This document published on : **http://www.6juin1944.com**

The following document is an extract from a microfilm I bought at Maxwell Air Force Base. The cost for each microfilm is $ 30. Help me to buy more microfilms about the Troop Carrier and put more documents and information on the website.

MAKE A DONATION – USE THE PAYPAL BUTTON – THANKS!

Le document suivant est extrait d'un microfilm que j'ai acheté à la base aérienne de Maxwell aux Etats-Unis. Le coût par microfilm est de $ 30. En m'aidant à acheter d'autres microfilms vous permettrez au site de diffuser encore plus d'informations sur le rôle des différents 'Troop Carrier Groups' lors de l'opération «Neptune».

FAITES UN DON – UTILISEZ LE BOUTON PAYPAL - MERCI

The following is a discussion of the training and tactical employment of Airborne Division Pathfinders as applies to Pathfinder activities in World War II and specifically to the Normandy Invasion, Operation NEPTUNE.

I would like to back track to some of the events that led up to the formation of the 101st Airborne Pathfinder Group. The airborne units had experienced many complications in being delivered to designated Drop Zones as was proven, not only in state-side activities, but by the drop in Africa of Colonel Edison Raft's unit when they missed their drop zone by approximately 60 miles and later on, by the 1st unit of large size that was committed in Sicily. At that time high winds, night landings, etc. had spread the paratroopers over an extended area from their intended drop zone and it became immediately apparent to the officers in charge of airborne activities that there was a need to define a definite point to which paratroopers would be delivered if they were to accomplish their mission. At the time of the Sicilian invasion they had been experimenting for several months with a method of marking drop zones with some groups of paratroopers so that the Air Corps would have a definite point of release for paratroopers after they come over the drop zone. In December of 1943 Major General William C. Lee, who was then commanding the 101st Airborne Division called me into his office and explained the problem to me. He stated that there was very little known about this method of operation but that the British Air Force was being particularly successful with individuals and aircraft called Pathfinders. These aircraft preceeded the main bombers commands and dropped flares on the target in advance of the main bomber formations. The main formations then would come through and drop the bombs on their targets. These British pathfinders of the RAF were vectored, or sent, to their particular area by Loran and other radar navigational aids that used a point to point intersection principle. In other words from the north of England a radar signal would go out to the aircraft and from the south of England another signal would go out and the two would intersect on a single aircraft carrying flare bombs. The people at control

headquarters in the Air Force had a detailed map and when they placed the aircraft by intersection, directly over their target, the pathfinder aircraft would drop flares. Immediately behind him in a matter of minutes would come the main bomber formation and they would drop their bombs through this ring of lights and were able to hit their targets, especially at night. This method had many advantages and also several disadvantages. One was the newness of the radar equipment at the time, the other was the fact that the winds aloft would frequently drift the parachute flares off the designed area and cause errors in the bombing pattern. General Lee directed that I go down to the 21st Independent Company of the 6th British Airborne Division and to determine how these individuals were operating as far as paratroop pathfinder activities went. At the same time we had some personnel from the Pathfinder Group used in Sicily; Lt Mike Chester, Lt Joe Bales and one or two enlisted men who had been working with pathfinders in Sicily. They explained some of the problems they had encountered. They had gone down with gasoline and with Number 10 cans and when they landed on the ground they would fill the cans with sand, pour gasoline on the sand and lay the cans out in a pattern for the troop-carriers to find the particular drop zone.

I was authorized to take one Warrant Officer, CWO Ernest D. Dilbern, a communications specialist from the 506th and three enlisted men to the school at Lark Hill. I spent approximately two weeks with the 21st Independent Company and was able to determine that their particular organization was not especially applicable to our American forces. The 21st Independent Company was an organization organized along commando lines with a mission of not only marking drop zones but performing behind the lines sabotage and demolition missions or any special mission that the Commanding General would desire. Their primary concern at the time was to mark drop zones for the 38th Group, RAF, so that they could deliver the parachutists of the 6th Airborne Division to designated drop zones. The officer commanding the unit was Major Lenox-Boyd, the second in command was Captain Andrew Tate. They had a communications officer, Lt Midworth, a demolition officer, Lt George Mains, and a straight infantry officer, Lt DeLature, in their three platoons. They were organized along the basic platoon organization of an infantry company with additional missions.

The British organization being such as it is, each officer was from

a different regiment, Major Lenox Boyd was from the Scotch Grays, Captain Andrew Tate was from the Cameron Highlanders, Lt Bobby DeLature was from the Cold Stream Guards and Lt George Mains, was from the Midland Regiment and the other officer, Lt Midworth, had been called up during the current emergency.

At that time their primary equipment or instrument to mark a drop zone consisted of a carbide light similar to the one that the American Army uses to blacken the site of an M1 rifle except that it had a larger reflector and a larger container of the carbide. They had experienced several problems, the most noteable of which was a group that had dropped and landed in water and the carbide had exploded when the water seeped into the container. They had no fully approved OR ACCEPTED means or piece of equipment with which they could adequately provide markings to drop zones.

They were experimenting at that time with smoke, smoke grenades, and smoke pots, none of which had proved especially satisfactory for their night missions. They were experimenting with these carbide lights and they recognized the fact that these were not satisfactory. They provided a very brillant light when viewed from a 45 degree angle or to a direct headon view but they did not meet the requirements of providing an illumination that would be visible and easily identifiable to a pilot and at the same time be practically invisible to an enemy on the ground.

We stayed with the 21st Independent Company long enough to visit their British Jump School and determine their methods of operation and to thoroughly examine the existing Pathfinder equipment and then (we) returned to our own unit, the 101st Airborne Division. At that time the division was scattered in several locations in the midlands; the division headquarters was at Greenham Commons Air Base near Newbury, the 502nd was located at Chilton Folette IAT near Hungerford, the 506th was located at Little Cold CATE also in the vicinity of Hungerford, and the 501st was AT LAMBOURNE a short distance away.

Utilizing the three noncommissioned officers and Mr. Dilburn as a training cadre, WE drew upon the available parachute units for approximately 10 men per regiment and preceeded to Welford Airbase and engaged in training with (51st and 52nd) Troop Carrier Wing. The officers that we worked most closely with, were Major Stan Cavel and Major ~~Bob~~ Robert Minnick of the A3 Section. ~~They~~ The/

were likewise concerned with the problems of providing accurate delivery of airborne forces to a drop zone and we were able to work out many of our problems through these officers.(Mutual organization of an airborne-Air Force) I want you to remember that at that time the Air Corps was a part of the US Army. Major Cavel and Major Minnick were very experienced pilots in civilian life; they had been with the air lines, they had at least 12,000 hours of flying experience and they recognized most of the problems of navigational, flying, etc.

We worked on the premises that it was necessary to have a definite system of marking a drop zone for day time landing and another system for night time landings. I want you to understand that all of this time I was working very closely with Capt Tate of the British Forces and Lt Chester, and later a Captain McRoberts, of the 82nd Division who were also going through the same process. Finally, Airborne and Air Force resolved a method of marking a drop zone in day time that would be by using the AP 50 flurescent panels that were then available to the Signal Corps, colored smoke and the AN/PPN. These panels consisted of orange (oohre) and red (cerise) panels that could be readily seen from a distance and they were to be laid out in the shape of a letter "T". The general conception would be that the LEAD aircraft would fly up the base leg of the "T" and give the green light or "go" signal as the aircraft passed over the bar of the "T". In order to bring the aircraft in to the general area on which they could VISUALLY recognize the panels and smoke, we were using at that time a "Rebecca-Eureka," the AN/PPI&2. The "Rebecca-Eureka" was a responder interrogator beacon which was activated from the aircraft. The operator in a C-47, (which we were using at that time,) would send (out) a signal which was received on one frequency by the instrument that we carried to the ground and transmitted back to the aircraft on another frequency.

The Theory was sound. The execution was faulty. There are very few troop carrier pilots with any experience in the Air Corps at that time who were willing to listen to an individual who was not qualified as a pilot. If the pilot or his assistant pilot was a senior pilot or a command pilot, he generally flew by his experience and he was very reluctant to listen to an individual who was a non-rated (who was) telling him how to fly his aircraft based on a new system of (radar) navigation. SOME of the individuals with whom

I have worked ~~most closely~~ with Major Cavett, and Major Minnick and, later, Colonel Stanton, were not this category and they would listen to their navigators. But this was a problem to overcome among many junior officers, ~~many of~~ who had been sent through a fast course of flying instruction in the states, ~~and come over to England~~ and had a minimum of hours flying time on the C-47. ~~but~~ They were fully cogizant of their position as the aircraft commander and were unwilling to listen to a non-flying officer who might be able to tell them where how to fly the aircraft based on radar navigation. We considered the "Rebecca-Eureka" a very accurate instrument, and it was available in the aircraft. It did require detailed calibration with the set used on the ground, but this was accomplished without too much difficulty. ~~At that time~~ we had a capable imaginative Signal Corps Officer, Major Hal Deery, who was able to boost the signal of the "Rebecca Eureka" from its accepted 15 to 18 mile range to 30 and some times 45 miles range. In the beginning we had the particular problem of how to get the ~~the~~ Rebecca Eureka ~~down~~ to the ground without injury. The instrument was not designed for parachute operations which meant that our riggers had to devise a carrying case that would allow the Pathfinder to get that instrument from the aircraft down to the ground and still have it in operating condition.

At the same time that we were working with the "Rebecca-Eureka," we went through many experimental ~~phases~~ tests of equipment for the drop zone. We had tried the carbide light of the 6th Abn Div; we had tried what was then known as the SE11, ~~which was~~ a signal light, but it was very directional. It looked like a Buck Rogers pistol and could be mounted on a tripod; it had a front and rear sight but it only had a 14 or 15 degree ~~of~~ angle of direction and therefore, was too restricted to be used with the aircraft. However, the SE11 was a step in ~~which~~ what we considered the right direction. We later used the tripod with our final product. Another light ~~that was~~ tested at that time was the plastic flashlight that the Military Police used as directional indicators. These are batons, the principle utilized being that plastic transmits light through its entire shape and the flashlight would provide the available source of light. However, these batons ~~had just come out~~, were in limited supply and ~~hard~~ difficult to obtain. The objective was to provide a light that could be seen from a distance of 2 or 3 miles and at least ~~at~~ from a height of 600 feet above the horizon but which would not been seen, or would be difficult to be seen, from ground level. Among other methods that we experimented with was taking the

TL 122 flashlight, forming a cone of copper wire around the lens and stretching over that cone of copper wire, a common rubber ~~substance or~~ item that was then a standard item of issue. This particular item of issue is not always mentioned in polite society or in mixed company. But when you take a very thin piece of rubber tubing and stretch that rubber tubing over the TL 122 flashlight that has a copper frame, you will obtain a reflecting substance that will be visible for a ~~great~~ REASONABLE distance.

We also used that standard issue, heavy duty delta light that had a reflector surface on its front and the railroad lantern type reflector on its top. The disadvantage of this particular lantern was that the reflector surface was too bright and the non-reflected, or railroad-type light, was to weak and the fact that they were unsuitable for dropping.

During this same period ~~of time~~ we were working with the British Branch Radiation Laboratory and after we explained our problem and set our requirements of marking a drop zone, they started working on what was later known as the Haliphane Zone Indicator Light. By this time it was in the spring of 1944, and I would like to digress ~~at this particular time on~~ to other problems that we ~~ran into~~ encountered.

The 501st Parachute Infantry Regiment had joined the ~~101st~~ Division ~~in England~~ which then gave the 101st Division organization 3 Parachute Regiments, 2 Glider Regiments, one Parachute Field Artillery regiment and ~~other~~ NORMAL supporting troops. We were ~~progressing through~~ TRAINING IN day and night jumps and all ~~of the~~ commanders were particularly concerned with the fact that ~~many day and night~~ MOST OF THESE drops were not being delivered accurately.

THE PATHFINDERS OR had no TO and TE. We would go through the process of determining what particular pieces of equipment we wanted to try to obtain and use, or test, most times it was in short supply ~~but~~ although we would go ~~down~~ WITH REQUISITIONS to the warehouses and supply depots who had ~~all of~~ this equipment, we were unable to obtain the equipment due to the fact that we had no TO or TE. G4 and Regimental S4s gave us as much support as they could, but when it comes to the fact that you have to ~~put on the bottom of a requisition form~~ CITE the authority for issue-and you ~~go back along the chain of command of supply specially when~~ ARE DEALING WITH those individuals who were not in the same frame of mind as either the Pathfinder Group or the staff of AIRBORNE division. IT CREATES PROBLEMS. At this particular time the division staff had many many problems. People in key spots had been informed as to where

and how the airborne divisions would be employed. Originally it was planned that four divisions, the 1st and 6th ~~of the~~ British, the 101st and 82d ~~of the~~ Americans would go into the general area of the Cotentin Pennisula of Normandy and it was merely a matter of who went where, when. Later on the British 1st was withdrawn from the planned operation and only the British 6th was involved. The 82d was to follow the 101st and then it was a matter of two ~~columns~~ Flights of PATHFINDERS preceding two ~~main~~ airborne columns into the Normandy, or Cotentin Pennisula. The British 6th was to be committed on the south in the vicinity of Caen and the 101st was to be committed north of ~~Serdden~~ CARENTAN, south of Saint ~~Marreington en Lieze~~ MERE EGLISE - followed by the 82d, in the vicinity of Saint MERE EGLISE. ~~So~~ Each regimental commander and the division staff was ~~then~~ engaged with the overall mission of the ~~101st Am~~ Division and the mission of the pathfinders, ~~although exactly not regulated to a second class citizen,~~ was not their primary concern. ~~At this particular time~~ In the spring of 1944, Wing Headquarters moved from the air field in the vicinity of our parachute ~~battalions~~ Regiments to the vicinity of the 9th Troop Carrier command at Bottisford, England. There we had what we considered an ideal situation of the pathfinders living at the same base, frequently in the same barracks, with the AF pilots and crews who were to fly the pathfinders on their missions. This makes for a strong organization, Eliminates ~~cuts out~~ travel time, creates closer ties and better esprit. At the time of ~~our~~ the move to Bottisford, ~~England~~, several additional groups and another wing arrived from the United States. Each individual group and wing ~~knew all the answers of every~~ HAD DIFFERENT SOLUTIONS TO problem of flying, marking of drop zones and parachute operations, AND THE RESOLVING OF DIFERENCES WAS TIME-CONSUMING.

We were still working on the problem of determining what particular pattern was going to be used to mark the drop zone, where the "T" would be placed and several other factors. This involved a conference at St Paul's School in London ~~in~~ AT which representatives of the British and American Air Forces were present ~~and~~ WITH representatives of the ~~the~~ Airborne Forces. The problem of laying out the T's, distance, location of the "Rebecca Eureka," the use of smoke or colored smoke and day and night marking methods were discussed. All of these factors were resolved at this conference, AND STANDARDIZED primarily due to an excellent understanding between Captain Andrew Tate of the British Airborne and myself. We both recognized the fact that the best way to sell our joint ideas was first to have a disagreement and then appear to suddenly realize

that maybe each of the opposite number has good points. We accordingly agreed before this meeting that I was to strongly push the spacing of the panel for the day time, the placing of the smoke, either at the bottom or the top, depending on the wind, whereas Andrew was to come in and stress the utilization of the lights, the spacing of the lights and the placing of the Rebecca Eureka. Captain Tate and ~~myself~~ I as well as Lt Joseph and Lt Chester of the 82d ABn Division, ~~had~~ It was resolved that the best and most accurate way to mark a drop zone was to place the~~m~~ lights and panels in a letter "T" with a SIXTY ~~normal~~ distance between them, ~~so that~~ the aircraft would fly up the stem of the "T" and give the drop signal as they crossed the bar. We would bring them in with the Rebecca Eureka ~~at~~ both day & night using coded signals, ~~and verify~~ the drop zone panels would form the "T" with colored smoke during daylight. ~~We were able to get exactly what we both finally thought was the~~ BEST method of marking a drop zone and from that conference, a manual was written on Joint Operations, British and American Airborne Forces. would also be manned

The Haliphane Zone Indicator light was still forthcoming from the British Branch Radiation Laboratory and also at this time they were experimenting with additional radar navigational aids. One of these aids was a BUPSB beacon that was operating on the "S" band frequency. ~~At that time~~ It was a very accurate aid but also a very delicate instrument. In order to get this beacon, the Haliphane Zone Indicator lights and other equipment to the ground we had adapted and utilized the British leg bag. This was basically a barracks bag of reinforced canvas with a buffer on the bottom that had a quick release device and was fastened to the leg of the paratrooper. ~~At that time~~ We were only using C-47s, which meant that we jumped out of the side ~~port~~ door of the aircraft and the leg bag was fastened to the right leg of the individual. This particular leg bag presented many problems. The canvas first usedwas not strong enough and consequentlyas ~~the~~ ONE swung ~~your~~ right leg out the door with equipment in the leg bag, and ~~you~~ dropped to the end of ~~your~~ the static line, and was suddenly arrested by a parachute opening, the equipment would frequently continue through the bottom of the bag. The problem was to build a bag of sufficient strength to carry the equipment that ~~we~~ WAS desired and still be of such construction that it would not injure the ~~paratrooper~~ above the paratrooper. The first leg straps were fastened around the ankle and calf. When you present a loaded leg bag of 50 pounds or more against the paratrooper's

all drops and the lights would be used at night.

calf as he swung his right leg out of the door and his descent was halted by the development of his parachute, most of ~~our~~ the paratroopers ended up with a "charley horse" and were unable to walk for a considerable time after landing. A strap was sewed to the front of the leg bag which the paratrooper held. This partially counterbalanced the weight of the leg bag. However, it did not leave his hands free to activate his reserve chute if necessary. If the bag, by force and momentum, tore loose from the hands of the paratrooper it was extremely difficult for the individual to raise his leg to where he could activate the quick release. The quick release was designed to drop the bag from the leg when 50 to 75 feet above the ground. It was fastened to the trooper by a static line secured to a ring of his harness. This had advantages and disadvantages. If ~~you were traveling~~ discerning in a wind and you released the bag prematurely, the bag would hang up in ground obstacles frequently trees, and act as an anchor and frequently leave the individual suspended on the side of the tree although he would be anchored by the leg bag to the top of the tree. This occurred on several occasions. If the leg bag was ~~dropped~~ released too high off the ground it interferred with judgement of exact landing area. The ideal situation of course would be to ~~drop~~ release the leg bag less than 50 feet above the ground but at such a point that it would not engage in trees or other obstacles and still act as an anchor when ~~you~~ one landed on the ground with ~~your~~ his equipment. ~~The bag would land on the ground,~~ the paratrooper would land ~~not to~~ with his equipment. ~~He~~ and merely followed the line that extended from his harness to his equipment. ~~About the~~ In the early part of May 1944 the pathfinders received the first shipment of ~~Ha~~liphane zone indicator lights. These lights had been hand produced with a precision lens which could be seen ~~brightly from~~ three degrees above horizontal but ~~could not be seen~~ were barely discernable on a horizontal ~~level~~ plane. They could be seen ~~from~~ brightly from that three degrees to approximately eight degrees above horizontal which meant that the aircraft approaching the light would be able to see it from the ~~required~~ desired distance, ~~if~~ when the power source was sufficient, until to a point where ~~he~~ the aircraft would pass almost directly overhead. ~~These~~ THEN THE brilliancy lights was reduced. had a metal shield that would permit the pathfinder to ~~direct~~ restrict the rays ~~to~~ to a forty-five degree angle to the expected route of approach. This eliminated the remaining portion of ~~the compass~~ the right, the rear and the left side of the direction of flight and gave a maximum security as far as ground observation was concerned. The lens

were made of glass, which meant that they had to be carefully packed and stowed in the leg bags in order prevent breakage upon landing. The source of power was a wet cell battery, and although the British had made considerable advances in the development of a compact wet cell battery, still persisted with the problem of acid, and the possibility of injuring the paratrooper or destroying the equipment if the container was broken upon landing. The problem of carrying these Heliphane zone indicator lights was partially resolved by utilizing new at that time was called the "grenade bag" and which were a standard issue for the paratroopers. These were bags of heavy canvas about the size of the container for a double E8 telephone. It was determined that no more than four men of a stick should jump with a leg bag because of the time factor of exiting from the aircraft, so our rigger[3] reinforced the grenade bags and each man of the stick that was to carry lights, was equipped with this particular equipment bag. The Heavy equipment such as our personal weapons, the BUPS beacon, and the "Rebecca Eureka" were all packed in leg Bags at the head of the stick. the Rebecca-Eureka was jumped with a special rigging Secured just below the reserve parachute. Pathfinders

Now at this time I would like to go back to the relationship that we had with the Air Force. We were stationed at Bottesford in the Midlands of England where we were working with the IX Troop Carrier Command. The individuals that worked most closely with the Pathfinders were members of the A-3 Section of the Troop Carrier Command and they had many additional duties. They were engaged in flight training and proficiency and they could not devote their full time to pathfinder activities. We were recalled to the 101st Div Area and trained with our parent units. In March of 1943, General Lee suffered a heart attack, was hospitalized, and (then Brigadier) General Maxwell D. Taylor came from the 82d and became the Division Commander. About this time Colonel Joel Crouch and a group of pilots who had been working on the pathfinder techniques from the airforce standpoint, under General Paul Williams, were activated as the pathfinder group (Provisional) of the 9th Troop Carrier Command. The Pathfinder personnel of the 101st and 82d Divisions moved to a new airfield at Northolt, in the Midlands, where the paratrooper pathfinders, and the Air Force pathfinders trained together. Colonel Crouch was the Commanding Officer. Lt Col Blair, later Governor of Missouri, was the Executive

Officer and Capt McRoberts commanded the 82d Division Pathfinders. Each stick of pathfinders was assigned a ~~permanent~~ aircraft, a ~~permanent~~ crew. They lived together, they ate together and shared all the base facilities. When they flew, we flew. When the aircraft was grounded for maintenance we conducted ground training. This was an ideal setup of an airborne-airforce crew. These people recognized our problems. In fact, at this particular time several of their pilots went through a provisional jump school and were able to qualify as parstroopers, including day jumps and night jumps. This, we believed at the time, and I personally still do, makes for a better and more mutual understanding. Also during this time ~~the 506th Regiment had arrived in England~~ we received reinforcements ~~of individuals~~ from the 501st, their officer in charge was Captain Frank Brown.

They ~~arrived~~ with a team representing each battalion. We had undergone many organizational changes to this point and our final structure in the spring of 1944 was based on a stick, or team, of twelve men per parachute battalion, supplemented by a ~~provisional~~ unit from the 377th Parachute Field Artillery and the 517th Engineers. This gave ~~us~~ the 101st Division a total of eleven sticks, where originally we had been set up to send a single stick in for a parachute regiment it was decided to send in three. ~~At this particular time~~ Some commanders were under the impression that we only had a fifty-fifty chance of succeeding so we had better send two where one might be able to do the job. We backed this up by preparing three sticks, or three teams, per regiment, or one per battalion. The ~~tactical~~ structure ~~at that time~~ was three battalions per regiment and a stick represented each battalion. ~~But~~ The planned employment of the 101st Airborne Division ~~was such, that~~ when committed in combat, as Normandy we had the 502d Parachute Infantry with the 377th Parachute Field Artillery Battalion in direct support and one company of engineers from the Engineer Battalion, scheduled for one drop zone, ~~and similar task forces at the other D.Z.~~ Each commander was obviously interested in having his own pathfinders on the ground of his D.Z. ~~and this is a point I very strongly go along with.~~ I believe The man on the ground should, if possible, be of the same organization as the unit that is coming in by air. ~~because of closer bind to the people that you worked with earlier in your training.~~ The 502d was to drop in the vicinity of San Martin deVeriville, secure the high ground covering the beaches, destroy the gun emplacements

in that particular area and prevent movement of the enemy against the beaches. The 506th PARACHUTE Inf Regt(-) plus Division Headquarters and one battalion of the 501st parachute regiment was to land in the vicinity of Hiesville, ~~so~~ this necessitated two sticks representing two battalions of the 506th and one unit of the 501st going into ~~that particular~~ the Hiesville drop zone. ~~At~~ IN the south ~~of our~~ sector, near St Com du Mon, ~~in Normandy~~, we were to send in two battalions of the 501st plus one battalion of the 506th. ~~Each of these units were supported with artillery, therefore,~~ In order to ~~make~~ ORGANIZE each pathfinder group ~~similar~~ ACCORDING to the unit that was ~~coming in on that particular~~ scheduled for each drop zone, we had to change the organization or ~~our particular~~ VARIOUS stick; including engineers, artillery NOW and obviously paratroopers from that particular regiment ~~that was~~ scheduled for that drop zone.

In addition, ~~our~~ mission included marking a ~~drop~~ zone for ~~the~~ gliders and ~~the~~ this required ~~one~~ remaining ~~stick in~~ a provisional stick ~~including~~ parachute artillery and engineers. They would have no initial mission but would have a commitment at approximately four o'clock in the morning.

Returning to the Airborne/Air Force relationships, ~~we lived in the same area,~~ although we thought along different lines in some activities, we generally agreed that we had a mission that required coordination. We were on a special diet ~~of high caloric content~~ which included vitamins to assist our night vision. Everytime we sat down to the table for a meal it was ~~necessary for each of our individuals to~~ REQUIRED that absorb vitamins which the Air Force Flight Surgeon had prescribed necessary for night vision. Much of our training was being done at night, ~~at this time.~~ ~~At this~~ We were averaging five to seven jumps per week, including night jumps, and our air force crews were ~~improving their ability to navigate~~ and to find a particular point with a particular serial numbered radar set. Aircraft ~~C-47~~ was calibrated with a ~~particular~~ numbered radar set, ~~their~~ frequency ~~was tuned just~~ as fine as possible. In order to test the ability of ~~a~~ particular aircraft, ~~on one occasion, for example~~, we put the Rebecca Eureka in the back of a jeep and drove ~~along the road~~. The aircraft ~~theoretically chased~~ the jeep by the ~~pilot listening to the navigator as he directed right or left changes.~~

We also had rehearsals ~~at this time~~ for the invasion. There were several that specifically come to my attention. One was a night drop where the pathfinders were to drop at 11:30 PM while the main drop was to take place at 6:30 or 7:00 the following morning. ~~At this time a particular~~ problem arose that we had not envisioned and which was later brought to my attention many

times by cancellations of missions. On this particular night drop ~~at night (at 11:30)~~ ~~which was~~ in the vicinity of ~~Greenfield~~ Chagnham Commons, near Redding, we went in with our pathfinder ~~planes~~ prisoners, completed the personnel drop, had a very successful reorganization and ~~got together and~~ spent the rest of the night under cover in ~~in~~ the vicinity of the ~~scheduled~~ Drop Zone. Rapid

I would like to mention ~~at this time~~ here a technique that ~~the~~ our pathfinders used ~~at that time~~ with the T7 parachute. The man on each end of the stick was designated "roll-up-man" and a center man on the stick was designated as a base man. We prided ourselves with a fast exit and ability as paratroopers to "steer" the parachute. As we went out the door we were ~~spread~~ dispersed, due to the speed of the aircraft, in an elongigated pattern, ~~therefore~~, each man on the end of the stick would slip toward the center while dropping and also assembled on the center man on the ground. This made for a small pattern and the center man was also the ~~man~~ individual designated to carry ~~the~~ our primary piece of special equipment, the Rebecca/Eureka. We carried two ~~pieces~~ of each item of equipment. Everything was backed up. On this particular night problem previously mentioned, we dropped in clear bright moonlight, which incidentially was very similar to our drop in Normandy, assembled, found our objective and then sacked up with one man standing sentry ~~on~~ for one hour intervals. However, as was and is, very common in England, the fog came over at four o'clock in the morning at the take-off airfields and although the drop was scheduled at 6:30 and 7:00 it was impossible for the air force to fly. At approximately 10:00 that morning we were still waiting. We had had our instruments on for hours, ~~and we~~ had a limited power supply and our batteries were running down. With no radio or wire communications, No one had bothered to notify the pathfinders of the cancellation of the mission. This ~~could~~ can present a very serious problem. We finally ~~were able to send~~ sent two men on foot to a nearby installation where a phone call to the air field informed us that the mission had been cancelled.

Another problem that we ~~ran into~~ encountered during a test concerning landing zones which we participated in in Southern England. This test was to determine the saturation point of gliders into small hedge row-type fields and the problem of marking particular release points for aircraft to turn their gliders loose. The British, had developed a templet which one could place on a map and based on

WIND direction and the size of the drop zone, determine the release point if the aircraft released the glider directly over a marker beacon, or in our case, the Rebecca Eureka. The pathfinder was trained to go into that ground, determine surface the/wind, winds aloft and mark the landing zone and designate the release point.

At this ~~particular~~ exercise in southern England we ran into several difficulties. ~~problems.~~ The first was the utilization of white smoke. On this particular day, many there was white smoke Englishmen were burning off the straw of their farms. We determined that all over the country-side - also gliders. utilization of white smoke is not practical for Pathfinders in combat operation due to the fact that artillery or mortar shells will also produce similar smoke as well as ~~including~~ fires, ~~and confuse the pilot~~. We have got to give them a definite, distinctive marker. We ~~used~~ SUBSTITUTED colored smoke which we trailed from jeeps and PASSED by hand that were to mark the general outline of the landing area; however, we discovered that the smoke grenades available at that time did not emit a cloud thick enough or fast enough to SATISFACTORILY mark the outline of ~~the~~ A drop OR LANDING zone, ~~or~~ unless many individuals were simultaneously employed over and a widely dispersed pattern, USING A LARGE NUMBER OF GRENADES.

This particular drop and landing was very interesting. It was the first time I witnessed the landing of a bulldozer in a glider and it also showed that gliders ~~have~~ HAD to have considerable more landing area than we had originally planned for. ~~at that time.~~

A small bull dozer had been losded into a CG4A glider and this was about the maximum load that this type of glider could carry. The only passengers were the pilot and co-Pilot. The bulldozer was secured for flight and to the rear pintle of the machine was secured the cable release that raised the entire front section of the glider. The CG4A was hinged at the top, OF THE NOSE just in back of the pilots seat and to unload cargo, the front was propped up, or AS in this case, after landing, the vehicle or machine was driven forward, AFTER TIE-DOWNS WERE RELEASED which in turn pulled open the front section of the glider.

As this particular glider came into the small field for A landing, he was traveling too fast ~~to stop~~ and, realizing that he was about to crash, attempted to go between two large trees. The body of the glider went through the trees but the wings did not and the glider came to a sudden halt. The force of the stop apparently broke loose all the bindings AND TIE-DOWNS of the bulldozer except the cable attached to the opening, ~~and~~ As the glider stopped, ABRUPTLY the bulldozer didn't. In the space of a fraction of a second, the glider stopped; the front opened; the bulldozer slammed out underneath the startled pilot and co-pilot and then, as the cable snapped, the

front dropped back down into place. There was the glider, securly halted against the trees with its cargo approximately twenty-feet in front of it and the uninjured pilot and co-pilot still strapped to their seats.

It is rather comforting to realize that we don't use gliders in the airborne anymore.

Another interesting drop was one that was scheduled just prior to the Normandy invasion in the latter part of May. This was a night drop and it almost caused a complete change in our Pathfinder personnel. We were to land south of Wellford Air Base, north of Hungerford and mark the drop zone. There was no moon this particular night and it was extremely difficult to judge ground landing. On this particular drop I took my people in, and in the presence of Leigh Mallory, Chief of the British Air Force, almost got cancelled out of the main event. Although I thought I was just above the ground, I decided when I popped my chute that I wasn't, and then all of a sudden the ground caught up to me. I tore several ligiments off the inside of one leg, And thought for awhile I was going to be sidelined.

I had been briefed at this particular time as to general time and place where our people were to be employed. Likewise I had been briefed on the British plan and I realized that each of use were to go in on parallel routes.

~~As a Junior Captain,~~ the magnitude of the security problem ~~really impressed me.~~ Up to this time ~~they had~~ only ~~briefed~~ Regimental Commanders and ~~senior~~ ~~divisional~~ staff officers. I was obliged, in order to ~~train our people~~, to give ~~certain of them~~ details of the briefing and ~~them~~ after I had briefed them I had the constant ~~problem of~~ worrying whether security would be violated.

This was exemplified by a situation at North Witham when one of my Lieutenants, ~~commanding a stick,~~ ~~went into~~ blackedout Nottingham. Although ~~I had said that every man~~ would travel in pairs ~~for security reasons~~, for some reason he was separated from his partner and was struck by a vehicle, sustained a broken leg and other injuries and was taken to a military hospital. ~~When it was finally brought out who he was~~ His sense of security was so strong that he ~~absolutely~~ refused medical attention until I was notified. I was able to get a man ~~in there~~ to him who stayed with him ~~all the time~~ he was under anesthetic to make sure that he did not talk while ~~he was undergoing medical treatment~~ and ~~disclose what he knew of the plans of operation.~~

Another security problem ~~that we ran into~~ occurred on the 4th of June. We were ~~stationed at that time~~ at North Witham Airbase. On one side of the field was an Air Force supply depot on which we relied for our administrative support, pay, supplies and so forth. Division had increased our mission, ~~at the last minute~~, and ~~said~~ that we ~~would~~ take in ~~so many~~ mines and ~~prepare roads for~~ demolition ~~and mining and~~ I had put in a requisition ~~to this depot~~ for ~~the~~ ~~three~~ mines to be delivered to the gate of our ~~screened~~ inclosure on the 4th of June. We had originally been scheduled to go into Normandy on the 5th of June, Late on the afternnon of the 4th, I was ~~engaged~~ in the Orderly Room, ~~in~~ paying off my men with French money, when despite our security precautions, ~~the~~ sergeant came in from the opposite side of the Air Base with these mines and said he had orders to deliver them to Captain Lillyman. He came ~~through~~ the sentry, walked into the orderly room and there I was paying off my men in French money. I realized immediately that this was a ~~security violation~~ and although he ~~had been duly fully picked, and~~ was their Chief non-commissioned officer I had to lock him up and he stayed locked up until ~~after~~ the 7th of June. Obviously, his section chief on the other side of the field was very concerned ~~as to where his men went.~~ I could not tell him nor would S-2 tell him nor why he was locked up. He was concerned about the fact that someone had "kidnapped" his sergeant and it created a rather embarrassing situation.

I would like to MENTION another problem that came up at this particular time. All of our personnel were of the belief that they could obtain better individual protection if they were armed with a Caliber .45 pistol. I have mentioned earlier that we had no TO&E, no authorization for equipment and were also undergoing changes in the airborne division that proposed only fieldgrade officers and military police be armed with pistols. However, all of the members of the Air Force who were flying missions were equipped with pistols. Likewise, all members of the Air Force were very desirous of obtaining jump bootswhich, theoretically, no one except the airborne could obtain. ~~(As I mentioned earlier we had mostly privates because commanders would not give us rated personnel)~~ One of my more enterprising,acting noncommissioned officers was able to requisition, over jump boots for everybody in the Pathfinder group. He took these jump boots to an Air Base and was able to swap them with the pilots for their Caliber .45 pistols. They were cheap because they could write off a pistol every time an aircraft went down,whether the pilot and crew were armed or not. He obtained sufficient pistols for each of the men to be individually armed ~~by swapping boots for guns~~, however, in early June, about the second or third, the CID obtained wind of the transaction and conducted an immediate investigation, ending up at division where they demanded a full explanation. The CID wanted to interview the sergeant, or acting sergeant in this case, who was responsible for the procurement of these pistols. Major Gregory, Air Provost Marshal, and I were able to stall off the CID saying "if you will come back on Tuesday or Wednesday I will have this man available to give a complete statement". To the best of my knowledge that CID agent is still waiting for that complete statement.

We were also running into mail problems, clothing problems, and other administrative problems. Some of my individuals may not have been the finest examples in the Army as far as administration and discipline went, but I personally think they were the best fighting soldiers the United States Army had at that time. Somewhere along the line, they had run into problems of not paying bills; not all of the officers had properly cleared a post or an officer's club when they left the station and similar situations, and all of a sudden, all of the correspondence connected with these administrative details caught up with us, but they all caught up with us, simultaneously about the first of June, With the usual indorsement that, "You will explain by indorsement hereon why the individual aforementioned

It would have required a small AG section to ANSWER that mess of correspondence so it was

has not completed his requirement". All I packed ~~all this administration~~ into one envelope, addressed ~~it~~ to the Commanding General of the 7th North East Pacific Command, APO some number and stuck it in the mail. I have not heard a word from it to this day. I hope someone got all of their administrative questions answered. I wasn't worrying about it, I had too much to do.

We had our first dry run on the 5th of June. This was very touchy. Again the Pathfinders are the last ones to get the word. We were supposed to take off at 9' o'clock in the evening. ~~We finished dinner, we were not allowed to tell anybody that we might not see them again and in our consolidated mess we had only so many individuals who were briefed and involved in the mission.~~ After the evening meal We finished our supper, went back to our barracks, drew all of our equipment, camouflaged our men with face coloring and ~~brought our equipment down to~~ LOADED the aircraft and sat there, sat there and sat there. Finally the cancellation of the mission came through and we went back to the billets. In the meantime, many BASE ADMINISTRATIVE individuals had been driving by the flight line and had seen us in obvious battle uniforms, ~~Well, they all said~~ AND NOW, of course the Pathfinders are about to take off, ~~and this presented a security problem~~.

I cited this and the other administrative problems because I want ~~all of you to realize~~ TO STRESS that our "growing pains" were numerous and until a Table of Organization and a Table of Equipment and mission was provided, the Pathfinders were always EXPERIENCING ~~going to run into~~ problems, administrative and otherwise.

On the fifth of June, after a twenty-four hour cancellation, we again prepared for take-off while it was still daylight. We loaded the aircraft and I was able to go down the line and visit each ship. We took photos of each crew, and incidently, in the meantime they had added, from each of the regiments, a security group. It was decided that our little twelve man paratroop sticks might not be able to take care of ourselves adequately so we added to MANIFESTS our aircraft ~~so they had loaded~~ with S-2 personnel, advance reconnaissance people and security personnel who were to protect the Pathfinders.

I have no records of any of this protection ever being utilized, nor did I ever see any of these additional personnel until long after we landed, so I do not know whether their employment was successful or not. I do not consider any of these additional personnel necessary or required, ~~in fact~~ they necessitated ~~hindered the mission because we had to~~ change our loading plans, Added to our existing problems and they did place a burden on us, administrative and otherwise. ~~The misplaced~~ They also ~~a problem to us tactically~~.