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Title: Operation Grubworm, Headquarters Tenth Air Force

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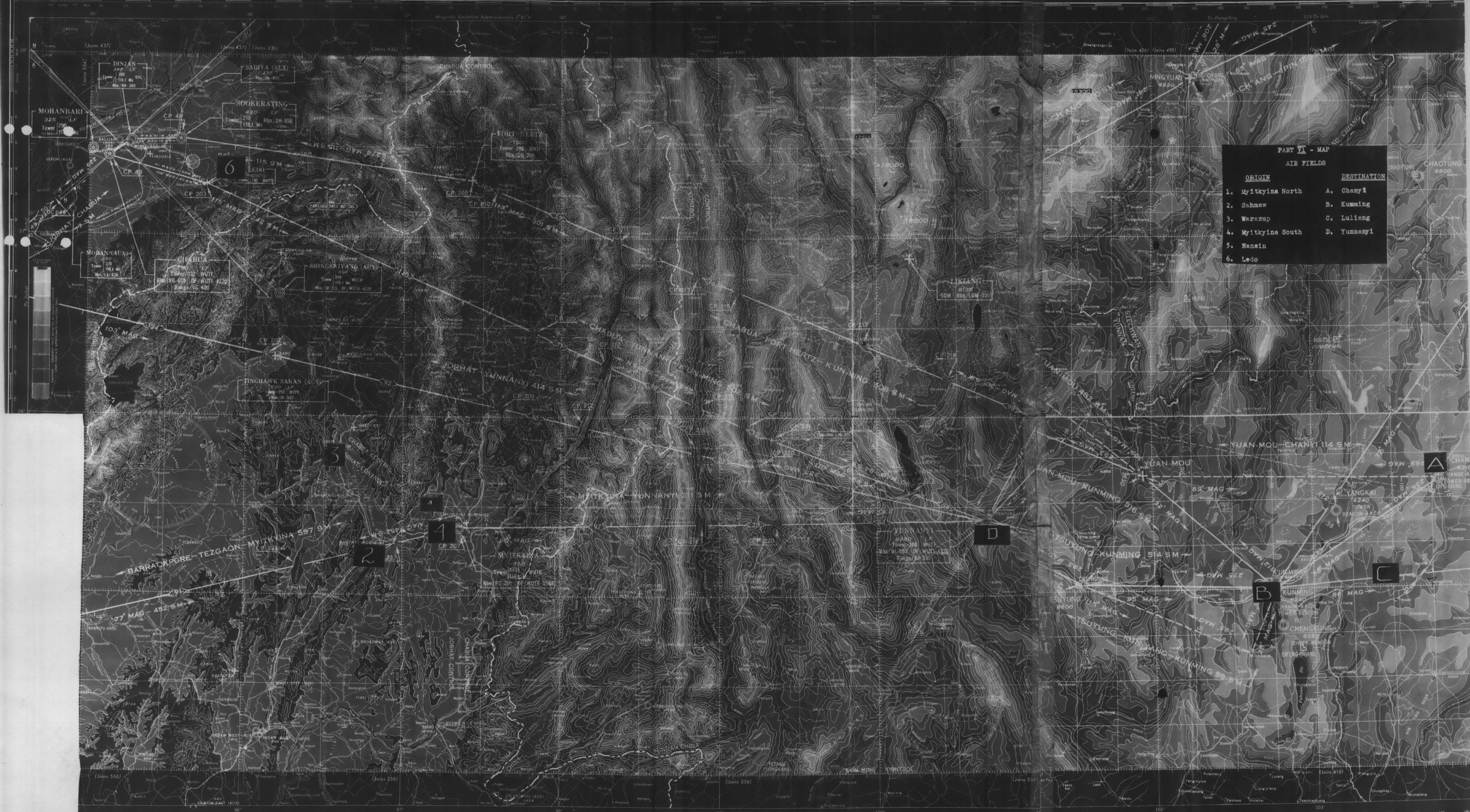
Abstract: Report on Operation "Grubworm" by the Tenth Air Force from 5 December 1944 to 5 January 1945. Includes information on the air movement from Burma to China, illustrations and pictures from duties in Myitkyina.

Number of pages: 92 p.

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Classification: Unclassified; Approved for public release

D 787.2 Operation Grubworm
.U551



PART VI - MAP

AIR FIELDS

ORIGIN	DESTINATION
1. Myitkyina North	A. Chany
2. Sahmaw	B. Kuming
3. Warazup	C. Luliang
4. Myitkyina South	D. Yunnanyi
5. Mansin	
6. Ledo	

HQ: TENTH AIR FORCE

OFFICE OF THE HISTORICAL OFFICER

OPERATION "GRUBWORM"

DEC. 5th 1944 - JAN. 5th 1945

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HEADQUARTERS
TENTH AIR FORCE
APO 216

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OPERATION "GRUBWORM"

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C. S. 10th A.F.
R. S. P.
29 Jan 1945

HEADQUARTERS TENTH AIR FORCE
Office of the Historical Officer

A. P. O. 216,
29 January 1945.

SUBJECT: Transmittal of Historical Data.

TO : Commanding General, Tenth Air Force, A.P.O. 216.

1. Transmitted herewith is the historical report on "Operation Grubworm", for your approval.
2. Data for the report were collected and assembled by Captain Edward J. Mintz, Assistant Historical Officer.
3. Suggestions by the Deputy Chief of Staff and the Assistant Chief of Staff, A-2, have been incorporated.

Ruben L. Parson
RUBEN L. PARSON,
Major, Air Corps,
Historical Officer.

APPROVED:

Howard C. Davidson
HOWARD C. DAVIDSON,
Major General, U. S. Army

A. B. [unclear] Col. [unclear]
12/6/45

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I-N-T-E-R-O-P-E-R-U-S-T-I-C-N

In November (1944) the Allied offensive in North Burma was progressing rapidly. But in China, particularly in the Kweiyang Province Area, the situation appeared grave. In a month's time the Japs had advanced from Liuchow 160 miles north-westward to Tuhshan. At the beginning of December their forward elements were only 60 air miles from Kweiyang. If the Japs took the city they could sever the Burma Road. All American civilians were ordered out of Kweiyang Province. From China came a radio message that it would be necessary to move one or two Chinese divisions from Burma to protect Kunming against the existing threat.

It was decided to move first the 14th Chinese since it was the Reserve Division of Northern Combat Area Command. Its Headquarters and one regiment were at Sammaw; another regiment was in the Myitkyina vicinity; and a regiment, less one battalion, was in the Warazup area. The division was alerted promptly, and prepared for transfer.

The 22nd Chinese Division, which was making rapid progress in the direction of the Burma Road, was the other division chosen to be moved. It was replaced by two regiments of the American 5332nd Brigade. The 1st Heavy Mortar Regiment was moved from Ledo, Assam.

Staff personnel of N.C.A.C. estimated that the reduction in strength, and the inevitable disruption of operations incidental to the movement would delay as much as a month or six weeks the opening of the Burma Road. Besides retarding their offensive, it left them only one regiment in reserve, the Chinese First.

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PART I

RESUME OF OPERATION "GRUBWORM"

SECTION A.....NARRATIVE

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RESUME OF OPERATION "GRUBWORM" (DEC. 5th, 1944-JAN. 5, 1945).

The air movement from Burma to China of 25,105 Chinese and 249 American soldiers, 1,596 horses and mules, 42 Jeeps, 48 75mm Howitzers, 48 4.2 mortars, 48 37mm A/T guns, and miscellaneous supplies and equipment was accomplished in 24 flying days. The Chinese units moved were the 14th and 22nd Divisions, 6th Army Headquarters, 1st Heavy Mortar Regiment, the 45th and 60th Portable Surgical Hospitals and the 988th Signal Company.

The movement took place from five airfields in Burma, Myitkyina North, Sahmaw, Warazup, Nansin and Myitkyina South; and one in Assam, Ledo. Four of these airfields had been constructed during the last two months by the Tenth Air Force Engineers operating immediately behind the retreating Japs; and one, Nansin, was completed just a day before the troop air movement from it began. It was at Nansin, incidentally, that loading was done within range of Jap artillery; the movement of one battalion delayed while it searched the area for Jap snipers who had retreated from Bhamo. The move proceeded simultaneously from as many as three fields in Burma, to as many as four in China. All the animals were hauled by C-47's of the 319th Troop Carrier Squadron, First Air Commando Group and the 317th Troop Carrier Squadron, Second Air Commando Group. Both Squadrons were assigned to the Tenth Air Force for this movement, 4 December 1944.

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The troops and equipment were hauled by C-47's of the Commandos and of the Troop Carrier Squadron and Combat Cargo Squadron, Tenth Air Force, by C-46's and C-47's of ATC, and by 14th Air Force Combat Cargo Squadron C-47's.

The loading and unloading of the planes was accomplished by NCAC personnel.

Tenth Air Force Combat Cargo liaison officers sent to Chanyi, unming, and Luliang, China, helped expedite the movement at these bases.

General Davidson was delegated responsibility for, and charged with, supervision over the entire air movement from Burma to China. Colonel S.D. Grubbs, Deputy Chief of Staff, Tenth Air Force, elected to direct the air movement without issuing written directives. Written orders would have needed constant revision and amendment, because there were often daily, sometimes hourly, changes in the situation with reference to: number of units, troops, and animals and amount of equipment to be hauled, airfields whence hauls would be made, number of ATC and Combat Cargo planes available from China, availability of C-46's or C-47's, or both, designation of fields in China which would accept off-loads, and urgency of the movement. The move was often described as one to haul "an unknown amount of cargo, with an indefinite number of aircraft, to an undetermined number of bases". Thanks to the ready adaptability and fine spirit of cooperation evinced by local ATC and NCAC representatives, as well as by all flying and ground

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personnel involved, operations proceeded on the whole, smoothly and with only minor interruptions. ATC planes operated 24 hours a day on the haul. By five trips to China and almost daily visits to the fields from which the movement originated, Colonel Grubbs was able to make prompt correction and modification as necessary.

With the exception of an eight-plane top cover that the Tenth Air Force fighter planes maintained over forward fields from which the move took place, and diversion of a few Tenth Air Force Combat Cargo and Troop Carrier planes, the movement interfered in no way with regular Tenth Air Force operations.

NCAC moved a small but efficient group of officers and enlisted men to each of the fields from which the move was to be made. These officers made the following arrangements so that the move would go smoothly:

1. Troops to be moved were bivouaced close to the airfield (on its edge, when possible).
2. Personnel and equipment to be hauled were divided into plane loads consistent with the type of planes expected.
3. One person, Chinese or American, was in charge of each load.
4. Americans checked the load on each plane.
5. All equipment, ammunition and rations were, so far as possible, loaded right with the Chinese or Americans to whom they belonged.
6. Where animals were hauled, trained personnel, whenever available, handled the loading.

NCAC's principal problems were:

1. To supply personnel awaiting shipment with food, water, shelter.
2. To issue each Chinese soldier his equipment, ammunition,

woolens and five-day rations. Often all this had to be air-lifted into the field from which the move was taking place, and broken down for the individual soldiers.

Nightly, the Tenth Air Force reported to NCAC Headquarters the number and type of aircraft that would be available for the haul at each field the following day. When one of the hauling transports came in, the pilot notified the tower that he carried freight, personnel, or animals, as the case might be. He requested a parking area and (excepting a few "rugged individualists") complied with parking instructions given.

Ground personnel loaded the plane, the pilot determining amount of load and its placement in the plane.

Because the Commandos had a reasonably constant number of planes available for the operation each day, they were assigned the entire animal haul. The Commando pilots took pardonable pride in the excellent maintenance their hard-working engineering crews performed, and their ground radio station "Jumbo", set up by the 319th in four hours. The first day the station operated it transmitted to and received from Commando planes on the ground at Chanyi, 400 miles away. It handled an average of one call every minute and a half, and through these calls, it was able to keep a log on each aircraft's movements from the time it took off until the time it returned. The set consisted of a 75 watt four-channel Collins transmitter and a Hallicrafter receiver (SX 28). The frequency used was 6680

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The 1348th AAF Base ATC Unit, I.C.D. ATC, at Myitkyina South, under the command of Lt. Col. Frank Thornquest, acted as the coordinating and operational center for all ATC planes as well as China-based Combat Cargo planes used in the movement. In the move of the 14th Division, ATC used Assam and Luliang base C-46's. In the move of the 22nd Division it also used ATC C-47's based at Chanyi, Kunming and Chengkung, and Combat Cargo C-47's of Suyung.

Its problem was somewhat complicated by the fact that it rarely knew in advance how many C-46's and/or C-47's to expect each day from China. Inasmuch as ATC operated on a 24-hour basis with planes based in China as well as in Assam, its operations were somewhat more complicated than that of the Commando and Tenth Air Force Cargo planes.

Although there were many variables the ATC procedure used, consistent with Tenth Air Force instructions was, roughly this:

1. Crews were briefed and transports gassed at Myitkyina South.
2. They then flew to the field from which pick-up was to be made.
3. They picked up their loads and took off for China, calling in to the ATC tower at Myitkyina South when within range on the way over.
4. On the way back, the crews called the tower at Myitkyina South for instructions.
5. Crews already familiar with the pick-up field, were instructed to proceed directly to that field.
6. They picked up a load, and returned to Myitkyina South for refueling unless the pick-up field had adequate refueling facilities.

7. In event the pick-up field was closed in before departure by weather they refueled at Myitkyina.

ATC was able to maintain its 24-hour schedule of operations with a change of crew after each round trip. During the movement its Operations personnel was supplemented by ATC personnel from Assam and China units participating in the move. Inasmuch as some of the pick-up fields were not operational at night, Commando and Tenth Air Force Combat Cargo and Troop Carrier C-47's hauled troops from these fields into Myitkyina South during day-time, thus building up a back-log which enabled ATC to operate all night.

For the first eight days of the movement of the 14th Division no ATC planes was used; but from December 14th to December 15th, ATC C-46's flew a total of 67 sorties and hauled 2,760 troops over the "hump". ATC participated in the whole movement of the 22nd Division from 22 December to 5 January, hauling a total of 11,871 troops with 457 sorties. Its peak day was 27 December, on which date it carried over the "hump" 1,696 personnel in 53 sorties.

Fourteenth Air Force Combat Cargo C-47's based at Tsuyung also participated in the move, of the 22nd Division. From December 28th to January 5th they flew a total of 68 sorties, air-moved 1,283 troops.

On General Davidson's orders, C-47's of the Tenth Air Force Combat Cargo Troop Carrier Squadrons, were diverted for this haul on December 8th. These transports did a major part of the hauling

of the 14th Division carrying 5,150 passengers over the "hump" in 271 sorties. Their peak day was 10 December, on which date 89 sorties were flown. The same day the Commandos flew 26 sorties, for a total of 115 trips. The busiest day of the move!

General Davidson did not divert Tenth Air Force planes for the "hump" haul of the 22nd Division because of supply conditions in Burma. Tenth Air Force Combat Cargo and Troop Carrier C-47's continued to assist in the movement, however, by hauling troops to fields in Burma from which they were picked up by ATC for lifts over the hump" at night.

Movement of the two divisions, the Howitzer Regiment, Sixth Army Headquarters, etc., involved 1,351 sorties. In the entire movement, three aircraft were lost, two of the 317th Commando Squadron and one of the Tenth Combat Cargo Squadron. One of the 317th Transports (Piloted by Lt. Glegg) is known to have crashed into the first ridge of mountains athwart the route from Myitkyina to China. Another 317th transport (Piloted by Major Thompson) is believed to have crashed near this same ridge, both during the first day's operations.

PART I

FIGURE OF ORATION "GRUBWORM"

SECTION B... PICTORIAL ILLUSTRATION

Fig. 1.

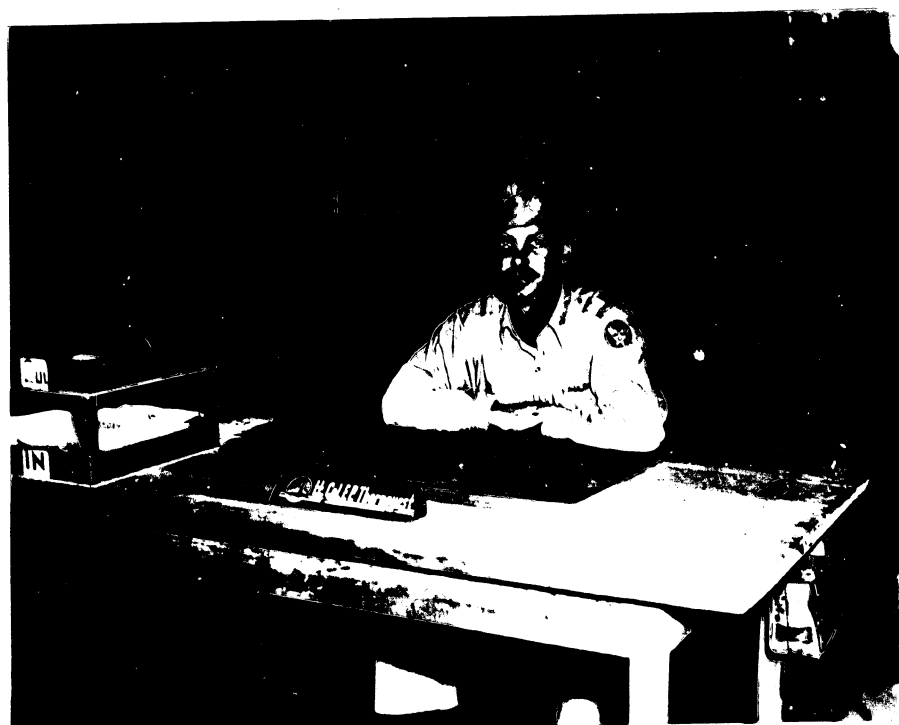


Fig. 2. Lt. Colonel Frank P. Thornquest
Commanding Officer 1348th AAF
Base ATC Unit. 10 Jan. 1945

Fig. 3.



Fig. 4.

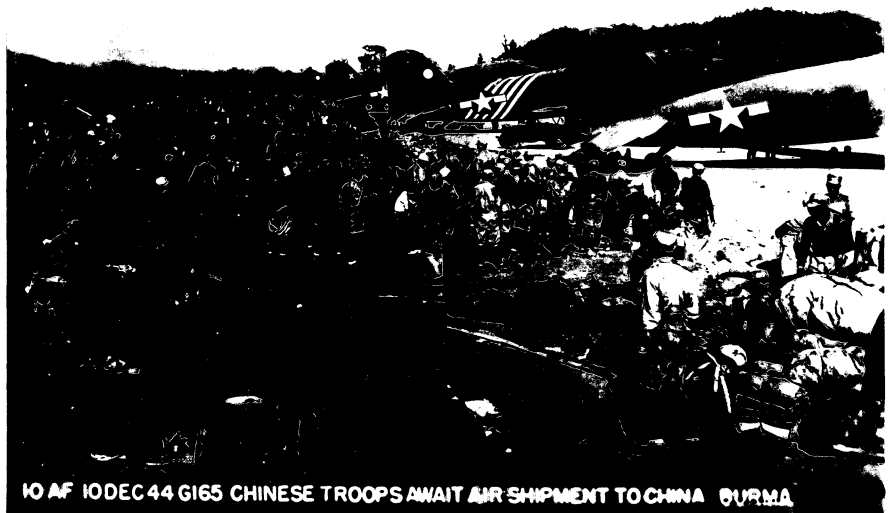


Fig. 5.

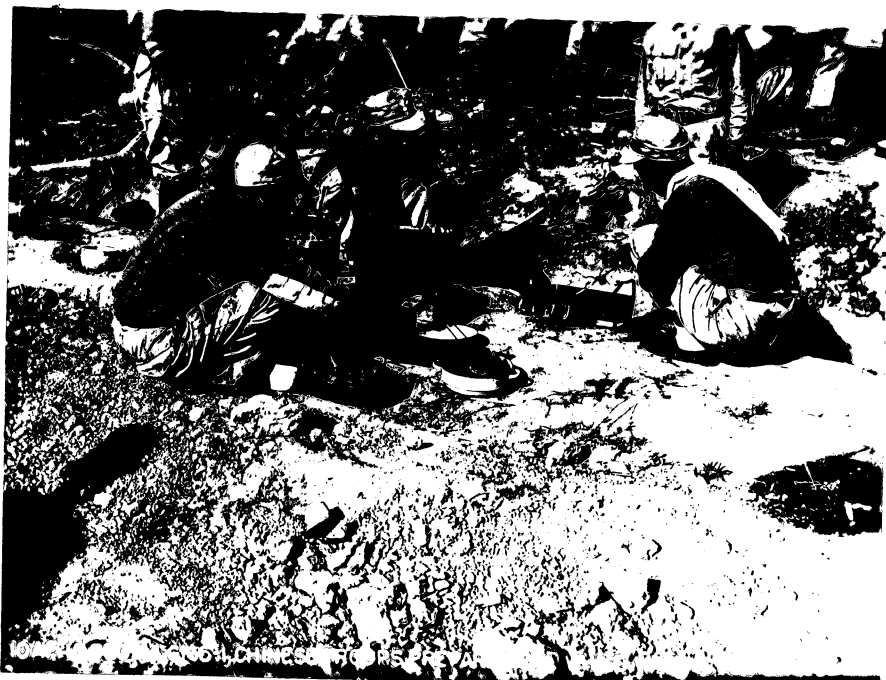


Fig. 6.



Fig. 7



Fig. 8



Fig. 9.



Fig. 10.

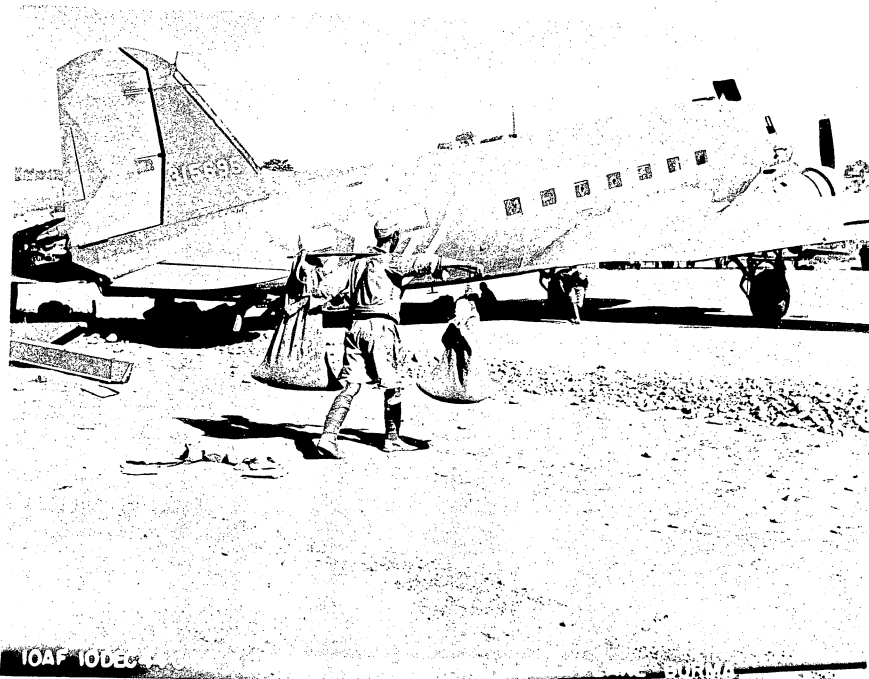
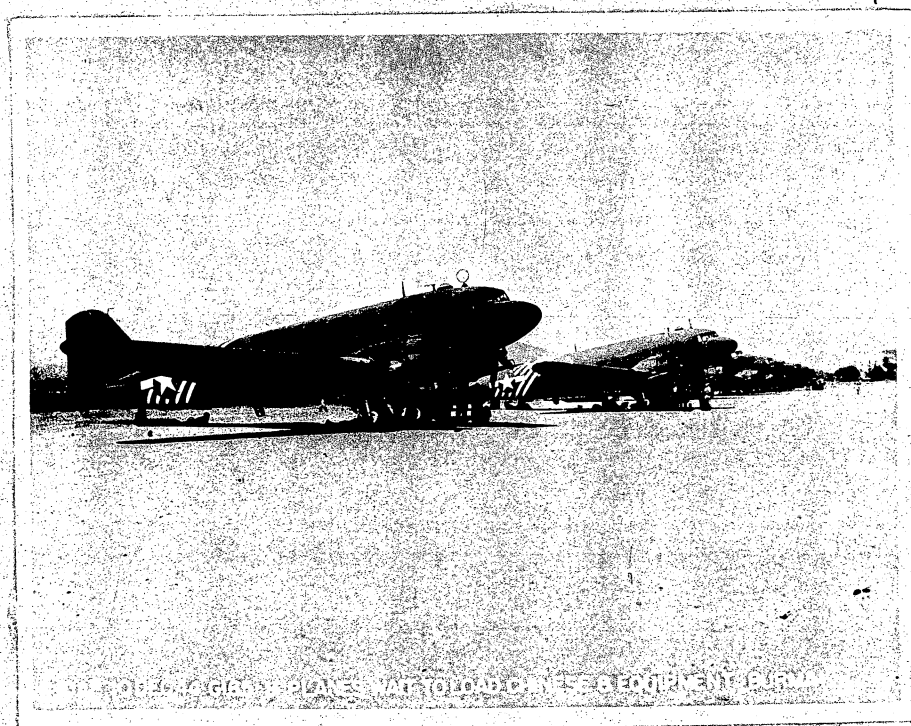


Fig. 11.



Fig. 12.



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Fig. 13.



Fig. 14.

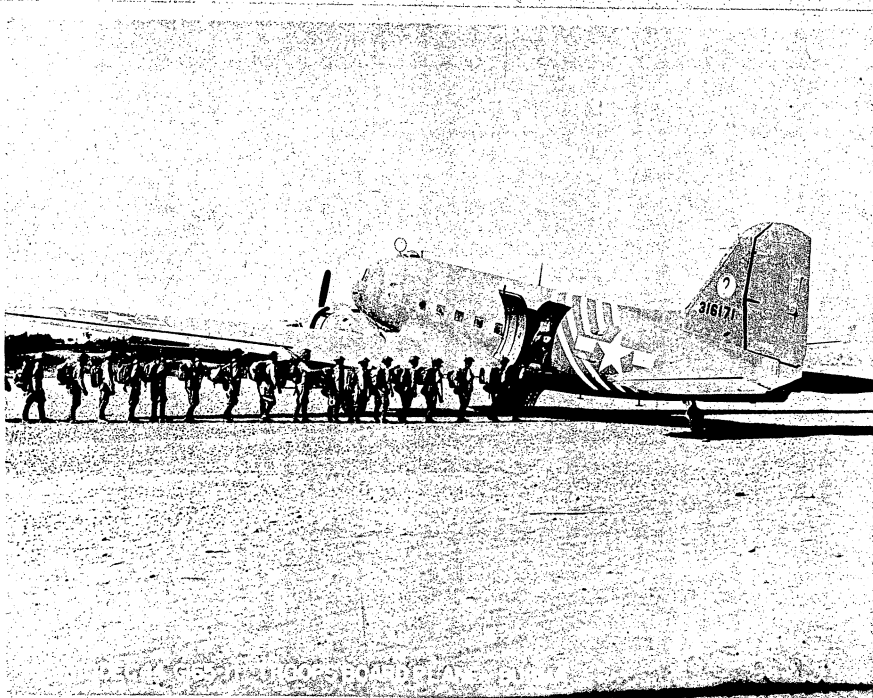


Fig. 15.



Fig. 16.



IOAF IO DEC 1944 THE 100TH AIRBORNE DIVISION APPEAR BEFORE FLIGHT BURMA

Fig. 17.



Fig. 18.



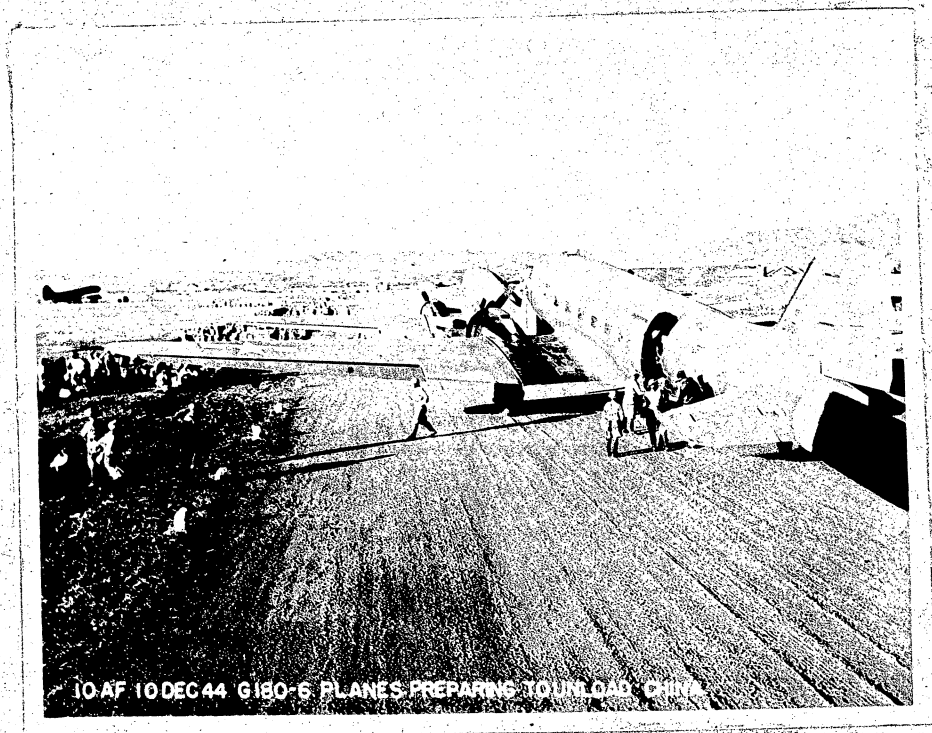


Fig. 19.

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PART II

DIARY OF OPERATION "GRUBWORM"

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HEADQUARTERS

TENTH AIR FORCE

DIARY OF OPERATION "CHUBWORM"

2 DECEMBER 1944 THRU 5 JANUARY 1945

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HEADQUARTERS
TENTH AIR FORCE
APO 216

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Auth: CG 10th AF
Initials: Edm
Date: 10 Jan 45

Office of the Historical Officer

DIARY OF OPERATION "GRUBWORM". (2 December 1944 thru 5 January 1945).

2 December. Tenth Air Force received word from Eastern Air Command that it should be prepared to provide a base for two Commando Troop Carrier Squadrons consisting of 32 C-47 Transports and approximately 160 personnel. These Transports are to be used for hauling Burma-based Chinese troops to China. Tenth Air Force was warned that the hauling of troops would start on short notice. General Davidson was advised that he would be responsible for air operations in this movement, and that the speed of the hauling of the Chinese troops would be limited only by the number of aircraft employed, including ATC C-46's required.

3 December. Tenth Air Force was advised by Eastern Air Command to get from General Sultan's Headquarters the following information:

1. Total personnel to be moved in each division.
2. Weight per individual, plus weight of individual equipment.
3. Estimate of how many Chinese troops a C-47 can carry.
4. The weight of divisional equipment other than individual equipment.
5. The area from which the hauls were to be made.

In answer to these queries, the following information was submitted:

1. The standard Chinese division included 11,245 personnel less:
 - a. 1 Reconnaissance Company
 - b. 1 Transport Battalion
2. The weight per individual, plus individual equipment,

was estimated to be 186 pounds plus rations.

3. C-47's can carry 25 such personnel with 3 days' rations.

4. The weight of the standard Chinese division exclusive of individuals and individual equipment, animals, vehicles, and less one reconnaissance company, one transport battalion and one veterinary platoon, is 279 tons.

5. The divisions to be moved would be picked up for the air lift in the Myitkyina area.

6. 477 C-47's sorties would be required to move a standard division, in addition to 475 C-47 sorties of animals and 360 sorties for vehicles.

The two Commando Squadrons are to be based at Myitkyina North.

4 December. The 319th Troop Carrier Squadron of the First Commando Group and the 317th Troop Carrier Squadron of the Second Commando Group were assigned today to the Tenth Air Force for the movement of the 14th Chinese Division.

The Tenth Air Force was authorized to use any Tenth Air Force transports which could be spared without jeopardizing commitments to the forces in Northern Burma, as agreed upon at the recent Ledge conference.

Headquarters, Tenth Air Force sent a radio to Eastern Air Command, asking when the Commando Squadrons would arrive; and whether, should they fail to arrive today, the Tenth Air Force might divert its own aircraft on the haul on December 5th, at least until the Commando Squadrons arrive.

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Eastern Air Command answered that the two Commando Squadrons would arrive at Myitkyina North before noon on the 4th of December; and that, starting early as possible today (December 4th), the 14th Division would be moved to Kunming. Eastern Air Command delegated to General Davidson direct responsibility for all aircraft used in this movement. Eastern Air Command stated further that if ATC were used, Tenth Air Force should coordinate with the local ATC Commanding Officer, Lt. Col. Thornquest.

Destination of the 14th Division was changed from Kunming to Chanyi.

The 317th Troop Carrier Squadron took off from its home base at Bikram at 1000 hours; 319th Troop Carrier Squadron took off at about the same time from Asansol. Both arrived at Myitkyina North this evening a few hours after Lt. Col. Berg had received word of their coming.

The 319th has available 16 aircraft. the 317th, 11 aircraft. The 319th took part in the "Broadway" landing in March. Of its 26 pilots who arrived today, 18 had towed gliders in this invasion, two had piloted B-25's. During their year of operation in this theater they have not lost a single plane in transport, nor a single crew member. Major Holm is the Commanding Officer; Major Austin, the Operations Officer.

The 317th is the first Squadron of the Second Commando Group to arrive from the States. Its air echelon has been in this theater a little over a month. Part of its personnel has not yet arrived. Captain Edwards is its Operations Officer.

Its shortage of personnel is being supplemented by the 52nd Service Group here. Most of its pilots had logged more than one thousand flying hours before coming over-seas.

The 317th and 319th set up adjacent camps near the North Strip. There were insufficient tents and cots to go around this first evening, so many of the officers and enlisted men camped out and slept in the open on the ground.

5 December. At 0710 hours the air movement of the 14th Chinese Division to Chanyi began. The first C-47 off from Myitkyina North Field was piloted by Captain McKay of the 319th (Captain McKay had flown B-25's for Colonel Cochrane before the "Broadway" invasion). He carried as passengers, Major Ho, Commanding Officer of the 3rd Battalion, 42nd Regiment, 14th Division; Captain Clemmer, Battalion Liaison Officer (American), and 23 Chinese soldiers. Two hours and 10 minutes later the plane landed at Chanyi, 70 miles Northeast of Kunming. It was after 1900 hours when the last Commando transport returned from Chanyi and landed at Myitkyina North. During this first day of Operations 16 C-47's of the 319th and 10 C-47's of the 317th flew a total of 36 "hump" sorties. Ten of the 319th transports, which had been the first to take off were able to get two sorties apiece, landing from the second after dark at Myitkyina North.

The trip from Myitkyina North to Chanyi averaged two hours and ten minutes; the return trip, two hours and 45 minutes. On the first trip over, it took the transports one hour to unload the Chinese and take off. On the second trip, it was done in 15 minutes.

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C-47's carried an average of 25 Chinese per plane. Including ammunition and rations for 5 days, each Chinese was figured at 200 pounds. Each Chinese carried his own blankets. The Commando planes, which had flown no high altitude missions previously, carried no oxygen. A supply is being obtained for them.

The Commando transports had no crystals for their VHF on our frequency, causing them to transmit and receive on HF which is known to be monitored by the Japs. The Commando pilots were instructed to give their call sign, "Jack Rabbit" when they came in to land, so that they could be given priority without identifying themselves further; this to help maintain the secrecy required for the mission.

Before the pilots took off this morning they were briefed by Lt. Nunn, Navigator, and Captain Blair, Intelligence Officer, of the 1348th ATC Base Unit.

Total passengers hauled to China: 921 Chinese, 1 American.

At 2000 hours, 4 of the Commando transports had not been heard from: No. 821, piloted by Major Thompson, Commanding Officer of the 317th.
No. 698, piloted by Lt. Clegg of the 317th.
No. 190, piloted by Lt. Johnson, of the 319th.
No. 450, piloted by Lt. Paris of the 319th.

Both of the 319th transports made the first round trip safely and are believed to have remained over night in China when it got too dark to return. No message has been received from them. Major Thompson's plane, No. 821, took off at 0750, Lt. Clegg's No. 698, at 0805. Neither was heard from since. A

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"Request News" was sent to Myitkyina South, Chanyi, and Kunming, but no answer came. Pilots had been given instructions to call in at Kunming to clear for Chanyi.

From early morning until late this evening Chinese soldiers stood, sat, slept in and about the Commando transports. Many will sleep in or about them tonight. None seemed at all perturbed by the waiting. They are very patient people!

6 December. General Davidson placed Colonel Grubbs in charge of the troop haul. In a very short time the movement became known as "Operation Grubworm".

Representatives of the 14th Air Force conferred with General Davidson at Tenth Air Force Headquarters today. They want troops moved from Burma to Chanyi; but had no idea of the number Chanyi might handle each day. A Tenth Air Force representative, just returned from Chanyi, stated that it was not equipped to handle more than 1200 troops per day, and that a greater number of daily arrivals was not desired. To meet the emergency, the 14th Air Force wants the 14th Division in China about 14 December and the 22nd Division by the last of December. The representatives indicated that the 14th Air Force is to continue its strategic bombing and support of the American effort in the Phillipines.

There has been no instruction on the hauling of animals. Directives have stipulated that the Chinese troops be dropped off at Chanyi and at no other Chinese base.

General Davidson in a letter to General Stratemeyer suggested that, in view of the emergency, ATC and Tenth Air Force utilize as many aircraft as the Airdromes in China can accommo-

date; that troops be put down as quickly as possible in China and be marched or shuttled forward as the necessity may demand. Airdromes in Burma accessible to troops to be moved, could accommodate at least 1000 sorties per day. Thus the troops could be moved to China in two or three days. This diversion of a large number of aircraft for a few days need handicap no one.

Tenth and Eleventh Combat Cargo Squadrons (C-47's) of the Tenth Air Force, arrived at Myitkyina North this morning to assist the Commando Squadrons in hauling the Chinese. The pilots were briefed to pick up troops at Sahmaw and move them to Chanyi after being refueled at Myitkyina North. Inasmuch as the field at Chanyi was reported "socked in" neither Commando nor Combat Cargo Squadron transports took off. Yunnanyi, however, was open all day. One C-47 of the 317th Squadron carried two jeeps, and Colonel Grubbs, Lt. Col. Chase, Executive Officer of the Second Commando Group, Major Beiser NCAC, and other American officers to Kunming, where it had to make an instrument let-down. Colonel Grubbs succeeded in obtaining permission from General Chennault to land troops at Kunming or Luliang, if the field at Chanyi were closed in.

From General Dorn came word that the facilities at Chanyi had been enlarged so that many more "than the presently planned 1200 can be handled". General Dorn recommended that animals be hauled to China along with the troops. He suggested that the divisions be divided for air shipment into four increments: the three regiments and the divisional headquarters. He advised that personnel, equipment, and animals of one increment be sent, then

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the personnel, equipment, and animals of the next increment etc., subject, of course, to the theater commander's approval.

Planes No. 190 and No. 450 of the 319th Squadron, which had been missing since yesterday, landed at Myitkyina North this afternoon. They had landed at Kunming late yesterday afternoon when the weather began to close in on their second return trip. Their RON message from Kunming never arrived here.

Nothing has been heard from the two 317th pilots missing since yesterday. A few of the pilots expressed the belief that the ATC briefing given the Commando pilots the first day was inadequate for pilots who had not flown the "hump" before. Most of the pilots, however, particularly those of the 319th Squadron, stated that the briefing was as good as they are accustomed to, that they never rely too much on briefing anyway, but study and learn their maps and use particular caution on the first trip over unknown terrain.

7 December. General Davidson spoke to the Commando pilots this morning, stressing the importance of the proper use of their radio. He suggested that flight radio operators check periodically to ensure proper fixes. Colonel Moore also spoke about radio procedure. It was stressed that if the Air Jungle Rescue Unit were to be sent out for a missing plane it would require some clue. From the two 317th planes which had gone down on the fifth no message of any kind has been received.

At a meeting held this evening in his quarters, Colonel Grubbs stated that 1770 3-47 sorties will be required to move

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the two divisions: 949 animal and 821 personnel sorties. With 80 sorties per day it would take 22 days to move the two divisions. It was decided to limit the Commandos to one sortie a day. That would give ground crews sufficient time to keep their planes in good condition by working on them at night, without calling them "out" during the day.

Colonel Grubbs reported that the C'47's should attempt to land Chinese troops and equipment at Chanyi because that is where they are wanted; but if Chanyi is closed, they may be landed at Kunming. If Kunming is closed, they may be landed at Luliang. It was decided to send Tenth Air Force Liaison officers to Kunming, Luliang, and Chanyi to facilitate the handling of clearances, RON's, and other problems for Commandos and Tenth Air Force crews arriving at those bases.

South East Asia Command, at Kandy, cautioned against a possible breach of security in the movement of the Chinese forces, and urged that radio communications be watched in traffic from plane to plane and to the ground on the "hump" run.

From General Sultan's Headquarters came a request for an estimate of sorties required to move the 14th and 22nd Divisions to China with the planes now being used, weather permitting, and the target date for each division.

The supply of oxygen for the Commando's was distributed. It is welcomed by the pilots, some of whom have suffered headaches, nausea and fatigue because of the lack of it on trips over the "hump". Previously, most of their flying has not been above 8,000 feet.

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Improved weather permitted 21 Comando sorties, which carried 478 personnel, 1 jeep, and two anti-tank guns to Chanyi.

8 December. The weather, while not good over the route to China, cleared sufficiently to permit the landing of troops at different times of the day at Yunnanyi, Kunming, and Chanyi - with instrument let-down at the latter two fields. During most of the day there was a cloud cover from Myitkyina to the Kunming area which prevented pilots from seeing the ground in between.

Cargo planes of the Tenth Air Force were used in this haul for the first time, carrying 225 troops with 13 C-47 sorties.

Two incidents that occurred in China today wasted one sortie and valuable time; and compromised security for this mission.

The first incident concerned one of our troop carrier pilots who was unable to land at Chanyi with his load of passengers because of the weather. The tower operator at Chanyi instructed him to proceed to Luliang. Here he made a skillful instrument let-down through the overcast. However, the ATC operations officer would not permit him to unload his Chinese soldiers because no provisions to take care of them had been made. The Troop Carrier pilot was instructed to return to Chanyi. The

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pilot took off, got over Chanyi, found the field still closed. This time he received instructions to go to Kunming. On arriving at Kunming, the pilot was assigned position No. 16 for let-down priority. With gas running low, he wearily returned to Myitkyina with his load of Chinese. The landed Chinese gleefully told their fellow Chinese what their destination was to be - a fact which everyone had been endeavoring to keep from them.

The second incident:- After they unloaded their Chinese troops, two of the transport pilots, coerced by ATC operations officers at Kunming, loaded their planes with Chinese civilians destined for Paoshan. After take off, weather prevented landing at either Paoshan or Kunming and the transports were forced to return and land at Myitkyina, where the Chinese were unloaded. Inasmuch as the Tenth Air Force has made no provision for transient Chinese personnel, there was a problem of what to do with the 50 new arrivals. They were turned over to NCAC who promptly put them to work on the roads. (A few days later was to come a frantic message from China: "Where are our carpenters?" NCAC then had the problem of finding these 50 carpenters among the numerous road workers. They were found; and ATC flew them back over the "hump")

From General Tunner, ATC Commander at Hastings, went a stern reprimand to China for the above dereliction. He stated

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that this primary mission of the Tenth Air Force would not be interfered with by forcing any aircraft on this haul to carry other passengers or freight; and that Kunming and Luliang, as alternate fields, must be prepared to handle off-loads in the event that Chanyi is closed.

On the advice of ATC it was decided that for their own safety Tenth Air Force and Commando pilots should make out an abbreviated, written clearance rather than clearing by radio, when taking off from ATC fields.

NCAC ground forces want loads delivered anywhere in China if Chanyi, Kunming and Luliang are closed; General Chennault wants landings restricted to these 3 fields.

New target dates: 22 December for the 14th Division, 10 January for the 22nd Division. (Note: the move of the 14th Division was to be completed on 16 December 1944 and the 22nd Division by the 5th of January.)

9 December. A Troop Carrier pilot who had remained over night at Chanyi returned today and reported almost solid overcast all the way back to Myitkyina, and icing of his wing. Colonel Grubbs called off all Chanyi hauling missions for the day.

Lt. Prince, Operations Officer at Myitkyina North was placed in charge of Operations from that field. To assist him, a representative of the 319th and 317th Squadrons will remain at base operations during the time the movement is on.

The 319th Squadron has erected and put in operation a ground to air station in its camp area at Myitkyina North. It is 5 Zero Oboe and will transmit on 6680. With this radio it is hoped that regular checks on positions of all Jack Rabbit ships

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in this movement can be maintained.

Late this afternoon NCAC personnel started preparing the Commando planes for hauling animals. They are receiving helpful advice from the 319th pilots of the First Commando Group, who are experienced animal haulers from "Broadway" days. Because considerable preparation is necessary to convert a transport to an animal carrier, it is planned to use Commando planes only and exclusively for the carrying of animals and their handlers.

The development of air fields from which the troop movement can be completed is progressing under Tenth Air Force Engineers at an accelerated pace. The newly constructed field at Nansin has been made suitable for both C-46's and C-47's., and its loading area is being enlarged to accommodate a greater number of aircraft simultaneously.

In an effort to expedite the movement, Colonel Grubbs sent the following message to Tenth Air Force Air Cargo Headquarters: "After your first delivery on Sunday, December 10th, you are to divert the following transports in the following way: 30 to Myitkyina North, 40 to Warazup, 30 to Sahmaw. All of these are to haul Chinese troops to Chanyi, with Kunming as the first and Luliang as the second alternate base. Pilots will use "Jack Rabbit" for the call letters of their aircraft from the time cargo for China is picked up until the home base is reached. The transports will proceed from the point of cargo collection to Chanyi via Myitkyina, Paoshan, and Kunming. Transports will get full loads of gas at Myitkyina North, Warazup and Sahmaw, respectively.

Only in extreme emergencies will any gas be taken on at Chinese terminals. Troops will not be off-loaded at Yunnanyi unless all fields in the Kunming area are closed. General Dorn does not want troops taken back across the "hump" to Burma. Crews are to be briefed at their home bases. The transports will return from China to their home base via Myitkyina Tower for check purposes only unless the gas supply is too low to permit it. This movement will be discussed with no one. The weather forecast is good, and red flannels are now being worn in China."

From General Wedemeyer to General Cannon came a request that movement of the 14th and 22nd Divisions be accelerated by restricting the number of animals; this in view of the fact that only a 4-day "turn-around" by animal is contemplated to supply those transported troops who will occupy defensive positions in China.

10 December. Commando pilots are very enthusiastic about the efficiency of the ground radio set which the 319th began operating yesterday. A two-way radio conversation can be carried on between pilots taxiing on the ground at Chanyi and the 319th stationed at Myitkyina North. The work of this station ensures accurate check on Commando pilots at all times.

The Tenth Air Force transports being used are those which, upon completing a haul from Assam to Burma, can land at Warazup or Sahmaw after 0900 hours, when the ground fog has "burned off". The number of fuel-servicing trucks at these new fields is somewhat inadequate for the volume of the movement.

Tenth Air Force submitted a suggestion that if it were permitted to land troops at Yunnanyi because of weather, it would be willing to shuttle them to Chanyi when weather permits. The Tenth Air Force wants to shuttle as many troops as possible to China during favorable weather, and pile up supplies in Burma when weather interrupts the China haul.

General Tunner, pursuant to General Stratemeyer's instructions, informed General Davidson that the Tenth Air Force could call on ATC for the additional planes needed, subject only to the limitations imposed by Burma airfields and traffic congestion in the Kunming area. General Tunner suggested that the ATC planes would be available from the following sources :

1. ATC transports engaged in the Hsian-Chanyi shuttle when the weather in China prevents such activities.
2. Luliang based C-46's.
3. Assam based C-46's, for the balance needed.

11 December. There were no less than ten radio messages pertaining to this move, received at Tenth Air Force Headquarters today. Earlier messages indicated that ATC would make available to the Tenth Air Force 20 C-47's from China to be used as animal carriers, in addition to 20 C-46's from Luliang which would be used to haul personnel. General Cannon had submitted a "rock bottom" estimate of 2,500 animals to be hauled for the two divisions. It was decided that ATC C-47's would haul 1,500, the Commandos, 1,000.

A radio message from General Tunner stated that China C-47's will not be available for this haul since they are all being used for troop movements within China. On the recommendation

of General Wedemeyer, the number of animals to be hauled was reduced to 1500; 500 for the 14th Divisions, 1000 for the 22nd Division. It was decided not to use ATC C-46's for the animal haul because of the height involved and the hazard to internal control cables. The Commando's would haul the 1500 animals. Luliang would supply the ATC C-46's not being used in China, the balance up to 20 aircraft each day to be made up by Assam C-46's to be based at Myitkyina South.

To permit 24-hour operations by ATC C-46's a 50 watt beacon and runway strip lights were installed on Sahmaw air-field. For the first time, it was learned that the 6th Army Headquarters might also be hauled.

12 December. General Stratemeyer and General Davidson were at Sahmaw at 1100 hours this morning, to inspect hauling of animals and personnel. Chinese troops grouped about were waiting for scheduled ATC C-46's which had not yet arrived from China. All ATC planes in this operation were instructed to use the call sign "Cotton Tail" and to call in to the Myitkyina and Kunming towers. ATC pilots would be briefed at Myitkyina South.

13 December. From General Wedemeyer came word that General Chennault is delegated authority for:

1. Controlling all air operations within China with the exception of ATC operations.
2. Coordinating all troop movements in China with Generals Cheves, Dorn, and Tunner.
3. Coordinating all troop movements by air from Burma to China with Generals Cheves, Dorn and Davidson.

Lt. Col. Thornquest complained that ATC pilots landing

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at Luliang are not assisted by the "Jack Rabbit" liaison officers stationed there. The complaint resulted from misunderstanding that "Jack Rabbit" liaison officers had been sent to ATC bases at Luliang, Kunming and Chanyi for the purpose of aiding Tenth Air Force and Commando pilots that would land at those bases.

The movement from Warazup was completed today.

14 December. Today was particularly noteworthy: for the first time since 1 December, no radio messages were received on Operation Grubworm. The average has been five per day.

Early morning fog continues to hamper operations. Over Nansin, for example, the fog rarely clears before 0930 hours, at which time the fighters take off to fly top cover over the field. Immediately thereafter, the transports land in rapid succession, creating some congestion. But there has been no landing or take off accident because of it, either to planes or personnel, due to the alertness shown by tower operators and NCAC ground personnel.

Dust, also is a problem, obstructing vision on take-offs and landings, and contributing to the difficulties of engine maintenance.

15 December. General Sultan has directed that the move of the 22nd Division, scheduled to start tomorrow, will be delayed for an indefinite period, until the Nansin-Si U situation clears.

The 22nd Division's replacement at the front has not yet arrived. It was also estimated by ground forces that if the haul to China could be delayed for three weeks, this same 22nd Division could drive the additional 30 miles through Hosi and open the Burma Road.

All parties were advised that the movement might be resumed at a moment's notice. The Commandos will haul supplies to Burma and Assam in the interim.

16 December. General Sultar was reported to be contemplating the move of a 105 Howitzer Regiment from Ledo to Chanyi inasmuch as the 14th Division is short of artillery. Such a move would involve a lift of 1520 tons, including personnel, equipment, rations, ammunition, and vehicles.

The movement of the 14th Division to China was completed today.

19 December. NCAC reported the necessity of sending to China with each Division moved, its Field and Portable Surgical Hospitals as well as medical, liaison, and veterinary personnel. The medical units remaining with NCAC are vitally needed to provide medical care for units now engaged in active combat in Burma.

21 December. From Lt. Col. Thornquest, ATC Commanding Officer came the apt radio "Good while it lasted was the movement suspension of the 22nd Division - now to proceed from Nansin to Chanyi." Scheduled to be hauled are 2500 personnel and 100 tons of equipment.

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Colonel Thornquest's radio indicated that 12 C-46's from Sookerating and 13 from Luliang will be used for the haul. Since operations from Nansin are not possible at night, the haul will proceed as follows: During the day both ATC C-46's and Commando C-47's will haul to China from Nansin. Tenth Air Force Troop Carrier and Combat Cargo planes will, on return trips from hauls into Burma, carry Chinese personnel to Myitkyina South from Nansin, as will Commando C-47's after returning from China. In this way a back-log can be built up during the day at Myitkyina South to be hauled by ATC at night, permitting them to operate on a 24-hour a day basis.

22 December. After a suspension of six days, Operation Grubworm is on again with the movement of the 22nd Division from Nansin and Sahmaw proceeding as planned. With the 25 C-46's promised by ATC and the two Commando Squadrons, it is estimated that the 22nd Division can be moved in ten days.

23 December. From Delhi and Kunming today came directions that the date for the completion of the haul be moved back, to 15 January. General Merrill radioed that the haul be accomplished without the diversion of ATC C-46 planes from the "hump" if Combat Cargo aircraft be utilized in the extra time being allowed for the move. He set forth the priorities in reference to the use of aircraft in connection with this move as follows:

1. The delivery of theater allocated tonnages in support of combat and construction units in Northern Burma.
2. Shortages in allocations to date, such as pipe-line material.
3. Such assistance as Tenth Air Force can render over and

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above 1 and 2. In other words the haul was being dropped to priority 3.

23 December. Colonel Grubbs was flying back from China today with Lt. Lewis of the 319th at the controls, and Col. E.B. Mc Reynolds, 10th Air Force Air Inspector as a passenger, when one of the engines in the C-47 cut out. He feathered the prop and covered the last 100 miles on one engine, descending from 14,000 to 12,000 feet altitude. The power settings were 29 inches and 2300 RPM. It was this same C-47, incidentally, which earlier in the day tried the experiment of hauling six animals and their handlers over the "hump". It was decided that such a load is too great for the C-47. Subsequent loading was limited to four or five animals, depending upon the size.

24 December. Using the Commando C-47's and 25 ATC C-46's, the new target date for the movement of the 22nd Division is 7 January.

25 December. The Tenth Air Force, in a radio message today, pointed out that ATC made available for this move on 23 and 24 December, only 16 C-46's, in spite of ATC's previous agreement to supply 25. Colonel Baker performed his part of the agreement by supplying 12 aircraft from Sookerating each day, but only 4 were being sent from Luliang.

General Tunner suggested to Lt. Col. Thornquest that he determine immediately the number of Luliang based C-46's that will be available each day, and advise Colonel Baker to make up with Sookerating C-46's the balance up to 25 each day.

General Stratmeyer radioed that although ATC was making 25 planes available, the Tenth Air Force shouldn't call on them

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unless necessary to complete the move by 15 January.

The Tenth Air Force replied that with 15 C-46's in addition to the two Commando Squadrons, the move might be completed by 15 January. If allowed to use the 25 C-46's as originally agreed, the move could be completed by 8 January. The Tenth Air Force recommended that the movement on the present schedule be maintained with 8 January as the target date because of the contingency of weather, because the troops being moved from Nansin were within range of Jap artillery fire, and because as long as the move continued the Tenth Air Force had to maintain over the fields from which the move originated, continuous, overlapping eight-plane top cover from dawn to dusk. The movement is being made from Nansin to save valuable time that would be lost in moving the division back to a safer air-field. The Tenth Air Force is not permitted to divert any of its cargo planes to the "hump" haul, because of shortages in supply tonnage delivered to NCAC during the diversion of Tenth Air Force aircraft in the movement of the 14th Division.

26 December. General Sultan, in a radio message to General Merrill, asked that 25 ATC C-46's be made available for the haul

- because:
1. Nansin airfield is very vulnerable to Jap air attack.
 2. The Tenth Air Force must maintain the same top cover regardless of the number of planes being used on the move until it is completed.
 3. The troops, while waiting to be hauled, are of no value to anyone.
 4. During the move both the Tenth Air Force and NCAC are being diverted from their primary tactical mission.
 5. The move of the Divisions is about one-third completed.

Using 25 ATC C-46's, the move will be complete by 7 January, using 15 ATC C-46's, by 15 January, so the only cost to

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China, is the use of ten ATC C-46's for about one week.

General Sultan received approval of the plan to use 25 C-46's for the haul. The radio mentioned that 16 ATC C-46's would be available from Luliang now that the Hsian-Chanyi troop movement is suspended.

27 December. A radio received from ATC stated that no more Luliang C-46's would be available for the move. Instead 47 C-47's from Chanyi would be sent over to take their place. The 14th Air Force was also assigning 10 C-47's on the haul.

Ten C-47 pilots of the First Combat Cargo Group based at Tsuyung arrived this morning at Myitkyina South with definite instructions to pick up drums of gasoline to be hauled back to China. Colonel Grubbs jeeped to Myitkyina South, where, after talking to the waiting transport pilots, he decided that their instructions to pick up gasoline was a "slip that passed in the night". The Combat Cargo pilots were immediately briefed at Myitkyina North and took off for Nansin to pick up the troops destined for Chanyi.

28 December. The movement of the 22nd Division was completed today from Nansin, with the exception of one battalion which had to be dispatched to attempt to cut off the Japs who escaped from Bhamo and are reported in the Nansin area. This battalion will be picked up on 1 January.

The 60th Portable Surgical Unit was hauled from Sahmaw.

29 December Only C-47's used were in the hauling initiated today from Ledo. Because of poor communications with Ledo, it became

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difficult for the Tenth Air Force and ATC at Myitkyina to keep as accurate and up-to-date figures on what was being moved as has been possible heretofore.

30 December. There has been approved for shipment to China, one Chinese Heavy (4.2) Mortar Regiment.

31 December. The Heavy Mortar Regiment and Sixth Army Headquarters are being moved.

1 January 1945. General Davidson wrote General Stratemeyer of the expanding "22nd Division". Originally, the 22nd Division consisting of 12,080 men and 1,000 animals was to be hauled. Then NCAC decided to send the 6th Army Headquarters to China, believing the 14th and 22nd Divisions could fight better under an Army Commander familiar with their problems. The Army Headquarters was originally figured at 400 personnel, but it subsequently grew to 600, plus two special service companies, for a total of 1,150 personnel. To this were added 662 recovered battle casualties who were picked up at Ledo, and the 1,950 personnel in the Heavy Mortar Regiment. The movement, will, however, be finished by 5 January - unless it is decided to move an additional 1,000 animals, about which there has been some talk.

3 January. Inasmuch as the planes being sent from China will be sufficient to complete the move, the Commandos were given a rest from the "hump" haul today.

4 January. The movement of the remaining battalion from Nansin was completed today.

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The first personnel accident occurred when one of the Chinese soldiers at Myitkyina South, waiting for the Chanyi plane, had the grenade he was wearing brushed off his belt. The handle was torn off and the grenade exploded, injuring slightly 11 Chinese soldiers standing nearby, but not the soldier who had been wearing it.

5 January. Operation Grubworm ended at 1317. An ATC plane made the last haul from Myitkyina South. The move of the Howitzer Regiment from Ledo was completed this morning.

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PART III

ANIMAL HAUL OF OPERATION "GRUBWORM"

SECTION A. EXPOSITION

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TENTH AIR FORCE
APO 216

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Auth: CG 10th AF
Initials: Edm
Date: 10 Jan 45

Office of the Historical Officer

ANIMAL HAUL OF OPERATION "GRUBWORM" (10 December 1944 thru
2 January 1945.)

On December 10th, 1944, horses and mules were flown over the "hump" from Burma to China, probably for the first time in history. This animal haul was significant, not only as part of the move of the 14th and 22nd Divisions to Chanyi, China to stop what was believed to be a Jap drive on the key city of Kweiyang, but also as real evidence of a critical shortage of animal transport in China.

The shortage has been caused by the following:

1. Mongolia, formerly one of China's principal sources for animals, is now, in effect, cut off by the Japs. Tibet the only remaining outside source, can supply China with 10,000 horses per year, at a maximum; only a small part of her needs.
2. The Chinese are not stock-raisers; and they know little about the care and breeding of mules and horses. They have attempted some scientific breeding of horses recently, but efforts have been on a very small scale.
3. Battle losses and overwork of mules and horses in China have seriously decimated them.
4. In more recent years, China, seeking to develop her motor transport, has neglected her animal transport.

Because of this shortage of animals in China and because the Ground Commanders decided that the 14th and 22nd Divisions would be ineffective in China without their animals, it was originally planned to haul the full divisional strength of 2,500 mules and horses. In order to expedite the move General Wedemeyer subsequently reduced this number to 1,500, giving as reasons that

the Divisions would need fewer animals in China where they would have less ammunition and supplies to carry, and that the 14th and 22nd Divisions were destined for defensive positions in China to which a four-day turn around with animals could fetch necessary equipment and supplies.

S/Sgt C. L. Hathaway, of NCAC Engineers, and a crew of 20 Chinese soldiers began work at 1300 hours on 9 December 1944 to prepare the Commando C-47's for the animal haul that was to commence the following day. They worked until 0100 hours on 10 December. The Chinese were willing to work through the night, but Sgt. Hathaway allowed them to rest until 0600 that same morning, when they resumed work.

Once the bamboo had been procured, only 30 minutes were required to cut and fit a plane for animal transport.

To make room for stalls, the seats were removed from the transport, checked, marked, and stacked away. (Fig. 1a)

To fashion stalls for the animals in the plane, six bamboo poles were cut of a length sufficient to extend from the cabin to the rear door, and eight shorter poles of appropriate length, to extend across the inside width of the C-47 (Fig. 2a). The long poles were tied in position inside the plane just above the windows and below the seats on each side (Figs. 3a and 4a). The shorter poles were used for cross bars and were bound to the upper and lower side poles. To the upper and lower cross bars were fastened two long poles that ran length-wise through the middle of the plane, completing the four stalls. Spaces were left between forward and rear stalls to accomodate two animal handlers (Figs 10a). A total of four or five handlers were

carried on each animal haul., as an average.

Tarpaulins were placed on the floor of the plane to prevent animal urine from leaking into the cable controls. A coco-matting was placed over the tarpaulins, and 200 pounds of hay spread over the matting in each transport.

Loading of the horses and mules on the C-47's was accomplished with ramps and trucks.

Trucks proved the faster and easier means with the loading of animals accomplished by backing the truck into an excavation so that the animals could be walked right onto the vehicle. The load of animals was then backed up against the plane door, and the animals simply led into their stalls (Figs. 4a ~~and 5a~~).

A number of animals were loaded onto the planes by ramp inasmuch as there were not sufficient trucks available.

An animal handler led the animals to the plane (Fig. 6a). Individual animals were forced up the ramp and into their stalls either by the "pull" or "push" method, depending upon the system of the animal loader and the disposition of the beast (Figs. 7a, 8a ~~and 9a~~).

In contrast with animals flown by the Commandos to Broadway and Chewrincee in March, 1944, these horses and mules were neither doped, nor rehearsed in loading and unloading. Both mules and horses proved surprisingly cooperative, probably because experienced animal handlers attended them throughout the journey.

Once the animals were inside the C-47, they were tied in place in their stalls by halters (Figs. 10a, 9a ~~and 11a~~). Each

animal was further secured in its stall by ropes that extended over its own back and that of its neighbor. The animals wore pack-saddles to prevent the ropes from cutting into their hide.

The entire loading and tying into position of four animals took an average of 15 minutes. The work was done by trained personnel, veterinarians when available.

After the animals had been tied in place, the pilot and his crew climbed into their plane through the baggage door (Fig. 13a).

On the haul over the "hump", the animals were, generally, very well behaved. It may be that the high altitude, up to 14,000 feet, with consequent deficiency of oxygen, may have diminished any animal inclination to wax rambunctious. Of the 1,596 animals hauled, only one broke loose. By fortunate coincidence, the crew chief in that plane happened to be a veterinarian. He promptly made the horse lie down, and sat on his neck until the C-47 landed at Chanyi. Occasionally, the animals would stamp about a bit when the air was rough, but no hole was kicked in any of the planes.

The trip over the "hump" to the Kunming area took between two and two and a half hours. Since there were insufficient ramps and trucks for unloading the animals, some were jumped off the C-47's during the first few days of the haul. However, one horse broke a leg in jumping out, and thereafter all were led off onto trucks or down ramps, increasing considerably the time required for unloading. At the beginning, the animals simply slid down the ramp; but they were soon afforded safer descent when ropes were tied across the ramp to provide some footing (Fig. 14a).

Most of the animals were Indian tonga ponies such as shown in Fig. 9a. They stand 14 hands high, weigh 600-700 pounds. Thin and slab-sided, considered a second-rate horse, they have been the backbone of animal transport in Burma. Many of those loaded had made the long trek from Shingbwiyang, surviving enemy fire, precipitous mountains, and the swimming of the Irrawaddy. Indian and American mules were also transported.

The 512 animals of the 14th Division were moved by the Commandos between December 10th and 15th; the 1,083 animals of the 22nd Division, between December 22nd and January 2nd. Twenty-eight C-47's of the 319th and 317th Squadrons did all the hauling. A large percentage of these were kept in commission continuously by engineering crews who flew during the day and worked on their planes at night: (~~Fig. 9a~~).

Four large, or five small, animals were carried on each trip, plus four to seven animal handlers with their personal equipment. This constituted a load weighing between 5,000 and 6,000 pounds, found to be appropriate for the "hump" haul. Colonel Grubbs made one experimental flight with six animals, and decided that such a load is too great for the C-47.

During the first day of the movement eight of the Commando transports completed two sorties apiece. It would have been possible to maintain a schedule of one and a half animal sorties per day, but it was decided that a larger percentage of planes might be kept operational if engineering crews were to service

them nightly at their Burma base.

Many of the pilots preferred hauling animals to hauling Chinese, some of whom have a tendency to get air sick on the "hump" haul.

All the animal hauling was done by the Commando transports in successive sorties. The pilots of the 319th Squadron of the First Commando Group had hauled animals for Colonel Cochrane in the Broadway and Chowringee landings in March, but none of the pilots on the animal haul had ever flown the "hump" prior to this movement. Every transport carrying animals arrived safely at its destination.

PART III

ANIMAL HAUL OF OPERATION "GRUBWORM"

SECTION B. . PICTORIAL ILLUSTRATION

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Fig. 1a.

Seat being checked
and marked after
removal from plane
to make room for
animal stalls.

10 Dec 44 Myitkyina



Fig. 2a

Chinese Cut
Bamboo for
stalls inside
C-47.

9 Dec 44

Myitkyina



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Fig. 3a.

Chinese rigging
for stalls
inside plane.

10 Dec 44

Myitkyina



Fig. 4a.

Truck load of
horses ready
to back against
plane door for
loading.

9 Dec 44.

Myitkyina



Fig. 5a.

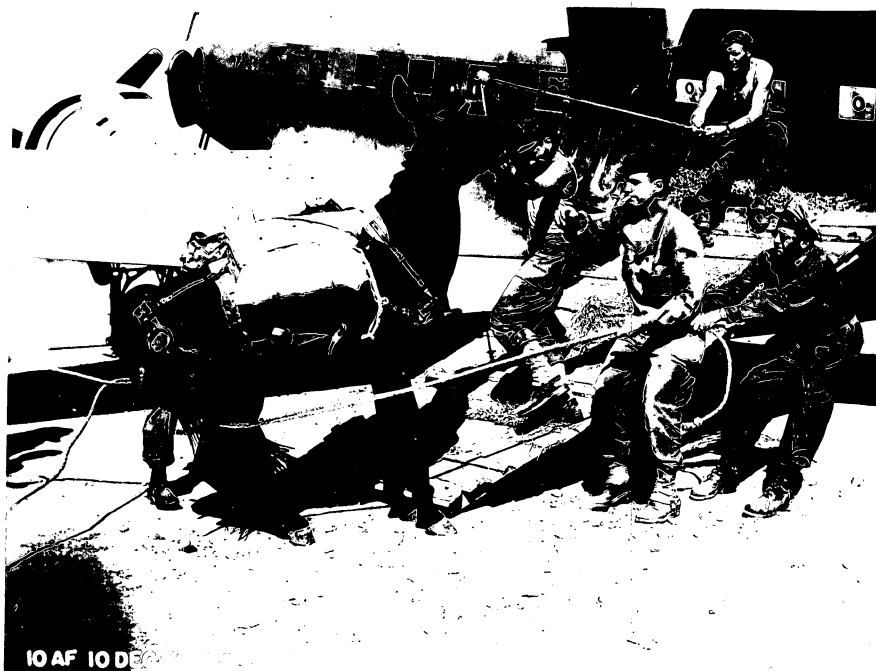


Fig. 6a.



Fig. 7a.

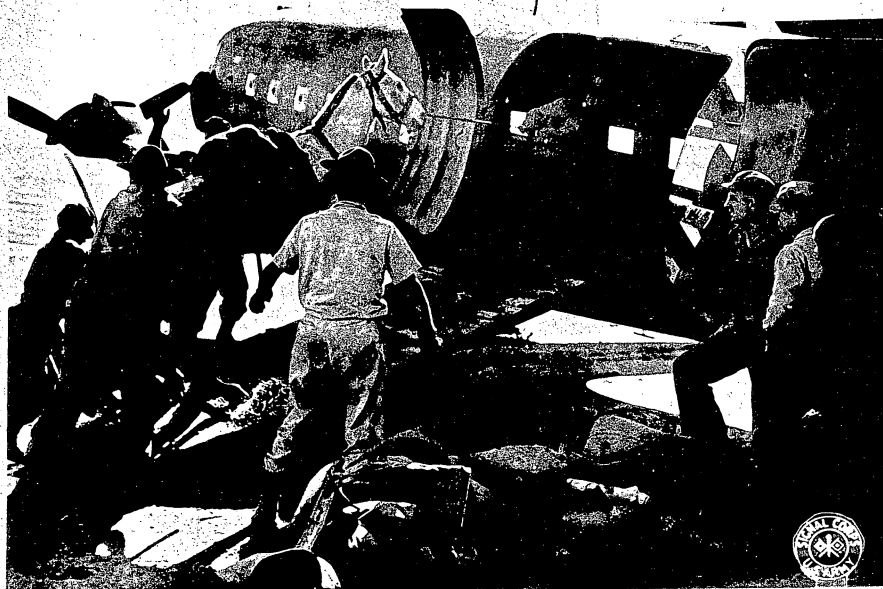


Fig. 8a. "First step is the hardest"
10 Dec 44 Myitkyina.

Fig. 9a.

Animals tied in
stalls. Space
between stalls
for animal
handlers.

13 Dec 44

Myitkyina

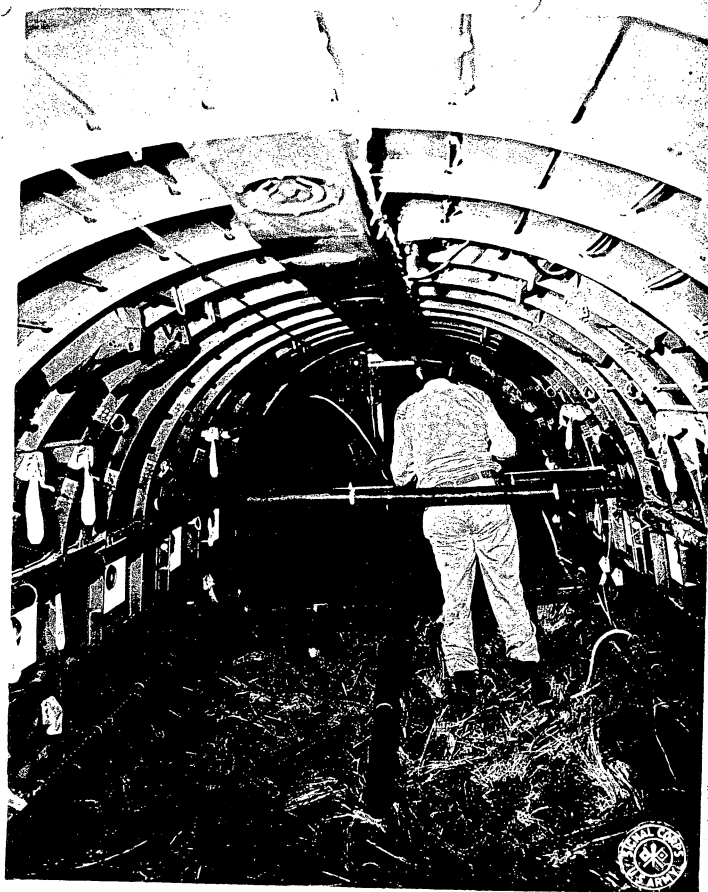


Fig. 10a.

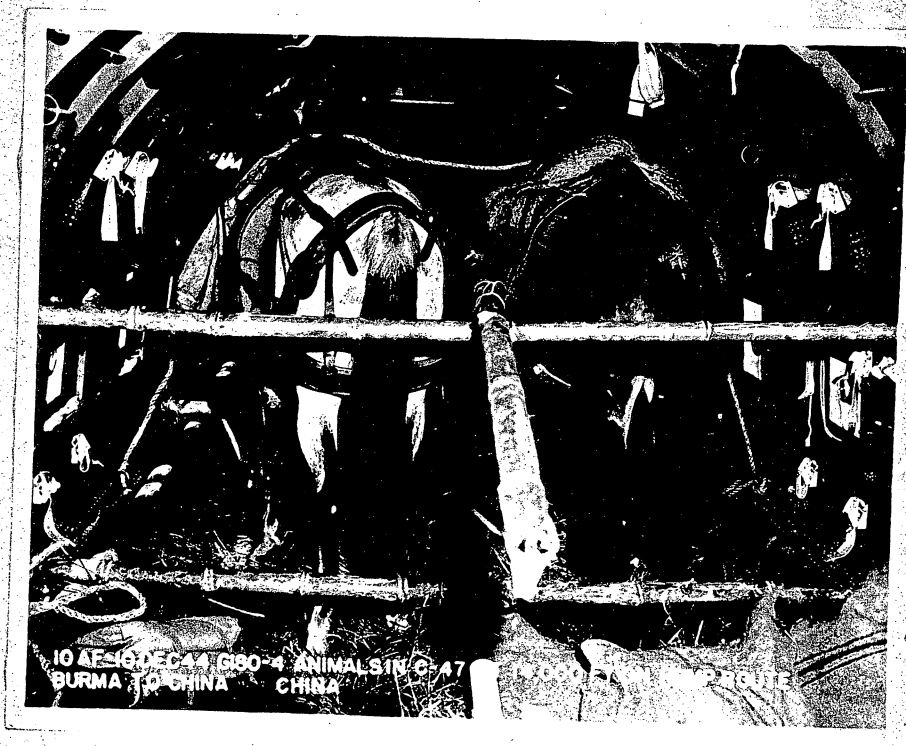


Fig. 11a



Fig. 12a



Fig. 13a.



10 AF 10 DEC 44 GIBO-8 CAPT ROBT W. SMITH RIDES HORSE FLOWN BY HIM OVER HUMP CHINA

Fig. 14a.



10 AF 10 DEC 44 GIBO-10 CHINESE SENTRY GUARDS PLANE WHILE CREW IS ABSENT CHINA

PART IV

THE OPERATION FROM PERSPECTIVE
OF
NORTHERN COMBAT AREA COMMAND

1. Preparation of Planes:

a. Planes should be stripped of all unnecessary equipment in cargo space of plane. This refers to seats, stretcher holders, radio equipment and any other equipment that may be damaged by the animals, or that may injure animals.

b. Bamboo stalls, if available, are very satisfactory, or raw timber can be used. The following pieces are required to haul four (4) to six (6) animals in a C-47.

(1) Six (6) pieces to reach from the front end of cargo space to the door. Two (2) pieces are wired on each side and two (2) are fastened down the center. The pieces on the sides should be fixed in place with wire; one just above the seats and one above the windows. The two (2) pieces used as center poles are to be tied to cross bars after animals are in place.

(2) Twelve (12) cross bars (width of the plane) are required for six (6) animals (four pieces for two horses). These are secured to side poles in front and rear of animals.

(3) One 12'X18' tarp placed on floor.

(4) Cocoamat sufficient to cover entire floor.

(5) Hay or dried grass should be placed on top to help absorb any moisture.

(6) Thirty-six (36) pieces of No. 16 or No. 14 wire, cut in lengths approximately 24 inches long, are required for each plane load of six (6) animals. (Wire was found to be more satisfactory than rope.)

(7) Three (3) pieces of 1/2" rope 15' long. (To be tied across animals backs to plane floor).

(8) One pair of wire cutters and one machette required for each plane-loading crew.

2. Loading of animals from a 2 1/2 ton truck to plane was found to be easier and quicker than the use of ramps.

(1) The use of trucks requires a ramp or dirt bank near air strip for loading of trucks. (Trucks should have high sides; extensions should be put on regular cargo truck sides, if necessary, to lessen hazard of animals jumping out.) Four (4) experienced horse-handlers are required for loading trucks.

(2) It was found that five (5) animals made the average truck load. (Three large and two small.) Small animals should be placed in the truck first, so as to place heavy weight at front of the plane.

b. Two (2) animals should be loaded in plane at a time, cross-bars tied and center poles placed, before the next two (2) are loaded. A space of approximately 2' should be left between each set of two (2) animals for horse-handlers.

c. Animals should be loaded with saddles on, so that the ropes holding them to the floor of the plane will not injure them.

d. Additional rations and equipment should be placed in the rear of the plane. (Where five (5) animals are loaded the space alongside last animal may be used.)

e. Two (2) experienced horse-handlers can load a plane in from 15 to 20 minutes.

3. There was a question among veterinarians as to whether animals should be doped before being loaded. Before a decision could be made five hundred (500) animals had been moved without accident and with but minor disturbance in the planes. It is believed that the movement went more smoothly without doping the animals because the horses are very nervous when the dope wears off.

COPY

HEADQUARTERS
NORTHERN COMBAT AREA COMMAND
APO 218

17 December 1944.

MEMO TO: Colonel Davies, Northern Combat Area Command, APO 218.

Air movement of 14th Division troops from SAHMAW airstrips:

1. This report is submitted for the information and guidance of all concerned for possible future operations of this sort.
2. It was quite fortunate in this particular operation that two (2) airfields were available for the movement of different types of cargo.
3. The North strip, or Shellhole Strip, air base for 60th Fighter Squadron, was used effectively for the loading of cargo and personnel planes. The South or FoxJig Strip, base for 71st Liaison Squadron, was used effectively for animal planes, hospital ships and liaison planes. By segregating the animal planes to the South Strip and personnel and cargo planes to the North strip, the flow of traffic was easily controlled and expedited.

The control towers on both fields use the same radio frequency which facilitated proper control and coordination in the landing and parking of planes. Each plane identified itself as a Jackrabbit, Cottontail or a non-operational plane. The Jackrabbit planes further identified themselves as personnel or animal planes and whether or not they carried cargo to be unloaded at these fields. The planes were immediately given the direction and altitude and pattern for circling the two fields. Upon identification of the type of cargo to be carried, the respective control towers took over the instructions for landing.

To facilitate the parking of planes in the proper area, traffic control officers in jeeps were placed on each strip in order to direct planes to their proper stations. On the Shellhole Strip, as well as the FoxJig, the traffic control officers were thoroughly briefed on the proper parking areas for each type plane. On both strips, to facilitate proper parking of all planes, the traffic control officers in the jeeps were given a light signal from control towers. A red light was used to signify that the cargo planes, non-operational planes and hospital ships were to be parked at Area A (see attached sketch), on the Shellhole Strip, and Area D on the FoxJig Strip. A green light was given to signify that C-46's would be parked in Area C, and C-47's would be parked in Area B and that animal planes would be parked in Area E or F on the FoxJig Strip.

Prior to each day's operations, the commander of the Chinese troops was given the number and type of ships to be expected for the next day's operations. This enabled him to plan in advance the number of troops and heavy equipment to be shipped out the following day. He was directed to have his unit divided into

Plane loads and these groups spaced along the edge of the air strip apron in order to expedite the loading of the planes. On the edge of the C apron, the units were separated into groups of 45 men each, and on the edge of the apron at B, the units were divided into groups of 25 men each and heavy equipment separated into loads of 5000 pounds. In addition to the pre-arranged loads for each day's operations, assembly areas were designated near each apron in order to dispatch additional plane loads of equipment and personnel, and to take care of the unexpected arrival of planes above the number previously scheduled for the day's operations.

In order to insure that each plane was not overloaded or underloaded, American liaison personnel were placed in charge of the loading to check the number of personnel and the weight of the equipment to be placed on the plane. In some cases where there was no weight given on the boxes of equipment, over-estimate of the weight was given in order to insure no overloading of planes.

In loading each plane the Chinese were directed to place on the ground in front of the plane door all equipment not to be carried on the individual's back. This extra equipment was then loaded on the plane by a few of the troops and placed in the center of the plane with heavy equipment being placed in the forward part of the ship. This loading was supervised either by a member of the plane crew or by American liaison personnel. Upon completion of loading of all extra equipment, all troops cleared the plane, and with their packs on their backs, fell into a double rank and were counted off. Each individual then explained, removing his pack and placing it on the sides of the cabin, using his pack for a seat.

In order to keep an accurate account of the number of personnel dispatched daily, the number of the plane and the number of personnel on each plane was recorded.

Planes of this movement landing with cargo were parked in Area A. These planes were quickly unloaded by the 52nd Service Group. After those planes of this particular operation were unloaded, they were taxied over to Area B or C. These planes were taxied to the loading areas to prevent confusion of moving troops and equipment from their pre-designated point of loading.

Trucks were used exclusively for the loading of animals. Approximately 100 yards from the FoxJig Strip, a ramp was constructed for loading of animals on trucks, and from this point the trucks were dispatched to the parked planes for loading. The loading of the animals was expertly handled by experienced American veterinary personnel.

4. For the improvement of operations of this sort, the following recommendations are given:

- a. That planes be echeloned in groups of twelve (12) planes,

~~REDACTED~~

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and be dispatched at half-hour intervals to the air strips being used for the movement of troops. This will insure the landing and taking off of planes with the least possible delay.

b. That pilots be thoroughly briefed prior to their arrival at the strip or that a briefing officer from the Air Corps be supplied at the field from which the troops are being moved. Preferably the pilot should be briefed at the home base, prior to his arrival at the strip from which the troops are being moved; this will enable the planes to be quickly dispatched after their arrival at the field.

c. That, if there are not two (2) adjacent air strips available for such a movement, that enough aprons be constructed so that planes carrying different types of cargo may be segregated.

WILLIAM T. MCDANIEL
Major, Infantry
Ass't. G-3.

COPY:

HQ. NORTHERN COMBAT AREA COMMAND
A.P.C. 213

OPH/kk

21 December 1944

MEMORANDUM;

TO : Major Beiser, Asst. G-3, N.C.A.C.

The following is a brief analysis of the movement of the 41st Regiment (less 1st Bn.) by air from Warazup airfield during period from 10th to 13th of December 1944.

1. Preliminary Preparation, Reception, and Bivouaching of Unit.

a. Arrived Warazup airstrip on the afternoon of the 5th contacted S.O.S. Base Commander, Lt. Col. Whitten, and Airfield C.O., Lt. Col. relative to the sites available for bivouaching the regiment. Bivouach area 2 miles from south of air strip on combat road was finally approved by both parties.

b. Unit arrived during 5th, was issued rations, and bivouached.

c. During the afternoon of the 6th had a conference with the U.O. and senior liaison officer of the 41st Regiment for discussion of explaining plans for air movement of troops and the following plan was suggested and accepted.

(1) Thirty-five 6th M.T.R. trucks which had moved the regiment to Warazup from Manyaseik were to be utilized in moving troops from bivouach area to air strip to facilitate and speed up loading of ships. Also, due to the very limited parking facilities for planes on the strip, and the resultant necessity for keeping the troops out of the way until the loading could actually be accomplished, each truck was loaded to exactly equal one C-47 load (i.e.: 25 men plus equipment, 5 days rations, and combat load of ammo, or 5000 lbs of equipment such as jeeps, all guns and bales of woolen clothing and blankets that arrived too late for issue to the troops). Loaded in this manner the trucks were parked in column along edge of highway leading to the strip, and were only brought on the strip when planes were parked and ready to load. Average loading time per plane was 15 minutes. Planes were loaded as they were being gassed.

(2) One officer of the 430th Bomb Squadron was detailed by the Airfield C.O. to handle the identification and parking of the aircraft (i.e.: determine what type of cargo they were to carry, Chinese troops or regular supply drops).

I was informed by the Airfield C.O. approximately 12 hours in advance of the number of planes to be available the next day and their E.T.A. This officer was of great assistance, and through his constant efforts made the planes move very smoothly considering the space available to operate in.

2. The following number of loads of personnel and equipment was dispatched on the dates as indicated:

10 Dec.	30 sorties	2 jeeps and 1 trailer - personnel
11 Dec.	41 sorties	3 A.T. guns - personnel
12 Dec.	no planes	
13 Dec.	21 sorties	7 plane loads supplies - personnel

(20 Chinese returned to Myitkyine with me via "aerial hitchhike" on afternoon of 14 Dec. due to fact one of 22 planes promised did not materialize. These 20 were shipped to China from Myitkyine north strip on the 14th).

3. Recommendations:

a. That Air Corps pilots assigned to a particular movement mission be given their instructions prior to leaving home field. Considerable difficulty was encountered in determining just which planes and pilots were assigned to "Jackrabbit" mission.

b. That Air Corps make adequate preparation for briefing pilots and dispensing weather information, etc. In a number of cases pilots came in with their plane, a blank look, and had no idea of where and how they were going, or even to what mission they were assigned.

c. That planes leave their home fields with a full load of gas, and not depend on the inadequate facilities of an advance air base to have their ships serviced. Several hours delay was encountered due to lack of gas on first day.

4. Comment:

a. Cooperation on the part of all concerned was excellent, particularly the work of the C.O. 41st Regiment.

b. Air Corps pilots might be given an "orientation course" in the treatment of and regard for our Allies.

O.E. HILTON,
Captain, C.A.C.

~~SECRET~~
HEADQUARTERS
NORTHERN COMBAT AREA COMMAND
A. P. O. 218

G-3/JJB/wc

8 January 1945

SUBJECT: Air Lift of Combat Units to China.

TO : Commanding General, N. C. A. C.

1. MISSION: To move by air the New Sixth Army, 1st Heavy Mortar Regiment less 1st Battalion, 14th Division, New 22nd Division, and supporting units less certain elements, to China. This lift was to include the following:

- a. New Sixth Army:
 - (1) 82 Animals.
 - (2) 8 $\frac{1}{4}$ ton trucks, complete with $\frac{1}{4}$ ton trailers.
- b. 1st Heavy Mortar Regiment, less 1st Battalion:
 - (1) 3 $\frac{1}{4}$ ton trucks complete with $\frac{1}{4}$ ton trailers.
- c. 14th Division:
 - (1) 500 Animals.
 - (2) 14 $\frac{1}{4}$ ton trucks complete with $\frac{1}{4}$ ton trailers.
- d. New 22nd Division.
 - (1) 1000 Animals.
 - (2) 14 $\frac{1}{4}$ ton trucks complete with $\frac{1}{4}$ ton trailers.
- e. 45th Portable Surgical Hospital:
 - (1) 1 $\frac{1}{4}$ ton truck complete with trailer.
- f. 60th Portable Surgical Hospital:
 - (1) 1 $\frac{1}{4}$ ton truck complete with $\frac{1}{4}$ ton trailer.
- g. Detachment 988th Signal Operating Company (Spec).
 - (1) 1 $\frac{1}{4}$ ton truck complete with $\frac{1}{4}$ ton trailer.

2. PLAN:

- a. To assemble and lift units from the nearest available C-47 strip.
- b. To lift units as such wherever practicable.

c. To supply and lift each unit with combat loads of ammunition, five days rations and one (1) wollen uniform.

d. To adapt C-47 type aircraft to carry animals.

e. To select and construct a C-47 strip in the vicinity of the New 22nd Division which was on 1 December 1944 in the vicinity of SI-U (SN 8736) BURMA.

3. EXECUTION:

a. Units were assembled and lifted from the following airstrips:

(1) MYITKYINA NORTH - 42nd Regiment of 14th Division.

(2) MYITKYINA SOUTH - Used as a staging area for some troops of New 22nd Division.

(3) WARAZUP - 41st Regiment of 14th Division, less 2nd Battalion.

(4) SAIRMAW - New Sixth Army
14th Division, less above mentioned units and motorized units.
New 22nd Division Rear Echelon and motorized units of Division troops.
2nd Battalion, New 22nd Division Artillery.
45th Portable Surgical Hospital.
60th Portable Surgical Hospital.
Det. 988th Signal Operating Company (Spec).

(5) NANSIN - New 22nd Division, less 2nd FA Battalion, motorize elements and Rear Echelon.

(6) LEDO - 1st Heavy Mortar Regiment, less 1st Battalion and motorized elements.
14th Division recovered wounded.
New 22nd Division recovered wounded.

b. 14th Division troops were to be lifted first in compliance with the request of the China Theater. The troops of this Division were already concentrated in the immediate vicinity of C-47 strips with the exception of the 41st Regiment, less 2nd Battalion. The 41st Regiment (-) was moved by motor from NANYASEIK to WARAZUP. The movement of this Division was inaugurated 5 December and completed 15 December. At total of 10504 Chinese, 84 Americans, 512 Animals, 14 1 ton trucks and trailers, 24 - 37 MM Anti-air guns were lifted. Two (2) days were lost due to weather.

c. Movement of New Sixth Army, New 22nd Division, 1st Heavy Mortar Regiment (-) and supporting medical and signal units commenced 22 December 1944 and was completed 5 January 1945. This movement entailed the air lift 14601 Chinese, 310 Americans, 1084 animals, 28 $\frac{1}{2}$ ton trucks and $\frac{1}{2}$ ton trailers, 24 - 75 MM Howitzers, 24 - 37 MM Anti-tank guns and 48 - 4.2" chemical mortars. No flying time was lost due to weather.

d. Animal movement was concurrent with the movement of troops. Twenty-eight (28) C-47 airplanes were equipped to haul animals by Major Hugh C. Grundvig, Corps Troops Liaison Officer and Captain Lee. T. Railsback of the 19th Veterinary Evacuation Hospital. Airplanes were floored with tarpaulins and cocoa matting to prevent urine flowing into controls and then covered with straw. Box stalls for four (4) or five (5) animals were erected of bamboo and each animal was tied to his stall. At least one (1) animal handler accompanied each horse. Animals were loaded into $2\frac{1}{2}$ ton trucks by ramp or by backing truck against a bank. The trucks were backed to the door of the airplane and animals walked into the airplane. One animal was loaded and secured at a time to avoid kicking and interference with horse loaders. Average loading time approximated 15 - 20 minutes per airplane. Only one (1) animal was lost in loading.

e. Personnel loading was organized by representatives of G-3, Hq, N.C.A.C. Each C-47 aircraft was loaded with twenty-five to thirty (25-30) troops or troops and equipment not to exceed six thousand (6000) pounds. Airplane crews assisted the loading by designating the center of mass to be established. Every effort was exerted by representatives of G-4, N.C.A.C. to ensure that personnel enplaned with one (1) woolen uniform, five (5) days rations and combat loads of ammunition. Personnel was segregated into aircraft loads on the edge of the field and held in readiness in order that aircraft would be loaded while refueling took place. Average loading time approximated fifteen (15) minutes per aircraft.

f. Due to the fact that NANSIN is not equipped for night operation it was necessary to shuttle personnel from NANSIN to MYITKYINA SOUTH. The backlog of personnel thus established was lifted by ATC aircraft during the night. This backlog was shuttled by C-47 aircraft flying supplies in- to NANSIN. These aircraft unloaded supplies and loaded personnel to be off-loaded at MYITKYINA SOUTH enroute to bases in ASSAM.

g. Air Force personnel was of material assistance in parking aircraft, assigning bivouac areas and designating airplane loads. Colonel Sidney D. Grubbs, Air Force representative in the move, notified Ground Force representatives of the number of aircraft to be available at each field sufficiently in advance for loads to be assembled on the field. In addition Colonel Grubbs made several trips to China to check on reception of aircraft at destination in order to provide the shortest possible turn-around.

4. SUGGESTIONS:

a. Ground forces must be thoroughly organized to handle reception and bivouacking of troops at airfield, segregation of loads, supervision and checking of loads and loading and smooth operation of supply problems.

b. Qualified and experienced personnel are necessary for loading of animals. Veterinary personnel is desirable.

c. Air Force personnel must be efficient in parking aircraft in designated parking areas, notification of Ground Officers as to aircraft to be loaded and type load desired, and prompt clearing of loaded aircraft.

THOMAS E. DAVIES,
Colonel, G.S.C.
A. C. of S., G-3

~~SECRET~~

HEADQUARTERS
NORTHWESTERN COMBAT AREA COMMAND
A. F. C. 218

11 January 1945

SUBJECT: Air Lift of 22nd Division.

TO : Colonel Thomas H. Davies.

1. The NANSIN Airfield (SN 8442), officially Station 821, was the unloading point for the main part of the 22nd Division. The strip is a dry weather grass strip 5300 feet long, 110 feet wide and has 11800 square feet of parking apron. The strip was prepared especially for this operation by a detachment of Company "B" 879th Airborne Aviation Engineers under 1st Lt. William C. Barnard, and the Engineer Battalion of the 22nd Division. It accommodates C-47s, C-46s, P-47s, C-45s, and all liaison type aircraft with no difficulty. The strip had a traffic control detachment, and during the movement, was protected by 8 - 40 mm and 24 - 50 calibre anti-aircraft guns. At the same time a detachment of the 60th Fighter Squadron from SAHMAW with about 12 P-47 fighters was stationed there.

2. a. The Division Commander attempted and did maintain tactical unity on the movement. Certain units were designated for lift directly to CHINA and other units were designated for the transshipment at MYITKINA.

b. The Division was bivouaced in the general area of the airfield; One (1) Regiment around the field and the remainder of the Division about four (4) miles away. Movement of the Division (animals and men) began on 22 December and continued through 28 December, recommencing on the morning of 4 January 1945.

3. The movement may be divided into three parts:

a. Animals planes. Two squadrons, the 317th and 319th, were converted into animal carriers at MYITKINA. These two squadrons had a total of twenty-eight (28) C-47s prepared to haul animals, but the daily average attained was twenty-three (23) operational aircraft. Each plane carried 4 to 5 animals and could make but one (1) sortie daily.

b. Combat Cargo. C-47s, bringing cargo into HANSIN, or making drops in that vicinity, loaded troops for shuttling to MYITKYINA South Field, from which field ATC aircraft lifted the men to CHINA during the night.

c. The ATC operated out of HANSIN directly to CHINA in daylight, first with C-46s and later with C-47s in addition. Because HANSIN was not equipped for night landings ATC worked at night from MYITKYINA South, lifting the back log shuttled in during daylight by combat cargo.

4. The greatest difficulty of the move was weights and balances of the loads. No scales were available and it became a question of estimates. Exact weights were known on certain things such as jeeps, 37 MM guns, 75 MM Pack Howitzers, crated ammunition and boxed rations, but the weights of the soldiers and his equipment, and especially the organizational equipment, was constantly a problem. It was agreed that the average Chinese soldier with his individual equipment and weapons, five (5) days rations and a combat load of ammunition weighed two hundred (200) pounds. This estimate was used to figure loads to be carried. ATC C-46s carried the equivalent of nine thousand (9000) pounds and ATC C-47s carried six thousand (6000) pounds. If units had extra weight as in the case of mortar and artillery units, enough men were removed so that the extra equipment could be taken with the unit and still not overload any one plane. It was necessary in a few cases to send planes loaded with ammunition and/or equipment with only a guard and loading detail. Two (2) battalions of artillery guns, with one (1) battalion of artillery personnel, were moved first from HANSIN to avoid transshipment of heavy equipment. Rifles and transport units were selected for the route via MYITKYINA. The 2nd Battalion 66th Regiment was employed tactically during the movement of the remainder of the Division. This battalion closed in HANSIN 3 January, 1945, and movement was begun the morning of 4 January, 1945, when 26 C-47s Combat Cargo brought the battalion plus attachments to MYITKYINA South for transshipment to CHINA that night.

5. Following is a recapitulation of the movement:

December 22

To CHINA:

C-46s	6	235 men	
C-47s	20	<u>144 men</u>	<u>101 animals</u> (animal ships)
Total		379 men	101 animals

To MYITKYINA:

C-47s	<u>1160 men</u>	
Grand Total	1539 men	101 animals

December 23

To CHINA:

C-46s	6	179 men	
C-47s	22	<u>118 men</u>	<u>102 animals</u>
Total		297 men	102 animals

To MYITKYIA:

C-47s	42	<u>965 men</u>	_____
Grand Total		1262 men	102 animals

December 24

To CHINA:

C-46s	5	157 men	
C-47s	23	<u>114 men</u>	<u>114 animals</u>
Total		271 men	114 animals

To MYITKYIA:

C-47s	31	<u>765 men</u>	_____
Grand Total		1036 men	114 animals

December 25

To CHINA:

C-46s	4	155 men	
C-47s	25	<u>127 men</u>	<u>124 animals</u>
Total		282 men	124 animals

To MYITKYIA:

C-47s	30	<u>724 men</u>	_____
Grand Total		1006 men	124 animals

December 26

To CHINA:

C-46s	7	170 men	
C-47s (AFC)	6	155 men	
C-47s (A.S)	26	<u>130 men</u>	<u>130 animals</u>
Total		455 men	130 animals

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TO MYITKYINA:

C-47s	18	<u>436 men</u>	_____
Grand Total		891 men	130 animals

December 27

TO CHINA:

C-46s	23	441 men	
C-47s (ATO)	29	784 men	
C-47s (A.E)	25	<u>125 men</u>	<u>125 animals</u>
Total		1350 men	125 animals

TO MYITKYINA:

C-47s	33	<u>896 men</u>	_____
Grand Total		2246 men	125 animals

December 26

TO CHINA:

C-46s	1	32 men	
C-47s (ATO)	19	<u>483 men</u>	
Total		515 men	

TO MYITKYINA:

C-47s	21	<u>542 men</u>	
Grand Total		1057 men	

January 4

TO MYITKYINA:

C-46s	26	<u>710 men</u>	
Grand Total		710 men	

TOTAL LEFT:		<u>ME</u>	<u>ANIMALS</u>
December 27		1539	101
" 26		1282	101
" 24		1096	114
" 23		1006	124
" 26		891	130
" 27		2246	125
" 26		1057	0
January 4		<u>710</u>	<u>0</u>
Totals		9747	696

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6. Comments:

a. It is most desirable on airlift of units that the Air Corps tell the ground coordinator as early as possible how many and what type ships to expect each day. The lack of this information on 27 December caused 16 sorties to be turned back for lack of available troops. Figures show that about twice as many troops were moved that day as the average previous days, yet there was no word of warning given that double the usual number of ships would be available.

b. It is essential that the Air Corps have a representative to load the planes for weight and balance. It was found that pilots differ greatly on the weight of loads and plane capabilities. Some pilots refused to carry part of a load while others asked for additional weight.

c. Weather is of prime importance. At NANSIN the fog cleared about 0930 hours. This gave many planes time to rendezvous at the field and get in the traffic pattern before the landing started, necessitating considerable parking space for the first few hours. This is, of course, an Air Corps problem, but ground officers must load troops promptly and clear the parking areas rapidly.

d. Personnel to park planes in proper place are also essential. It must be remembered that supply ships, animal ships, personnel ships (10th Air Force and ATC), fighters and liaison type aircraft were operating from this field simultaneously. This necessitated close coordination by air force personnel of ships in the air and on the ground.

FRED HUFFINE
Major, Infantry
Ass't. G-3

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HEADQUARTERS
NORTHERN COMBAT AREA COMMAND
A.P.O. 218

G-3/THD/wo

12 January 1945

SUBJECT: Air Lifts, New Sixth Army Units

TO : Commanding General, Northern Combat Area Command, APO 218.

The following is an overall description of the recent air lift of the New Sixth Army to China.

1. Just prior to 1 December we received a radio from China stating it would be necessary to move one or two divisions into China immediately to protect KUNMING against a threatened Japanese attack. We recommended that the 14th Division be moved immediately in as much as it was the most available, being in General Reserve. Units of this Division were at MYITKYINA, MOGAUNG, LONKIN, WARAZUP and a few other scattered outposts.
2. There are a number of fields in this area that can take C-46s; one at WARAZUP, one at SAHMAW near MOGAUNG which was the Sixth Army Headquarters, several at MYITKYINA. In addition there are C-47 strips at MAWLU in the Railroad Corridor, MAWLUK just outside of BHAMO, and suitable terrain at SI-U some 80 miles south of BHAMO, the location of the 22nd Division.
3. Immediately after making our recommendation to lift the 14th Division first, we started to concentrate units of that Division and bivouaced them at MYITKYINA, SAHMAW, MAWLU and WARAZUP. This necessitated some change in our security plan for rear areas, LONKIN, for instance, being some 60 miles west of MOGAUNG, protecting N.C.A.C.'s right rear installations.
4. Loading of C-46 and C-47 planes with both animals and personnel together with equipment was tested at MYITKYINA, and correct loads determined. Feeling sure that the lift would have to be made fast we also started, at this time, to build stalls in cargo ships to handle animals. Bamboo poles were secured along the side of the cabin and heavy cooca matting was placed on the floor so animals would not slip or slide.

5. G-3 and G-4 sections this Headquarters organized teams composed of a G-3 and a G-4 Officer together with a few interpreters and veterinary personnel for each field. These teams were given instructions to organize the field to which they were sent along the lines in Major MacDaniel's report. They were carefully briefed so there would be no delay in loading planes as they came in. The 10th Air Force appointed an officer, Colonel Grubbs, in overall charge of their part of the move. Colonel Grubbs was most cooperative and worked hand in glove with G-3. The 10th Air Force briefed an Air Officer for each field and this Air Officer acted with the team sent from this Headquarters. Major Beiser, G-3 Section, was put in overall supervision to coordinate G-3 matters. Colonel Gade, G-4, coordinated overall G-4 matters. Fortunately telephone communication was available to all fields except the field at SI-U, with which we had radio contact.

6. Immediately upon receipt of acceptance of our plan to move the 14th Division first, work was begun to move the 41st Regiment at MYITKYINA North. Animals and personnel were loaded at the same time and, because of the odd numbers of sorties for each operation, expanded to SAMRAV and SARAZUP before all the units at MYITKYINA North were lifted.

7. ATC planes of Colonel Williams command were ordered to assist the 10th Air Force, and sorties were flown 24 hours a day. At one time all five fields were being used. There was no hitch or delay at any field.

8. Feeling certain that the 22nd Division would be called for next, Air Force Engineers were flown into SI-U and enlarged the G-47 strip to take G-40s. This Division was deep into enemy territory and the field liable to attack by Japanese ground forces as well as air. Fighter cover had to be maintained while this work was going on. The 22nd Division furnished the ground security around the perimeter of the airfield.

8. Upon completion of the move of the 14th Division the question of delaying the lift of the 22nd Division was brought up. However on the 21st of December a directive was received to ship the 22nd Division immediately. Inasmuch as our organization was all set up the lift was started immediately by the 10th Air Force, and within 24 hours some 1100 men and 120 animals of the 22nd Division were in China. The lift continued uninterrupted and included 6th Army Headquarters, Special Service Troops, 45th Portable Surgical Hospital, 60th Portable Surgical Hospital, Detachment 988th Signal Operations Company (Spec), and 1st Heavy Mortar Regiment, less 1st Battalion, together with all American liaison personnel.

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10. The fields employed in this lift were MYITKYINA South, SAPHAN, SI-U and LEDO. SI-U was not equipped for night sorties. Therefore, in conjunction with regular supply sorties flown in the daytime, cargo ships that delivered supplies to SI-U shuttled Chinese troops to MYITKYINA South where a team received and bivouaced them. They were picked up by night sorties as sorties became available. The air lift of all units (personnel, equipment and animals) under orders was completed 0500 hours 5 January, 1945, which includes four (4) days when no lifts were made. Troops were issued five (5) days rations, combat load of ammunition and woolen clothing before they enplaned at the field.

11. Total personnel, animals and equipment transported to China Theater. (Inclosure No.).

U. S. Personnel	247
Chinese Personnel	25105
Animals	1596
Jeeps with trailers	42
75 MM Howitzers	24
4.2" Chemical Mortars	48
37 MM AT Guns	48

12. AUC, 10th Air Force Troop Carrier and Combat Cargo, and 317th and 319th Troop Carrier Squadrons made the lift using C-46 and C-47 aircraft. (317th and 319th TC lifted the animals.

a. 533 sorties were flown to lift the 14th Division.

b. 869 sorties were flown to lift all other units.

13. The entire operation was handled very smoothly and without any disorganization or confusion. Its smoothness was entirely the result of close cooperation and coordination between the ground crews and the 10th Air Force, and due to careful preliminary planning and thorough orientation and instructions to each team (both air and ground) in the organization of the airport to which they were assigned. Attached report of Major MacDaniel (Inclosure No.) is typical of the organization and operation at each of the airfields used.

14. Major Seiser, at this Headquarters, kept all loose ends together and acted as overall controller of ground, through whom all details were coordinated; each team reporting in to him directly at the end of each phase giving information of work accomplished and outlining plan for the following day such as - number and type of planes desired, time desired, etc.

~~CONFIDENTIAL~~

Major Weiser kept in close touch with Colonel Grubbs so that both air and ground were acquainted with each other's problems, insuring much better cooperation and coordination than could have been otherwise.

THOMAS N. DAVIES
Colonel, G.S.C.
A. C. of S., G-3

10-22-55

PART V /

"CINUEWORM" STATISTICAL TOTALS

55

10-22-55

HEADQUARTERS
TENTH AIR FORCE
APO 116

~~SECRET~~
Auth: CG 10th AF
Initials: efm
Date: 12 Jan 45

STATISTICAL BREAKDOWN

"OPERATION GRUBWORM"

TOTALS HAULED:

Chinese Soldiers	25,105
American Soldiers	249
Animals	1,596
Jeeps	42
75 mm. Howitzers	48
4.2 Mortars	48
A/T Guns	48

PERSONNEL HAULED (BY UNITS)

	<u>Chinese Soldiers</u>	<u>American Soldiers</u>
14th Division	10,504	29
22nd Division	12,132	22
Sixth Army	881	12
First Heavy Mortar Reg't.	1,528	17
45th Portable Surg. Hosp.		30
60th Portable Surg. Hosp.		28
988th Signal Company		106
Air-Ground Liaison Team		5
TOTALS	<u>25,105</u>	<u>249</u>

TOTAL SORTIES:

1,361

Movement began 5 December 1944 - suspended 16 December to 22

December 1944 - ended 5 January 1945.

44

GRAND TOTAL STATISTICAL TOTALS

10th AF				14th Division									
T.C. & C.C.				A.T.C.									
Commandos													
Date	Sorties	Personnel	Animals	Sorties	Personnel	Sorties	Personnel	Miscellaneous Hauled	Total Sorties	Cumulative Sorties	Total Personnel	Cumulative Personnel	Cumulative Animals
900-1900)													
Dec. 44													
5	36	922							36	36	922	922	
								1 Jeep 1 Jeep Trail					
6	1	2							1	37	2	924	
								1 Jeep					
7	21	478						2 A/T guns	21	58	478	1,402	
								2 Jeeps 5 loads					
8	21	433		13	225			Ammo & rifle 1 Jeep Trail	34	92	658	2,060	
9				1	25				1	93	25	2,085	
10	26	102	104	89	1,763			2 Jeeps	115	208	1,865	3,950	104
11	25	99	92	44	1,382			8 A/T guns	69	277	1,481	5,431	106
								6 A/T guns					
12	27	106	108	26	521			3 Jeeps	53	330	627	6,058	304
								6 Jeeps 7 plane					
13	28	110	108	42	670	12	532	loads wool- ens	82	412	1,312	7,370	412
								1 Jeep					
14	27	108	96	46	396	24	1,030	4 A/T guns	97	509	1,534	8,904	508
15	2	8	4	3	63	31	1,198	4 A/T guns	36	545	1,269	10,173	512
16				7	105				7	552	105	10,278	512
Totals	214	2,368	512	271	5,150	67	2,760		552	552	10,278	10,278	512

GRUBWORM - 1 HISTICAL TOTALS

		14th AF			22nd Division		(6th Army; 1st Mortar Regt; Misc. Units).													
		COMMANDOS			COMBAT CARGO		A.T.C.		Miscellaneous		Total		Cumulative		Total		Cumulative		Cumulative	
Date	Sorties	Animals	Personnel	Sorties	Personnel	Sorties	Personnel	Sorties	Personnel	Hauled	sorties	Sorties	Personnel	Personnel	Animals	Sorties	Personnel	Personnel	Animals	
900-1900)																				
Dec. 44																				
22	20	101	144			13	398			1 Jeep 2 Artil Pcs	33	33	542	542	101					
23	23	111	141			24	1,031			45th Post Surg Hosp	47	80	1,172	1,714	212					
24	26	117	119			25	937			3 Jeeps 5 Artil Pcs	51	131	1,056	2,770	329					
25	25	112	104			18	740			5 A/T guns	43	174	844	3,614						
26	27	135	144			38	1,219			12 A/T guns	65	239	1,363	4,977	576					
27	26	115	112	10	294	53	1,696				99	338	2,102	7,079	691					
28	25	121	122	1	30	43	1,169			8 Jeeps, 2 Trailers, 60th P. Surg	69	407	1,321	8,400	812					
29	24	111	107	8	178	47	1,151			4 Jeeps 6 Trailers 7 A/T guns	79	486	1,436	9,836	923					
30	23	99	129	1	25	23	215			5 Jeeps 6 Artil pcs	47	533	369	10,205	1,022					
31	20	51	261	10	175	57	1,105			25 plane loads equip.	87	620	1,541	11,746	1,073					
Jan. 45										4 Jeeps 20 Howitzers 15 Mortars	47	667	773	12,519	1,078					
1	17	5	314	9	125	21	334			3 Jeeps 15 Howitzers	69	736	1,107	13,626	1,083					
2	18	5	362	4	50	47	695			15 Mortars	26	762	412	14,038						
3				9	49	17	363			13 Howitzers 10 Mortars	34	796	757	14,795						
4				14	302	20	455													
5				2	55	11	226				13	809	281	15,076						
Totals	274	1,083	2,059	68	1,283	457	11,734				809	809	15,076	15,076	1,083					