

Staff Department
THE INFANTRY SCHOOL
Fort Benning, Georgia

STUDENT MONOGRAPH
Advanced Infantry Officers Course
Class Nr. 2
1955-56

TITLE

RESUPPLY BY
ANIMAL IN MODERN WARFARE

1st Lt Francis E. Howard, Jr
Roster Nr 89

TABLE OF CONTENTS

	PAGE
PREFACE	2
INTRODUCTION	3
DISCUSSION	5
CONCLUSIONS	20
BIBLIOGRAPHY	21

INTRODUCTION

In 1940 the Chief of Staff of the Army made a very momentous decision. He sounded the death knoll to the use of horses and mules in the Army. This decision brought tears to the eyes of the cavalrymen. At first glance the infantryman did not seem effected but as I will show it struck a blow at one of the Infantry's weakest links. This link is resupply. The Infantry must have resupply in order to accomplish its primary mission of destroying the enemy's land forces.

Presently this resupply may be accomplished by three means, motor transport, aircraft (fixed and rotary wing) and by manual labor (soldier and indigenous). Before 1940 we had a fourth means which was resupply by animals, primarily mules. I believe we would have been justified in keeping this fourth means.

Two of the factors for eliminating mules, given by the Chief of Staff were--

1. Low cost and efficiency of motor transport.

2. It was contemplated that American forces would largely operate in terrain over which four wheeled drive or tracked vehicles could operate." (8:47)

I'm sure that if the Chief of Staff were making that same decision in 1956 instead of 1940 that he would list the resupply capability of aircraft (fixed and rotary wing) as another factor in eliminating mules.

I intend to compare mules with the three normal means of

resupply in order to show the need for a supplementary method when the others fail or are limited. I will deal specifically with mountainous terrain.

First I would like to quote a few people who have had experience with mules. Lt General George S. Patton summed up his conclusions at the end of the Sicilian Operation by saying, "In countries such as Sicily, it is almost a necessity to have pack animals." (1:3) Maj Gen M. S. Eddy recommended, "Provide organized pack trains for any operation where mountainous terrain is to be encountered." (1:3) Maj Gen John P. Lucas said, "It is my personal opinion that each Infantry Division operating in mountainous or rugged terrain should have available a train of 500 mules." (5:19) General Sir Harold Alexander said, "Burma was lost because mechanization was sent where animal transport should have been used." (9:26) And finally Maj Albert E. Phillips, designer of the Phillips pack saddle, said, "When the going got tough in Tunisia; when food, ammo and water were needed by troops in positions where trucks could not reach them, when fog enshrouded planes and jeeps spun in the mud; when stalled tanks needed gasoline, oil and spare parts over routes that wheeled vehicles could not travel, pack animals were brought into action." (9-27)

"On Dec 31, 1943 the mule strength in the Army was approximately 60,000" (8:50) It was hard for me to believe that an animal slated for elimination, who was to be replaced by more modern means, could be so urgently needed. Maybe someone made a mistake, maybe someone underestimated our four legged friend's capabilities. I think so and I intend to show you why.

DISCUSSION

In 1940 it was believed that we would fight mostly in terrain which could support wheeled vehicles. Since that time the Army has had to fight many times in very mountainous terrain, e.g., Italy, Burma, and Korea, to name a few.

In mountainous terrain resupply is very difficult and very often will dictate tactics. Therefore, it is important that all capabilities are developed so if one capability fails or is limited we have another to take its place. In other words we should not put all our eggs in one basket. We need a capability to plug the gaps in the others. I believe the best means of resupply available for a job of this type is resupply by mule.

In this discussion I will show what the mule can accomplish in relation to the other means of resupply.

First I will give three combat examples with a discussion of each. Then I will touch on some advantages and disadvantages of resupply by mule in comparison with resupply by vehicles, manual labor and aircraft.

Combat Example Number 1:

"The Gothic Line was a defensive position in the Appennines Mountains which ran between the Po Valley and Arno Valley in Italy. The Germans had used more than 15,000 Italians to construct defenses and had been working feverishly during the summer of 1944 to prepare for the coming American Army.

The terrain on which the Gothic Line was organized was

very mountainous. There were only seven first class highways connecting the Po and Arno Valleys. For the most part they consisted of numerous sharp curves and steep grades. By use of demolitions the Germans would be able to reduce the effectiveness of these roads. For the most part, mule paths and cart trails offered the only routes of communication. The mountains were very precipitous with bare rocky slopes, razor back ridges, and sheer cliffs. In September rain turns the streams into raging torrents. Fog and mist reduce visibility at times to zero.

The strongest defense in the Gothic Line was in the vicinity of Futa Pass and the American II Corps was to make the main attack in this area. II Corps consisted of the 91st Infantry Division and three other divisions. The 91st was preparing to attack the main defenses of the Gothic Line in its sector. On 10 Sept 1944 the Division jumped off in an attack with two regiments abreast with the 362d Infantry on the left with Mt Calvi, Mt Alto, Mt Gazzaro and the Futa Pass as its objectives. The 2d Battalion was to attack Mt Calvi.

At 0600, 13 Sept the 2d Battalion attacked Mt Calvi. Enemy resistance was strong and the Battalion was only able to advance several hundred yards up the slope of Mt Calvi. After two days of severe fighting Mt Calvi was captured and the position consolidated. They were ordered to continue the attack against hills 840 and 841 at 0400, 15 Sept. All three rifle companies had suffered heavy casualties. Average strength in a company was about 2 officers and 60 enlisted men.

The supply and evacuation situation of the 2nd Battalion was very difficult. The only means of transporting supplies and evacuating wounded on Mt Calvi was by hand carrying parties and mules.

The Battalion had 20 mules but this was not sufficient and several trips were required each night to get the rations and ammunition to the top of Mt Calvi. Supplies had to be carried approximately 6000 yards. The Ammunition and Pioneer Platoon was used extensively to hand carry ammunition to the top and to help carry wounded to the Battalion aid station. Cooks were also brought up from the train bivouac and organized into litter squads.

At about 2200 on the 14th, the night before the coming attack, rations arrived and were distributed to the men. The Battalion Commander was notified that fifty replacements would come up with the next mule trip.

The next morning the attack was unsuccessful and a new attack was planned for 0400 on 16 Sept.

That night brought the ration train with "K" rations. After eating the men settled down to get as much rest as possible.

The next morning the attack jumped off as planned. F Co had reached a point about half way to the crest of Hill 840. Here its advance was held up by fire from machine guns and mortars. F Company tried to remain in this position and establish a defense but due to small arms and mortar fire little could be done. The Battalion Commander then ordered them to withdraw. The F Company Commander notified the Battalion

Commander that he did not believe he could return to Mt Calvi but as he could see friendly troops to the West, he would withdraw in that direction. He requested smoke to cover his withdrawal. The mortar platoon of H Company began to lay down a screen to shield F Company from observation on Hill 840. The smoke mission kept one section of mortars busy for one hour. This smoke screen enabled F Company to withdraw and join elements of the 361st Infantry. At the time F Company called for smoke to cover their withdrawal 200 rounds of smoke was already available at the gun positions. Had this ammunition not been available they would have suffered many more casualties."

Discussion of Combat Example Number 1:

This action shows how valuable the mule can be to a front line Battalion. The 2d Battalion had 20 mules which actually were not enough to support the Battalion. Manual labor was used when the load was too great for the mules. The Battalion depended on the mules and men to move all food, ammunition, and medical supplies to the Companies on Mount Calvi, a distance of 6000 yards over extremely rugged terrain. The mules could make several trips a day, whereas one trip a day exhausted the manual labor. Without the mules, the men alone would not have been able to adequately supply the front line Companies. Additional men were not available due to the shortage in the Battalion.

The men already being used with the mules were from the Ammunition and Pioneer Platoon and were cooks. If more mules had been available these people could have been used for other

important duties.

A large number of men were being used to carry litters. "It takes as many as six men to evacuate one man by litter in the mountains. One mule with a special litter pack can evacuate one man." (11:18) The men being used to carry litters could have been helping other wounded or perhaps fighting.

The smoke rounds fired by the mortar platoon which made it possible for F Company to withdraw were for the most part placed on the position prior to the time they were needed. Over two hundred rounds of smoke had been carried up by the mules and the Ammunition and Pioneer Platoon and had been placed on position. Without this prior placing of ammunition F Company would probably have suffered many more casualties. Thanks to the mules this did not occur.

The use of aircraft was severely limited in this action due to the poor visibility caused by the fog and mist.

Without mules this Battalion would probably not have been able to stay on Mt Calvi, much less launch an attack from there. The normal means of resupply were all greatly limited. The mules, however, had few difficulties in performing their tasks.

Combat Example Number 2:

"This action began on 27 Sept 1944 in Italy on the high ground between the Santerno and Senio Rivers. The unit involved was the 2nd Battalion, 350th Infantry, 88th Infantry Division.

The mission of the 2nd Battalion was to seize Mount

Battaglia. Enemy strength or disposition on Mount Battaglia was unknown. The main German opposing forces were badly beaten and poorly supplied. However, inclement weather was greatly aiding them in their defense. The terrain was rugged and the weather poor. (See Combat Example Number 1 for a discussion of Italian terrain and weather.)

Attached to the Battalion for supply transportation were 27 mules from the Regimental Mule Group. These were placed under the direction of the Ammunition and Pioneer Platoon leader and would be supervised by the Battalion S-4. It was impossible for any type vehicle to move in this terrain. Only one mule trail led to the top of the mountain from the South.

H-hour was to be 0600, 27 Sept 1944. The plan of attack called for the Battalion to attack in a column of Companies. The mule train was to be fully loaded and follow the last Company in the attack. In case the Battalion was held up, the loads would be dumped and the mules returned immediately to Mount Acuto for resupply.

In less than three hours an intermediate objective, Mount Carnevale, was captured along with 50 prisoners. The speed of the attack was the big factor of success. The Germans did not have time to dig in. Our losses were minor; one killed, six wounded.

At about 1500 the leading element of the Battalion reached the peak of Mount Battaglia. German 88's were firing right into the area which made supply movements very dangerous.

Twenty-five partisans that had joined F Company on the

way up the mountain were told to stay with F Company. As soon as they learned the Battalion did not carry a large supply of food, they immediately started to desert our ranks, and by nightfall of the first day, all had vanished.

Ammunition was diminishing and the aid station was over-running with casualties. Emergency requests were being sent to Regiment for ammunition, medical supplies, and litter bearers. Ammunition from our dead and wounded was immediately gathered and redistributed. The mountain was an eerie sight. Darkness, rain, and fog engulfed the area.

Machine guns needed new barrels and the mortars were useless because they had no ammunition. The Battalion S-4 sent a ten team mule train forward from Acuto but it had not yet arrived.

On 27 Sept the Regimental Commander had sensed the importance of holding Mount Battaglia. The fanatic and continuous effort of Jerry made it obvious. To help alleviate the situation he ordered K Company from the 3rd Battalion to go forward and help the 2nd Battalion. They were to be reinforced with all the possible men and mules in Regimental Headquarters Company. The mules were to be packed with ammunition, especially hand grenades, K rations, and additional medical supplies. At least one hundred SCR-300 radio batteries would be carried. The Battalion S-4 knew that to attempt a full scale carry to battle position was futile. The Ammunition and Pioneer Platoon that attempted this on the previous day had lost a great deal of their vital cargo to enemy mortar fire. It was therefore planned that the mules would go as far as the high knoll behind Hill 664

(500-750 yards from the Battalion's front lines), where they could not be observed, unload and return for more supplies.

By now the Battalion had 150 casualties. It was a four mile trip to the Regimental CP and there were no facilities for evacuation.

At 1930 hours K Company arrived at the battle position. Ammunition was so badly needed that it was immediately distributed.

Dawn approached with the sky enveloped in fog, heavy clouds, and a drizzling rain. It was then that the Germans started a large scale attack. The last hour of the attack was all hand to hand fighting. After it was over every soldier had German blood dripping from his bayonet.

The most vital savior from the attack was the arrival of the ammunition brought forward by K Company the previous day. The ammunition supply was so critical before K Company's arrival that had the Germans been able to launch one more counterattack the 2nd Battalion would probably have been knocked off the mountain.

The ammunition expenditures of the 2nd Battalion for the six days spent on Mount Battaglia included 6000 hand grenades, 3000 rounds of 60mm mortars, and about 1,000,000 rounds of small arms."

Discussion of Combat Example Number 2:

In this example we find the 2nd Battalion fighting over terrain which had no roads and was impassable to vehicles. Even if roads had been available the steepness of the terrain and the rain and fog would have made travel virtually impossible.

The twenty-seven mules attached to the Battalion proved invaluable. They could easily traverse the terrain and the mud and fog had little effect on their performance.

During the initial attack employing the mules immediately in rear of the last Company enabled the Battalion to have ammunition continuously available. This allowed the Battalion to move very fast, in fact so fast that the Germans didn't have time to dig in and Mount Carnevale, the intermediate objective, was taken with few casualties. This speed saved many lives.

The Partisans with F Company left when they found out there was little food available. This points out a difficulty in using civilians for any tasks; they sometimes will leave if the going gets tough. Mules, however, will stick with you. Especially, if you have a halter around their necks.

When the resupply of the 2nd Battalion became critical the Regimental Commander attached K Company to the 2nd Battalion and gave them all the mules in Regimental Headquarters. K Company and the heavily loaded mules arrived the night before a large scale German attack. The resupply of ammunition was considered to be the savior of the 2nd Battalion. Without it they would probably have been pushed off the mountain. The one hundred SCR-300 radio batteries carried by the mules were also very valuable as the Battalion's communications depended upon them.

This action also brought out a limitation of mules. They cannot be used too far forward in the daytime because they make a beautiful target. Supplies have to be dropped off in

a covered position near the front lines and hand carried to the troops.

Because of the bad weather, supply by aircraft was not attempted.

The four mile carry to the Regimental Collecting Station made it very difficult to evacuate casualties. If more mules had been available they could have helped considerably in this long evacuation.

Everything not carried by mule had to be carried by hand. It was difficult enough for the men to move without loading them down with unnecessary equipment. The mules by assuming these burdens afforded the troops a degree of mobility that would otherwise have been impossible. Without this mobility the taking of Mount Battaglia would have been a long, slow process, if not impossible.

Combat Example Number 3:

"The 5307th Composite Unit (Provisional) of the Army of the United States was organized and trained for long-range penetrations behind enemy lines in Japanese-held Burma. (1:6) It was popularly known as "Merrill's Marauders." The unit in this combat example is Khaki Combat Team which was one of six combat teams in Merrill's Marauders. Khaki Combat Team consisted of approximately 470 men and 68 mules. (14:6)

Situation: Late April 1944--The Allied offensive was putting heavy pressure on the Japs. The Marauders were to strike at Myitkyina, the principle base for the defense of Burma from the North. The Marauders had a 65 mile trip through

the wilderness. About one fifth of the trip was over the Kumon Range rising in this area to over 6000 feet. The trail across the hills had not been used in 10 years and was reported to be impassable. The monsoon season was commencing and rain fell every day. Air drops became very difficult. In some places the trails were so steep that footholds had to be cut for the mules; in others the mules had to be unloaded and their burdens manhandled up precipitous inclines. Occasionally no path of any sort could be found. Even the mules slipped on the uncertain footing of the hillsides and plunged to their deaths in valleys far below. Khaki Combat Team, which was in the lead lost 15 of its 68 mules. It took Khaki Combat Team from 28 April to 17 May to reach Myitkyina.

For this action the Marauder's were awarded the Distinguished Unit Citation which read, 'After a series of successful engagements in the Hukawng and Mogaung Valleys of North Burma in March and April 1944, the unit was called on to lead a march over jungle trails through extremely difficult mountain terrain against stubborn resistance in a surprise attack on Myitkyina. The unit proved equal to its task and after a brilliant operation on 17 May 1944 seized the airfield at Myitkyina, an objective of great tactical importance in the campaign'." (6:93)

Discussion of Combat Example Number 3:

The strike against Myitkyina will go down in history as a great accomplishment. Once again the unsung hero was the mule. Without the mule to pack supplies Khaki Combat Team could not have made their 65 mile trip and still been able to accomplish their mission. In fact the trip was considered im-

possible because of the supposedly impassible mountain trail which had not been used in ten years. Why then did they attempt such a difficult task? I believe they had so much confidence in the ability of their mules that they had few doubts as to whether they would succeed.

As was shown in this action, "Loaded pack mules usually can travel anywhere a man can walk without the use of his hands for support". (7:48) Sometimes when the going was rough the men unloaded the mules, carried the supplies over the rough portion, then loaded the mules again on the other side. The going was so dangerous that 15 mules from Khaki Combat Team slipped to their deaths in the valleys below. These incidents point out that even a mule has certain limitations in mountainous terrain. However, with the men and mules working together as a team no obstacle was too difficult to surmount.

The monsoon season made supply by air difficult. Even when supplies were dropped by air there still remained the problem of carrying these supplies.

The use of vehicles was impossible because of the lack of roads. Even if roads had been available the mud would have made them impassable.

Advantages and Disadvantages of Mules in Relation to Other Means of Resupply:

A mule has many characteristics that give him a distinct advantage over vehicles, manual labor, and aircraft. The mule also has some characteristics that are disadvantages. I will give you some of both.

Advantages:

1. "A mule can carry from 200 to 250 pounds." (9:28)
2. A mule will not spy on your operations or intentionally give away positions as indigenous personnel sometimes do.
3. A mule won't "bug out" when the going gets tough as civilians sometimes will. This was brought out in Combat Example Number 2.
4. On return trips mules can be used to evacuate casualties. "A mule with a litter pack can evacuate one man. It takes as many as six men to handle a loaded litter any distance in the mountains." (11:18)
5. The life of a mule is of less consequence than the life of a soldier.
6. "Mules are relatively fast in the mountains. The rate of march of a pack train (herded) is four and a half to five miles an hour." (7:48)
7. "The mule is seldom disturbed by the noise of battle when working under combat conditions." (9:28) They completely ignore artillery shells which explode nearby." (3:75)
8. "A mule will not step on a mine." (2:5)
9. Loads that cannot be broken down into smaller individual loads are extremely difficult for two or more men to carry on narrow mountain trails. A mule can carry these loads easily.
10. Attached mules will always be available for resupply while aircraft and soldier labor may be limited because of tactical commitments.
11. Mules won't bog down in mud unless it is very deep.
(9:2)

12. In case of air attack mules can leave the trails and take cover quickly. Vehicles would probably be road bound.

13. Mules don't have mechanical difficulties.

14. "Mules can move easily at night and are valuable for night movements." (8:28)

15. Mules can bypass obstacles such as roadblocks, shell-holes, and blown bridges.

16. Mules don't make as much noise as vehicles and aircraft.

17. Mules can go cross country while vehicles are usually road bound.

18. Mules don't present as good a target to the enemy as do aircraft and vehicles.

19. Mules are not as effected by enemy air superiority as are vehicles and aircraft.

20. "Mules can operate rain, shine, day or night." (3:75)

21. Supplies dropped by air are often recovered by the enemy or partially damaged or in some cases lost. Mule delivered supplies are not subjected to these limitations.

Disadvantages:

1. A mule must eat even when not working.

2. A mule must sleep and rest.

3. A mule is slow compared with vehicles and aircraft.

4. A mule can't carry as great a load as vehicles or aircraft.

5. A mule is sometimes limited by terrain, as was brought out in Combat Example Number 3.

6. "Few people have experience in operating with mules."
(5:19) While almost any soldier can operate a vehicle.

7. Mules are subject to diseases.

8. Mules cannot go too far forward in daylight because of the good target they present.

CONCLUSION

1. The normal means of resupply, vehicles, aircraft and manual labor, have many limitations in mountainous terrain; mules can overcome most of these limitations.

2. We should always have a mule capability in mountainous terrain to supplement or replace the normal means of resupply.

3. We have fought in mountainous terrain many times before and should expect to fight there again.

4. We should keep mules in the Army.

BIBLIOGRAPHY

1. Eldred, P.D., "Are Horses Essential in Modern War?" The Cavalry Journal, 2-5, May-June, 1944.
2. Geake, Robert, "Beyond the Jeep Line in Italy" The Cavalry Journal, 2-5, Jan-Feb 1944.
3. Geake, Robert, "Mule Pack Train in Italy" The Cavalry Journal, 74-75, Mar-April, 1944.
4. Hatt, Reginald L., Lt Col, "Packing Along Salween Trails" The Cavalry Journal, 28, Sept-Oct, 1944.
5. Lucas, John P., Maj Gen., "Need for Animals in Italy", The Cavalry Journal, 16-19, July-Aug, 1944.
6. "Merrill's Marauders" Military Intelligence Division, U.S. War Dept., pp 1, 14, 93-113, Feb-May, 1944. D676.25
A201
7. Oppenheimer, Harold L., Lt Col, "Saddle Up", Marine Corps Gazette, 47-53, July, 1952.
8. Phillips, Albert E., "From Jeeps to Packs", The Cavalry Journal, 26-28, Sept-Oct, 1944.
9. "Statement by War Department Press Branch, Aug 14, 1944", The Cavalry Journal, 28, Sept-Oct, 1944.
10. Heldreth, Charles H., Captain, Infantry "The Operations of the 2nd Battalion, 362nd Infantry, 91st Infantry Division, at Hills 840 and 821 in the Gothic Line, 15-19 Sept, 1944 (Personal Experience of a Company Commander)" Military Monograph, Advanced Infantry Officers Class No. 1, 1949-1950, The Infantry School Library, Fort Benning, Georgia. pp 4-16, 24.
11. Matthews, Milton A., Major, Infantry "Operations of the 350th Inf, in the Attack on Mount Daniano, West of Castelforte, Italy and Subsequent Objectives, 11-15 May, 1944. (Personal

Experience of Regt S-2)", Military Monograph, Advanced Infantry Officers Class No. 1, 1949-1950, The Infantry School Library, Fort Benning, Georgia.

12. Scherer, Bernard J., Major, "The Operation of the 2nd Bn, 350th Inf, 88th Inf Div, at Mt Battaglia, South of Bulogna, Italy 27 Sept-1 Oct 44", Military Monograph, Advanced Inf Officers Class No. 1, 1949-1950, The Infantry School Library, Fort Benning, Georgia, p5-29.