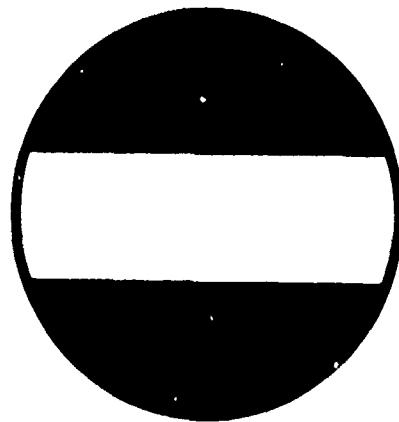


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HISTORY OF THE TENTH LIGHT DIVISION (ALPINE)

Study No. 28



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Historical Section . Army Ground Forces

1946

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The Army Ground Forces

HISTORY OF THE 10TH LIGHT DIVISION (ALPINE)

Study No. 28

By

Capt. Thomas P. Govan

Historical Section - Army Ground Forces

1946

HEADQUARTERS ARMY GROUND FORCES

WASHINGTON 25, D. C.

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1 September 1945

SUBJECT: Studies in the History of Army Ground Forces

TO: All Interested Agencies

1. The history of the Army Ground Forces as a command was prepared during the course of the war and completed immediately thereafter. The studies prepared in Headquarters Army Ground Forces, were written by professional historians, three of whom served as commissioned officers, and one as a civilian. The histories of the subordinate commands were prepared by historical officers, who except in Second Army, acted as such in addition to other duties.

2. From the first, the history was designed primarily for the Army. Its object is to give an account of what was done from the point of view of the command preparing the history, including a candid, and factual account of difficulties, mistakes recognized as such, the means by which, in the opinion of those concerned, they might have been avoided, the measures used to overcome them, and the effectiveness of such measures. The history is not intended to be laudatory.

3. The history of the Army Ground Forces is composed of monographs on the subjects selected, and of two volumes in which an overall history is presented. A separate volume is devoted to the activities of each of the major subordinate commands.

4. In order that the studies may be made available to interested agencies at the earliest possible date, they are being reproduced and distributed in manuscript form. As such they must be regarded as drafts subject to final editing and revision. Persons finding errors of fact or important omissions are encouraged to communicate with the Commanding General, Army Ground Forces, Attention: Historical Section, in order that corrections may be made prior to publication in printed form by the War Department.

BY COMMAND OF GENERAL DEVERS:

J. L. Farr
J. L. FARR
Colonel, AGD
Acting Ground Adj General

1 Incl:
Historical Study

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PREFATORY NOTE

This history of the 10th Light Division covers only the period to the end of April 1944. The subsequent history of the division, including its reorganization as the 10th Mountain Division, is sketched in booklet, Studies in the History of the Army Ground Forces, No. 23, "Training for Mountain and Winter Warfare." The present study, submitted by the division in June 1944, is included in the series of AGF Studies to supplement No. 23, and also No. 24, "The Mountain Training Center."

Copies of the documents listed in Annex I are filed in AGF Records 314.7
(10 Light Div) (R).

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HISTORY OF THE 10TH LIGHT DIVISION

Activation

The 10th Light Division (Alpine) was activated by the commanding general, Second Army on 15 July 1943 and assigned to the XI Corps.¹ The three infantry regiments, the 85th, 86th and 90th were organized from the 86th Infantry, two regimental cadres from the II Armored Corps, and fillers furnished by the Army Ground Forces. The 86th Infantry had been organized with personnel selected by the National Ski Patrol System who were either qualified or showed aptitude for high altitude operations. The personnel of this regiment were redistributed uniformly in all grades among the three infantry regiments.²

The division artillery consisted of three battalions, the 604th Field Artillery Battalion, 605th Field Artillery Battalion and 616th Field Artillery Battalion. Two of these battalions, the 604th Field Artillery and 605th Field Artillery, had already been activated and trained as part of the Mountain Training Center. The third, the 616th, was activated and trained with a cadre from the 2d Field Artillery Battalion and 603d Field Artillery Battalion, 604th Field Artillery Battalion, 605th Field Artillery Battalion and other personnel of the Mountain Training Center. The three battalions were then equalized to insure a uniform distribution of trained personnel.³

The other units of the division came from the reorganization and redesignation of units of the Mountain Training Center with the exception of the 727th Antiaircraft Artillery Machine Gun Battalion, which was furnished by the commanding general, Antiaircraft Command.⁴

The 10th Light Division (Alpine) was organized to test the organization and equipment best suited to the employment of a division in high mountain warfare and was to be trained to attain ultimate combat efficiency in high mountain warfare. It was designed to operate primarily in mountains and primitive terrain where road nets were poor or nonexistent and under adverse and extreme winter weather conditions.⁵

The division was organized with pack transport, but certain light motor equipment ($\frac{1}{2}$ -ton trucks, M-28, M-29 Cargo Carriers) was available as dual equipment for experimental use as substitutes for pack transport. The purpose of this experiment was to determine the type of transport or combination of transport most advantageous mountain or winter warfare.⁶ In addition, the 226th Engineer Motorized Company was attached to the division in order to make a unit available to determine, by tests, the feasibility of rapidly constructing roads and trails through mountainous terrain in support of a light division, so that it could be supplied by this motor transportation.⁷

The activation and training of the 10th Light Division at Camp Hale, Colorado at an altitude of over 9,000 feet was a unique experiment for the Army of the United States. It would not have been possible had it not been for the exploratory work accomplished by the Mountain Training Center and its predecessors. Mountain training, as distinguished from winter warfare training over ice and snow, began on 16 December 1941 with the activation of the 87th Mountain Infantry Battalion at Fort Lewis, Washington.⁸

This organization was made up of volunteers from the 3d, 41st and 44th Divisions and others direct from civilian life recruited by the National Ski Patrol System. Training was conducted at Mount Rainier, Washington until September 1942. But facilities were not available here for the complete training of soldiers in all phases of mountain training. The main accomplishment at Mount Rainier was the development of military skiing technique. The differences between civilian skiing, which is wholly

downhill with no weight being carried, and military skiing, which teaches the individual not only downhill but also cross-country skiing with a heavy pack, and the development of proper stamina in addition to form, were emphasized in the training. Tests as to the relative values of skis and snowshoes were made. Snowshoes were found superior where heavy equipment had to be carried, but for a surprise attack or fast-moving cross-country action, skis were more desirable.

Volunteers for mountain training continued in large numbers. The 87th Mountain Infantry Battalion became a regiment, and, in September 1942, the Mountain Training Center was activated at Camp Carson, Colorado under the command of Colonel (now Brig. Gen.) Onslow S. Rolfe, who had been in command of the mountain troops from their date of activation. Two months later, November 1942, the Mountain Training Center was moved to Camp Hale, which had just been completed at Pando, Colorado. By this time mountain troops consisted of artillery, signal, quartermaster, engineer, ordnance and medical units in addition to the original mountain infantry regiment.

Training consisted not only of special mountaineering techniques, skiing, snowshoeing, climbing, etc, but also of the individual and unit training of the various arms and services, and in their combined operations. At the same time there was continuous experimentation with technical equipment and in training methods applicable to mountain and winter warfare by the Mountain Training Center in conjunction with the Mountain and Winter Warfare Board which had been established for this purpose.⁹

The experience of the Mountain Training Center during the winter of 1942-1943 with units of various arms and services made it evident that it was possible for a tactical organization as large as a division to be organized and trained for mountain and winter warfare. On 26 June 1942, Lt. Gen. Lesley J. McNair, Commanding General, Army Ground Forces, inspected the Mountain Training Center, and immediately thereafter, the staff of the Mountain Training Center received the tables of organization, tables of equipment, and the details of the activation of the 10th Light Division.

Personnel

The Commanding General of the 10th Light Division was Maj. Gen. Lloyd E. Jones who had previously commanded the task force which occupied Cold Bay and Amchitka in the Aleutian Islands. The Assistant Division Commander was Brig. Gen. Frank L. Culin, Jr. who also had service in the Aleutians, being in command of the Northern Forces on Attu from 11 May to 2 July 1943. Brig. Gen. Culin was relieved on 27 April 1944 to assume command of the 87th Infantry Division. Col. Robinson E. Duff who had previously commanded the 398th Infantry of the 100th Infantry Division succeeded him as assistant division commander. The Division Artillery was commanded by Brig. Gen. David L. Ruffner, a recognized authority on pack artillery, who had commanded the Mountain Training Center Artillery from its activation.

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The division was organized under the Light Division Table of Organization 72 (Pack) which called for 490 officers, 19 warrant officers and 8,355 enlisted men. Officers for the division were supplied, wherever practicable, from officers already under the control of the Mountain Training Center. Where this was not possible the commanding general, Second Army, furnished officers to fill vacancies from sources under his control.¹⁰ The original enlisted personnel came largely from the units of the Mountain Training Center with two regimental cadres from the 27th Infantry Division which had completed a year of duty in the Hawaiian Islands. These cadres were for the most part satisfactory. There were losses due to physical reasons and a number of cadremen transferred to other organizations such as the Air Corps and parachute troops. Some of the losses of cadremen can be traced to the fact that the men came from a warm climate.

The enlisted personnel from the Mountain Training Center were of very high quality. Many of them were volunteers, recruited by the National Ski Patrol System from men who had previous mountain and ski experience. In addition the following physical standards for enlisted men of high mountain or alpine units had been established:

1. Age, maximum - 35 years.
2. Second degree pes planus, even if symptomatic, to disqualify.
3. Other physical requirements and standards to be as presently prescribed for Class 1-A inductees in Mobilization Regulation 1-9 and such standards to be rigidly adhered to.
4. Waivers of the above standards in the cases of selected individuals to be made at the discretion of the senior commander concerned.
5. Definite and conclusive evidence of chronic "altitude sickness" will disqualify.¹¹

The AGCT distribution of men in the Mountain Training Center on 22 April 1943 was:

<u>Group</u>	<u>Number</u>	<u>Percentages</u>
I	701	6.19
II	5668	32.29
III	3789	33.46
IV	2626	23.18
V	537	4.83

Approximately two thousand of the fillers for the division were provided through the recruiting program of the National Ski Patrol System. Seven hundred and seventy one of these were volunteers sent direct from reception centers. The remainder came from men recommended by the National Ski Patrol System who had been earmarked on induction for mountain troops but had been assigned to infantry and artillery replacement centers for basic training, and others who were already assigned to units but applied for transfer through the Ski Patrol to mountain troops.¹³

It soon became apparent that the division could not be filled entirely from this source and on 6 August 1943, 30 officers and 454 enlisted men were received as a result of the reorganization of the 89th Infantry Division. Beginning on 7 October 1,333 enlisted men from inactivated armored infantry units were sent to the division, and, beginning on 9 December, 409 enlisted men came from reorganized tank destroyer battalions. After this the division was forced to rely on periodic requisitions for filler replacements and on volunteers through the National Ski Patrol System.¹⁴

The fillers did not quite measure up to the high quality of the original personnel but the division has maintained a high average both as to AGCT distribution and the percentage of young men in its ranks. On 7 October 1943 the AGCT distribution was as follows:

<u>Grade</u>	<u>Number</u>	<u>Percentage</u>
I	549	8.0
II	2695	39.5
III	2189	32.1
IV	1177	17.3
V	211	3.1

On the same date the age distribution was:

<u>Group</u>	<u>Number</u>	<u>Percentage</u>
18-19	1493	21.8
20-22	2141	31.2
23-25	1167	17.0
26-28	839	12.2
29-31	580	8.4
32-34	313	4.6
35-37	262	3.8
38 and Over	67	1.0

Most of the filler replacements were not volunteers for mountain troops. Many of them were from the South, unacquainted with snow and cold weather and with a lower educational and AGCT level than the original personnel. The filler replacements from the armored infantry and tank destroyer units, however, proved to be satisfactory, though considerable training was necessary to bring them up to the standards of the remainder of the division.¹⁶

The need for special physical requirements for troops in high altitude and mountain training became more apparent as training progressed. It was found that a soldier able to do duty at a low altitude may find considerable difficulty doing duty in the mountains. To learn to live and fight in sub-zero and rarefied atmosphere was not an easy task. At 9,000 feet and higher there is approximately 30 per cent less oxygen than at sea level. From time to time lists of men not meeting the physical standards were submitted to higher headquarters for reassignment. For a time the Army Ground Forces directed the reassignment. Later XI Corps took over this function and after reassigning 562 enlisted men to other organizations of the Corps, the task was assumed by Second Army. A total of 982 men were reassigned to other infantry divisions up to 1 February 1944. The majority of these men were reassigned to other infantry divisions at a lower altitude. The remainder were reassigned to Headquarters, Special Troops of Second and Third Armies.¹⁷

Because of the high caliber men in the division a great many were lost to Air Corps, Ground Crew and Aviator Cadet. There were many volunteers for parachute training. These losses added to the normal attrition of the division caused considerable difficulty in reaching table of organization strength. The division did not reach its full strength until 22 March 1944.

The same rapid turnover of personnel existed in the case of officers. The division was called on to furnish numerous officer replacements to AGF replacement depots. Officer cadres for new field artillery battalions took many officers from the field artillery battalions. There was a constant shifting of infantry and field artillery officers in and out of the command. The medical corps was hardest hit. From the date of activation until 1 May 1944 there had been at least two complete turnovers of medical officers. The medical battalions were forced to function with 1 or 2 medical officers in a company authorized 6. The infantry medical detachment operated with 2 medical officers in a detachment authorized 4.¹⁸

Losses of well qualified regimental commanders and other line officers proved to be difficult for the division to overcome.

In February 1944 the 90th Infantry was relieved from assignment to the 10th Light Division and was replaced by the 87th Mountain Infantry which was reorganized as a light infantry regiment.¹⁹ The 87th had been an integral part of the Mountain Training Center from the date of activation of the Center until June 1943 when it had been transferred to the Alaskan Defense Command for the capture of Kiska in the Aleutian

Islands. On completion of that assignment the regiment was returned to the United States with station at Camp Carson, Colorado. The assignment of this regiment provided the division with an experienced unit whose personnel were skilled in mountain and winter warfare, and some of whom were among the nation's outstanding skiers and mountaineers.

Before the 90th Infantry left the division the men in its ranks who had come in through the National Ski Patrol System were cleared and assigned to the other infantry regiments of the division. They were replaced by men from the 87th and other units of the division.

Training

The training mission of the 10th Light Division was to attain ultimate combat efficiency in high mountain warfare. There were many obstacles in the way. The original units were in various stages of training; the fillers for the division were slow in arriving, some of these were direct from reception centers while others had completed individual and unit training in different branches; and, in addition, large numbers of officers and men were unacquainted with the special techniques of mountain and winter warfare.

The training program of the division had to provide for special recruit training for those direct from reception centers; the remedying of deficiencies in individual and unit training of some of the units; the special training required for operations under the peculiar conditions of high mountain warfare; and the regular training prescribed for all units by higher headquarters.

In its special training task the division had the experience of large numbers of its own officers and men in winter and mountain training to draw upon in addition to the specialized knowledge of the officers and men of the Mountain Training Center (later Mountain Training Group). But many of the problems confronting the training of such a large unit were unique and could be worked out only through the method of trial and error.

The problems of organization took up the first ten days after activation from 15 July to 26 July, then training began. On 21 July each infantry regiment was required to appoint one qualified field officer to serve as a member of a board to study and publish a directive for squad and platoon training.²⁰ The initial directive was issued on 26 July and provided that the infantry units, from 26 July to 15 August, would accomplish the training of cadre personnel so as to perform duties in unit training; preliminary marksmanship instruction and range firing for all individuals who had not fired the rifle; and marches of increasing length and weight of equipment and other field training designed to acclimatize newly-arrived troops.²¹

Other units of the division were to continue basic, unit or technical training necessary during the same period. Since movement to the field on 16 August was planned, commanders and staffs were to make the necessary reconnaissance to facilitate the planning and execution of training schedules after that date, and to requisition the necessary equipment. In addition an inspection of individual training by organization commanders was ordered on 15 August and men found deficient in basic training were to be grouped for special instruction within units.²²

During the same period the officers of Headquarters 10th Light Division were given instructions in rock climbing by personnel of the Mountain Training Center.²³ On 16 August a master training schedule, based on a verbal directive given by General Jones, was published. This covered the period until 6 November and was designed to complete unit training on that date. The schedule was based on the assumption, later

proved erroneous, that the division would receive trained fillers before 1 September.²⁴

Shortly after the publication of this schedule the division received a training directive from the XI Corps. This provided for two periods of training, the first from 15 August 1943 to 8 January 1944, and the second from 10 January to 31 March. During the first period applicable individual and unit training were to be accomplished to permit the units of the division to participate in combined training by 10 January. The second period was to be devoted to appropriate training, exercises and maneuvers in order to accomplish the training mission assigned to the division.²⁵

No modifications in the 10th Division training schedule were necessary as a result of this directive and training continued as previously announced.²⁶ The required schools for specialized and technical training of armorers, motor officers, radio operators and other technicians and specialists were established. The training of the division was under way but continued shortages of men and equipment in the various units added to the difficulties.

Many of the fillers came to the division direct from the reception center and it was necessary to give them basic training before they could take their places in units. This school under Lt. Col. John P. Stone began on 1 November and continued for six weeks, turning out fully qualified replacements who worked in as competent members of the combat units. This was accomplished by the intensive work of the 24 officers and 218 enlisted men assigned as a faculty for this school and by the elimination of all the free time provided by MTP 21-1. During this period the trainees had no other duties.²⁷

The schools for specialized mountain and winter warfare were also established during this period. From 30 August 1943 to 16 October 1943 each infantry battalion and selected officers from the artillery spent one week in bivouac at a mountaineering school conducted by the Mountain Training Center under Lt. Col. Robert L. Cook. Here officers and men received intensive training in rock climbing, mountain marching, route selection and navigation. The training was completed by an extended cross-country march in the rough country in the vicinity of Holy Cross Mountain.²⁸

A ski training program for individuals equipped with skis plus ten per cent additional for replacements was scheduled to begin on 8 November under the supervision of Capt. H. L. Kelly of the Mountain Training Group.²⁹ Officer and enlisted instructors for the division were trained and qualified but the ski training of the division was postponed until 27 December because there was insufficient snow in the lower valleys.³⁰

The Mountain Training Group also conducted a school in the operation and maintenance of the M-29 Light Cargo Carrier from 15 November 1943 to 7 December 1943. Drivers, mechanics and one officer from each unit in the division were given two days instruction in preparation for the use of these over-snow transport vehicles.³¹

The regular divisional program continued. Combat intelligence training was given to all individuals with emphasis on scouting, patrolling, compass, map reading, reporting by small units and individuals, reconnaissance by ground foot patrols, observing, use of air photos, movement of individuals and patrols through mountainous country, mountain climbing, skiing, survival and operations in snow and extreme cold, sketching, communications and keeping of records. The division had no organic reconnaissance unit and the intelligence sections in all echelons of command were small. This was remedied by the formation of a provisional reconnaissance echelon from a reinforced rifle battalion which was given a limited amount of additional intelligence training and by the intensive training of individual soldiers whose primary functions were not intelligence.³²

The intensive training program of the division caused the combat intelligence tests to be given over an extended period of time in order that the small amount of motor transport and the few pieces of suitable nearby terrain might be utilized. The emphasis on these tests was on the ultimate combat proficiency of all personnel and not the grades or ratings. The very nature of the rough mountainous terrain, extreme weather conditions, lack of necessary equipment, transportation and personnel made intelligence training slow and difficult. Intelligence training and that to attain combat proficiency was carried on simultaneously and the problem of proper scheduling was overcome only by the close coordination of the G-2 and G-3 Sections. One of the most difficult problems was the maintenance of trained intelligence men in the intelligence sections. The turnover of men in the division was so high that partially trained intelligence personnel were pulled out of their sections in order to fill the vacancies created by the transfer and loss of key men in other units of the organization. Nevertheless the training was carried through and all officers and troops were impressed with the importance of combat intelligence.³³

Infantry Platoon Combat Firing Proficiency Tests were given from 22 November to 18 December on four rifle and weapons combat ranges. These utilized the varied and rough mountainous terrain, and the tests were conducted in snow and sub-zero weather.³⁴

While the troops were engaged in the established training program the division staff, later the combat team headquarters, was carrying out CPX's. These were initially held indoors and the principal problem was found to be the computation of time and space or rather in reaching a satisfactory decision as to time and space between umpires and umpired. Combat teams made constructive marches that actual experience later proved to be impossible.

The first division field exercise was held early in November. The problem was confined to a movement of the division in a single column over a route of about 7 miles and a climb of 2,000 feet into a bivouac. A truck head for Class I and V was established about 1.5 miles and 1,000 feet below the bivouac area with sufficient area for unloading trucks and loading mules being cleared by the 126th Engineer Battalion. The division took 18 hours to close in the bivouac area. The reason for the slow movement was the disorganization of the column by the mules, which slipped on icy places in the road, had to be rescued, reloaded and reorganized. The supply of rations was satisfactory but slow and transportation was insufficient for ammunition supply to be complete.³⁵

By the middle of December 1943 it was obvious that the division could not complete its special individual and unit training and its special mission of over-snow operation by 10 January 1944 because of an influenza epidemic during November and December, the slow arrival of fillers, and the lack of general covering of snow. Accordingly a request was made to the XI Corps and Second Army that the unit training period be extended one month. This was at first refused, but early in January the division came under XVI Corps. A team from this Corps and a representative of Second Army inspected the division thoroughly, found individual training satisfactory and recommended the extension of unit training one month to 5 February, which was permitted.³⁶

Unit training was completed on 5 February. Preparations for combined training, which was to last from 7 February to 22 April, were already under way. This period was to consist of 12 weeks, the first 6 weeks to consist of successive periods of from 4 to 7 days and nights in the field, and the second 6 weeks to consist of 1 two-week and 1 three-week period in the field.³⁷ The 10th Division, in accordance with this directive from higher headquarters, prepared a detailed schedule for combined training which provided for the following:

1. 7 February - 25 March, RCT and Battalion Test Phase.
2. 27 March - 15 April, "D" Series. Specific dates for the exercises were to be determined by Lt. Col. L. E. Bolduc, Headquarters XVI Corps, with approval of the maneuver director, after further study and reconnaissance.
3. 17-29 April for Attack against Permanent Land Fortifications and for Field Artillery Battalion Tests.
4. An Air-Ground School for officers not occupied with training described above was to be held during the period 17-29 April.³⁸

The original training letter from the XI Corps directed the division to make a report at the conclusion of combined training to cover the following:

1. Organization -- all units; adequacy of personnel. Flexibility of organization. Efficiency in type operations. Modification recommended. Adequacy of staffs for continuous operations.
 2. Weapons: Adequacy of numbers. Proper types. Ammunition supply.
 3. Equipment: Amount and efficiency of types issued. Is organic transportation adequate and of proper type to meet minimum requirements?
 4. Communications - Wire: Adequacy, weight. Radio: Range and efficiency, weight, adequacy.
 5. Engineers: Proper employment. Adequacy of equipment. Efficiency of pioneer units. Possibility of using separate engineer company equipped with angle-dozers for rapid road and trail building in rear of the division.
 6. Cooking: Methods. Adequacy of cooking equipment. Method of distribution of prepared food to troops.
 7. Supply: The utility of hand carts. Are present individual packboard and cart loads too heavy? How far can they be carried in difficult terrain? What attachments are necessary for supply by pack, motor, air, water, human-carry for operations extended beyond the 5 mile distance for which organic transport is provided?
 8. Transport: Adequacy. Relative advantages of pack and various types of motor transport.
 9. Factual Data: Time and space factors and logistical data.
 10. Recommended changes in organization, weapons and equipment.³⁹
- This report covers all phases of training, equipment and supply.⁴⁰

Clothing and Equipment

The division was activated under tables of equipment that had been recently prepared by the Army Ground Forces. These tables were presented to the division in the form of rough mimeographed copies, corrected and re-corrected by members of the AGF headquarters staff. From the basis of these tables of equipment, breakdowns were prepared, mimeographed, and presented to the various organizations that were to compose part of the division.

Considerable ground work in the testing of equipment and clothing for an organization of this nature had previously been done by the 87th Mountain Infantry Regiment on Mt. Rainier during the winter of 1941 and 1942 and by the Mountain Winter Warfare Board at Camp Hale during the winter of 1942 and 1943, but a suitable answer for numerous items of equipment and clothing had not been found at the time of the activation.

Most of the clothing and equipment as authorized under these tables of equipment was furnished the division in due time and the training program of the division itself suffered very little from lack of equipment.

The major problem encountered in operation in high mountainous terrain has been transportation of organizational equipment, basic loads of ammunition, rations and the resupply of ammunition and rations.⁴¹

The original tables of equipment set up quite a large number of carts, hand, model M3A4, as a method of transportation of this equipment over dry land. This was later changed to toboggans for use over snow. Experience has shown very definitely at this time that neither the handcarts nor toboggans are of any use transporting equipment over rough mountain terrain, that the number of individuals required to draw the carts or toboggans are required to expend more effort in pulling the transportation with its load than is required to carry that same load on the backs of individuals.

In addition to the handcarts for dry land operation, the division was authorized a certain number of pack mules. The basis was such that even when the mules supplemented the handcarts, a minimum of two or more shuttles had to be made in order to move the organic equipment of the division. No provisions were made for sufficient cargadors and packers efficiently and quickly to pack and unpack the mule trains. The result was the consumption of a large amount of time to complete each shuttle. In fact, so much time has been required that it is impossible to move the organic equipment as fast and as far as the foot elements of the division can march daily. In addition to this serious bottleneck the division is left in the mountains without any transportation for the resupply of ammunition and rations.

For over-snow operations the Special List of Equipment authorized M-29 cargo carriers, light, a type of snow vehicle that has been shown to have excellent mobility over any type of snow and over any type of terrain not so heavily wooded that the vehicle cannot pass between the trees. This vehicle is capable of carrying a load of 1,200 pounds or the equivalent loading capacity of six pack mules and has made the division much more mobile when supplied.

In addition to the cargo carriers, the Special List of Equipment authorized cargo carrier sleds designed to be pulled by the cargo carriers. Experience has shown that this sled is impracticable for use in mountainous and rough terrain, but indicates that it would be excellent in over-snow operations on level or gently-rolling terrain.

Numerous experiments were conducted with various articles of clothing and individual equipment. With the exception of footwear for that part of the division equipped with snowshoes, a satisfactory authorization of clothing and individual equipment has been secured and adapted. At the present time those men equipped with snowshoes are not authorized any type of footwear that is suitable for wear during the temperature range of 20 above zero to approximately 10 degrees below.

The standard type of emergency rations, i.e., K rations, C rations, B Frigid ration, mountain ration, and the D ration, have been experimented with during the division maneuvers and have been found to be satisfactory for use under certain conditions. Operations over this type of terrain make it necessary for frequent use of a ration that can be easily carried by the individual and consumed without the necessity

of cooking. The K ration and C ration have both been found satisfactory for the purpose, although extreme cold encountered makes an addition of hot coffee or some similar hot beverage very desirable as a supplement to these rations when it can be prepared.

Another factor encountered to which no answer has been secured is that the rugged terrain and the deep snow over which the foot elements operate make it very desirable that the weight of the pack on the individual's back be reduced to the minimum in order to permit him to reach his objective while still capable of efficient combat. In order to exist in this extreme cold for a protracted length of time quite a large amount of equipment is necessary for the individual's use. It is thought that it would be very desirable to have sufficient transportation made available in order to carry a large percentage of this equipment for the troops.

The original table of organization cut the number of administrative and supply personnel of the division considerably under that of a normal infantry division. A division operating in high mountainous territory requires a greater number of supply personnel than a normal low land division, and experience has shown that the supply personnel allowed is seriously inadequate for efficient performance.

Since the division was the first of its kind, considerable experimentation was involved in adapting the table of organization and table of equipment to the problems of signal communication in the mountains.

A large amount of wire had to be laid to carry on the division communications. Wire had to be laid in deep snow under difficult conditions. Wire crews had to replace large quantities of wire which had been cut by cargo carriers going over it. It was found that the table of organization did not provide enough messenger and field wire-laying personnel.

The radio equipment (SCR-195 and SCR-511) provided to substitute for SCR-300 was unsatisfactory. The final receipt of a portion of the table of equipment authorization of SCR-300 improved radio communication considerably but still left the division without a thoroughly reliable set for command purposes. The SCR-284 provided in the table of equipment was not too reliable in all cases due to limited power and extreme fragility.

Tables of equipment for signal units failed to provide telephones and tentage sufficient for the needs of the division in field operations.⁴²

REFERENCES

1. (1) WD ltr AG 322(8 Jul 43) OB-I-GNGCT, 10 Jul 43, sub: Orgn of the 10th Light Div. (2) Second Army ltr AG 322.04-15, 13 Jul 43, sub: Activation of the 10th Light Div. (3) GO 1, 10th Light Div, 13 Jul 43, sub: Activation of the 10th Light Div.
2. Ibid.
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4. WD ltr AG 322(8 Jul 43)OB-I-GNGCT, 10 Jul 43, sub: Orgn of the 10th Light Div. (2) Second Army ltr AG 322.04-15, 13 Jul 43, sub: Activation of the 10th Light Div. (3) GO 1, 10th Light Div, 15 Jul 43, sub: Activation of the 10th Light Div.
5. AGF ltr 353/2(Mt)(F)(28 Jul 43)GNGCT, 28 Jul 43, sub: Tng of the 10th Light Div (Alpine). (2) XI Corps ltr AG 353 GNMCE, 11 Aug 43, sub: Tng of 10th Light Div (Alpine).
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7. AGF ltr 321(Engr)(F)(17 Sep 43)GNGCT, 17 Sep 43, sub: Mission of 226th Engr Mtz Co.
8. This account of the background of the 10th Light Division is based on information furnished by Brig Gen Onslow S. Rolfe, Asst Div Comdr, 71st Light Div, formerly CG, Mountain Training Center.
9. See Studies in the History of the Army Ground Forces No 33, The Mountain Training Center (R).
10. WD ltr AG 210.31(5 Jul 43)PO-A, 6 Jul 43, sub: Commissioned Personnel for the 10th Light Div.
11. 10th Med Bn(Mn) ltr 201.6/360 GNGCT, 17 Feb 43, sub: Qualification Requirements for Mountain Troops. AGF 8th ind 201.6-GNCAP-1(2-17-43), 14 May 43.
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14. 10th Inf Div memo, 27 Jan 44, sub: Enlisted Men Transferred to Lower Altitude. In G-1 files.
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16. Comments of Capt H. W. Longfellow, Classification Off, 10th Inf Div.
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18. Statement of Lt Col Berman, 10th Inf Div, Div Surgeon.
19. (1) Second Army ltr AG 370.5(Inf)(GNMBG), 17 Feb 44, sub: Transfer of 87th Mt Inf Regt to Cp Hale, Colo. In AG 370.5. (2) SO No 43, 10th Inf Div, 19 Feb 44.
20. Tng Memo 2, 10th Light Div, 21 Jul 43.
21. Tng Memo 3, 10th Light Div, 26 Jul 43.

22. Ibid.
23. Tng Memo 2, 10th Light Div, 21 Jul 43.
24. Statement of Lt Col J. J. Irvin, ACofS G-3, 10th Inf Div.
25. XI Corps ltr AG 353 GNMCE, 11 Aug 43, sub: Tng of 10th Light Div (Alpine).
26. Record of telephone conversation between Lt Col Monteith, G-3, XI Corps to Lt Col J. J. Irvin, G-3, 10th Light Div, 9 Aug 43. In AG 353.01.
27. Tng Memo 9, 10th Light Div, 11 Sep 43, sub: Div Recruit School.
28. Tng Memo 7, 10th Light Div, 28 Aug 43.
29. Tng Memo 22, 10th Light Div, 10 Nov 43.
30. Tng Memo 34, 10th Light Div, 17 Dec 43.
31. Ibid.
32. (1) Tng Memo 15, 10th Light Div, 5 Oct 43, sub: Check List for Intelligence Tng. (2) Tng Memo 19, 10th Light Div, 6 Mar 44, sub: Map Reading.
33. 10th Light Div ltr to CG AGF, sub: Application of AGF Combat Intelligence Tng Tests.
34. Tng Memo 23, 10th Light Div, 18 Nov 43.
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Annex - Reference Material

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9 Oct 43, 6 Mar 44, 10 Nov 43, 18 Nov 43, 17 Dec 43.

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10th Inf Div memo, 27 Jan 44, sub: Enlisted Men transferred to Lower Altitude.

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10th Light Div memo, sub: Enlisted Men transferred who are Physically Unqualified for High Mountain Operations.

General Orders

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Miscellaneous

Program, Activation Day Ceremonies, 16 Oct 43.

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