders were going to play a crucial part in the war effort. The only question was exactly how these carriers of men and materiel would be used to best advantage.

To complement the inventory, the development of the helicopter continued. These aircraft by the spring of 1942 were just emerging from the experimental stage and their practicability in a combat support role had not yet been proven. However, given the possibility of men caught in an inaccessible remote area with no way of returning to base, especially if they were wounded, a helicopter might be able to reach them when other aircraft and ground units could not. One thing was certain: the helicopter was virtually an unknown quantity before the shooting started. How it would perform under combat conditions and just how vulnerable it was to ground fire and enemy aircraft were still unanswerable questions.

In July of 1942, a conference was held including the commanders of the Army's G-4 (Supply Section), SOS (Services of Supply), ASC (Air Service Command) and RGS (Readiness Groups) sections (respectively, Colonels Walker, Berry, Newberry and Lt Colonel Generous) on the "Responsibility for Air Supply to Isolated Groups in Combat Zones."[35] It was crucial for the Army Air Force (AAF) to make that determination as soon as possible. The members of the conference reached a consensus that Troop Carrier Command was the unit best equipped and trained to deliver supplies to isolated groups (they believed that Air Transport Command was not properly equipped to drop supplies while in flight). In addition, the conference decided that the ground forces should be responsible for having their supplies made available for delivery by air to airborne troops and isolated ground units." Furthermore, the ground forces were responsible for ensuring that their supplies were delivered to the airdromes for the Troop Carrier planes to pick up.[36]

With that particular responsibility established, the Combined Joint Chiefs of Staff had to determine where and when these particular tools of war would be used. Making the vital decisions about allocation of scarce resources in very diverse theaters of war was not an easy task. The Allies had officially determined that Nazi Germany was the most dangerous threat; therefore, the defeat of Hitler was paramount. The Japanese, although at the threshold of India, and having extended their East-Asia Co-Prosperity Sphere by virtue of their apparently successful attack on Pearl Harbor[37] and subsequent occupations of Wake Island, Guam, and the

Philippines, would be dealt with fully by the Allies once the Germans were defeated. For the time being, the conflict against the Japanese would be waged primarily by the United States, followed by the Commonwealth troops of the British Empire and segments of the Chinese Nationalist Army. Whatever men and materiel could be spared from the Allied buildup against Germany would be sent to the Pacific and what few units that were left would be allocated to the China–Burma–India Theater of Operations (CBI).

To prepare an offensive in the CBI, the Allies required massive supply shipments from the United Kingdom and from the United States. These supplies were meant to keep Generalissimo Chiang Kai-Shek placated and keep his armies in the field opposing the Japanese. The Allies were compelled (they also intended to develop bases in eastern China to bomb Japan; therefore, the plans for air operations included maintaining these bases with the help of Chiang's forces) to provide thousands of tons of supplies per month to China that could be delivered only via an air route over the Himalayas. This commitment, in turn, used men and equipment that would otherwise have been better employed elsewhere. However, the Generalissimo was considered a vital component in the plans to defeat Japan. Therefore, short of placing troops on Chinese soil, this lesser of two evils was deemed the most desirable. Not until the Combined Joint Chiefs of Staff made their final plans for the future conduct of the war and obtained approval from President Roosevelt and Prime Minister Churchill would the Allied Command in India have any indication about their exact status in the overall war plans. Then and only then would they be able to determine what would be available and when, and, therefore, be capable of developing an offensive strategy against the Japanese.

Not only would the Allies need to adapt to a precarious 12,000 mile long supply line, but once the supplies reached India, the primitive nature of India's infrastructure was a further obstacle. Faced with inadequate port facilities, no electricity, running water, or all-weather roads, over-burdened rail lines that were also in disrepair, and deplorable conditions in the state of Assam in northeastern India, the Allies faced significant challenges prior to any offensive taking place.

Compounding their tribulations, by the middle of 1942 the command structure was in chaos. It was extremely difficult to determine who had what responsibility over the forces that were gathering. Commonwealth forces from all over India, divisions raised in both East and West Africa, Canadian units, Home units, United States forces (primarily USAAF), the American Volunteer Group in China (popularly known as the Flying Tigers), Chinese units under the command of Lt. General Joseph Stilwell,

and those under various Chinese commanders, some Burmese units and some Australian and New Zealand units–all had to be brought under some sort of unified command.

As the basic command structure was being established, the entire components of cargo and carrier air groups had to be created in the United States and shipped to the theater of operations. The logistics of such a move were daunting in the extreme, considering the distances and the primitive nature of the facilities available in India. For example, the number of planes, primarily C-46s and C-47s, called for in a combat cargo group was l25. The number of crews needed for the group, including a reserve element, was 150 (a crew consisted of 4 men). In addition, the maintenance and ground support units and the necessary administrative and support personnel brought the total number of men to 883, of which 350 were officers.[38] This aggregate total of men and machines made the task of transportation an exceedingly difficult undertaking.

Lacking the necessary training for the job that the high command conceived for the air units, the Army indicated that it knew of no "diagrams or blueprints pertaining to loading and unloading methods of any transports in Army use."[39] It was however, common knowledge that the heaviest items were loaded as close to the wings as possible, whereas the lighter items were then distributed throughout the remaining space. If it was at all possible, items should be lashed down or secured by some sort of restraint. The rest were to be braced against the more firmly fastened supplies. All members of the crew participated in loading the cargo with the invaluable assistance of native labor. Not until the middle of 1944 was a loadmaster provided to expedite the loading of planes with little intercession on the part of the crew.[40]

The United States Army Air Force in 1943 was about to embark upon a mission unprecedented in its previous experience, and it certainly was going to encounter difficulties unlike those in any other theater of operations. Considering the lack of experience of the plane and ground crews, it remained to be seen if it would be possible for them to adapt their ingenuity and skills to fulfill the needs of the Allied campaign against the Japanese in Burma. Or would these men and their machines, heading into such a vast unknown, be crushed by all the varied physical, environmental, political, and logistical barriers set before them?

Notes

1) Edward Meade Earl, ed., *Makers of Modern Strategy* (Princeton, NJ: Princeton University Press;1943), 499. It was also mentioned more specifically in the book, *Billy Mitchell: Crusader for Air Power* by Alfred F. Hundley, USAF, (Bloomington and London: Indiana University Press; 1975), 36., that Mitchell had submitted a plan to General Pershing in October, 1918 suggesting that the First Division, having the most experience in the Army be given parachute training for a drop behind the German lines.
2) Peter Calvocoressi and Guy Winty, *Total War* (Middlesex, England: Penguin Books; 1972),160. Over a third of the airborne troops were killed or wounded and the Luftwaffe lost some 220 aircraft. However, the Germans captured Crete and denied the British a base within range of the Ploesti oilfields. Plans for a similar attack on Malta were scrapped and Hitler turned all his parachute regiments into infantry units, destined for the Russian front.
3) Donald H. Connolly, Administrator of Civil Aeronautics to Brig. Gen. Oliver P. Echols, Acting Chief of Air Corps, 10/23/41; in File #454.1 "A," Box #753, Record Group 18, National Archives (Nat'l Archs), Washington, D. C.
4) Both of Cornelius Ryan's books, *A Bridge Too Far* and *The Longest Day* deal extensively with the airborne operations and their respective shortcomings. Also, Carlo D'Estes' *Bitter Victory* describes in great detail the problems that the Allies encountered in the invasion of Sicily. For the most recent account of the airborne operations in conjunction with the Allied invasion of Normandy, Stephen Ambrose's *D-Day June 6, 1944: The Climactic Battle of World War II* provides a great deal of information of the difficulties encountered by the airborne units not only during the initial drops and landings, but more importantly, the significant limitations that the US and British units had to function with and at the same time required to carry out their respective missions.
5) "Proposal to Build Helicopters" sent to the Office of the Chief of the Air Corps, June, 1924. File #052.18, Box #510, RG 18, Nat'l Archs, Wash., D.C.
6) *Marine Corps Historical Reference* Series, Number 21, "The United States Marines in Nicaragua," Historical Branch, G-3 Division, Headquarters, U. S. Marine Corps, Washington, D. C., Revised, 1961, pp 25-55.
7) Ibid.
8) Ibid. In one particular incident, Lieutenant Christian F. Shilt flew in a total of 1,400 pounds of medicines and supplies to a Marine unit in the small village of Quilali that was completely surrounded by Sandinistas. Singlehandedly, Shilt flew 18 men out, three whose wounds were of such serious nature that immediate medical attention meant life or death. In recognition of such a singular feat, the Marine Corps awarded Lt. Shilt the Congressional Medal of Honor.
9) Macaulay, Neil, *The Sandino Affair* (Chicago, Illinois: Quadrangle Books; 1967),124-125.
10) Headquarters, Army Air Forces, "Routing and Record Sheet," 6/18/42. File #452.11 "B," Box #753, p.1, RG 18, Nat'l Archs, Wash., D.C. This document relates to the status of Rotary Wing Projects.
11) Ibid, 2.

12) Ibid., 2.
13) Inter-Office Memorandum, War Department, Air Corps to Commanding General, AAF Materiel Command, 05/08/42, p.2. File #452.1 "B," Box #753, RG 18, Nat'l Archs, Wash., D.C.
14) Administrator of the Civil Aeronautics Adm. to General Oliver P. Echols, Acting Chief of Air Corps, 10/23/41. File #452.1 "A," Box 753, RG 18, Nat'l Archs, Wash.
15) "Report on Glider Training," Materiel Division to the Army Air Corps, 06/18/41. File #353.9, RG 18, Nat'l Archs, Wash.
16) Commander, Air Corps to Chief of Armored Force, 07/05/41. File #337.0, Box 1890, RG 18, Nat1 Archs, Wash.
17) F. I. Ordway, Jr., Major, Air Corps, Asst. Exec., Materiels Div. to the Chief of Infantry, 11/19/41. File #337.0, Box #1890, RG 18, Nat'l Archs, Wash.
18) Ibid.
19) Acting Chief, Air Corps to Air Staff, 12/10/41. File #452.1 "A," Box #753, RG 18, Nat'l Archs, Wash.
20) Ibid.
21) "Information on Air Corps Equipment," Materials Division to Intelligence Division, Army Air Corps, 01/23/41. File #452.3, Box #803, RG 18, Nat'l Archs, Wash.
22) Memo, the Office of the Chief of the Air Staff to the Chief of the Army Air Forces , 07/19/41. File #452.1 "A," Box #753, RG 18, Nat'l Archs, Wash.
23) F. I. Ordway, to Mr. Charles T. Malone, President, American Glider Association, 08/26/41. File 342.1 NA," RG18, Nat'l Archs, Wash.
24) Mr. Edward Steptoe Evans to Franklin Delano Roosevelt, 06/05/41. File #452.1 Box 753, RG 18, Nat'l Archs, Wash.
25) Robert A. Lovett. Assistant Sec'y of War for Air to Mr. Edward Evans in response to Edward Evans in response to his letter to FDR, 06/15/41. File #452.1 "A," Box 753, RG 18. Nat'l Archs, Wash.
26) Letter, "Armored Force Board Project No. 37, Supply by Air," Armored Force Board to the Army Air Corps, 01/28/42. File #452.3, Box #802, RG 18, Nat'l Archs, Wash,
27) George H. Davis to Major General Walter R. Weaver, Acting Chief, Army Air Corps, 01/30/42. File #454.1 "B," Box #752, RG 18, Nat'l Archs, Wash.
28) War Department, Office of the Chief of the Air Corps (from the Assistant for Procurement Services, General 0. P. Echols) to the Chief of the Army Air Forces, 02/04/42. File #452.1 "A," Box 754, RG 18, Nat'l Archs, Wash.
29) Letter, Major General George C. Kenney to General H. H. Arnold, Chief of the Army Air Forces, 04/25/42. File #385.C, Box #597, RG 18, Nat'l Archs, Wash.
30) Newsletter, "PICK-UP," All American Aviation, Inc., June of 1942. This document describes the first pick-up of a glider by an aircraft in flight. File #452.1 "B," Box #752, RG 18, Nat'l Archs, Wash.
31) Ibid.
32) Memorandum, "Planning of Glider Program, "from Colonel W.D. Eckert, Executive for Control, Production Division to the Chief, Production Division,

Army Air Corps, 07/25/42, p.4. File #452.1 "B," Box #752, RG 18, Nat'l Archs, Wash.
33) Ibid., 2.
34) Routing and Record Sheet to the Chief, Army Air Corps, a summation of contracts that had been negotiated with various manufacturers of gliders, 05/02/42. File #452.1 "B," Box #752, RG 18, Nat'l Archs, Wash.
35) Memorandum from Headquarters, Army Air Forces concerning the "Supply of Air Borne Troops & Isolated Units," to Colonel Whitten dated 07/20/42. Located in File #400.Misc., Box #215, RG 18, Nat'l Archs, Wash. 07/26/42.
36) File #400. Misc. Box #215. RG 18, Natl. Archs, Wash.
37) There is no question that at least on the face of it, the Japanese strike against the primary U. S. naval base in the Pacific was an enormous disaster both militarily and psychologically to the United States. However, upon closer examination, once all the fires had been doused and the dead and wounded taken care of, the situation at Pearl Harbor was far from the debacle that most people had come to believe. As Gordon Prange pointed out in his signal account of the attack, *At Dawn We Slept*, the final assessment at Pearl turned out to be greatly opposed to the general beliefs concerning the Japanese attack. There is of course no way to minimize the loss of some 2400 lives, including over 1100 men permanently entombed in the bowels of the *Arizona* and some 1100 wounded in the attack. Also, the sinking or seriously damaging of six of the eight battleships plus a dozen or so other ships sunk or damaged plus the destruction of some 188 aircraft at Hickam and Wheeler Fields certainly can not be ignored.
What the Japanese attack had accomplished seemed to have been a huge success in crippling the United States Navy's ability to interfere with their plans throughout South Asia and the western Pacific. But the Japanese, in fact, had missed a golden opportunity that would haunt them for the next 3 1/2 years. Yes, they did a great deal of damage and it seemed that they would now be unstoppable.
However, the Japanese had missed the three most important targets that would have indeed impeded the United States in any attempt to stop Japanese aggression. Their naval aviators left the fuel depots completely unscathed, therefore keeping the reach of the US Navy some 2,800 miles closer to the action instead of operating from the west coast. Also, the aviators missed the major repair facilities, which also meant that ships needing major overhauls or repairs would not necessarily have to go back to San Diego or Bremerton, Washington. This would be pointed up by the fact of the seriously damaged aircraft carrier, the *Yorktown* after returning from the Battle of the Coral Sea in May was repaired in record time for battle in the crucial Battle of Midway instead of being sent back to the west coast.
In addition, six of the eight battleships were all repaired at Pearl and eventually sent back to active duty. Plus the fact the battleships were in Pearl for the sole reason that they were too slow to keep up with our carriers meant that for all practical purposes, the battleships had become obsolete in the newly emerging warfare at sea using the speed and striking power of a navy's carriers and its aircraft.

And last, the Japanese had hoped to find two or three of our carriers sitting quietly at anchor on that peaceful Sunday morning. Needless to say they were sadly disappointed and to add salt to the wound their attack made the vast majority of the American population angry and promising to return the favor in spades

38) Wesley Frank Craven and James Lea Cate, *The Army Air Forces in World War* Two, Volume VI (Chicago, Illinois: University of Chicago Press; 1955), 391-2.

39) Memo, "Transport Loading," from Headquarters, Army Air Forces to Naval Air Transport Service, Office of the Chief of Naval Operations, 04/23/42. File #500—523, Box #887, RG 18, Nat l Archs, Wash.

40) Interview with Walter L. Carre. Mr. Carre originally served with the 7th Bomb Group as a mechanic and was transferred to a special rescue unit with their own pilots and aircraft comprising liaison aircraft, two B-25s and the first operational helicopter in the theater. Interview took place on 5/21/93 at King of Prussia, Pennsylvania.

CHAPTER TWO

"GO TELL THE RAF"

By late 1942, the outlines of Allied strategy against the Axis took on a more concrete and optimistic format. It was at the Casablanca Conference in January of 1943 that the "broad outlines of the strategies" of the Allies took shape. The Mediterranean was made the principal theater of operations in Europe, to be followed by an invasion of northwest Europe late in 1943 or early in 1944. On the other side of the world, operations in the Pacific theater would lay claim to most of the resources (primarily American), for securing the Aleutians, advancing from Midway on the Truk-Guam line with a concurrent advance from Rabaul if forces were available, and advancing via Samoa and the Malay barrier. Support for activities to secure Chinese participation in Burma under the code name of "Operation Ravenous" would be limited to a small advance from Assam to obtain jumping-off points for further advances into Burma at some future date, and to improve the air-transport route (the "Hump") to China. Any ground campaign would be sufficiently supplied, but there would be little available in the way of assault and landing craft, naval forces, and shipping.1 In other words, the China-Burma-India Theater of Operations (CBI) would be given some of the tools needed to conduct some sort of offensive against the Japanese.

Adding to these difficulties of priorities, the topography of Burma, coupled with its unique weather conditions, created hazards and problems on a significantly larger scale than encountered by the Allies elsewhere in the world. Burma, which was to become a battleground for Chinese, Americans, British, Indians, Ghurkas, East and West Africans, and of course Japanese for more than three and one-half years, could not have been a more horrendous theater to fight a war.

Almost the size of Texas, Burma has been likened to a giant wedge driven between China and India. A massive ring of mountain ranges which form most of its 3,200 miles of land frontier locked the country in on three sides. And prior to completion of the Burma Road. there was no rail or road connection with China or India. The Patkai-Naga Hills, with peaks rising to approximately 20,000 feet and valleys of impenetrable jungle,

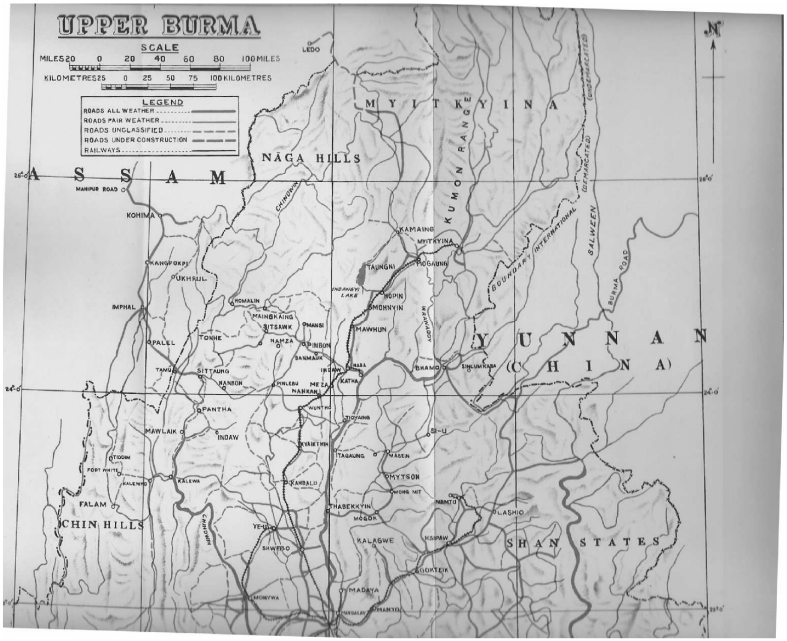
interposed an effective bar to transportation between Assam and northern Burma.

Farther to the southwest, an extension of that range, the Arakan Yomas, stretched to the shores of the Bay of Bengal, with peaks up to 10,000 feet, preventing land communications between India and lower Burma. On the east, too, Burma had been long isolated from its neighbors by rugged and forbidding mountains. On the China-Thailand side, the Himalayan range branched out into numerous parallel north-south chains, extremely high along the China border, tapering gradually in the Shan states, and stretching far down into the Malay peninsula. In shape and contour, Burma itself resembles a slightly cupped hand, a jumbled mass of parallel ridges running north and south giving the palm a corduroy-like appearance.

The central basin, its ridges shrinking in altitude toward the middle, extends from Fort Hertz in the north to the Bay of Bengal, varying in width from 100 to 150 miles. Because the north-south ranges hinder lateral traffic, the valleys between have developed into heavily traveled routes. Upon the southward-flowing rivers, most important of which is the Irrawaddy-Chindwin, and upon motor roads and rail lines closely paralleling their courses, normally passes the bulk of freight. After the victory of the Japanese in 1942, this system became the lifeline of enemy occupation forces.[2]

Burma's tropical and sub-tropical climate further compelled the opposing forces to alter their plans of campaign. With rainfall exceeding more than 120 inches in some parts of the south and monsoons blowing in regularly between May and October, the conduct of ground and air operations was severely hampered. Only during the "dry" season of October through May were the Allies able at first to commence offensive operations, and that is not to say that it did not rain from November through April. Indeed, as Lt. General Joseph Stilwell noted in his diary during the 1943-44 campaign, "It rained about eleven inches in January and another eight inches more in February."[3]

If the rainfall was not enough of a hindrance, the maximum temperatures at Shwebo and Mandalay in central Burma reached above 100 degrees Fahrenheit, whereas farther north in Myitkyina the temperature never went below 98 degrees.[4] In such a climate the prevalence of parasites such as leeches and mosquitoes causing such debilitating diseases as malaria, bacillary dysentery, and cholera hindered the fighting capabilities of all the forces in Burma.



Picture courtesy of Indian Armed Forces in WWII – Reconquest of Burma Vol 1.

Given all these obstacles in the forward areas along the Indian-Burmese frontier, the primitive nature of the infrastructure in the rear areas needed consideration long before any Allied offensive was to occur. In the Assam region alongside the state of Bengal (which bordered on the northwest region of Burma), any Allied buildup would require essentially starting from scratch. Airfields, hangars, barracks, fuel depots, training facilities, ammunition dumps, base hospitals, and supply dumps for everything from automobiles to Zippo lighters had to be constructed. Very few of the supplies could be left exposed to the heat, humidity, and rain that plagued the region. Therefore, the tasks assigned to the various Allied units upon their arrival in the Assam region initially fell into the category of housekeeping chores long before their air and land assaults against the Japanese could begin.

By December of 1943, the Eastern Air Command had been established with its commander, Major General George E. Stratemeyer, who would be answerable to the commander of South East Asia Command, Admiral Lord Louis Mountbatten. The Eastern Air Command consisted of the 10th Air Force Strategic Air Services, Troop Carrier Command, and a number

of Royal Air Force Groups. Within the Troop Carrier Command, Brigadier General William D. Old was ordered to "supervise all Air Transport operations in the Forward Areas."[5] Troop Carrier Command had the 1st Troop Carrier Squadron (TCS); the 2nd TCS; the 27th TCS; 315th TCS; 31 Squadron, Royal Air Force (RAF); 62 Squadron (RAF); 117 Squadron (RAF); and the 194 Squadron (RAF).[6]

Airdrome (airbase) Squadrons were organized for "tactical employment as ground servicing units to support Combat Cargo"[7] and Troop Carrier Squadrons. These Airdrome Squadrons were assigned the jobs of "administration, mess and security, chemical and medical services, furnish and provide first and second echelon maintenance and supply and to organize and operate airdromes."[8] Essentially, the Airdrome Squadrons were to provide all the necessary ground support services required by both Troop Carrier Command and Combat Cargo Command; in the case of Troop Carrier Command the 98th Airborne Squadron was to serve as the housekeeping unit for the 27th and 315th Squadrons.[9] They had to assemble an efficient base of operations to handle the various contingencies of combat air crews and their aircraft.

General Old, having been named commanding officer of Troop Carrier Command on December 16, 1943,[10] was charged with the task of "providing air transportation for airborne and air transit forces in the support and training of the Army Group and other land or air forces included in operations in Burma."[11] This order would place Old's Troop Carrier Command in the forefront of providing, by any means available, all needed support of ground troops on the front lines and especially those placed some 150 miles behind the Japanese lines, as envisioned by British Major General Orde Wingate.

It was all well and good to have at his disposal on paper such a large air armada. Each U.S. squadron was provided with thirteen C-47 aircraft, "with provision for one and a half crews per aircraft."[12] Each Royal Air Force Squadron was equipped with twenty-five Dakotas, which had been modified with the addition of a number of .30 caliber machine guns for defense and a number of navigational aids.[13] Of its twenty-five aircraft, twenty were operational, with the remaining five held in reserve.[14] All told, General Old commanded in excess of some 150 first-rate transport planes to effect a mission never before required in the history of aviation. Could SEAC, through an Eastern Air Command that filtered all the way down to specific squadrons, succeed at a job that had never been attempted before? Old's command had to contend with a precarious supply line across the Pacific to the west coast of the United States. And to obtain supplies from Great Britain, the traffic had to endure some 6,000 miles of

sea and land routes stretching from Assam across India and through the Middle East, across the Mediterranean and to England past the major submarine bases of the German Navy.

As a testament to the fragility of this supply line, items that were taken for granted in Europe or the Pacific were at times difficult, if not impossible to obtain in the CBI. If anything of value to frontline units happened to have arrived in the rear depots, a unit had to lay claim as quickly as possible to these items, for otherwise they would disappear in less than twenty-four hours. As Colonel Philip Cochran (commanding officer of Air Commando 1) related, "You'd send all this beautiful new stuff, and they would grab it. They would take everything you got as it would come into ports. They would steal it from you. An unalerted[sic] task force could lose their identity before they even got into place, because their supplies would be used by people who said, 'My God, we haven't seen any of those for 2 years. I think we need those.'"[15]

One of the most annoying problems for the South East Asia Command (SEAC) was the difficulty in obtaining parachutes. In this newly evolving concept of air mobility amid impenetrable jungle, the quickest and safest method of delivery was dropping all the requisite supplies out of C-47s, either by parachute, or in many instances, without. As noted by Mountbatten's staff, the need for parachutes in operations conducted by Wingate's "Chindits" (a unit named by the corruption of the Burmese word for the winged stoned lions that are the guardians of Buddhist temples) called for a quantity of parachutes that in late December of 1943 simply did not exist. The heat and humidity affected the silk material by spreading mold and mildew on the fabric. Therefore, the usual silk material needed another component to strengthen the fabric. With these facts in mind, it was recommended by SEAC that Operation Tarzan (Wingate's Long Range Penetration Group) wait until the parachute supply problem could be eliminated.[16]

To alleviate this shortage, SEAC devised a number of methods to increase its supplies on hand rather than wait for months for shipments from Great Britain and the United States. Some of those recommendations were as follows: local cotton supplies were to be used for parachutes more than ever before; a local material, jute, was tested as a replacement for silk or cotton; and it was determined that a larger segment of supplies needed by men and animals in the jungle could in fact be free dropped with little risk of damage. Items previously dropped with parachutes were reconsidered as being able to sustain a drop of some three hundred feet with little or no damage. Along with such items as forage for animals and food grains for personnel and clothing, other non-fragile items such as

tinned food, which at present required either a parachute[17] or a similar speed-reducing device, could also be free dropped.

Additional experiments were carried out to increase the loads for which various parachutes had been previously specified. The British had in fact during the months of May and June of 1943 carried out experiments with the intent of increasing the loads that various parachutes could accommodate. Instead of cutting the parachute material on the bias, they determined that cutting the material on the square would enable the parachutes to not only carry a heavier load, but also increase the descent of the items only slightly with no undo harm to either the items dropped and on the parachute canopies themselves. In fact, of ninety-three drops made with parachutes cut on the square, only one parachute suffered a slight tear in one of the "A" panels near the periphery.[18] Therefore, it was determined that this method would enable the cargo planes to deliver more supplies to the forces on the ground not only quicker, but also with little additional risk of damage.

The Mark I parachute load of some 140 pounds had been increased to more than 180 pounds. The Mark II parachute had its carrying capacity increased from 180 pounds to nearly 210 pounds, and it was assumed that further improvements would raise that load to some 250 pounds. However, the use of jute for parachute material did not fare as well. Although designs were made that enabled an eighteen-foot jute parachute to carry a load of 200 pounds, its rate of descent (some 35 ft/second) was considered too high and forced the "parajutes" to be used for only non-fragile items that could not be free dropped.[19]

The experiments with the jute parachute proved to be disappointing. The weight of the "parajute" was thirty-three pounds, versus a weight of nine pounds for the U.S. cotton Mark I and eleven pounds for the Mark II. This would increase the weight so substantially that for every seventeen fully loaded C-47s, one C-47 would be needed to carry the additional weight of the "parajutes" alone. If that were not serious enough, humidity acted upon the jute material, causing the "parajute" to absorb moisture in the air, and subsequently increasing its weight by more than twelve pounds. Last, the "parajutes," unless hermetically sealed in storage, had only a two month shelf life before they began to deteriorate and become useless.[20]

However, making the distinction between supplies that were virtually invulnerable to harm upon impact and supplies that required the greatest of care, SEAC dove enthusiastically into the design and production of baskets with native materials. These baskets would not only be more economical, but they also would be used in place of the jute parachutes