

AIR DROP SUPPLY OF A LONG RANGE PENETRATION UNIT

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Appreciation is expressed to Lt. Col. LOREN D. PEGG, currently serving as the Executive Officer of the Communications Department, The Armored School, Fort Knox, Kentucky, for documenting this Monograph. Lt. Col. PEGG, then serving in the grade of Colonel, was the Commanding Officer of the 124 Cavalry RCT during the latter stages of operation in Burma in 1945.



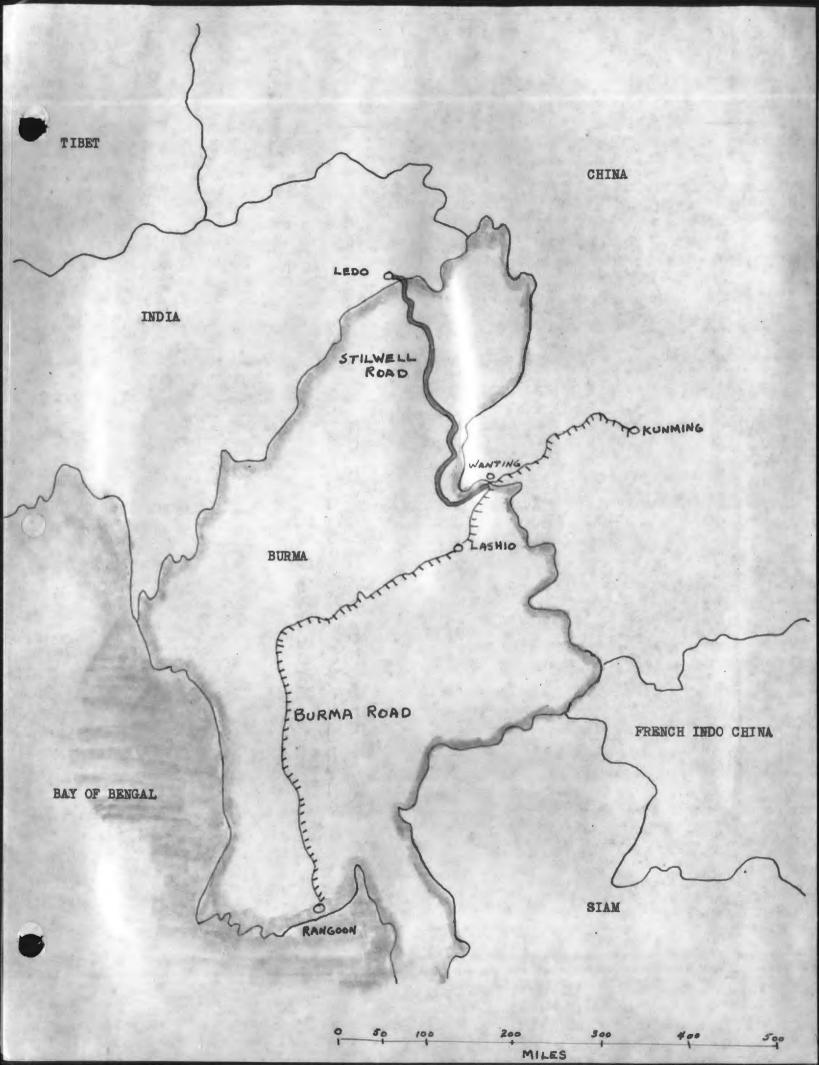
AN EXCELLENT DROP-FIELD

This drop-field was used by the 5332 Brigade, Provisional (Mars Task Force) as their only supply point during combat in the Central Burma Campaign.

SECTION I

As the speed of modern war increases it becomes more and more apparant that in order to take full advantage of all opportunities for exploitation it is necessary to have some method of supplying these fast moving columns. It is easy to visualize an armored division, or any other major unit, as far as two hundred miles or even more beyond the reach of normal supply procedure or what is called "behind the enemy lines." The expanding use of aircraft for this supply function is a natural outcome of the improvement in the technique of employment of transport aircraft; and because aircraft are not hampered by lack of roads their use in supply is obvious.

My personal experience is confined to one unit of regimental size which operated "behind the enemy lines" for a period of three months with air drop the only source of supply. As the problems involved with the supply of this unit are rather similar to any other unit under the same conditions it is felt that something may be learned from a study of the air drop procedure used by the 124th RCT which operated in Northern and



of 13 divisions (approximately 30, 000 troops)
north of Lashio, the cutting of this road would have
had a most detrimental effect on their operations.

The original plan was to move this force by glider from Myitkyina to Lashio, (air-line distance - 200 miles) but this was abandoned because no suitable landing zone could be found and it was felt that the landing casulties would make that type of movement uneconomical.

The decision was then made to march cross country to the west of the Burma Road and suddenly appear astride the road north of Lashio. The ground distance was approximately 300 miles. This was done and complete tactical surprise was gained. This surprise was possible because of the terrain. Northern Burma is one of the few remaining portions of the earth's surface that is completely isolated. It has some of the most formidable terrain in the world. Dense jungle, innumerable streams, towering meuntain ranges running in all directions and absolutely no communications. Elephant trails were used in liquid and mountain sides. As an example of the difficult terrain, one night we bivouaced at an elevation of 500 feet and the next night at

7200 feet. There were no roads of any description and of course the country was impassable to vehicles of any sort. This brought about the necessity of an unusual supply procedure.

The only workable supply method in this terrain was air drop. This was used throughout until a large air field at Lashio was taken, at which time supplies were landed there and packed by mules to the troops.

Air drop supply proved very successful and this force could have operated indefinitely on this system. It must be remembered however that we used no fuel or lubricants, and only a minimum of 75 mm howitzer artillery. The two regiments that composed the Mars Task Force were the only American ground force units in the entire theater. The supply of these two regiments taxed the rather limited resources of the C.B.I. Theater to the utmost and it is extremely doubtful if many more units could have been so supplied, and still accomplish the theater mission of supplying the Chinese armies. We did prove that if a country is willing to stand the expense, and can maintain air superimpity, they can operate entirely independent of ground supply lines.

The following rather detailed description of the functioning of the air drop supply system will be discussed from the viewpoint of the ground unit being supplied rather than the supplying units.

A brief description of the supply bases is necessary in order to understand the complete system.

These bases were located in eastern India at the railheads, ports, and large air fields that dotted the Indian provinces of Bengal and Assam. The bases were practically due west of the area in which we operated so the airline distance was always between 300 and 400 miles.

Supplies were unloaded at Calcutta and moved by rail and truck to the air supply bases where they were properly packed for aerial delivery by the Combat Cargo Command of the Air Transport Command. They were packed for delivery on call and it was routine to receive an air drop within six hours after requesting it. I do not know what miracle of organization and planning eccurred at the air bases to accomplish this in such phenomenal time but that could be the subject of some very interesting and productive research. The Air Transport Command was responsible for the supplies from the time they were delivered to them until the

aerial canopies opened above the troops on the ground.

Because the ground troops were going to have to live on the air drop supplies, they determined what was to be dropped. As we had nearly 3000 men and 2000 mules, rations were of course a major item of supply. As each animal needed a minimum of ten pounds of grain per day, grain in itself accounted for ten tons per day of air drop.

Grain was always free dropped and was packed in twenty pound bags, and three of these packed in one large bag. The impact of 60 pounds was great and it was found that by placing three small bags inside a larger one it could be free dropped. The small bags would break open but the large one would not. I will cover the dangers involved in a free drop later.

As far as rations were concerned it was of course obvious that the regular "B" ration could not be supplied. Among other apparant reasons we had no stoves or cooking utensils. It was decided that "C", "D" and "K" rations reinforced with canned fruit juice, canned peanuts, and vitamin pills would suffice and we developed two standard ration units called the "Therapac" and the "Fourapac".

The "Therapac" was three day's C rations for one

man, plus 1 16-ounce can of fruit juice, 4 D ration chocolate bars, 1 medium size can of peanuts and 4 packages of cigarettes. The "Fourapac" was 4 day's K rations for 1 man, plus the peanuts, fruit juice, cigarettes and vitamin pills.

bag and about 40 of these bags packed in a woven basket for attachment to the parachute. You may wonder why we settled on this system. There is a definite reason. That is all a man can carry in addition to his regular load. As we couldn't receive an air drop every day due to the scarcity of air drop fields and because of the labor involved in a single drop, we received an air drop every three or four days and had to carry the rations with us.

We rested one day in seven in order to rest men and animals and let everyone catch up on his own "first echelen maintenance". The drop before this rest day was "10 in 1" rations, which we found to be a wonderful break in the monotony of "C" and "K" as well as a fine morale factor. I strongly recommend that in the future units of this type be rationed entirely on "10 in 1", if possible.

We found that the "C" ration reinforced would

keep men strong and healthy while doing the hardest kind of labor for indefinite periods. The "K" ration would undoubtedly do the same thing, but after about 20 days of nothing but "K" rations we found that men could no longer eat them three times a day. I have seen a man become violently nauseated merely watching another man open a box of "K" rations. When we were forced to exist on "K" rations for 20 days we always stopped and received a "10 in 1" frop regardless of the tactical situation.

During the march the tactical situation was such that we could pick our own drop fields and in general dictate the air drop procedure. This procedure in general follows. The day before the drop was to be taken we would notify the base by radio giving them location, time, present weather, and enemy activity. When we arrived at the drop field the S-4 section put down their recognition and wind direction panels and waited for the aircraft. The communications platoon would make contact with the aircraft while they were some distance away and would "talk them in" to the panels. The lead plane would come over and commence dropping immediately from as low an altitude as possible - usually between 200 and 500 feet. The

remainder of the planes would follow quickly behind unloading at the same place as the lead plane. They could unload 14 large bags of grain or five parachutes on one drop so they would have to form a traffic pattern around the drop field in order to discharge their complete load. This pattern was of course up to the Air Corps and our only connection with it was to warn them of ground fire from enemy positions over which they might fly. When the last plane made its final circle we were notified and immediately began clearing the field.

The drop field was cleared on the march in the following manner. The S-4 arranged to have a detail of about 75 men at the field when the drop was over. These men arrived with one mule per three men and brought their arms and machetes (a long, wide knife used in cutting brush.) The S-4 designated collecting points for grain, rations, and equipment (including clothing.) As he knew how much of each class of supply was expected he broke up his detail accordingly: so many men collected grain, so many rations, so many equipment. When it was all accumulated, the S-4 balanced what was collected against the needs and immediately broke it down into separate piles for

for each troop and notified them as to the breakdown.

They then distributed it to their platoons where it

was further distributed to each individual man in

his own troop area. This sufficed on the march

where nothing was dropped but food and the equip
ment that wore out on the march.

After we arrived at our position on the Burma Road and the entire force was committed to action, the preponderance of weight and bulk was ammunition. The physical possession of the drop field was in doubt, so a different system was used.

The problem was made more difficult because of the small arms fire the drop planes received while dropping, which forced them up to an altitude sometimes above 1500 feet resulting in a very wide and extended pattern on the ground. The drop field itself was a large rice paddy approximately one mile wide and six miles long and for a period of nearly a month there were drop planes over this field every daylight hour. This resulted in a rather astounding tonnage delivered by air drapl. In principle, clearing the field in combat was much the same as when not in contact. There was, however, one big difference.

Before the system would work well the field itself

had to be taken and be in our hands completely and then the drop field detail had to be protected while at work. We will discuss this organization later.

After the situation became more or less stable and we were no longer marching, it became possible to use the parachutes and wrapping material quite extensively. The S-4 had the parachutes and all containers folded and stacked in two piles and when the Japanese in that area were annihalated we were able to become quite comfortable under paracaute tents. Soft beds made of parachutes and tarpaulin, screened in and covered mess halls of silk and nylon and other luxuries added to our comfort.

The above general discussion outlined the "make up" of the 124th Cavalry RCT, the mission of the "Mars Task Force" and the supply problem, and how it was solved. From my experience with this unit I say again that if a country is willing and able to stand the expense and can maintain air superiority it can keep a fighting force in the field anywhere on the face of the earth. It must be remembered however that the cost in money alone is fantastic. I cannot recall how we arrived at the figure, but I remember once during a lull in the fighting we figured out

that it cost the United States \$100.00 in 1945 to put one "K" ration in the hands of one hungry soldier in Burma.

SECTION II

Lessons Learned

In this section I will outline and explain some of the many lessons learned, mistakes made, and short cuts involved in supplying a unit by air drop.

1. In jungle or heavily wooded terrain it may become necessary to have dropped a great deal more than is actually required to resupply a unit. I remember one rather harassing experience where weather and terrain combined to keep one squadron of the regiment out of food for nearly a week. We had just crossed the Shweli River, a rather formidable stream about 300 feet wide and 10 feet deep. Through the centuries this stream had cut a wide valley in Central Burma. Both sides of the valley were very steep and the entire area was overgrown with dense jungle growth. This was early in January 1945 and the time of the "mid-season monsoon", a fourteendday wet period in the middle of the standard seven month dry season. The sky was gray and low hanging clouds kept visibility at zero. The Combat Cargo Command attempted twice a day to drop rations and grain but could not. Finally in desperation they dropped, on radio signal from the ground, four days supplies of which less

than 10% were recovered. One man was killed as a result of being struck by a free dropped 60 pound sack of grain. The only solution was to get to higher ground which would endanger the unit from a security standpoint but which enabled the air corps to keep us supplied.

2. In moving to a meeting engagement it is necessary to have a pre-arranged emergency drop set up.

This drop must contain artillery, mortar and machine gun ammunition, engineer entrenching tools, medical supplies, and extra signal equipment. This was necessary because of the limited amount of the above supplies and equipment that could be carried.

We set up a pre-arranged drop in the following manner. When contact became imminent we notified the air base to prepare it. The Combat Cafgo Command loaded the aircraft from the list we had previously funnished them which was of course heavy with ammunition. The aircraft then stood by on ground alert waiting for our call. We communicated directly with the air base and when we called for the "E Drop" it was there in four hours!

This resulted in a large number of aircraft being withdrawn from possible use for about ten

days. This wastage of aircraft was one big fault in the system, but remember we had no transportation except mules and it was physically impossible to carry enough ammunition for defensive combat or a large scale coordinated attack. Bear in mind also that an armored unit operating anywhere its track vehicles can go, can carry this bulk of ammunition with it in its combat and field trains.

The principle, then, is this: if the exploiting unit cannot carry the necessary reserves of ammunition, there must be a pre-planned method of re-supplying them in a very short time.

to lead the supply aircraft to it. We used the "Rebecca-Eureka" radio sets and they worked perfectly every time. It is also advisable to have some ground marking system to mark the drop field both day and night as a night drop of supplies will sometimes be necessary. There should be some system developed that would enable the drop planes to unload their supplies accurately when visibility is poor or the meanther makes the ground invisible. With the equipment we used it was impossible to drop accurately enough in bad weather to insure recovery by the

ground units.

4. The drop field crews must be organized before the drop starts with definite duties assigned.

When we were not in contact with the enemy each organization furnished a prorated share of the drop field personnel. When we were in contact, the drop field crew was a permanently assigned crew from such groups as horseshoers, cooks, and other people whose absence from regularily assigned duties would not lower the combat efficiency of their units. These men were organized into three types of teams:

- A. Teams of five men and two mules to disengage the parachutes from the supplies, and pack the supplies back to the distribution point.
- B. Teams of three men and one mule to pack in the parachutes.
- C. Drop field guards, to protect the field from the enemy and to keep our own troops from rifling the food packages are essential. It is entirely possible that the only usable drop field will not be entirely in friendly hands. This happened to us in January 1945. The only possible

drop field was a rice paddy located in a valley about two miles west of the Burma Road. The Japanese were dug in on the hills west of the valley and we were on the high ground east of it. Both forces sent out teams at night to retrieve essential supplies. The Japanese would take only food while we had to get ammunition and food. This went on for about ten days while we built up a sufficient ammunition supply to launch an attack to take the western hills and deny the enemy observed fire on the drop field. After the success of this attack, the drop field was cleared daily under sporadic, inaccurate artillery fire.

The principle involved is this: the main effort of a unit whether it be attack, defense, or even supplying itself must be supported by the entire unit or at least the bulk of it. In the example given above, the attached artillery battalion and automatic weapons of all squadrons and troops gave the teams clearing the drap field continuous fire support. The teams themselves would be reinforced

at times with a platoon with the mission of physically protecting them as they went about their business of "harvesting the drop field."

5. Recovered parachutes and packing material are very useful. In a situation where there is no transportation to carry such items as bed rolls, tents, extra canvas and blankets, personnel of a command have no way of protecting themselves from the ele-This was forcible brought home to me during the time of the mid-season monsoon of 1944-1945. This period was a miserable one, physically. The temperature at night was in the forties and rain fell incessantly. It was impossible to keep dry and even at that moderate temperature the cold was intense. This was during the period when no air drop was received, and consequently no parachutes or canvas were available. The factor involved, of course, is the drastic lowering of unit efficiency due to respiratory diseases and the common cold. It was indeed a frightening thought to a commander to be 200 miles behind the enemy lines with his command and no possibility of reinforcements or replacements and no way of protecting themselves from the elements. Add to this the fact that during

this period the non-effective rate rose sharply due to sickness, medical care was extremely limited, and there was no evacuation.

All of the above is brought out to show that
the proper use of the recovered parachutes and packing material, when they are available, for shelter
and additional bedding is a decided factor in the
accomplishment of a mission. Parachutes and packing material can, of course, be used for many other
things than tentage and bedding. Such things as
litters, light-proof shelters, sovering for perishable supplies are just a few uses. If a unit has
a sufficient quantity of them their use is limited
only by the ingenuity and resourcefulness of the
unit's personnel.

6. Security of the drop field is essential.

It is unlikely that a drop field can ever be left entirely unsecured. With the field covered with parachutes and valuable supplies and food it is ablutely necessary to protect it from the enemy, local inhabitants and our own troops. This protection must be continuous. I have already covered the protection that must be given the personnel clearing the field. All local inhabitants must be kept away

a problem due to the fact that in nearly every instance there were noticeal inhabitants. We must protect the supplies, and food especially, from our own troops. The point might be raised that if our own men pilfer food from the drop field no over-all loss will occur because they eventually get the food anyway. The fallacy there is this: in any kind of ration whether it be "C", "K", "10 in 1" or anything else there are certain items more desirable than others and men will waste and ruin entire boxes of rations to get that one desirable item. Our biggest trouble with this matter was the theft of the canned fruit juices that were used to supplement the rations.

I have already covered the necessity of keeping the drop field from observed artillery and small arms fire. There is another type of security that is a "must". That is security of the airplanes dropping supplies. The aircraft that dropped our supplies were either C46 or C47 aircraft. They had to fly at very low altitudes and no faster than 125 miles per hour. They are large, rather cumbersome craft and make choice targets for enemy fire of all kinds from the ground. There are many ways of providing

security from this type of enemy action. If protection is not provided and the supply craft are receiving heavy fire their solution is to move up to a higher altitude and step up their speed to around 175 miles per hour. This results in a greatly dispersed ground pattern and a very high factor of parachute failure with resulting "free drop" of items that are destroyed when they high the ground.

The best protection of course is to have the drop field far enough away from the enemy so that the aircraft will be out of range of his weapons. This can be done by either originally setting up the drop field far enough behind to accomplish this, or pushing the enemy back. We used both solutions, the principle being that the physical location of the best drop zone sets the pattern and ground units must modify their tactics accordingly.

There will be times when the drop field must be located within range of enemy weapons and he will not be pushed back. This is a situation that calls for resourcefulness on the part of the commander.

One solution is to set up limited, harassing attacks while the drop planesaare over the area. This will work, but many times you will use more ammunition

in these efforts than is recovered from the air drop. The solution that we used more often with better results was to get the artillery liaison plane in the air over the enemy position. The observer would bring in artillery fire on anything he saw firing at the planes. After the first time we did this and very accurate artillery fire was brought down on enemy firing positions, the mere presence of the liaison plane kept this fire down completely.

made. In any air drop a fairly high percentage of damage will occur. This comes about through impreper packing, loading, or parachute failure. The latter was our principal cause of trouble. The parachute failures were caused in the main by too heavy loads being released from aircraft traveling in excess of 125 miles per hour. I remember one instance when that occured after we had requititioned three when that occured after we had requititioned three to replace battle losses. They were to be dropped under the only white parachute in the load,

all three of them in one package. The airplane came in at an estimated speed of 150 MPH and altitude of 800 feet. The white parachute was the first out of the airplane. The shock of the canopy opening was too great for the straps holding the load and we received three "free dropped" radios that were mashed as flat as FM-101-10. Although these radios were damaged beyond all recognition, some parts were salvaged which leads up to the principle involved: no matter what the extent of the damage every effort must be made to recover as much of the item as possible. Entrenching tools were dropped and wooden handles destroyed but in a heavily wooded country pick handles were no problem. It seems as though the most frequently damaged items were rations. One hundred pounds of "C" ration free dropped makes a terrible mess, but after they are dug out of the ground some of the items are still usable if the supply officer or the commander will have the recovering personnel sort and issue it. Free drops of clothing and blankets will inevitably land in streams if any are present but they can be dried and are usable. After our position became stabilized the regimental S-4 maintained classified salvage

dumps and set up repair facilities for damaged equipment and supplies and a remarkably high percentage of damaged goods were eventually used.

8. The drop field is a dangerous place. It requires very little imagination to figure out what would happen to a man hit by a free dropped weight of 100 pounds. While free dropping was going on, it required no training or discipline to keep the field completely clear of all personnel. Parachute dropping is a different matter. We had several casualties from men being hit by packages that were accidentally free dropped, due to parachute failure. Over-enthusiastic drop field crews would get out on the field while drops were going on and would get arms or legs broken by being hit by parachute supported loads which come down rather fast even if they are supported by a canopy. The principle is this: if the tactical situation will permit, everyone must stay at least 1000 yards from the outside edge of the drop field until the drop is completed. There will be times of course when the urgency of securing ammunition will counterbalance the danger to drop field grews and they must be on the field recovering while a drop is in progress.

If this is done, each crew must have one additional man to watch for falling packages and warn the others so they can get out of the way in time. In a situation where a comparitively large unit or several smaller ones are using the same field and a large tonnage comes in every day, the field must be cleared continuously and the crews must work under falling loads constantly. Where this is the case it is essential to keep the same crews together because, as is so often the case, the experienced, careful man does not get hurt.

SECTION III

Evacuation

One of the most difficult operations imaginable when a unit is being supplied entirely by air drop is evacuation of sick and wounded. In a unit of regimental size, marching through hilly, jungle country, there will be several serious accidents and sickness cases daily. When that unit is in combat and attacking fortified positions, the casualties will be heavy.

Byery one of our march and battle casualties were evacuated by air in liaison type planes. We used the L-1, (now obsolete), and L-4 and L-5 planes.

During the march when a case developed that had to be evacuated it was done in this manner. If the man could survive without hospital care he would be carried with his unit either on mule back or on a litter. Incidentally, in that terrain it took sixteen litter bearers for each case. If the surgeon determined the man would die without hospital care we would build a landing strip and take him out with the artillery liaison plane. The strip was constructed by natives rounded up by the territorial troops attached to the regiment. If no natives could be secured our own troops did the work.

There were remarkably few evacuations on the march. This was caused by the high state of training, morale, and esprit-de-corps. All drinking water was boiled, and copious quantities of D.D.T. powder and insect repellent were used. These three items kept the disease rate outstandingly low. Men were imbued with the absolute necessity of keeping up with the column.

The principle involved is that through proper training and discipline a unit can reduce its non-battle casualty rate to the point where it is not a major factor.

Battle casualties present an entirely different picture. Our Portable Surgical Hospital could keep a backlog of fifty wounded. As our casualties in this particular operation were nearly four hundred some way had to be designed for evacuation.

The dvacuation was done by liaison plane back to a General Hospital. We constructed a landing strip and set up a dug-in, protected evacuation point capable of handling ten men at a time. The regimental surgeon was in charge.

The airplanes would land and taxi to the evacuation point and be loaded with a sitting or litter case and take off again in less than two minutes. In building this strip we had to take the direction of the prevailing wind into consideration.

The surgeon was in contact with squadron aid stations and the Portable Surgical Hospital, and would coordinate the flow of casualties to the air strip. This was necessary because the strip was under artillery fire. The fire was not observed but we lost ten planes as a result of it in as many days.

This system worked so well that in many instances a wounded man would be in a general hospital two hours after he had been hit.

There is one point that must not be overlooked in this system of air evacuation. That is the use of empty cargo space in planes returning from the hospital. This takes a great deal of coordination as the supply bases and hospital are under different command and normally will be some distance apart. Our supply officer happened upon this by accident. The second day of evacuation one of the pilots brought a box of fresh meat back with him. After several messages to the supply base and the hospital every empty plane brought in such things as medical and signal supplies, high priority equipment of all kinds and many other items which experience showed

were not effectively air-dropped. No figures are available on the amount of supplies brought in on liaison planes but it was considerable.

SECTION IV

Conclusions

There are many conclusions that can be drawn from a study of this operation. I will touch on some of the obvious ones which were more fully covered in the preceeding sections.

- I have not said so before but it requires very little thought on the subject to understand that air superiority must be maintained. The battle position and the rear areas were literally covered with slow, unarmed transport and liaison planes. They must be able to operate unhindered by the enemy.
- 2. Prior planning must be done from broad policies down to minute details.
- 3. An automatic resupply of Class I supplies must be set up.
- 4. Intensive training must be done prior to the operation with special emphasis on training supply personnel.
- 5. There will be a loss factor of air dropped supplies that must be taken into consideration. Overages of all classes of supplies must be requisitioned.
 - 6. A pre-arranged emergency drop must be set

up to provide for ammunition and other Class II, IV and V items necessary for prolonged action.

- 7. A "homing device" must be carried by the ground forces so they can ecomomically and accurately receive drops day or night in any weather.
- 8. Utmost use must be made of damaged supplies, parachutes and packing materials.
- 9. The commander must give a great deal of thought to evacuation of sick and wounded and a Standard Operating Procedure must be established prior to commencing an operation of this kind.

The over-all conclusion that can be drawn from this operation is this: if a country is willing and able to stand the expense in both supplies and money it can maintain a fighting force in the field anywhere on the face of the earth.



A typical drop-field. The background will give some idea of the ruggedness of the country.



March columns and patrols were protected from ambush by specially trained war dogs. The men handling these dogs were Quartermaster Corps personnel. They were the point of every patrol.



A bamboo bridge across the unfordable SHWELI river in Central Burma.



Another of the more than 100 stream crossings.



One of the many stream crossings south of Myitkyina on the STILMELL ROAD



A portion of the 124th Cavalry's Cemetery in Central Burma



A DANGEROUS PRACTICE

A drop-field clearing team bringing in artillery ammunition while supply planes are still dropping.



An unnamed village in Central Burma. The natives shown here had never before seen a white man.



A portion of the march column on one of the engineer constructed bridges north of Bhamo. The unit marched nearly 100 miles on the STILWELL ROAD south of Myitkyina before moving cross-country.



The air evacuation strip which was under enemy fire almost continuously for one month.



The 3rd Squadron, 124th Cavalry executed a night attack up this hill for their initial commitment to combat and secured the objective against strong opposition.



A bivuoac in one of the more civilized sections of Central Burma