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# FM 21-18

DEPARTMENT OF THE ARMY FIELD MANUAL

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# FOOT MARCHES

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DEPARTMENT OF THE ARMY •

JULY 1950



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# FOOT MARCHES

U. S. ARMY  
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DEPARTMENT OF THE ARMY • JULY 1950

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## CHAPTER 1

### GENERAL

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**1. PURPOSE AND SCOPE.** This manual is a guide to the techniques and methods of foot marching, including march discipline, march hygiene, and march sanitation.

**2. REASONS FOR FOOT MARCHES.** Troops march on foot when the tactical situation dictates, or when transportation is not available, the distance is short, or when terrain, weather, or nearness of the enemy prevents the use of vehicles; or when the march is used for physical conditioning.

**3. TACTICAL AND ADMINISTRATIVE MARCHES.** **a.** Tactical marches are made under combat conditions when contact is imminent and the column provides its own security.

**b.** Administrative marches are made when contact is not imminent or when the movement is protected by friendly forces or terrain barriers.

**4. A SUCCESSFUL MARCH.** A successful march gets the troops to their destination at a prescribed time in condition for combat and prepared to execute their mission under the control of their leaders. Factors that influence the success of a march are careful planning and preparation; correct dispositions; adequate march supervision; the men's state of training, esprit de corps, morale, physical condition, and confidence in their leaders.

## CHAPTER 2

### FACTORS AFFECTING THE MARCH

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#### Section I. INTRODUCTION

**5. GENERAL.** The factors that affect foot marching are natural, physiological, and psychological. The natural factors determine the conditions under which the march is made and include terrain, climate, and weather. The physiological factors apply to the men's health before, during, and after the march. The psychological factors deal with the men's attitudes during the march and include confidence in leaders, self-confidence, morale, and straggling.

#### Section II. NATURAL FACTORS

**6. EFFECTS OF TERRAIN ON FOOT MARCHING. a.** Marching over level or slightly rolling terrain in good weather is not difficult. After a period of rain, snow, or ice, however, the route becomes slippery. Footing gets difficult and the rate of march slows down.

**b.** In Arctic climates, deep snow, crevasses, and ice slow the rate of marching troops and may require them to use special equipment such as special foot wear—skis and snowshoes.

**c.** In desert marching the poor footing, heat, dust, and lack of roads dictate a slower pace. The monotony of the view reduces marching efficiency.

**d.** In mountains the problems of marching are increased by poor footing, narrow trails, trackless terrain, and steep, slippery slopes.



e. In jungles the dense vegetation, heavy rains, and the lack of roads make foot marching extremely difficult.

## **7. EFFECTS OF CLIMATE ON FOOT MARCHING. a.**

Foot marching under adverse climatic conditions follows the same basic principles as marching under normal conditions. The differences lie in the physical limitations imposed by these conditions and in the training and use of special equipment to overcome these conditions.

b. Certain seasons in temperate zones have characteristics common to tropical and Arctic climates. Under such conditions the Arctic and tropical techniques may apply.

c. Snow and ice in Arctic climate decrease our rate of marching, and the weight of the special clothing may restrict physical activities.

d. The intense heat and the high humidity of tropical climates may exhaust you rapidly. Proper adjustment of clothing and equipment becomes particularly important because improperly adjusted equipment causes skin irritations, and resulting infections are always possible. Water discipline is most important.

## **8. EFFECTS OF WEATHER ON FOOT MARCHING. a.**

Extremes of weather in the temperate areas may demand the precautions taken in Arctic and tropical regions. As rain and fog, like darkness, decreases visibility, units are closed up to retain control.

b. Dust created by the wind in dry weather causes difficulty in breathing and seeing, therefore, slowing down the march.

c. Blizzards and extremely high winds in the Arctic may halt troops for long periods. Marching in heavy or sticky snow is like marching in mud, and wet snow increases the problem of keeping the feet dry. Packed snow and ice is slippery and fatiguing to walk on.

d. Frequent rainstorms in tropical climates make the footing poor. Sometimes this prevents foot marching altogether.

### Section III. PHYSIOLOGICAL FACTORS

**9. BEFORE THE MARCH.** Men should be in good physical condition before going on a march. This is accomplished by systematic and progressive training. When possible, inform your men of the march at least a full day before it is to begin. It is a good policy during early training to inform them a week in advance. Have them all, even experienced soldiers, organize and adjust their equipment the night before the march. Serve a hot meal before the march.

**10. LOADS.** a. Heavy loads or improperly adjusted equipment impair marching ability. They decrease the rate and distance that men can march and increase the frequency of halts. Tightly fitting pack straps restrict the chest and make breathing difficult. Tight belts that ride high on the abdomen also handicap normal breathing and digestion. Teach each man to adjust his uniform and equipment so that he can move and breathe freely without impairing his blood circulation.

b. Your load should not exceed one-third of your

weight, or 50 pounds maximum. A more practical load is 40 pounds or less. This load includes water, weapons, ammunition, helmet, pack, and other equipment which is absolutely needed or required. Wear the pack high and as close to the center of your body as possible so that you exert minimum effort to stand naturally. This reduces the chance of your pack rubbing against the buttocks and puts less strain on your back.

**11. MARCH DISCIPLINE.** March discipline is the observance and enforcement of the rules that govern a unit on the march. It is willing teamwork—the result of training. March discipline involves adequate march control; care of equipment; obedience to march instructions; proper conduct and performance of duty; suitable formations and rate of marching; correct distances; and effective use of cover and concealment.

**12. WATER DISCIPLINE.** a. Control water consumption rigidly to avoid cramps, nausea, heat exhaustion, and disease. Water requirements vary under working and marching conditions. On long marches during hot and humid weather you may need as much as 3 gallons of water a day for drinking and cooking. Drink when you are thirsty when water is plentiful, but drink only enough to quench your thirst. Any restrictions on water below the level necessary for efficiency cause body temperature to rise and result in heat exhaustion.

b. A hot, tired stomach does not readily assimilate large amounts of water. Drinking too much water too fast results in cramps and nausea even though

the body needs water at that time. Drink small amounts frequently.

c. Perspiration causes a loss of body salt. Exhaustion results if this salt is not replaced. The amount of salt in your food makes up for losses when water consumption is less than 1 gallon a day. As you drink more water, you need more salt. When the salt diet is inadequate, salt is best taken in solution by adding salt to the drinking water. Suitable solutions are—

- (1) One pound of salt per 100 gallons of water.
- (2) Three-tenths pound of salt per Lyster bag (36 gallons water).
- (3) One-fourth teaspoon or two salt tablets per canteen of water.

d. Take water with salt tablets to avoid any possibility of nausea.

e. Do not permit your men to drink water that has not been approved by a medical officer or treated. Do not allow them to refill their canteens except during halts, and then only at approved water supply points.

f. Use halazone tablets for water purification as directed.

**Caution:** When used, water must set 30 minutes before drinking.

#### Section IV. PSYCHOLOGICAL FACTORS

**13. SELF-CONFIDENCE.** Some men doubt their ability to complete a march. Since marching is a military necessity, build up the self-confidence of these men by strong leadership and progressive training. As their muscles harden and marching techniques

are learned, their self-confidence increases and they take pride in their marching ability. Stimulate their pride; build a unit spirit in each man and a determination not to let his unit down. Explain the where, how, and why of the march without minimizing or exaggerating any expected difficulties. In training, state the specific training purpose of each march. In the combat zone, if the march is by roads, explain why transportation is not available or that it is much safer to march on foot under the tactical situation. In this way you keep the men informed and retain their confidence. A well-conducted march is a medium for developing and demonstrating the many indefinable attributes of a good soldier, a good leader, and a good unit.

**14. MORALE.** Any loss of morale reduces marching efficiency. Low morale is contagious and magnifies any discomfort soldiers may have. You can avoid low morale on a march in many ways. For example:

**a.** Don't have your men fall in too far in advance of the actual starting time; form your unit just before the start of the march.

**b.** Avoid delays that keep the men standing. These delays increase fatigue by restricting their movement and by preventing them from easing the weight of their equipment. Long delays cause them to cool off and stiffen, making it more difficult for them to resume the march.

**c.** Prescribe the uniform and equipment to be carried and check to see that the equipment is as prescribed and the uniform is properly fitted. Neckties are not worn. Marching is normally at route step with arms slung. Control the march.

**d.** Do not march your men over difficult routes when either shorter or better routes are available, except for specific training purposes. Make a route reconnaissance to get information of conditions which might cause delays. Eliminate or reduce these delays by planning. Reduce any delays which could not be foreseen before the march by prompt decision and action on the march.

**e.** Do not move your men by foot when they can be moved by motor, except for specific training purposes and when the tactical situation dictates movement by foot. When enough transportation is not available to move all in one trip, shuttle.

**f.** Place guards at the head and rear of your marching columns to control traffic. Let vehicles pass only when it is safe to do so.

**g.** Do not permit motor vehicles to speed by your column, covering your men with dust or mud; make the vehicles slow down to a safe and considerate rate.

**h.** Do not permit straggling. Straggling is caused by poor discipline, poor physical condition of the men, overloaded men, or by men who are about to become march casualties as the result of fatigue, blisters, or sickness. Straggling lowers morale and reduces the unit's strength and ability to accomplish its mission at the end of the march. Straggling is infectious; after one man falls out, others feel less compelled to continue the march. On long, hard marches many soldiers have a tendency to straggle. It is here that leadership is plainly exhibited. The leader who can cheer up his men, keep up the march rate, prevent straggling, and maintain the appearance of strength, firmness, and cheerfulness in him-

self commands the greatest respect in his men. The leader who falls out or who fails to maintain discipline loses his men's respect.

**i.** Watch for conditions that cause straggling and take immediate action to prevent straggling when it starts. When it is a matter of discipline, be firm. Have each soldier continue to march in his correct place in the column. Have a small guard unit march at the rear of the column to help control straggling.

**j.** When straggling is caused by the poor physical condition of an individual, such as one with a swollen knee, give him written permission to fall out. When the injury is permanent or will probably occur on all future marches, take steps to have the man re-assigned. When straggling is caused by overloading, such as men carrying crew-served weapons, shift the load from man to man at frequent intervals.

**k.** When straggling is caused by men who are about to become march casualties, require them to fall out and examine them. When you feel that a man will become a march casualty in a short while, give him written permission to fall out. When he appears to be shirking, have him continue the march.

**l.** Keep the unit together. Entire units may tend to straggle because the rate is too fast, or the lack of rest periods, poor footing on slippery roads, obstacles like streams, or heavy traffic.

**m.** Encourage diversions that take the men's mind off of the march. For example: Marching at attention for short periods, counting cadence, singing, conversation, or humor in almost any form.

**n.** Show your men how to march by participating in the march with normal loads.

## CHAPTER 3

### TECHNIQUES OF MARCHING

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#### Section I. GENERAL TECHNIQUES

**15. MARCH FORMATION.** The normal formation for marches is a column of twos, one file on each side of the road; but troops can march in a column of files, twos, threes, or fours, depending upon the circumstances and the route. The commander designates the side of the road on which the troops march. (See fig. 1.)

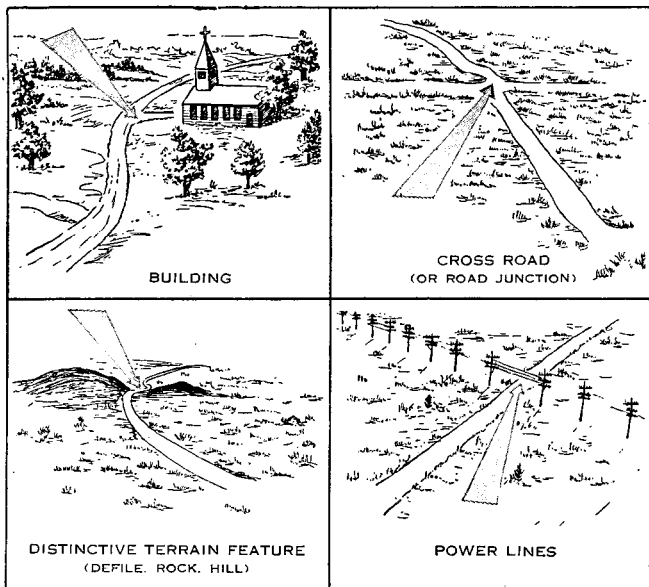
**16. ORGANIZATION OF MARCH.** a. Units normally march in their tactical groupings; a regimental serial is organized into battalions, companies, and platoons. The infantry battalion normally constitutes one serial of a column and companies normally are march units. When the company commander cannot effectively control his company, as in mountains, cross-country, or jungles, the platoon may be a march unit. A column is formed by the successive arrival and passing of its elements at the initial point (IP) (fig. 2). The IP is an easily recognized point on the route of march, forward of all units.

b. When the column approaches its destination it is met at the regulating point (RP) by guides, who lead the units from the RP to their assigned areas. An RP (fig. 3) is an easily recognizable place on the route of march at or before the point where the column breaks down into its units for movement into their assigned areas.





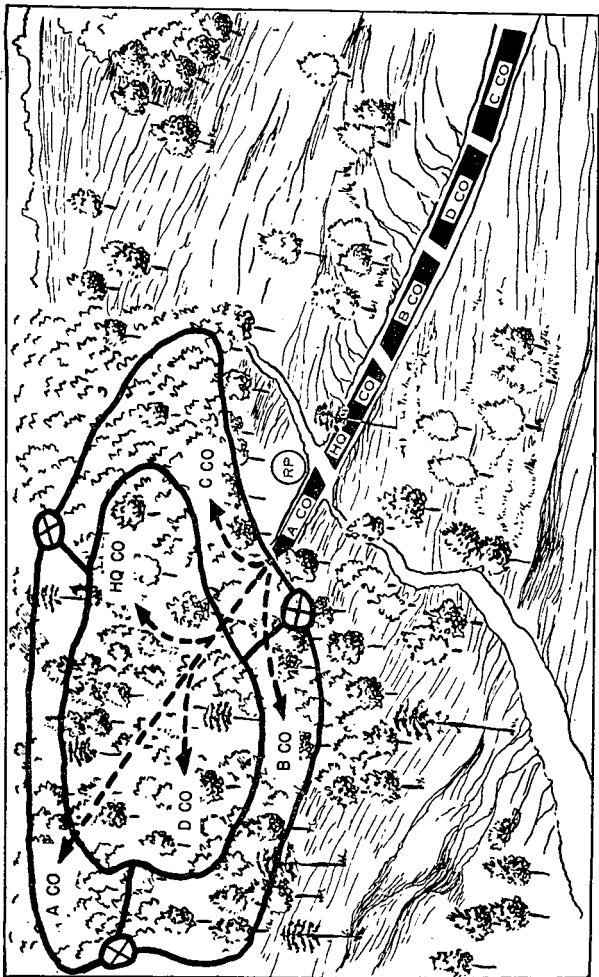
*Figure 1. Correct tactical march formation.*



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*Figure 2. The initial point is an easily recognized ground feature where a march column forms.*

**17. RATE OF MARCH.** In determining the rate of march, consider the tactical situation, size of your unit, terrain, individual loads, weather, length of march, and the condition of the troops. Your SOP usually gives the rate of march (see appendix III), but the column commander may modify this rate as the situation requires. He considers the factors that affect the march and then selects the rate that will place his unit at its destination in the shortest time and in the best condition to accomplish its mission.



*Figure 3. The regulating point is where the column breaks down for movement into bivouac or assembly areas*

**18. PACE SETTER.** The pace setter, usually a non-commissioned officer, marches 4 to 10 yards ahead of his unit and maintains the specified rate of march. (See fig. 4.) A pace setter knows his pace (length of step). By knowing his pace and using his watch he sets the correct cadence (steps per minute) to maintain the rate for a particular march. To maintain a uniform cadence he checks his cadence from time to time by counting his steps per minute. For a pace setter, select a man of medium height, because a long legged man usually covers more ground and short legged ones less. The officer marching at the head of the column supervises the pace setter to make sure he keeps a uniform cadence.

**19. PACE. a.** The normal pace is 30 inches. Using a pace of 30 inches and a cadence of 106 steps per minute results in a *speed* of 3 miles per hour, and a *rate* of  $2\frac{1}{2}$  miles per hour if a 10-minute rest period is included.

**b.** Have each man determine the length of his natural step for distance marching purposes. The march rate is set and the pace setter uses his step and cadence to give the prescribed rate. Since the pace of each man may vary, the cadence will not be the same for all men at the prescribed rate of march.

**20. CADENCE. a.** Cadence is the number of steps that a man marches a minute. To maintain the normal rate of march of  $2\frac{1}{2}$  miles an hour, set the cadence at 106 steps per minute using a 30-inch pace, march 50 minutes and rest for 10 minutes. Changing cadence that has become a habit to your men



*Figure 4. The pace setter maintains the rate of march.*

disrupts their marching routine and tires them more quickly.

**b.** The ground slope and footing dictate the pace. The cadence remains the same. Decrease the length of step when marching uphill or when marching on steep downhill slopes. The step will lengthen and shorten and thus automatically adjust the accordion

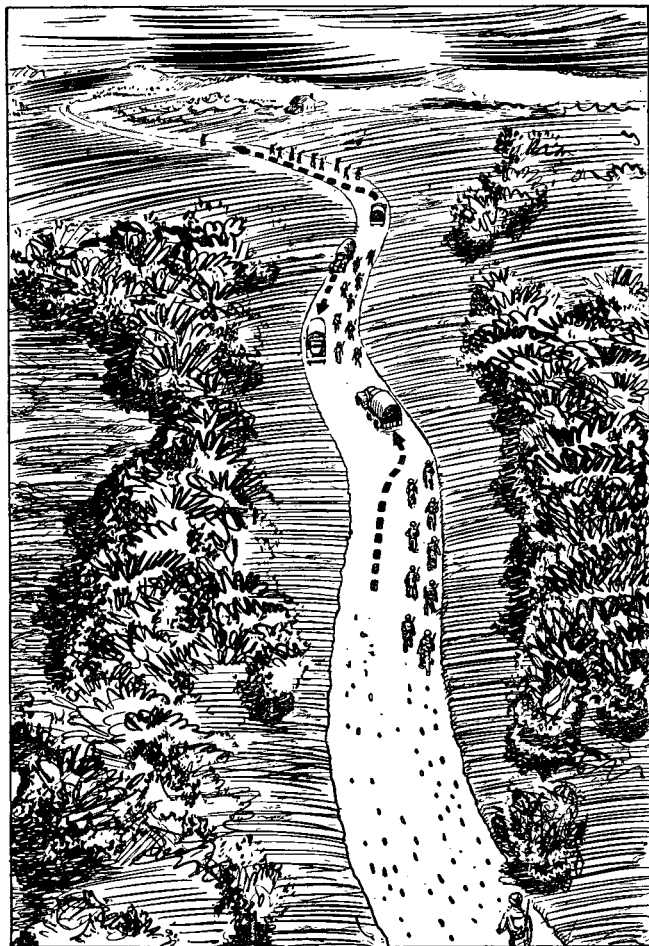
effect. Distances between units open and close during the operation but remain the same between men. On moderate or gentle downhill slopes, hold a normal cadence and pace. When footing is muddy, slippery, or rough, a prescribed cadence is not practicable.

**21. DISTANCES BETWEEN MEN.** The march commander fixes the distances between men. This is usually covered in the unit SOP. (See appendix III.) The normal distance between men in formation is 40 inches, but a distance greater than 40 inches gives your men more room for marching and is advisable on a long march. Distances greater than 5 yards per man complicate control, increase road space, and delay the unit's arrival at its destination. Distances vary according to the visibility and the footing.

**22. DISTANCES BETWEEN UNITS.** a. Use the distances between units to help reduce accordion action (par. 23) and increase march efficiency. The commander ordering the march prescribes these distances, allowing enough distance between the units to permit vehicles to pass the column (fig. 5).

b. Suitable distances for administrative marches are 100 yards between battalions, 50 yards between companies, and 20 yards between platoons.

**23. ACCORDION ACTION.** a. Maintain a steady march rate to limit accordion action in column movement. When the rate is increased or decreased, do it gradually and at the same time warn the column that the rate is being changed. Distances between



*Figure 5. Allow space for passing vehicles in column formation on the road.*

units take up the slack by allowing the length of the march units to expand or contract a reasonable distance.

**b.** The men keep their relative distance within a unit by alertness and by gradual change of rate; any sudden change of rate increases as it passes down the column, so that the last few men must double time or be left behind. Minor changes at the head of a column become major changes at the tail of the column. The tail of the column is the most difficult marching position. Rearrange the order of march periodically so that your same men or units do not always march at the tail of the column. Good march discipline over normal roads should make marching at the rear the same as at the front. It can be done. The unit leaders prevent straggling by properly supervising the march.

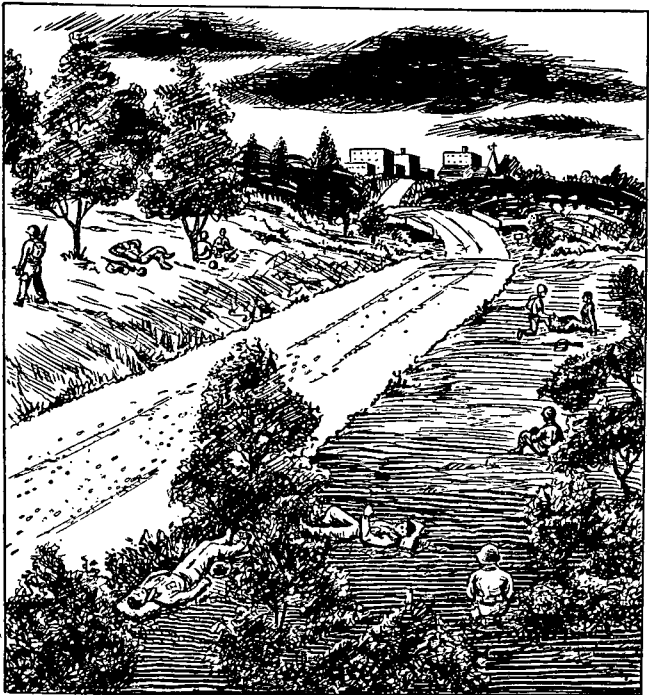
**24. HALTS. a.** Make halts at regular intervals so that the men can rest, adjust equipment, and relieve themselves. Under normal conditions make a 15-minute halt after the first 45 minutes of marching. After the first halt, make a 10-minute halt after each 50 minutes of marching.

**b.** Make changes in the time schedule or place for the regular halts when passing through crowded areas or when needed to obtain cover or concealment. For example: Do not halt in congested communities where individual relief is difficult; select a more appropriate area (fig. 6). Avoid halts on forward slopes which are subject to observation and long-range fires. Halt in woods to provide concealment.

**c.** Stop and start all units of a column at the same



time. This is done by the use of watches that have been synchronized and under platoon control. At the halt signal, have the troops fall out to the sides of the road, leaving the road clear during the halt. Keep your men in the immediate vicinity of their unit, and have them loosen their packs and relax. To improve blood circulation and to keep their feet from swelling, encourage the men to elevate their feet and legs by placing them on rocks, banks, or logs.



*Figure 6. Halt outside of towns.*

Adjust shoe laces and pack straps after a few hours of marching.

d. Leaders inspect their men during halts and the aid men administer emergency treatment.

e. Dispose of feces in small individual pits and cover immediately. Dig straddle trenches during noon halts and in temporary bivouacs.

**25. LENGTH OF THE MARCH.** a. Do not march more than 8 hours at the normal rate during any one day—unless in an emergency. Regiments or smaller units can cover 15 to 20 miles a day by normal marches under favorable conditions. For a fast march, a rate of 4 to 5 miles per hour may be maintained for short distances.

b. Forced marches seriously reduce combat efficiency and are used only in an emergency. A forced march is made by increasing the number of marching hours per day. *Do not increase the rate of march.* The maximum distances made by forced marching are 35 miles in 24 hours; 60 miles in 48 hours; or 80 miles in 72 hours. At the end of such marches, troops require considerable rest. March casualties may be high.

## Section II. SPECIFIC TECHNIQUES

**26. CARE OF SICK AND INJURED.** a. Let your men fall out during the march or leave the immediate vicinity of their unit during halts *only* with the specific authority of an officer. Examine the men who fall out. Give them a written note to the surgeon, or have them continue the march (fig. 7).

b. A medical officer marches at the tail of the



*Figure 7. Give a written note to march casualties you leave behind.*

column to examine the men authorized to wait for him. He may admit them to the medical vehicle or authorize them to place their arms and equipment (all or part) on transportation provided for the purpose. He treats cases of minor illness or injury and sees that these men rejoin their units at the first opportunity (fig. 8).

**27. MARCHING ON ROADS.** Concrete, macadam, and other hard-surfaced roads offer little or no hindrance to normal marching, but vehicular traffic over them frequently requires the troops to march beside the smooth surface. It is easier to march on the shoulder of the road when the weather is good and the road shoulders are wide enough. Your steps are then cushioned by the softer footing. Vehicular traffic on unimproved roads is a constant interference to the foot column because the road shoulders are seldom wide enough for marching. Rain turns the footing into mud, and dry weather increases dust. The footing may be good to start with, but after a number of men and vehicles travel over the route, the footing may break down. If this occurs, increase the distances between your men so they can select the best footing.

**28. MARCHING CROSS-COUNTRY.** a. A cross-country march is generally used to move troops into action. More supervision is required in cross-country marching, because there is less schedule control, limited personal control, more obstacles, and unforeseen difficulties. A cross-country march is usually slow, and the formation depends on the specific cir-

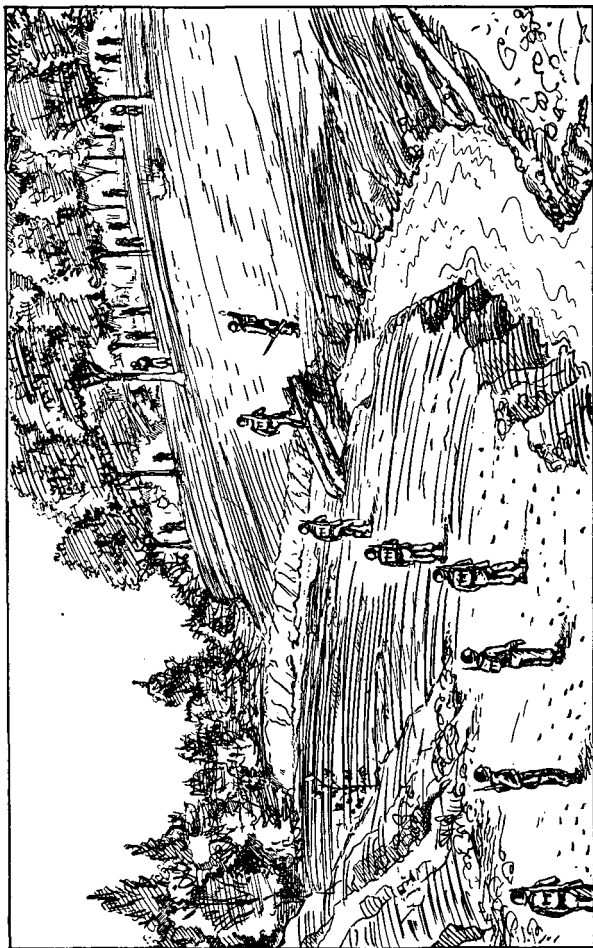


*Figure 8. Medical personnel collect march casualties along the route.*

cumstances. Increased distances between men and units extend the column and make control more difficult, but the increase is worth while because each man can then select the best footing. To aid control make full use of communication.

b. Accordion action (par. 23) may become a serious problem while marching cross-country, tiring the troops and decreasing command control. Typical causes of this action are: the lack of a level, smooth-marching surface; the increased load carried by the troops (because of a lack of vehicles); and obstacles (ditches, streams, fences, enemy artillery fire). The time interval between men may vary from 1 second on level ground to 10 seconds when passing an obstacle. For example, if a battalion in single file were to cross a 10-second defile, it would require  $2\frac{1}{2}$  hours to do so. However most defiles are not as serious as this and can be by-passed or reduced by trail-breaking detachments at the head of the column. Defiles and prominent landmarks that are normally interdicted by artillery fire are by-passed. Each unit commander calls a brief close-up halt on the far side of each defile. (See figure 9.)

**29. MARCHING AT NIGHT.** a. Night marches afford concealment from air and ground observation, reasonable security from air attack, and avoid the excessive heat of day marching. Make a detailed daylight reconnaissance of the route and march objective before a night march. When this is not possible, make a map reconnaissance. Take special precautions to maintain direction and contact within the column, and use guides and connecting files.



*Figure 9. Halt the column to let troops close up after crossing a defile.*

Make route sketches that show the route, prominent landmarks near the road that can be easily recognized at night, road junctions and crossroads and any features that distinguish them, and distances from the IP to the most important features.

**b.** Mark the route when the situation permits reconnaissance. Place guides or luminous markers at road junctions and crossroads to indicate the correct route. When you cannot mark the route beforehand, have the guides accompany the leading element, and post the guides where needed to point out the correct route for the units that follow. Make provisions to pick up the guides and markers when the column has cleared.

**c.** To maintain direction use friendly civilian guides, or guides from other units who are familiar with the route. Preferably, follow a well-defined route, even if it is much longer, make frequent checks of the route, and make full use of communication facilities.

**d.** Use the same formations at night that you use for day, but keep contact by reducing the distances between men and units. Send enough connecting files forward to keep contact with the unit to your front.

### **Section III. MECHANICS OF MARCHING**

#### **30. FORMATIONS FOR ADMINISTRATIVE MARCHES.**

Make an administrative march when contact with enemy ground forces is remote. When the danger of enemy air attack is present, however, provide security in the form of antiaircraft sentinels throughout the column. A rifle company normally marches in



five platoon size units. Have a rifle platoon lead off followed in order by the company headquarters, a rifle platoon, the weapons platoon, and a rifle platoon. This places rifle platoons in position to help the men in the weapons platoon carry the crew served weapons.

a. During daylight, march your column with a 2- to 5-yard interval between men. An interval of less than 2 yards causes a man to cut down his step to keep from stepping on the heels of the man in front. An interval of more than 5 yards between men causes excessive length in the column and consequent lack of control. Suitable intervals are 100 yards between battalions, 50 yards between companies, and 20 yards between platoons. Determine the amount of traffic, and the condition and width of the roadway, before deciding on the march column.

b. During darkness, march your column with an interval of 2 to 3 yards between men. March at a slower rate so that the men and units do not lose contact. At night march at a rate of 2 miles an hour on roads and 1 mile an hour cross-country. Suitable intervals are 50 yards between battalions, 20 yards between companies, and 10 yards between platoons. Use connecting files to keep contact between units. Send the connecting files out from your unit to the next unit ahead. When the distance between your unit and the one ahead increases, send out more connecting files, but *never lose contact*. When the distance between your unit and the one ahead decreases, withdraw unnecessary connecting files. If the unit ahead makes an unscheduled halt *go forward and investigate*. The delay may be caused by

sleeping personnel or doubt as to the correct route; take steps to resume the march. Close the lost distance gradually so as not to cause gaps in units to your rear. Rough terrain demands frequent halts to let the men close up.

**31. FORMATIONS FOR TACTICAL MARCHES.** Make a tactical march when contact with the enemy is possible, or when the unit is to occupy a combat position at the end of the march. The tactical situation dictates the march order. Vehicles are often dispersed throughout the foot column.

**a.** During daylight, allow enough interval between men to provide dispersion against hostile small arms or artillery fire. Allow enough interval between units to permit easy deployment and to prevent the entire column from being surprised by enemy fire. Usually 5 yards distance between men or the interval prescribed for administrative marches is enough.

**b.** During darkness, caution your men to keep silent to preserve secrecy. Keep them closed up. Post guides at any point where the column might take the wrong route. After halts, all leaders see that the men move out promptly. A column of twos is usually the most practical formation; however across rough terrain, use a column of files. Control is difficult at night; therefore make full use of connecting files, messengers and other authorized communication means to keep direction and contact.

**32. THE COMPANY COMMANDER'S JOB ON THE MARCH.** Upon receiving a warning order (par. 66), the company commander immediately informs his company of all known data applicable to the march.

He orders the platoon leaders to prepare their squads for the march. Upon receipt of the march order, the company commander supervises the platoon leaders while they check their men for physical defects. He issues instructions as to what equipment will be carried.

**a.** When the company is marching alone, the company commander selects the route, sends out a route reconnaissance party, and issues a march order.

**b.** When the company marches as part of a larger unit, he issues a march order and supervises the preparation of his company for the march. (See par. 70.) All men that cannot complete the march because of physical defects are left behind, or they are transported by vehicles. Before the march, the squad leaders inspect the men's equipment for completeness and proper loading. The platoon leaders and the company commander supervise the squad leaders.

**c.** The company commander reconnoiters the route to the IP and determines how long it will take his company to arrive there from its present area. In this way he can judge the time to form his company to prevent delay and to keep the men from standing for unnecessary periods in the company area or at the IP. He usually marches at the head of the company to the IP. He checks the company formation, intervals, and loading of equipment as it passes the IP. Then he falls in at the rear of the company, or at the place in the column where he can exercise the most supervision. He keeps control (usually by voice commands), prevents straggling, and checks the prescribed march rate.

d. At the first halt, the company commander normally walks from the rear to the front of his company supervising foot inspections, water discipline, sanitation, and adjustment of loads. When the company resumes the march, he remains in place inspecting the men and loads as they pass and checks the prescribed intervals. He then falls in the column. He maintains control and checks all men who fall out to see that they have written permission of their platoon leaders. If they do not have permission to fall out, he makes them continue the march.

e. At succeeding halts, he supervises foot inspections and inspects men who are about to become march casualties. If the case is serious enough, such as a man with a swelling foot, he gives him permission to fall out. Toward the end of the march, the company commander moves to the front of the company to lead it into the assembly area. He allows no delay in marching off the road. After dispersing the platoons in their areas, he sees that the men are rested and fed.

### **33. THE PLATOON LEADER'S JOB ON THE MARCH.**

Upon receipt of a warning order the platoon leader supervises the squad leaders while they check their men for physical defects. When the march order is issued, he informs his platoon of the time and duration of the march, formation, intervals, rate, halts, and equipment to be carried. He supervises the squad leaders as they make foot inspections and check the equipment. He discusses with his platoon such details as water discipline, straggling, changing socks during the march, treatment of blisters and

foot abrasions. When the march is to be made over terrain like mountains or jungles, or in extreme cold or hot weather, he discusses the factors affecting these special marches.

**a.** Before the march, the platoon leader inspects the packs and other equipment as carried on the men to see that straps are properly adjusted and that the load is carried as high as possible for comfort.

**b.** As the platoon marches from the company area to the IP, the platoon leader keeps the correct distance behind the platoon ahead and has his men take the prescribed formation and intervals between men. He normally falls in at the tail of the platoon and marches there until near the end of the march. He then moves to the head of his unit to lead it into the bivouac area.

**c.** During the march the platoon leader prevents straggling and maintains the prescribed rate. At halts he sees that his men move off the road and get off their feet so that they will get as much rest as possible. One minute before resuming the march he forms his platoon on the road promptly to prevent delaying the column. When a member of the platoon becomes a march casualty, he personally inspects him. When the casualty is bona fide, he gives the man written permission to remain in place and receive medical attention. When the man appears to be shirking, the platoon leader requires him to continue the march.

**d.** At the end of the march, he supervises the squad leaders while they make a foot inspection. He sees that prompt medical treatment is obtained when needed. The men are then allowed to get as much

rest as possible. The platoon leader assists in this by dispersing his platoon under cover in its area as soon as it halts.

#### **34. THE SQUAD LEADER'S JOB ON THE MARCH.**

Upon receiving the warning order the squad leader inspects his men for physical defects. If any man is injured or sick to the extent that he is not able to make the march, the squad leader reports to his platoon leader.

a. After the platoon leader gives the march order the squad leader tells his squad what uniform is to be worn and what equipment to carry. He shows the men how they are to assemble their packs and carry their equipment. He inspects each man's shoes to see that they have been broken in and are serviceable. He inspects each man's socks to see that they fit and that they have no holes or mended sections that would cause blisters. He has each man carry an extra pair of socks. The squad leader or his assistant should carry a can of foot powder, gauze, adhesive tape, and salt tablets. It is the squad leader's responsibility to see that all men have full canteens of *water*.

b. The squad leader marches at the head of his squad keeping the proper distance from the man ahead of him and checking his men to see that they keep their prescribed intervals. At halts he adjusts equipment and, if necessary, shifts crew-served weapons and heavy loads from tired men to others. He also inspects the men's feet for blisters and abrasions. On long marches he sees that his men change socks after 3 or 4 hours of marching.

c. Upon arriving in the bivouac area he disperses his men under cover. He inspects the men's feet and reports to the platoon leader those who need medical attention.

**35. MARCH CONTROL.** Use radios, messengers, visual signals and voice to control the march. When the tactical situation demands radio silence, use voice, messenger, or hand-and-arm signals.

a. A short compact column is easier to control than one that is scattered and long. Weigh carefully the value of dispersion against the value of control before deciding on the march formation. For example, on a night march in an area interdicted by enemy artillery fire, to disperse the column with large intervals between units and individuals may result in a long column making control difficult. This could cause temporary loss of some units en route or failure to assemble in the correct area on time. On the other hand, if a short compact column were caught by surprise fire, heavy casualties would result.

b. Give a march order stating distances to certain points along the route and times of halts. These factors assist in march control. March at a uniform rate with prescribed intervals between units and individuals. Keep up this rate throughout the march unless unforeseen obstacles arise. Prevent straggling and keep the company marching as a unit regardless of the obstacles.

c. When marching on the right-hand side of the road and approaching a crossroads heavy with traffic where the company is to turn left, the company commander orders each platoon to cross to the left

of the road by executing a left flank movement on the platoon leader's order. The platoon leader orders a right flank movement as the platoon reaches the left of the road. The platoon then turns to the left at the crossroads staying on the left side of the road. When the tail of the platoon clears the crossroads, the platoon leader orders a right flank movement, followed by a left flank movement to return to the marching position on the right of the road. These movements permit the company to pass crossroads with least interference by traffic.

d. The company commander moves immediately to the front of his column if unscheduled halts occur and continues the march with least delay after overcoming the obstacle. During heavy traffic, he has the men march on the shoulders of the road or as far to the sides as possible to facilitate the traffic flow. The platoon and squad leaders keep the prescribed intervals between men and prevent straggling. They exercise control by voice and hand-and-arm signals. Singing and talking on the march is encouraged unless secrecy is to be preserved.

e. The platoon leaders and higher commanders should carry strip maps of the route. The maps help in regulating the march rate because they show prominent terrain features and their distances from the IP. Distances between units are permitted to vary to offset the changes of rate within the column. For example: When the head of the marching column is slowed by a poor section of the route, the platoons following continue at the specified rate until they, in turn, reach the obstruction, or until all the distances between the platoons have been closed. When the



leading platoon and each platoon in turn clears the poor section, it resumes the specified rate. Since the rest of the column moves at a slow rate past the obstruction, the distances between platoons are regained.

**36. SETTING THE PACE.** Use a pace setter to set the rate of march. (See par. 18.) He should be equipped with a wrist watch bearing a second hand so that he can frequently check his pace. Have the remainder of the company govern their rate by that of the pace setter, but do not try to keep in step with him.

**37. SETTING THE MARCH RATE.** The rate of march is the average marching speed per hour, including short halts. The rate of march may be specified in the march order or in the SOP. The unit commander uses the pace setter to maintain this rate. If the prescribed rate requires double time it is executed by each platoon in turn over the same selected stretch of road. Whenever possible this stretch of road should be on level ground, or downhill, and have good footing. For marches over roads, keep up a rate of  $2\frac{1}{2}$  miles per hour during the day and 2 miles an hour at night. Across country, keep rates of  $1\frac{1}{2}$  miles an hour during the day and 1 mile an hour at night. Small units on independent missions may move at a faster rate. The condition of the route and climatic conditions affect the rate. For example, a column marching on a moonlit night along a hard-surfaced route may maintain the same rate as for a daylight march.

**38. WATCH SYNCHRONIZING AND TIMING HALTS AND STARTS.** Platoon leaders and higher commanders should carry reliable watches on foot marches. Watches with luminous dials are necessary for night marches. Before starting a march the column commander synchronizes his watch with his leaders to within one-quarter of a minute.

a. Schedule the time and duration of halts in the march order. Schedule the first halt to begin 45 minutes after the leading element of the column passes the IP. This halt should last for 15 minutes. Schedule the second and succeeding halts for 10 minutes at the end of each 50 minutes of marching. All units halt on order of their leaders at exactly the time scheduled regardless of gaps between units or whether the tail of the unit ahead is still moving. This gives the men full benefit of the rest halt, facilitates control, and prevents widening the interval between the units.

b. One minute before the march is to be resumed, platoon leaders form their platoons on the road so that they can begin the marching at exactly the specified time. To prevent accordion action the tail of each platoon begins marching at the same time as the head of the platoon.

**39. CHANGING THE RATE OF MARCH.** The need for a change of the march rate is most apparent at the rear of the column. If the pace setter is marching too fast, the men at the rear of the column will lag, if they march at the correct rate. On the other hand, if the pace setter is marching at too slow a rate, the men at the rear of the column close up on

men ahead. When the column commander decides that a change of rate is necessary, he warns the units at the rear of the column to expect a change of rate and passes this information from the rear to the front. He informs the pace setter last. The pace setter changes to the desired rate and the column makes the change smoothly. When practicable, the column commander announces changes of rate at halts so that all men can be briefed. An example of need for such a change occurs when a marching unit is caught by a rainstorm, necessitating a slower rate.

**40. SELECTING DISTANCES BETWEEN UNITS.** Terrain, weather, and the tactical situation dictate a difference in distances between units under varying conditions. Normally, prescribe 20 yards between platoons, 50 yards between companies and 100 yards between battalions. These distances allow enough interval to absorb the accordion action caused by marching over hills or rough stretches. At night, or in inclement weather, decrease these distances to facilitate control. Usually one-half of the normal distances is enough. In daylight, when the route is extremely rough or when marching in flat, open terrain within artillery range of the enemy, increase these distances if you can keep control.

**41. SELECTING DISTANCES BETWEEN INDIVIDUALS.** When marching on roads in daylight, increase the distance between men to more than 40 inches to give them more room for marching comfort. The best distances are from 2 to 5 yards. An interval of

over 5 yards between men creates an excessively long column with consequent loss of control. At night, set the interval at from 40 inches to 3 yards so that the men can keep contact. Within these limits, the tactical situation dictates the interval. For example, when the route is interdicted by sporadic enemy artillery fire set the interval at about 5 yards between men in daylight and 3 yards at night. When the route is not under fire, use shorter intervals.

**42. FORCED MARCH TECHNIQUE.** Make sure that the men are rested before beginning a forced march. (See par. 25.) Your plans for a forced march are limited by terrain, weather, and the tactical situation. Assume that you desire to start a column of troops at daylight to make a foot march of 33 miles. You might divide the march as follows:

	<i>Hrs.</i>
First stage, 12½ miles. At 2½ miles per hour (daylight, on roads)-----	5
Noon meal and rest-----	2
Second stage, 12½ miles. At 2½ miles per hour (daylight, on roads)-----	5
Supper meal and rest-----	6
Third stage, 8 miles, at 2 miles per hour (night, on roads)-----	4
Total-----	22

(The maximum distances made by forced marching are 35 miles in 24 hours; 60 miles in 48 hours; or 80 miles in 72 hours.)

## Section IV. MARCH SUPERVISION

**43. GENERAL.** All leaders see that their men are in the best possible condition before the march. During the march they supervise the men to keep them in that condition.

### **44. DUTIES OF THE COMPANY EXECUTIVE OFFICER.**

The executive officer assists the company commander as directed. He usually leads the company over the designated route at the desired rate. He supervises the pace setter, supervises halts and resumes the march according to the march order time schedule, posts and supervises company traffic guards, and locates and supervises the establishment of mess and latrine facilities at the end of the march.

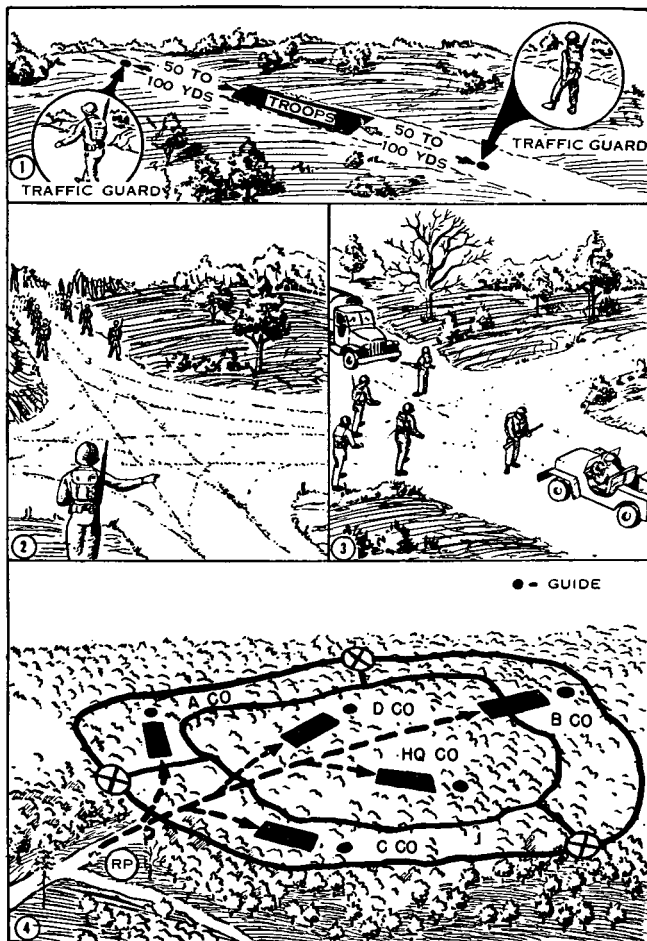
**45. POSITION OF LEADERS.** a. The company commander has no specific position in the company formation; he moves where he can best observe and control the company. The first sergeant marches at the rear of the company during the march, and he moves to the head of the company headquarters just before the march ends. The company commander designates the march position for the company headquarters.

b. The platoon leader marches at the rear of his platoon. He may move to another position to direct or supervise his unit, and when he expects enemy contact he marches where he can best control his unit. The platoon sergeant marches at the head of the platoon. When the platoon leader is away from the rear of his unit, except for short periods, the platoon sergeant marches at the rear of the platoon.

At the end of the march, all leaders move to the head of their units. The squad leader marches at the head of his squad.

**46. GUIDES.** Use guides to lead or direct a unit over a predetermined route, and in or out of a selected area (fig. 10). Place the guides at points along the march to control direction. Instruct the guides in their duties. Give them strip maps if possible. Include in their instruction how they do their job and answer normal questions about the unit and the movement. If conditions prevent posting guides ahead of the marching column, have them accompany the leading element of the column and post them along the route to indicate the direction for the other units. Have the guides posted along the route join the tail of the column as it clears their position, or else provide trucks to pick them up. To provide for the safe passage of the column, place guides at road or trail intersections, at points where a new direction is taken, at points where the column might lose its direction and at danger points. In cross-country marching, post guides along the route of march and at points where a new direction is followed. When the column approaches its destination, use guides to lead the units from the RP into their assigned positions in the new area.

**47. TRAFFIC GUARDS.** Place traffic guards at least 50 yards to the front and rear of the column to slow or stop traffic. Each unit is responsible for placing guards at road intersections or other danger points where no route guide is provided. At times guides and traffic guards may perform the same duties.



- ① Guards at the head and tail of column slow or stop traffic..
- ② Guide at road junction points out correct turn.
- ③ Guides at busy intersection stopping traffic while unit crosses.
- ④ Guides leading companies from RP into bivouac areas.

Figure 10. Use of guards and guides on the march.

#### **48. MARCH SUPERVISION DURING THE MARCH.**

Keep your men in formation and moving at the correct rate during the march. Prevent straggling and allow no one to leave the column without written permission of an officer. Platoons march at route step, but in close interval in favorable terrain they may stay in step within platoons. Encourage mental relaxation through singing and conversation. Enforce food and water discipline. Set an example by personal endurance and leadership.

**49. SUPERVISION DURING HALTS.** See that your men clear the shoulders of the road at halts and remain in the immediate vicinity of their platoon. Check to see that all men get off their feet, loosen their equipment, and secure the maximum rest. Check the men for physical ailments. Have the medical aid men attend those with blisters, injuries, or other illnesses. Enforce food and water discipline. Check traffic guards. Require the men who relieve themselves to cover their feces. Have your men keep off their feet during the rest until alerted to form, normally 1 minute before resuming the march. At that time have your men form for continuing the march promptly.

**50. SUPERVISION AT THE END OF THE MARCH.** At the end of the march see that your unit moves promptly to its assigned area in the march objective. Have the men bathe their feet and treat any foot injuries. Platoon leaders supervise squad leaders while they make a foot inspection after their men have bathed their feet. Check your men's physical



condition, and see that they get hot food, water, shelter, and rest. Check the march casualties to determine the cause and to limit future march casualties.

**51. SUPERVISION IN BATTLE AREAS.** In battle areas reconnaissance and planning becomes paramount. When you are away from your men, the second-in-command automatically takes over. You inform him as to your absence and time of probable return. Attention to the men's needs is SOP and continual.

**52. COMMUNICATION.** Use all appropriate means of communication to maintain control on the march, particularly, radio, visual signals, light aircraft, foot or motor messengers, and guides. The use of radios is often restricted under tactical situations. When allowed, make full use of your radios. Use connecting files whenever visual contact is difficult to maintain.

**53. SECURITY ON THE MARCH.** The tactical situation governs the security measures on the march. Protect your column against interference, surprise, and enemy observation, maintaining security in all directions during movement and at the halt. Use mobile reconnaissance elements as needed to the front and flanks to give prompt warning of hostile action. (See appendix I for references.) Security measures must include an adequate warning system.

## CHAPTER 4

### CARE OF THE FEET

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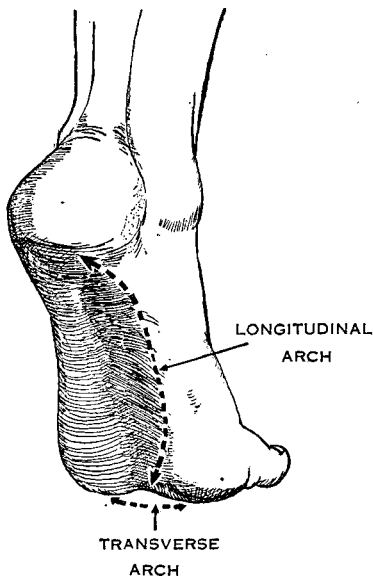
#### Section I. STRUCTURE OF THE FOOT

**54. GENERAL.** The foot is designed to cushion the body against shock of walking. It has two arches (fig. 11), a longitudinal arch and a transverse arch. The longitudinal arch is longer on the inside of the foot than it is on the outside. The inside of the transverse arch carries the body weight, while the outside of the transverse serves to balance the weight. The shape of the longitudinal arch is maintained by the wedge shape of the bones, by the criss-crossing of the tendons of the strong leg muscles, and by the ligaments which bind the foot bones together. The shape of the transverse arch is similarly maintained, with an additional support provided by the foot muscles. Thus the bottom of the foot appears dome-like. Standing causes the two arches to lengthen and flatten, making the foot larger. The heel and ball of the foot are protected by a pad of fat. The bones and tendons on the rest of the foot and the ankle have little padding. The foot's blood vessels are close to the surface and are easily compressed by tight socks or shoes.

#### Section II. DEFECTS OF THE FOOT

**55. FLAT FEET.** The arches differ in length and height in different persons. When the longitudinal arch is absent, a flat foot results. Flat feet are natural or acquired. Natural flat feet are usually sat-

isfactory for marching, but acquired flat feet are usually painful and interfere with marching. The shape of the foot has little to do with the ability to march; this is primarily determined by whether or not the feet hurt. Flat feet may result from pro-



*Figure 11. Arches of the foot.*

longed illness, improper shoes, improper posture, or from weakening or stretching of the ligaments and tendons supporting the arch. Flat feet are aggravated by prolonged standing and by carrying heavy loads. Acquired flat feet and painful feet are helped by physical training before marching, progressive march training, proper posture, proper shoes, and

personal hygiene. The foot is strengthened by walking with the toes pointed straight ahead.

**56. FOOT AILMENTS.** a. Prevention of foot trouble is the best first aid for feet. The soldier can prevent many minor foot defects by personal care. He also corrects minor defects like blisters, abrasions, sweaty feet, and callouses.

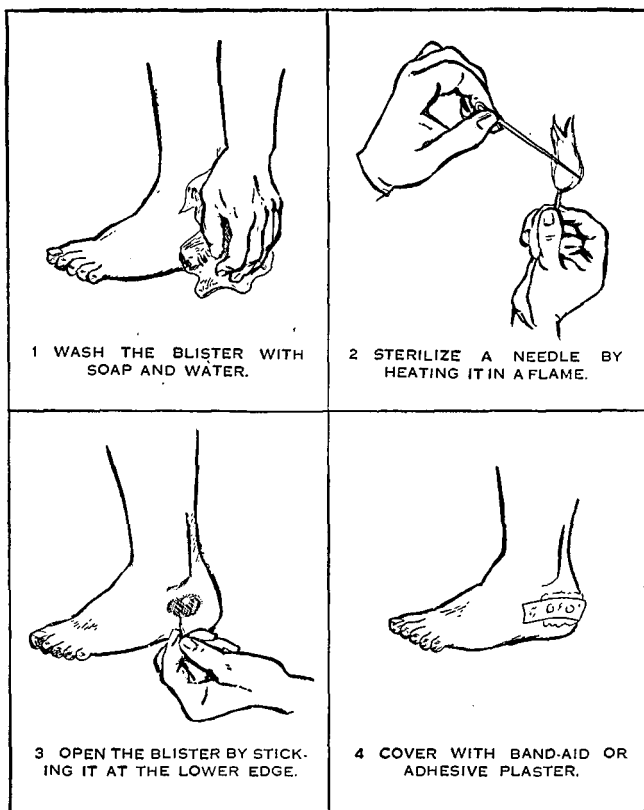
b. Blisters usually are caused by friction resulting from shoes or socks that do not fit, or by socks that have holes or darned places.

(1) *Treatment.* Wash carefully around the blister with soap and water, being careful not to break the skin if the blister is unbroken. If the blister is unbroken, empty it by pricking its lower edge with a needle or knifepoint that has been held in a flame. Do not remove the skin, but cover the blister with a band aid or similar small dressing smoothly applied with adhesive plaster extending beyond its edge. In a few days, after the blister has dried up, remove the adhesive plaster.

(2) *Infected blister.* If a blister becomes infected, report to the dispensary or aid station at once (fig. 12).

c. Clean and cover abrasions on the feet with a band aid or similar small dressing smoothly applied with adhesive plaster extending beyond its edge as soon as possible.

d. Red, painful areas which accompany sweaty feet are prevented and treated by keeping the feet



*Figure 12. Treatment of a foot blister.*

dry. Do this by changing to clean, dry socks, and by using foot powder.

e. Callouses are caused by ill-fitting shoes or by flattening of the arches, which puts additional pressure on the wrong parts of the foot. For temporary relief, place padding around the calloused area to

distribute the pressure. For permanent correction and prevention, see that shoes fit correctly.

**f.** Prevent athlete's foot, a fungus infection, by keeping your feet, socks, and shoes clean and dry, and by using foot powder. You can temporarily relieve burning, itchy toes by washing and drying your feet and then sprinkling them with foot powder. Self-treatment is not advised.

**g.** Trench foot is caused by exposure of the feet to cold and dampness. In severe form it is very crippling and may lead to gangrene and loss of the feet or toes. This condition develops when your feet stay cold and wet for a long time, such as spending many hours during cold, rainy weather in muddy foxholes without making any effort to keep your feet even reasonably dry and warm. Although you cannot always keep your feet dry and warm under combat conditions, you can help to prevent trench foot by observing the following rules:

- (1) **Keep your feet as dry as possible.** Dry your socks and shoes by every expedient and change the socks as often as you can. If possible, take your shoes off before going to sleep and keep them under the covers or in the sleeping bag; in this way they will not freeze and will be partially dried out by the body heat. Carry spare socks under your outer clothing so that the body heat will help dry them out; keep out of mud and water when possible.
- (2) **Keep the clothing about the legs and ankles loose.** Avoid tight shoes, tight socks, and tight shoelaces.

- (3) Exercise and massage your feet. Even in a stationary position, flexing of the toes and stamping the feet help to maintain circulation. As often as possible, massage your feet or pair off with a buddy and massage each other's feet.
- (4) Carefully follow all instructions for the wearing of special footgear.

**h.** Frostbite of the feet develops much faster than trench foot. The toes are most frequently affected. The main prevention is wearing sufficiently warm footgear to withstand the cold, and taking every opportunity to warm your feet.

**57. FOOT HYGIENE.** Everyday foot hygiene includes the following measures:

**a.** Keep your feet clean. Wash your feet and thoroughly dry them immediately after a march. Avoid soaking your feet and be careful to dry around and between the toes. If water is not available, rub your feet briskly with a dry cloth.

**b.** Dust your feet frequently with foot powder to keep them dry. Be sure to powder between the toes. Rub off excess powder.

**c.** Trim your toenails straight across; use a sharp instrument and be careful not to tear the nail. (See fig. 13.) By trimming the toenails correctly and wearing proper-fitting shoes, you prevent ingrown toenails.

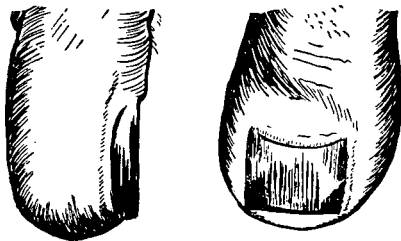
### **Section III. FOOTWEAR**

**58. TESTS TO CHECK SIZE.** **a.** The unit commander prescribes the type of footwear worn by his men, and is responsible for proper fitting. He checks the fit

by having the soldier stand with his weight evenly distributed on both feet. The soldier should be wearing the type socks which are to be worn with the shoes, and should have the shoes properly laced.

**b.** There are four tests (fig. 14) to check the correct fit.

- (1) *Test No. 1.* Determine the fit under the arch by grasping the shoe over the instep with your thumb on the outer side and your



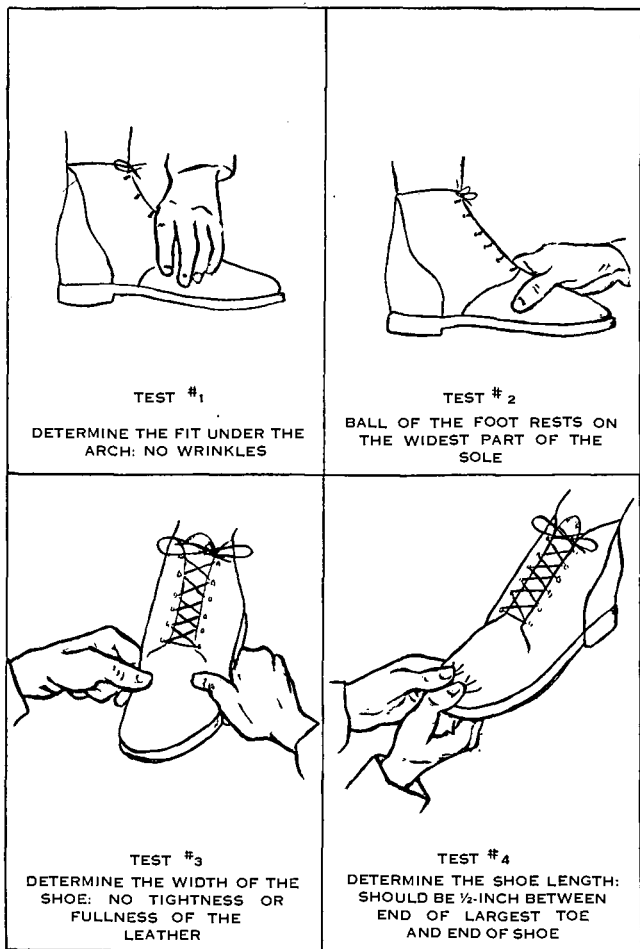
#### **TOE-NAIL PROPERLY TRIMMED**

*Figure 13. Keep your toenails trimmed.*

fingers on the inner side. The leather should be free of wrinkles.

- (2) *Test No. 2.* The ball of the foot should rest on the widest part of the sole.
- (3) *Test No. 3.* Determine the fit of the shoes in width by pressing your thumbs against the outer and inner sides near the sole, and by running your thumbs toward the center. There should be no tightness or fullness of the leather.
- (4) *Test No. 4.* Determine the fit in length by pressing down on the shoe with both thumbs at the toe end of the shoe. There should be





*Figure 14. Test shoes for correct fit.*

one-half inch between the end of the great toe and the end of the shoe. (See fig. 14.) If you cannot compress the toe of the shoe estimate the length of the foot by tests No. 2 and No. 3.

**59. TYPES OF FOOTWEAR.** **a.** In *temperate weather* the combat boots with the composition sole or the service shoes with the composition sole are adequate footwear for marching. The best sock combination is usually two pairs of light wool socks or one pair of cushion-sole wool socks.

**b.** Choose *cold weather* footwear with care. Temperatures near freezing demand waterproofed footwear. In subzero temperatures use footwear made of a porous wind-resistant material which does not trap moisture inside, for in extreme cold, moisture trapped inside a boot freezes.

**c.** Keep all lacings loose in cold weather.

**d.** For *near-freezing* temperatures on wet and muddy terrain, the service boot or shoe with Arctic overshoes provides protection against cold and wet. However, overshoes do not fit well enough for ideal marching.

**e.** For temperatures down to zero degrees F., the shoepac is adequate protection against the cold. Wear shoepac with two pairs of wool ski socks and one pair of felt insoles. Take care to keep the socks and insoles dry in the shoepacs. Since the feet of the shoepac are made of rubber, perspiration cannot escape and freezes inside.

**f.** For temperatures from 20° F. to -40° F. Arctic felt shoes are excellent marching footwear.

Arctic felt shoes are not waterproofed; therefore, do not wear them in temperatures above 20° F. because the heat of the foot melts the snow and the shoes become wet. Wear two pairs of wool ski socks and one pair of felt insoles with Arctic felt shoes.

**g.** Wear the mukluk in temperatures below -40° F. As the mukluk is not waterproofed, do not use it in temperatures above 20° F. It is flexible but gives little foot support; therefore, the wearer may complain of aching feet. The sock combination consists of one pair of wool ski socks, one pair of felt socks, and two pairs of felt insoles.

**h.** The service boot or shoe is better for marching than overshoes, shoepacs, Arctic felt shoes, or muklucs. Conditions dictate when to sacrifice marching efficiency for protection from weather and climate.

**i.** Keep footwear in the best possible condition. Remove dirt and mud from leather shoes and boots, using a dull instrument to avoid cutting the leather. Clean and preserve the leather with soap or saddle soap. Thoroughly brush felt shoes and muklucs to rid them of snow. Repair shoes and boots before wear has ruined their structure.

**j.** Break in new shoes or boots before wearing them on long marches. When shoes are new, wear them at first only for short periods. If practicable, do not wear a pair of shoes on two successive days.

**60. SOCKS.** **a.** To check the fit of socks, stand with the weight evenly distributed on both feet. No tightness or fullness will show if the fit is correct. In a new sock allow three-eighths inch excess length for shrinkage.

**b. Table of sock sizes, wool sock :**

Shoes-----	5-5½	6-6½	7-8	8½-9	9½-10½
Socks*-----	10	10½	11	11½	12
Shoes-----	11-11½	12-13	13½-14	14½-15	
Socks*-----	12½	13	13½	14	

\*Cotton socks one-half size smaller.

**c.** Socks which are too large wrinkle inside the shoe, rub your feet, and cause blisters and abrasions. Socks that are too small wear quickly and reduce the free circulation of blood in the foot.

**d.** To prevent cramping your feet when more than one pair of socks is worn at the same time, wear an outer pair that is at least one-half size larger.

**e.** Change socks daily because dirty socks are conductors of heat and let the warmth escape. Wash them regularly for cleanliness and to preserve the fiber of the sock. Wash socks in luke warm water. Hot water causes excessive shrinkage.

**f.** Socks play a large part in protecting the feet from cold. Several pairs of socks are warmer than one pair, since the insulating layers of air hold the heat in. If at all possible carry extra insoles. Take care to keep socks and insoles dry in cold weather. They may be dried by body heat by placing them inside the clothing or the sleeping bag.

## CHAPTER 5

### TRAINING

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#### Section I. OBJECTIVES AND PRINCIPLES

**61. OBJECTIVES.** Training in foot marching is conducted to develop a unit capable of marching to its objective and arriving in condition to perform its mission; and to develop the unit's discipline, leadership, teamwork, morale, health, strength, and endurance.

**62. BALANCED PROGRESSIVE TRAINING.** **a.** The objectives are accomplished by balanced progressive training that moves from that which is easy to that which is difficult.

**b.** Physical condition and endurance are progressively developed by exercises and by marches within the increasing capabilities of the men. Training marches start with short distances, light loads, and smooth routes, gradually progress to longer distances, heavier loads, and rougher routes. Trained men are kept in excellent physical condition by frequent marches.

**c.** Mental conditioning is an essential part of training in foot marches. Soldiers are informed of the military need for a unit to be proficient in marching. Their confidence in leaders is developed by proper planning and conduct of the march. Self-confidence in their ability to march is gained by progressive training.

**d.** A knowledge of marching is essential for sol-

diers. They are taught march discipline, individual preparation for the march, conduct on the march, march technique, and pack-carrying technique.

## **Section II. TRAINING PLANS AND ORDERS**

**63. TRAINING PROGRAMS.** In the training programs include not only foot marches but also related subjects. Conduct training in care of equipment and clothing, basic medical subjects, and physical training before any marches are taken. Do not schedule actual marching in the first week of recruit training, although related conferences and demonstrations may be given. When training in marches begins, include related subjects like individual and group cooking, field inspections, bivouacs and tent pitching, basic signal communication, security on the march, and individual tactical training.

**64. TRAINING SCHEDULES.** a. Here are some suggestions for scheduling and conducting marches.

- (1) Plan your short marches to pass points of interest on or near the reservation. Before the march remind your leaders of these points so that they can explain and discuss them as the unit passes.
- (2) Schedule short marches in the afternoon periods so your men can clean themselves and their equipment after the march.
- (3) Stimulate pride in your unit's ability to march.
- (4) Give your men something to look forward to after the march.

- (5) Encourage singing during the march.
- (6) Allow the platoon wits to show off, within reason, during a march, and devise other schemes to maintain interest.
- (7) Consider each movement on foot, no matter how short, as a march to be conducted according to regular march principles and techniques.
- (8) Mark half-mile and mile distances so that leaders can check by the watch, to see they are on schedule.

**b.** On an often used road, paint white stripes along the side at 30-inch intervals to form a horizontal ladder. This helps your men to measure their pace and allows leaders to check the rate of march.

**c.** A suggested subject schedule for recruit training during a 13-week period is included in appendix II.

## CHAPTER 6

### PREPARATION FOR THE MARCH

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**65. GENERAL.** A unit's ability to make a successful march depends upon the marching ability of its men; so plan your march within the capabilities of your men. When making your march plan, consider the warning order, a route reconnaissance, length and rate of march, equipment to be carried, formation and organization of the march, security, and communication. The march order, when prepared correctly includes all of the items as well as prescribing the uniform, assembly time, and times for meals. Take steps before the march to get your men in the best possible physical condition. Inspect them for physical defects that would prevent them from completing the march. Leave those men with physical defects behind or provide transportation for them. Inspect the men's equipment to see that it is adjusted. To reduce planning time and to insure more effective execution of the march plan, develop a standing operating procedure (SOP). For an example of a march SOP, see appendix III.

**66. WARNING ORDERS.** a. A brief warning order is issued when a march is to be made to allow the units the maximum time to prepare for the march. A warning order answers as many of the following questions as are known by the issuing headquarters.

- (1) Who? (The unit or units involved.)
- (2) What? (The type of movement.)



- (3) When? (The time the movement is to begin.)
- (4) Where? (The destination.)
- (5) Why? (The mission.)

The absence of any one item of information should not delay the issuance of the warning order.

**b.** A typical warning order follows: "1st Battalion 1st Infantry, marches on 13 March to Area A to participate in a field problem."

**c.** The order of execution designating the exact route and time will follow at a later date. The information contained in the warning order is enough to alert the unit and permit it to make plans.

**67. ROUTE RECONNAISSANCE.** **a.** Send out a reconnaissance party before the march to gain information for use as a basis for the march order. In combat areas, when time is limited, the reconnaissance party is organized to precede the column, send back necessary information, post guides, and reconnoiter the new area. When time allows the route reconnaissance determines—

- (1) Route or routes available for the movement.
- (2) Location of the new area.
- (3) Type and condition of the road or roads.
- (4) Suitable rates of march over various parts of the route.
- (5) Security measures necessary.
- (6) Location of the initial point (IP) and the regulating point (RP).
- (7) Distances from the IP to all critical points.
- (8) The location and extent of any obstruc-

tions and the amount of engineer work (if any) necessary to permit the unit to move over the route.

- (9) Suitable areas for rest halts and feeding.
- (10) The number of guides needed and the location of their posts.
- (11) Special means of control, communication, and evacuation.

**b.** Organize the reconnaissance party according to your unit SOP. For a battalion, make it up of reconnaissance elements, a traffic control representative, and an engineer or pioneer platoon representative. Organize the reconnaissance party so that it can be dispatched promptly after the decision to move has been made.

**c.** For an infantry regiment, the intelligence and reconnaissance platoon leader usually commands the reconnaissance party. The antitank mine platoon leader and the regimental security platoon leader assist the I and R platoon leader. A battalion pioneer and ammunition platoon leader may supplant the antitank mine platoon leader when he is not available.

**d.** The reconnaissance party submits its information in a route reconnaissance report. Here is a sample route reconnaissance report:

Route	Speed-ometer reading	Miles from IP	Suitable marching speed (miles per hour)	Remarks
IP-8th Div Rd at Superhighway	159.6	---	2½	Bridge; hard surface, 2 guides.
8th Div to Cusseta Rd	159.8	0.2	2½	Guide; traffic heavy.
8th Div Rd to Jamestown Rd	160.0	.4	2½	Turn left on Jamestown. Guide: Traffic heavy. Hard surface.
Jamestown Rd to Hershey Rd	161.0	1.4	2½	Traffic heavy; 1 guide; Jamestown bears to right.
Jamestown Rd to Hourglass Rd	162.0	2.4	2½	2 guides.
Jamestown Rd to Crosbie Rd	162.4	2.8	2½	Do.
Jamestown Rd to Yankee Rd	164.0	4.4	2½	Do.
Bridge—Weems Pond	164.7	5.1	2	Good bridge; water close to road on both sides. Stop vehicles approaching column. Gravel road. Dusty.
Jamestown Rd to Lightning Rd	166.1	6.5	2	2 guides.
Jamestown Rd to Sunshine Rd	167.3	7.7	2	2 guides. Traffic light. Turn right on Sunshine Rd. Dirt road, slippery when wet.
RP at CR of Sunshine Rd and Sedan Tr.	168.8	9.2	2	2 guides. Dirt road.

**68. MARCH ORDER.** a. A march order designates the route, destination, schedule, rate, formation, time intervals, organization of the column, commanders of the elements of the column, and other details of the march not covered by the SOP. Orders are simplified by the use of maps, overlays, and march tables.

b. An example of a formal written battalion march order follows:

(CLASSIFICATION)

1st Battalion 1st Inf  
FORT BENNING, GEORGIA  
121600 Mar 19--

OPN Order 1.

Map: FORT BENNING, GEORGIA 1:50,000

1. 1st Battalion 1st Infantry Regiment will march beginning 130800 Mar 19-- to Area A to conduct a field maneuver. IP at 8th DIV Road—SUPER-HIGHWAY. RP at CR of SUNSHINE Road—Sedan Trail. Route: 8th DIV Road to JAMESTOWN Road, JAMESTOWN Road to SUNSHINE Road, SUNSHINE Road to CR SUNSHINE Road—SEDAN Trail.

2. Organization and formation—order of march:

A Co  
Hq Co  
B Co  
D Co  
C Co

Formation: Column of twos, 5 yards between men.

Distances: Between companies—50 yards.  
Between platoons—30 yards.

3. Rate:  $2\frac{1}{2}$  miles per hour.

4. Administrative details:

*a.* Hot lunch served at 1200 vicinity CR SUNSHINE Road—SEDAN Trail.

*b.* Troops carry full canteen water.

*c.* Uniform D, steel helmet, full field equipment.

5. Command and Signal:

*a.* March headquarters: Head of Battalion Headquarters and Headquarters Company.

*b.* Radio: SOI 7-5 in effect. Contact every half hour, on the hour and half hour.

*c.* Each company send runner to march headquarters.

JONES

Lt Col

OFFICIAL:

Smith

S-3

(CLASSIFICATION)

*c.* A route sketch (fig. 15) may be issued with the march order. When the route selected follows twisting roads and trails, the sketch will assist leaders in maintaining direction.

**69. INSPECTION BEFORE THE MARCH.** Before starting on a march the squad leaders inspect their men and their equipment. The platoon leaders hold their squad leaders responsible for their squads. The company commander and platoon leaders supervise the

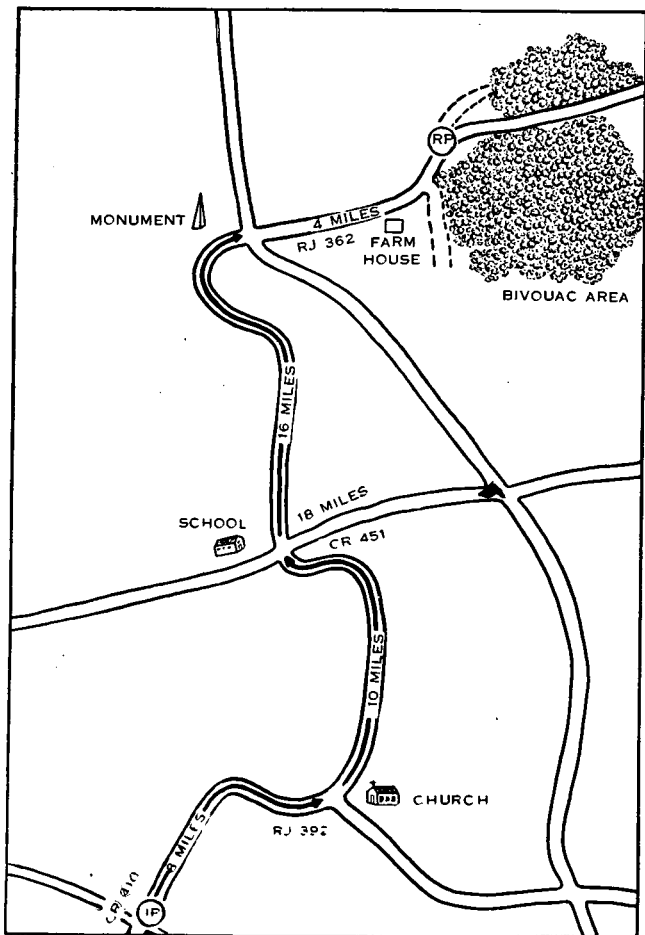
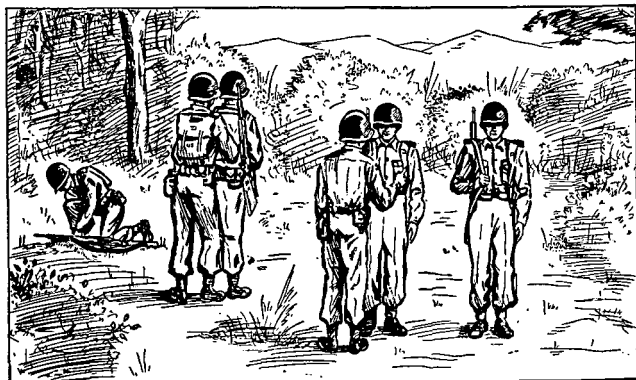


Figure 15. Route sketch.

inspection. Inspect their feet for condition and cleanliness; their shoes, socks, and clothing for proper fit, condition, and cleanliness; their equipment for condition, completeness, and adjustment; and determine each man's physical fitness. Check the completeness of water, rations, and supplies. Immediately correct all defects that might reduce your men's activity and stamina. Send men who appear to be ill or physically unfit to the dispensary. (See fig. 16.)



*Figure 16. Inspect men and equipment before going on a march.*

**70. DUTIES OF THE COMPANY COMMANDER BEFORE THE MARCH.** a. The company commander issues his warning order in time to allow his men maximum time to prepare for the march. If his company marches by itself he makes a reconnaissance to select the best march route (fig. 17). If his company is a part of a larger body he checks the route to the IP



*Figure 17. Make a reconnaissance before a march and select your route.*



and makes a march plan. Then he issues the march order. It includes—

- (1) Who will participate.
- (2) The march objective.
- (3) Reason for the march.
- (4) Time for forming for the march.
- (5) Formation, organization, rate, initial point, route, and regulating point for the march.
- (6) Uniform, equipment, amount of water and rations to be carried, and other administrative considerations.
- (7) Methods for preventing straggling.
- (8) Details of march discipline.
- (9) March security.
- (10) Communication on the march.

**b.** Many of the routine details of the march order may be included in the company SOP.

U. S. ARMY  
77 INFANTRY MUSEUM  
67

# CHAPTER 7

## SPECIAL OPERATIONS

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### Section I. MOUNTAIN MARCHES

**71. GENERAL.** Mountainous terrain is characterized by heavy woods or jungle, rocky crags and ice covered peaks, hills and valleys, narrow trails, high altitudes, and few roads (of poor quality). Besides terrain obstacles, your march rate is further reduced by sudden and localized rain and snowstorms, fog, and intense heat. Marching in fog presents the same difficulties as marching at night. Keeping your sense of direction is more difficult since fogs are often so dense that you can hardly see the ground. Under such conditions you will have to maintain even closer columns, a slower pace, and use audible signals.

**72. CONDITIONING AND ACCLIMATIZATION.** Your first consideration in mountain marching is to conserve the strength of your men. Altitude sickness is extremely rare at low or medium elevation. In this type mountain marching you do not need to give your men any special conditioning or acclimatization (adapting oneself to new climate conditions particularly as related to change in altitude). If they are to march in high altitudes, a 10- to 14-day conditioning or acclimatization period is needed. After a week or two of training at high altitudes, your men will find that they have become conditioned to their new surroundings. During this training period pro-

vide for graduated physical exercises, including short marches, balanced appropriate rest periods.

**73. CLOTHING.** To keep warm and yet travel light, wear porous clothing next to your body and wear windproof outer clothing to keep out the wind and keep in the warm air. During cold weather exercises, guard against perspiration by loosening the outer clothing so that ventilation will reduce body heat and carry away body vapor. Keep one dry garment handy in the pack or rucksack in case your other clothing becomes wet.

**74. EQUIPMENT.** When carrying loads in mountainous terrain carry the weight high at all times with the load distributed between the shoulders and hips; reduce leverage to the minimum. Provide air space between the pack and the body by using packboards if available to help keep the back dry. Carry only essential items.

**75. WATER DISCIPLINE.** Exercise strict control over all sources of water. Impress on your men the fact that contrary to popular belief, mountain water is no safer to drink than any other unpurified water. The air is generally dry in high mountains and sweat evaporates quickly. Although this may lead you to think that you are not perspiring, you actually are. Unless you take enough water and salt to replace that lost through perspiration, the loss of fluid and salt may soon lead to acute fatigue, muscle cramps, or heat exhaustion.

**76. FORMATION.** Use a single file with 2 to 5 yards between men when the tactical situation permits. This allows each man freedom in selecting his footing, adjusting his stride, and stepping over or around obstacles without halting or slowing down the man behind him (fig. 18).

**77. RATE OF MARCH.** a. Determine the march rate in the mountains by the method of movement (foot, snowshoes, skis), the depth of the snow if any, the condition and state of training of the troops, the visibility, and the terrain. Use the  $2\frac{1}{2}$  miles per hour rate to estimate the marching time on good trails. However, as the climb and descent considerably increases the total effort and time, add 1 hour for each 1,000 feet of ascent or 1,500 feet of descent. For example, a 5-mile march normally requires 2 hours. When there is a climb of 2,000 feet and a descent of 1,500 feet, the march will take 5 hours.

b. To conserve strength and combat efficiency when marching uphill, maintain a slow and steady pace. Zigzag to reduce the steepness of the grade. Keep your body nearly vertical. To obtain sure footing place the entire foot on the ground. On side slope keep feet flat by bending the ankles. Check footholds by bending your knees slightly and applying the weight of your body.

**78. HALTS.** Make halts as needed, rather than on a fixed time schedule. Halt near sheltering terrain features. After the first 15 minutes of marching, halt to adjust clothing and equipment. See that your men remove their packs and weapons during the reg-



*Figure 18. Use single file when marching in mountains.*

ular halts, and encourage them to lie down with their feet elevated. See that they put on or take off their clothing as the conditions change.

**79. COMMUNICATION.** Give communication special planning and supervision in mountainous country. Radios, although very useful, are frequently masked, therefore, maximum use must be made of visual signals, light aircraft, messengers, and guides. When a high degree of control is dictated by the tactical situation, wire should be laid as this is the most dependable means available.

## **Section II. DESERT MARCHES**

**80. GENERAL.** Marching in any direction usually is possible on a desert as you are not normally confined to roads and trails. Troops from temperate climates require special conditioning for desert operations. As desert temperatures are abnormally high during the day, the body loses more moisture through perspiration. The lack of concealment, the difficult ground surfaces, and the need for more water during marching limit desert foot movements. The intense heat and the difficulty of walking in loose, shifting sand or sharp rocks reduce desert marching rates to one to two miles per hour.

**81. CLOTHING AND EQUIPMENT.** **a.** In some desert areas the temperatures may range from 120° to 130° during the day to freezing at night. Provide sweaters, overcoats, and blankets for the men at night. The helmet liner is suitable to protect the head and eyes from the sun's direct rays. Spécial equipment

includes goggles, respirators, sunglasses, neck cloths, nose cloths, and two canteens.

**b.** For navigating long distances use the sun compass, corrected for date, suntime and latitude.

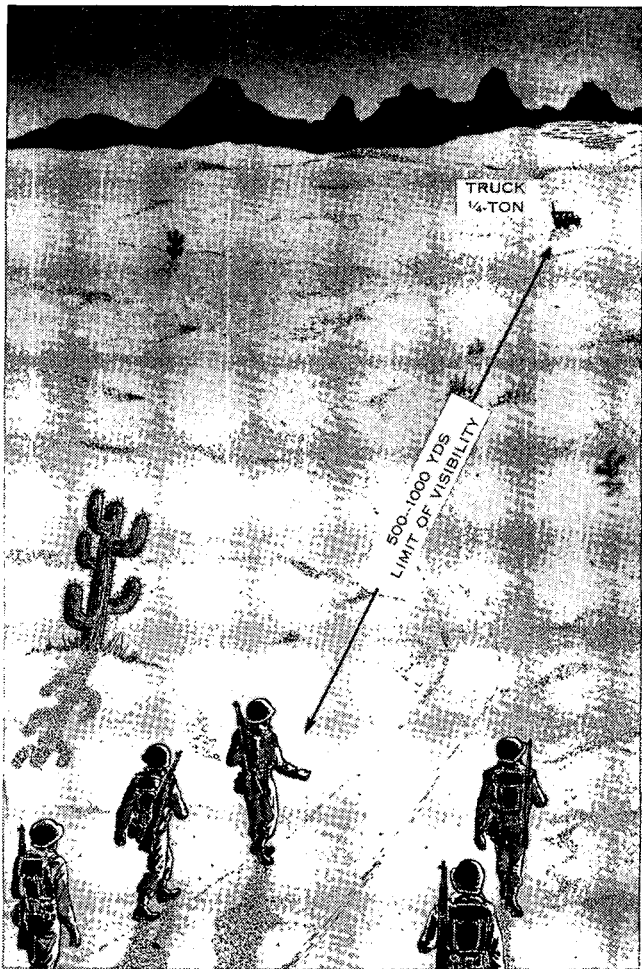
**82. WATER DISCIPLINE.** Water plays an important part in the success of desert operations. Supply your men with adequate water and train them to avoid waste. Water found in the few local sources is usually infected and disagreeable. Replace the salt lost through perspiration by drinking water in which salt has been dissolved.

**83. FORMATION.** Use extended formations with 5 to 10 yards between men to reduce dust and to allow air to circulate through the column.

**84. HALTS.** Because of the intense heat and the fatigue caused by marching in loose sand, make halts whenever required by the conditions.

**85. COMMUNICATION.** Radio is the most efficient and convenient means of desert communication. Use it as the primary means, but also use visual signals, light aircraft, foot and motor messengers, and wire when its use is dictated by the tactical situation.

**86. NIGHT MARCHES.** Make night marches when possible to avoid the fatigue and discomfort caused by high daylight temperatures. The brightness of the desert moon and lack of vegetation will help you to use formations that are similar to daylight formations. In the absence of moonlight, close up the formations to aid in controlling the unit. Have direction-finding parties in vehicles precede the foot column (fig. 19); if this is impossible, use compasses.



*Figure 19. Spot vehicles as landmarks to guide marching troops in desert marching.*



### Section III. JUNGLE MARCHES

**87. GENERAL.** Jungles have only a few roads and trails, and where the undergrowth is thick, progress is exceedingly slow; in many cases a path has to be hacked out before movements can be made. Limited visibility requires a reduction of the distances between units. Follow known trails, streams, and ridges whenever possible. Make frequent halts to allow the column to close up. Night movements are extremely difficult because of poor visibility, tendency of units to become lost, and lack of communications. Select march objectives for day marches that can be reached by the tail of the column before dark. Units cannot pass one another on jungle trails. When the head of a column reaches a dead end, select a new route and have the march unit closest to that route lead off.

**88. CONDITIONING.** Temperate zone troops are apt to magnify the physical hardships and dangers encountered in jungle movements. Limited visibility and strange noises develop a feeling of insecurity, and troops new to jungle areas may fear the unfamiliar diseases and climate. To help them overcome this insecurity, give them training that will familiarize them with jungle conditions. Conduct training in subtropical areas or areas of dense underbrush when possible.

**89. CLOTHING.** The two-piece herringbone twill combat suit is satisfactory for jungle wear, and the issue field shoe or boot is satisfactory for general use. The helmet liner is an ideal sun hat. The poncho is

very useful as rain clothing, ground sheet, or shelter half. During rainy periods wear it to keep the pack and the upper part of the body dry. When the poncho is not worn, use it as a roll to keep extra clothing dry. As tropical nights are often cool, wear a knit shirt for warmth and the poncho for cover.

**90. WATER DISCIPLINE.** a. You sweat considerably in the jungle, and may require as much as 3 gallons of water a day to replace that lost through perspiration. Any restriction on the use of water below the level required results in a rapid loss of efficiency and a reduction in the ability to march. Any prolonged restriction on the use of water causes a rise in body temperature and heat exhaustion.

b. Water consumption is about the same if you drink only at meals or drink whenever thirsty. Drinking in small amounts when thirsty is the ideal practice.

c. Use purification tablets in your water, and if you have two canteens, you can drink from one while the water in the other is being purified.

**91. FORMATION.** Jungle trails usually restrict the formation to a column of files (fig. 20). To facilitate control, to improve security, and to achieve more rapid movement, move each unit in the column as compactly as possible, using connecting files to keep contact between units. As point duty is fatiguing, rotate the leading elements periodically, and also rotate assignments within the leading elements.

**92. RATE OF MARCH.** Calculate jungle marches in terms of time rather than distance. The poor qual-



*Figure 20. March single file on a jungle trail.*

ity or absence of trails, the dense vegetation make movement slow. Troops moving on good jungle trails rarely exceed a rate of 1 mile an hour. Poor trails reduce the rate to half a mile an hour, or less. The rate is further reduced by the hand-carrying of equipment.

**93. TRAIL BREAKING.** When you cannot follow a ridge or stream or trail, maintain direction by compass or by marching from one terrain feature to another. Use machetes for cutting trails. When cutting trails rotate the men frequently, because trail building is exhausting.

**94. HALTS.** Regular halts in jungle marches are often supplemented by additional rest halts taken as needed. When it is impracticable to feed a regular hot meal at the noon halt, order a rest period of about 45 minutes. Encourage your men to drink lemonade or bouillon preparations; these drinks are quickly assimilated and are palatable and refreshing.

**95. COMMUNICATION.** Use all means of communication where appropriate. Foliage, dampness, and ground masks somewhat reduce the usefulness of radio. The vegetation frequently limits visual signaling. Foot messengers are the most dependable means of communication. Pigeons can be used to send messages from the march column to the base unit. Liaison aircraft can be used to relay radio messages.

**96. MARCH DISCIPLINE.** The solution of control difficulties in the jungle requires decentralization,

which depends on the skilled march discipline of every small unit. Maintain contact and keep the prescribed distances. Prevent telescoping the column by keeping all men of your column alert. Keep your squads fairly well closed up.

#### **Section IV. ARCTIC MARCHES**

**97. GENERAL.** The technique of marching does not materially change in the Arctic, but training, march discipline, and control become more difficult than in temperate areas. Most Arctic marching is cross-country in column, usually on a trail. Troops require special equipment. The low temperatures, snow, ice, and the lack of roads and landmarks increase the problems of marching in Arctic regions. Marches in snow and extreme cold are made on foot, on skis, on snowshoes, or by a combination of these methods. Trail breaking in deep snow and the carrying of a heavier-than-normal pack demands great physical exertion. Severe weather conditions often handicap movement. In extreme cold weather your body requires increased amounts of food to produce the heat and energy required, so hot food and drink become prime factors. Training acquaints your troops with the problems encountered in extreme cold weather. Well trained and properly equipped troops are able to move confidently cross-country in snow or extreme cold.

**98. CLOTHING.** a. Cold-weather clothing consists of several layers that help to retain body heat. Several thin layers of cloth are better than one thick,

heavy, matted piece of material, because they trap the air between them.

**b.** Men perspire on the march even in cold weather. Perspiration moistens clothing and reduces its insulating qualities. Damp clothing may cause chilling and frostbite. To increase ventilation and air circulation the men should loosen their clothing or remove outer garments. As soon as the situation permits, they should change their underwear (at least the undershirt) and rub their skin dry. They should also keep extra garments in the pack so that they can be readily removed and worn during long breaks.

**c.** Both inner and outer cold-weather clothing is loose-fitting and should be kept clean and dry.

**d.** Outer clothing is windproof to retain the insulating air held between the layers, and it is water-repellent to keep light rain and snow from penetrating to the inner clothing.

**e.** Do not wear waterproofed clothing in sub-freezing weather, because body moisture collects on the inside and turns to frost.

**f.** The inner clothing consists of several layers of a spongy insulating material, such as wool. Clothing requirements vary with the individual, and each man adjusts the number of undergarments he wears to prevent both overheating and chilling.

**99. EQUIPMENT.** When not equipped with snow-crossing equipment do not make cross-country marches in deep snow except in an emergency. To increase mobility use snowshoes, skis, crampons or ice creepers, and sleds or ahkios. Sleds may be improvised from skis. Skiers wear rucksacks, but

troops on foot or on snowshoes usually wear packboards (fig. 21). Typical individual equipment includes snow goggles, a brush to keep clothing free of snow, and a large pocket knife. Machetes, hatchets, axes, and saws are necessary for clearing brush and cutting firewood.

**100. WATER DISCIPLINE.** Water is as essential in the Arctic as in any other climate. However, the amount of water available may be limited because of the difficulties of getting and storing water in a liquid state. Dehydration is as prevalent in extreme cold as it is in extreme heat. Normally, a march unit supplies its own water from day to day by melting snow or from local sources such as rivers and lakes. If this is done, men sterilize the water by boiling it or treating it with water purification tablets. Eating snow should ordinarily not be permitted since it violates the principles of water discipline and there is no way of knowing that the snow is clean. However, in an emergency, patrols and small groups of men breaking trail in new territory may place small balls of snow in their mouths to melt. A handful of snow compacted and placed in the mouth at each halt will quench the thirst. Large amounts of snow eaten at one time can be injurious in that it can produce stomach cramps. Men should be impressed with the necessity of securing at least two-thirds of a canteen of water before starting and having it purified with halazone tablets or by boiling.

**101. FORMATIONS AND TRAIL BREAKING.** a. Single file is the usual march formation in deep snow



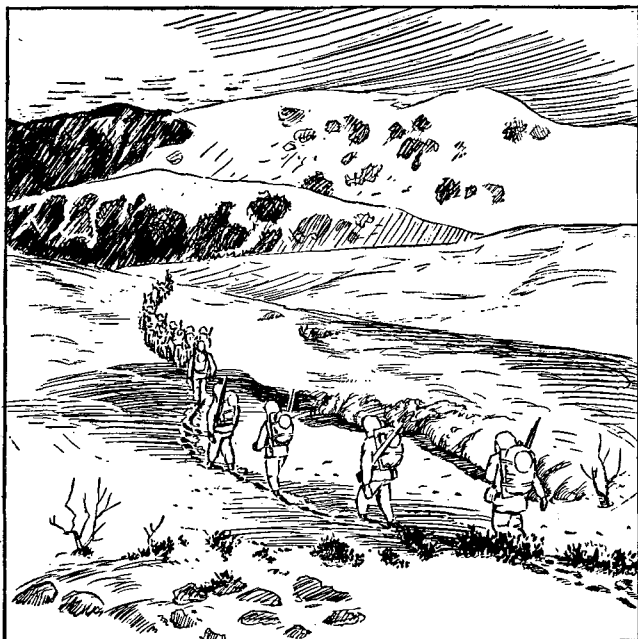
*Figure 21. Troops on foot usually wear packboards in the Arctic.*



when not expecting contact with the enemy (fig. 22). Use a column of twos to shorten the length of the column but separate the files so that they do not interfere with each other during the march.

**b.** Trail-breaking is the chief problem when marching in deep snow. Organize a detachment to break trail for the main body. The trail-breaking detachment precedes the main body about 1 hour for each 3 miles of marching distance. For example: If a 15-mile march is planned, dispatch the trail-breakers 5 hours in advance of the main body. Use men on skis or snowshoes, horse-drawn sleds, or tracked vehicles for trail breaking. When breaking trail by manpower, the leading man in a file breaks trail for a short assigned distance or time. He then steps out of the trail and falls in at the end of the column. The next man in the column automatically begins to break trail. Trail-breaking is strenuous work, so rotate the detail frequently to save the strength of your men, prevent overheating, and permit a steady march by the main body.

**102. RATE OF MARCH.** Wear skis or snowshoes when marching in snow which is deep enough to restrict the free movement of your feet. Marching considerable distances on snowshoes requires training; the rate varies from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  miles an hour. Trained skiers are the most mobile troops in open terrain if the snow is over 1 foot deep. The rate, limited by the slope, varies from  $1\frac{1}{2}$  to  $3\frac{1}{2}$  miles an hour. Trained skiers can travel 6 miles an hour for short level distances.



*Figure 22. Single file is the normal cross-country march formation in snow.*

**103. HALTS.** Make frequent short halts when the men are exposed to the cold. Select halt sites that provide protection from wind. See that your men sit on their packs during halts, because sitting in the snow dampens the clothing and this dampness later freezes. Sitting back-to-back provides a comfortable position and also helps men keep warm. If the halt is longer than 5 minutes have the men put on their outer garments (parkas). Plan the march to reach the bivouac area before darkness and before the men become exhausted.

**104. COMMUNICATION.** Radio is your best all-round means of communication. . When atmospheric conditions prevent the use of radios, use visual communication, particularly in air-ground operations. When practicable, wire may be laid. Use foot messengers equipped with skis or snowshoes for local messenger service. When the time, distance, and terrain permit, use oversnow vehicles to maintain communication. Use dogs, pigeons, or aircraft for messenger service when available, and the weather conditions permit.

**105. MARCH DISCIPLINE.** Since every march casualty requires another soldier to care for him, closely supervise the march rate, the pace setter, and the use of equipment to guard against cases of exhaustion or frostbite. (Never leave a march casualty alone in extreme cold.) Let the march pace slacken on slight uphill slopes. Do not let your men bunch up at the start or finish of a downhill stretch, but continue the march at the normal pace. After crossing an obstacle, halt briefly to close up and re-form the column; check for stragglers. Detail one leader in every unit as end man to supervise march discipline. Carry only essential equipment on all Arctic marches; wear the prescribed clothing, with minor variations allowed for individual comfort; maintain distances; and make halts as needed.

## APPENDIX I

### TRAINING REFERENCES AND TRAINING AIDS

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Training references and training aids recommended for use in planning and conducting foot marches and allied subjects are—

FM	7-10	Rifle Company, Infantry Regiment.
	7-15	Heavy Weapons Company, Rifle Regiment.
	7-20	Infantry Battalion.
	7-40	Rifle Regiment.
	20-15	Tents and Tent Pitching.
	21-5	Military Training.
	21-10	Military Sanitation.
	21-11	First Aid For Soldiers.
	21-15	Individual Clothing and Equipment.
	21-20	Physical Training.
	22-5	Infantry Drill Regulations.
	31-25	Desert Operations W/C 1, 2, 3.
	70-10	Mountain Operations.
	70-15	Operations in Snow and Extreme Cold.
	72-20	Jungle Warfare.
	100-5	Operations.
MTP	7-1	Infantry Training Program, Individual Training for Infantry Regiment and Armored Infantry Regiment.
ATP	21-1	Basic Military Training Program for Newly Enlisted Men.

GTA	8-15	Beware, Drink Only Approved Water. (14'' x 70''.)
	8-16	This Is Trench Foot.
	8-17	Personal Health.
	8-22	Think of Your Feet.
	10-3	Fitting Clothing and Footwear.
TF	7-2051	The Soldier in Bivouac.
	21-1434	Use Your Head—The Tump-Line Principle of Carrying Loads.
FB	180	Trench Foot.

## APPENDIX II—SUBJECT SCHEDULE

The following subject schedule is considered to be the minimum for recruit training during a 13-week period:

Period*	Hours	Subject	Text references	Area	Equipment and training aids
1	2	Conference and Demonstration on: Care of individual equipment before, during, and after the march; march technique; individual pack preparation and carrying. Duties of leaders.	FM 21-10 (31 Jul 45 C 1, 2) Chap. 12. FM 21-15 (30 Apr 45 C 1, 2) par 20-22 incl; par 25-26; FM 100-5 (15 Aug 49) par 288-292 incl; par 300-351 incl; FM 21-18 par 4; 6-14 incl; 65-70 incl; 43-53 incl; 15-27 incl; 56-57 incl; 59-60 incl. Same as period 1-----	Training area.	Individual: Weapons and full field equipment. Leader: Demonstration teams with equipment; Graphic Training Aids 8-15, 8-16, 8-22, 10-3.
2	2	Practice march of 3½ miles; application of techniques learned in first period.		Secondary road net, preferably dirt.	All personnel: Weapons and light pack. Leader: Attached medical personnel plus ambulance or truck.

3	4	Practice march of 7 miles; bivouac.	Same as period 1 and 2.	Training area.	All personnel: Weapons and full field equipment. Leader: Demonstration area (see par 96), attached medical personnel.
4	8	Practice daylight march of 15 miles, including cross-country marching.	Same as period 1 FM 21-18 pars 40, 23, 28.	do. do.	All personnel: Weapons and full field equipment. Leader: Attached medical personnel and ambulance.
5	8	Practice march of 20 miles, including night march and bivouac.	Same as periods 1-4 incl. FM 21-18 par. 29.	do. do.	All personnel: Weapons and full field equipment; individual canned rations. Company: Field equipment, mess equipment, medical personnel.

\*Periods are widely separated; see notes.

## TRAINING NOTES

### *First Period*

(Two hours, second week)

1. Conference and demonstration (2 hours).
  - a. Discuss the necessity of training soldiers to march correctly.
  - b. Explain march discipline and emphasize its importance.
  - c. Discuss food discipline and water discipline to include the use of salt.
  - d. Discuss the individual soldier—
    - (1) Before the march: completeness and condition of clothing and equipment; medical attention if necessary.
    - (2) During the march: adjustment of equipment, conduct during halts and upon falling in to resume the march, and procedure if ill or injured.
    - (3) Upon entering bivouac at the end of the march: care of self, foot inspection, and execution of assigned tasks.
  - e. Discuss and demonstrate fitting of shoes. Use four soldiers—
    - One with shoes too short and too narrow.
    - One with shoes too long and too broad.
    - One with shoes of proper size and not broken in.
    - One with shoes of proper size and broken in.
  - f. Discuss and demonstrate each and explain difficulties encountered in marching from all but properly fitted, broken-in shoes.
  - g. Demonstrate method of breaking in new shoes.



*h.* Discuss and demonstrate proper selection and fitting of socks. Use six soldiers wearing socks—

Too long.

Too short.

Dirty.

With holes in heel and toe.

Silk or cotton.

Properly fitting light wool.

*i.* Discuss each and explain why march casualties occur from all but properly fitted wool socks.

*j.* Discuss care of feet and proper method of treating blisters. Emphasize prevention of trench foot.

*k.* Discuss and demonstrate adjustment of pack, equipment, and clothing. Use soldiers with—

Pack too low.

Pack too loose.

Belt too short; and too long.

Belt too high; and too low.

Pack too long and various articles out of place.

Pack and equipment properly adjusted.

*l.* Discuss each adjustment. Emphasize the importance of proper adjustment of full equipment as prescribed by FM 21-15.

*m.* Discuss and demonstrate why good marching units keep in step.

(1) Use squad with men out of step and with individuals stepping on the heels of the soldier ahead.

(2) Use squad with men in step and marching with a natural swing.

*n.* Discuss the effect of proper training, condition of troops, weather, and condition of roads on the rate of march.

o. Explain how a marching column executes double time and the procedure for crossing a road and turning at a crossroad. Discuss march safety precautions.

2. Applicatory exercises—not included in this period. Techniques are applied, however, as part of other training during the subsequent training weeks; for example, movement to training areas and ranges, inspections, and instruction in the basic medical subjects. During movement to training areas use a pace setter, correct procedures for crossing roads and turning at crossroads, and use other techniques introduced in the conference. Conduct critiques and foot inspections after all marches.

### *Second Period*

(Two hours, sixth week)

3. Demonstration and practical exercise.

a. Stress the checking of equipment and adjustment of packs and clothing.

b. March the company  $3\frac{1}{2}$  miles on a secondary road net to avoid traffic. Avoid marching on hard-surface, whenever possible. Choose a route that offers interest, and that ends in the company area. Do not double back on your route, but make it circular. Use a commentator to point out points of interest.

4. During the march, practice the techniques taught in the first period and followed in concurrent training periods thereafter.

5. Check the use of attached medical personnel.

6. Schedule this period as the last 2 hours of instruction for the day.

7. Conduct a foot inspection and critique after the march.

### *Third Period*

(Four hours, eighth week)

8. Demonstration and practical exercise.

*a.* Stress the checking of equipment and adjustment of packs and clothing.

*b.* March the company  $3\frac{1}{2}$  miles to a bivouac area.

9. After entering the bivouac area—

*a.* Hold a short conference and demonstration on pitching tents to avoid alinement, and on camouflage and concealment in bivouac.

*b.* Demonstrate bivouac sanitation, the construction of straddle trenches, and the police of bivouac areas.

*c.* Show a demonstration (already set up) of several tents properly placed and camouflaged, with foxholes.

*d.* Point out the necessity for designating squad, platoon, and company assembly points, and the necessity for individuals knowing their way in darkness to the squad assembly points.

*e.* Stress the necessity of the squad leader knowing where each man is and having a plan to get out of the area.

*f.* Conduct one or more platoon assemblies before breaking camp.

10. March  $3\frac{1}{2}$  miles back to the company area. Use the last 10 to 15 minutes of the period for foot inspection and a critique.

11. Schedule this period as the last 4 hours of instruction for the day.

*Fourth Period*

(Eight hours, tenth week)

12. March the company 15 miles, 5 miles of which is cross-country, including swamp, dense underbrush, steep hills.

13. Continue to practice march technique, emphasizing cross-country technique; fording streams, passing obstacles, and crossing bridges.

14. Emphasize duties of leaders before and during the march, at halts, and after the march.

15. Check medical personnel on their care of the men's feet at halts.

16. Emphasize security on the march and at halts to include warning systems, dispersal, and use of cover during an air attack.

17. Serve hot lunch in the field.

18. Conduct concurrent training in field sanitation and personal hygiene.

19. Conduct inspection and critique after the march.

*Fifth Period*

(Eight hours, twelfth week)

20. March the company 10 miles over varied terrain to the bivouac area.

21. Hold a short conference in the bivouac area on security, outpost the area, pitch camp properly to

include marking out foxhole positions, and require leaders to inspect their areas.

22. Prepare supper during the hours of daylight by individual cooking using canned rations.

23. Enforce blackout and other tactical measures.

24. Break camp during the early morning hours, feed a hot breakfast. Require leaders to conduct the usual inspections of the area and their personnel prior to the march. March 10 miles—at least 5 miles before daylight.

25. Continue to practice march technique and security on the march and at halts, emphasizing light and noise discipline.

26. Use a tactical situation to promote realism.

27. On return to the company bivouac area, conduct the usual inspections and critique.

28. Schedule a full field inspection soon after completion of the night march.

29. As this period is preferably conducted during the week of bivouac (see appropriate Army Training Program), the company probably will be a part of a larger unit. Conduct the march the first day. The night march and subsequent training may be conducted on any other day or days of that week.

## APPENDIX III

### UNIT STANDING OPERATING PROCEDURE

**1. GENERAL.** An SOP is a set of instructions giving the procedure to be followed in the absence of instructions to the contrary. It usually covers those matters which the commander desires to make routine. SOPs usually are written after a unit has functioned for some time and certain procedures have been habitually followed. Units which for a long time have had the same key personnel can eliminate many instructions, because throughout that unit there is an understanding of how certain things are to be done. Part of the unit SOP covers foot marches. Some or all of the topics listed would be found in a unit SOP, depending on the size of the unit.

#### **2. EXAMPLE:**

1st Battalion, 1st Infantry  
FORT BENNING, GEORGIA  
21 March 19\_\_

#### STANDING OPERATING PROCEDURE

##### *Object*

The purpose of this SOP is to set forth procedures intended to avoid confusion and delay, to shorten orders, to expedite movement, and to provide guidance. Although all conditions cannot be provided for, commanders concerned will take prompt action to comply, as far as possible, with the intent and purpose of this SOP.

## Section I

\* \* \* \* \*

### Section XII. MOVEMENTS

a. Air movements.

\*\*\*\*\*

b. Rail movements.

\*\*\*\*\*

c. Water movements.

\*\*\*\*\*

d. Motor movements.

\*\*\*\*\*

e. Foot marches.

1. *Warning orders.* To provide maximum time for troop preparation, a warning order will be sent to company commanders.

2. *Reconnaissance party.* The battalion reconnaissance party will be prepared to depart 30 minutes after a warning order to move is received. Reconnaissance party will be briefed by the S-3 before departure.

a. *Composition.*

- (1) Pioneer and ammunition platoon leader.
- (2) Intelligence squad.
- (3) Assistant S-3 (commands reconnaissance party).
- (4) 2 drivers, battalion headquarters.\*
- (5) 2 1/4-ton trucks from battalion headquarters.\*

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\*Designated by S-3.

*b. Reconnaissance report.* Route reconnaissance report will be made on the following form:

*Route Reconnaissance Report*

Place	Speedometer reading	Miles from IP	Suitable speed	Remarks

*c. Reconnaissance party recommendations.* Reconnaissance party will recommend **IP** and **RP**, route to be used, and number of guides required and where they should be posted.

3. *Quartermaster party.* The quartermaster party will be prepared to depart 30 minutes after a warning order to move is received. Quartermaster party will be briefed by the S-1 before departure.

*a. Composition.*

- (1) Battalion S-1 (commands quartermaster party).
- (2) 1 NCO each letter company, to be designated by company commander.
- (3) Communication platoon leader and 4 assistants (to be designated by communication platoon leader).
- (4) 2 trucks, 1/4-ton (w/trailers), 1 truck 3/4-ton, (w/trailer) and 3 drivers from communication platoon.

*b. Duties.* The quartermaster party will—

- (1) Select exact location of bivouac area.
- (2) Subdivide battalion bivouac area to company areas.
- (3) Select location of headquarters installations.



- (4) Establish communication in bivouac area.
- (5) Have unit guides meet units at RP and guide them to areas.
- (6) All foot formations will march on the left side of the road facing traffic, except when column of twos is used one file may march on each side of the road.

#### 4. *Organization of the column at the start of a march.*

*a.* Company A, Headquarters and Headquarters Company, Company B, Company D, and Company C.

*b.* Order of march will be changed on long marches so that the same elements will not always be marching at the tail.

5. *Location of commanders.* During administrative marches, march headquarters will be at the head of Battalion Headquarters and Headquarters Company. Company and platoon leaders will march at the rear of their units, moving as necessary for control. Company executives and platoon sergeants will lead their units. Each company will send a messenger to battalion march headquarters before the start of the march.

#### 6. *Distances.*

*a.* Distances between companies: 50 yards; between platoons: 20 yards. Distances between men: 40 inches or 5 yards, as announced.

*b.* Guide for estimating yards of road space of foot troops:

<i>Formation</i>	<i>40 inches distance between men</i>	<i>5 yards distance between men</i>
Single file.....	1.5 x (number of men)	5.4 x (number of men)
Column of twos.....	.8       "	2.7       "
Column of threes.....	.5       "	1.8       "

## 7. Rates of march.

	Roads (miles per hour)	Cross-country (miles per hour)
Day.....	2½	2
Night.....	1½	1

## 8. Guides and traffic guards.

*a.* When possible guides will be placed before the march. They will guide the column and will also stop traffic from crossing the route of march while foot troops are at intersections. Guides placed out by battalion will rejoin the last element of the battalion.

*b.* Traffic guards will precede and follow the battalion column by 50 yards to slow down or stop traffic.

9. *Pace setter.* A pace setter will precede the battalion at 6 paces to set the pace for the battalion. The officer marching at the head of the leading company will check the pace setter for proper length of step and cadence. For a speed of 3 miles per hour (2½ miles per hour rate) 106 30-inch steps per minute are required.

10. *Night marches.* Maintain contact by connecting files.

\* \* \* \* \*

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