

## CHAPTER 8

### TROOP MOVEMENTS

#### GENERAL

- 334. Troop movements are made by marching, by motor transport, by rail, by water, by air, and by various combinations of these methods. The method to be employed depends upon the situation, the size and composition of the unit to be moved, the distance to be covered, the urgency of execution, the condition of the troops, and the availability, suitability, and capacity of the different means of transportation.
- 335. For the organization of systems of transportation and circulation and control of traffic in the theater of operations, see FM 100-10.
- 336. For technical and logistical data pertaining to troop movements, see FM 101-10.
- 337. In the *combat zone*, troop movements generally are executed by marching or by a combination of marching and movement by motor transport. Motor transportation is employed extensively to increase the mobility of foot troops and conserve their strength. Air transportation is used for the movement of troops for special purposes.
- 338. A *successful march* places troops at their destination at the proper time and in effective condition for combat. It is the task of commanders to reconcile the conflicting requirements of rapidity of movement and conservation of fighting power.
- 339. The ability of a command to achieve decisive results on the battlefield depends in large measure upon the marching capacity of the troops. While mechanical means of transport are employed extensively for troop movements, sustained mobility on or near the battlefield requires that all troops be thoroughly conditioned to march exertions; therefore, from the first days of training, advantage is taken of every opportunity to perfect troops in marching.

■ 340. Special attention to the care of troops and the means of transportation is essential to successful marching. Commanders take the necessary measures prior to a march to place men, animals, and transportation in the best possible condition and exercise the necessary supervision during and after the march to maintain them in that condition. Troops are not kept in column or under arms any longer than necessary. Full use is made of available transportation to carry the rolls of troops and the equipment and loads of animals in need of relief.

■ 341. Care is exercised to prevent men from obtaining unwholesome food and beverages and from indulging in excessive eating and drinking. Men are encouraged to drink all the water they need before starting a march; they are cautioned to drink sparingly during the course of the march. All water for drinking and cooking purposes is chlorinated unless it is procured from a source found to be safe by the medical service. Commanders make the necessary arrangements for refilling canteens in accordance with anticipated needs. They permit no straggling from the column for this purpose. For details of march hygiene, see FM 21-10.

■ 342. *Hot weather* is one of the greatest sources of hardship on a march. Places for halts are, when practicable, selected where there are shade and free circulation of air. Special attention is given to the supply of water and water discipline before, during, and after the march. Fatigue and heat exhaustion can be minimized by the consumption of common table salt. Cold coffee or tea is likewise beneficial.

If animals are watered insufficiently they rapidly lose condition. The times of watering must be regulated in accordance with march conditions and available facilities.

■ 343. The hardships caused by *cold weather* are mitigated by proper precautions and suitable winter clothing. Ears, eyes, face, and hands must be protected.

Mounted troops stimulate circulation by dismounting and leading. Foot troops sling their weapons to free their arms.

Snow and ice greatly reduce the rate of march. To equalize the exertion of breaking the way, leading elements of a column are frequently changed. In deep snow, it may be necessary to break the way for foot troops with a snow plow, tractor, or similar device. (See ch. 12.)

## SHUTTLING

■ 344. The ability of a command to concentrate superior forces quickly at the decisive place and time will often depend largely upon its skill in the use of its organic motor transportation. The movement of a unit in two or more trips using the same vehicles is called *shuttling*. Whether the normal loads of motor vehicles are advanced before or after the foot troops depends upon the nature of these loads and the tactical situation. The amount of organic transportation which prudently can be diverted from its normal purpose to move foot troops depends upon the degree of readiness for combat required by all or part of the command, the supply requirements, the hazard of immobilizing essential loads at a critical time, and the consequence of possible disorganization of the command by enemy action. Except for vehicles issued for the movement of active weapons such as prime movers or weapons carriers, all trucks of any unit are considered as a pool of transportation to be used as required.

■ 345. The distance moved by shuttling is largely dependent upon the time required to complete the movement, the enemy's capabilities to interfere with the movement, and the cover and terrain suitable for the assembly, detrucking, and deployment of the main body. The time required to complete the move is affected by the number and condition of roads; distance between entrucking and detrucking areas; vehicular speed maintained; number of trips required; time-length of columns; delay caused by enemy interference or other obstructions; the time-lag between the issuance of orders and the beginning of execution; and the time consumed in loading and unloading personnel and equipment and in turn-arounds.

■ 346. In the execution of movements by shuttling, a commander divides his command into tactical groupings which are moved successively either by furnishing them with additional transportation obtained either from higher echelons or from units whose movement is deferred, or by initially organizing each group so that it has the transport means to move itself in two or more shuttles.

Each contingent should be a well-balanced force. Its composition depends on the tactical mission. As far as practi-

cable, each tactical grouping is composed of the same units. They should include the tactical units (combat teams) normally associated in combat.

■ 347. Movement by marching and by shuttling may be combined. Foot troops may march from the initial point while awaiting their transportation, or may be detrucked short of their destination.

■ 348. Preparations for and the conduct of movements by shuttling are greatly facilitated by the adoption of standing operating procedures. Otherwise the plans and orders for such movements are so time-consuming in their preparation as to nullify the potential mobility of the command.

■ 349. When combat is in prospect, special attention is given to the protection of the detrucking area, to the composition of the first shuttle, and to the security of the zone of movement between the separated elements of the command.

#### TACTICAL CONSIDERATIONS

■ 350. The factors which exercise the greatest influence upon dispositions for marching are the composition and proximity of the hostile ground forces and the activity of hostile aviation. Distance no longer gives to armies the same degree of protection and freedom of action as in the past. When the hostile forces include mechanized elements, contact with such elements should be expected from any directions not protected by friendly forces or terrain barriers.

When contact with enemy ground forces is remote, the principal object of march dispositions is to facilitate and expedite the movement of troops and to conserve their energy. Commanders make use of the available motor transportation for moving foot troops. As far as practicable, columns are composed of units having the same rate of movement. Separate roads are assigned to columns having different rates of movement, or their movements by the same road are echeloned in time.

When contact with the enemy is probable, tactical considerations govern march dispositions. Columns are constituted in accordance with their tactical missions. Adequate provision is made for security.

Service troops, kitchens, and baggage trains may be held in a protected area and moved forward under cover of darkness.

■ 351. A large unit advancing against the enemy is assigned either successive objectives or a direction of movement, and either a zone or routes of movement.

A large unit whose zone of movement includes several routes assigns routes or zones to its component units in accordance with its plan of maneuver.

■ 352. *When the enemy main forces are distant*, a large unit usually moves in a broad and deep formation in order to retain the power of maneuver and to achieve the rapidity of movement essential to the initiative. Reconnaissance troops reconnoiter the assigned zone of reconnaissance and gain contact with the hostile forces. Security against motorized and mechanized forces is provided in the zone of reconnaissance by the successive seizure of road centers and natural terrain lines through the aggressive action of mobile detachments operating well to the front and on unsupported flanks. To the extent permitted by the tactical situation, movements are made at night or by infiltration by small groups during daylight.

■ 353. *With the closer approach to the enemy*, the zone of reconnaissance becomes less extensive and less time is available to prepare for action. Readiness for combat requires a diminution in the depth of the formation. Columns are constituted in accordance with tactical missions.

■ 354. Commanders dispose their tactical groupings so as to permit flexibility of maneuver and readiness for deployment in the direction of the enemy.

A *formation in depth* provides maximum flexibility of maneuver but delays deployment. It is the easiest of all formations to control, enables the commander to exert the maximum influence in coordinating the action of the forces initially engaged, and assures the availability of units intended for maneuver.

A *formation in width* increases readiness for deployment in the direction of movement. Maneuverability is restricted, especially after gaining contact. Changes of direction are difficult.

A formation in which columns are echeloned to a flank facilitates maneuver and deployment to that flank and retains to varying degrees the advantages and disadvantages of both linear and columnar formations.

The commander's movement order prescribes the time and place of departure of his columns so as to produce the desired formation and includes such instructions pertaining to *subsequent* coordination as can be foreseen.

Movements may be controlled by prescribing the hour when the head of the main body of the respective columns will continue the advance beyond the designated terrain (phase) lines. These intermediate objectives may be prescribed in the order or during the movement. Column commanders report promptly when these objectives are reached and at other designated times. The imminence of contact with strong forces prepared for battle, the probable inequality in progress of the several columns, and suitable terrain affording concealment and cover and tactical advantages largely determine the length of bounds.

Control of the movement may also be obtained without the designation of phase lines. Under this procedure, subordinates furnish periodic position reports and the commander issues his orders during the movement.

■ 355. When contact with strong forces prepared for battle is imminent, the commander assures himself of continued possession of terrain suitable for subsequent maneuver and prepares his command for combat. He coordinates further advance by prescribing terrain lines that will be seized by the advance guards while the main bodies of the respective columns are suitably disposed for combat within supporting distance. After a march has begun, variations in echelonment are regulated by halting certain columns or by changing the duration of their rest periods.

■ 356. In an advance, *commanders and their staff parties* are well forward. The commander goes where he best can control the operation, usually with his principal column or with the column along which the axis of signal communication is being established. Ordinarily, the commander and his staff party move by bounds to successive locations where messages may be received and sent. He may be accompanied by one or more of his principal subordinate commanders.

■ 357. *Signal communication* between columns and with the superior commander is regulated ordinarily by standing procedure, supplemented as necessary by special instructions. Ordinarily the means employed are motorcycle messenger and vehicular radio. Liaison airplanes may be used to maintain contact between columns and to report their arrival at successive march objectives. Full use is made of existing commercial signal communications systems.

■ 358. A column comprises its security detachments, the main body, and the trains. The formation and movement of each of these groupings are regulated by a designated commander in accordance with instructions of the column commander. Distance between the groupings is regulated by the column commander.

The maintenance of roads and the removal of obstacles require the presence of an engineer unit with the advance guard or near the head of each principal column.

■ 359. The *order of march* of a column of all arms advancing against the enemy is dependent upon the terrain, the tactical situation, the mission of the column, and the relative mobility of the component units.

The order of march of security detachments ordinarily is prescribed by their respective commanders. The column commander prescribes the order of march of the main body.

■ 360. When contact with the enemy is possible, the order of march of a column composed of elements of approximately equal mobility is adapted to the requirements of security and to the probable order of entry of units into action.

Artillery is placed within the column so as to insure its protection but primarily to insure its availability for early and adequate support of the security forces and the initial action of the main body.

Antitank weapons must be so disposed and employed as to provide protection to the moving column. Antitank weapons are attached to security detachments.

Motor vehicles required in the exercise of command and control of the column ordinarily advance by bounds in the interval between the main body and the security detachment. Other motor elements pertaining to staff parties march at the head of their units.

Trains are so placed in the column as to be available to their units when required. Trains not immediately required may be held in protected areas in rear and sent forward when the situation permits.

■ 361. Orders for troop movements must be issued sufficiently in advance to permit preparation by the troops. For items to be included in a march order, see FM 101-5.

■ 362. The *routes should be reconnoitered* and marked prior to the commencement of the march. Timely measures are taken for preparation of stream crossings and for the removal of obstacles and other possible causes of delay.

Careful examination is made of fords, bridges, and ice before attempting a stream crossing.

■ 363. *Cross-country marches* usually will be necessary in the development and approach march preliminary to battle, or in the extension of a command for the purpose of diminishing its vulnerability to air attack. Overextension in depth is avoided by increasing the number of columns on the front of advance.

In difficult terrain, foot and mounted troops constitute the elements of a command most capable of cross-country movement.

■ 364. With the approach of a column to close contact with strong hostile forces, it becomes necessary to abandon the road and to *develop* the route column into a broader formation. The development of a large command is expedited by an advance in several columns. The area where development starts ordinarily depends upon the effectiveness of the enemy's artillery fire. As a rule, time can be saved and losses avoided by detouring isolated areas under hostile observation or fire rather than by starting early development.

■ 365. The *development* of the column is effected by breaking the single column into several roughly parallel columns, each of which is assigned a march objective. As contact with the enemy becomes imminent, these columns themselves are developed into smaller columns.

Time is generally gained in the execution of the development by assigning the longest routes to the leading units of the column.

■ 366. The result of the complete development of the command is to distribute the troops in accordance with the commander's plan of action.

The development of a division usually terminates in the occupation of *assembly positions* by front line units preliminary to deployment for attack or defense.

■ 367. Assembly positions are so selected as to be, as far as practicable, screened from air and ground observation and reconnaissance. Terrain which provides turn-arounds for motor vehicles and natural protection against a mechanized attack is desirable. The position should be such that the troops have at their disposal favorable lines of advance to their combat positions. When the terrain does not afford concealment, the assembly position of a division in daylight should be beyond the effective range of hostile artillery. The assembly position is protected by antitank weapons and local security detachments. The artillery is so disposed that it can protect the occupation of the assembly position.

■ 368. Massing of units in close formation in assembly positions is avoided. Units are separated by sufficient intervals and distances to insure that concentrated targets are not offered to hostile air attack or artillery fire. Each unit makes its own provisions for local *security*.

■ 369. When a command executes its *development under cover of darkness*, all preparations for the maneuver are completed, as far as practicable, before dark. A covering force is sent forward without delay to gain contact with the enemy; routes of advance are reconnoitered and marked; if necessary, artillery protects the occupation of the assembly position by occupying suitable firing positions before dark or completing its preparations for night firing. In general the provisions for night marches apply.

■ 370. *Night marches* often are required to obtain concealment from air and ground observation and security from air attack. They may be made for the purpose of avoiding excessive heat.

When troops are being concentrated by night marches, movement before dark except by small detachments and single vehicles should be prohibited and daybreak should find the troops either in position or in concealed localities.

■ 371. Night marches must be carefully prepared. Prior reconnaissance of routes and assembly areas is important. Special precautions are taken to insure the maintenance of direction and connection within the column. Guides are furnished whenever practicable. Routes are marked at points where a wrong road might be taken. Numerous connecting groups are provided.

On good roads, foot and mounted troops usually can maintain the same rate of march as for a day march. On poor roads, on very dark nights, or in unfavorable weather the rate of march is considerably reduced. Motorized units reduce their speed at night.

■ 372. *When concealment is sought* during night marches, measures to avoid disclosure must be rigidly enforced. Such measures may include prohibiting or shading of lights; instructions to halt or to clear the road when illuminated by flares; rapid bounds by motor and mounted elements between successive areas of concealment; prohibiting smoking and visible fires; silencing all radios; and when near the enemy, the maintenance of silence by personnel and so far as practicable the suppression of noises made by vehicles, motors, and equipment.

■ 373. *Forced marches* impair the fighting power of troops and are undertaken only in cases of necessity. The completion of the march must find the troops in condition to accomplish the object of the movement. Requirements for increased rates of march are met, wherever practicable, by the use of motor transportation.

The length of marches of foot and mounted troops is increased by increasing the number of marching hours per day rather than by increasing the hourly rate of march. The march may be broken into short stretches by halts of several hours' duration. A long forced march practically becomes a succession of daily marches of greater average length with shorter intervals of rest.

#### MARCH TECHNIQUE

■ 374. In each arm and service, movement is based upon a *march unit* which moves and halts at the command or signal of its commander. In foot and mounted units, the battalion

or squadron constitutes the march unit. In motorized and mechanized units, the march unit will ordinarily be composed of a number of vehicles easily controlled by one commander; the company, troop, or battery, or exceptionally the battalion, is the most satisfactory march unit. Small separate units may be constituted as march units or attached to march units.

In each march unit, the order of march of the several component units is normally changed daily. Rotation in the order of the march of larger units may also be ordered when permitted by the situation.

■ 375. Distances between march units and between elements within march units are prescribed for each march in accordance with the situation.

Irregularities in the rate of march in columns composed of foot or mounted troops are absorbed as far as practicable within the space between march units. In motor columns, irregularities are absorbed between vehicles.

■ 376. A march column is formed by the successive arrival of its component units at an *initial point* located in the direction of march. It should be inconspicuous to hostile air observation and easy to identify on the ground.

■ 377. Initial points and the hour at which the heads of columns pass and the tails of columns clear the initial points are stated in the march order or in a march table accompanying it.

When a large unit marches in several columns, the march order may fix an initial point for each column, or designate an initial line to be reached or cleared at a prescribed hour by a specified element of each column. When an initial line is designated, each column commander fixes an initial point and hours of passage in such manner as to pass the initial line as prescribed in the orders of the higher commander.

■ 378. Commanders of subordinate units of a column consider the route to be followed in reaching the initial point, calculate the time required, and start their commands so that there will be neither delay nor unnecessary waiting at the initial point or elsewhere.

■ 379. When several elements of a command marching by different routes are to join on a single road or when their

routes of march cross each other, arrival at or clearing of the point of junction is so timed as to prevent interference between columns.

When an unforeseen crossing of two columns occurs and no control personnel of a superior headquarters is present, the senior commander regulates the crossing, basing his action on the situation and the missions of the two columns.

■ 380. The hour to be fixed for the start of the march depends upon the situation, the length of the march, and the hour at which the troops must arrive at their destination.

■ 381. The *rates and lengths of march* vary with the situation, weather, time of day, character of the roads, condition of the troops, nature of the terrain, and the obstacles that must be overcome. Average rates and lengths of march are given in FM 101-10.

The elongation of a column varies with speed of movement, road conditions, weather, condition of the troops, and the march dispositions adopted for antiaircraft protection.

In each march unit, the leading element under the direction of its commanding officer regulates the rate of march in accordance with instructions issued for the march.

■ 382. *Motor columns* may move in open or close column formation at prescribed rates or by infiltration at high speed. (See FM 25-10.)

■ 383. Ordinarily, troops keep to the right of the road, leaving the left free for passage of other traffic along the column. On muddy, sandy, or dusty roads, or when both sides of the road provide concealment from air observation, or when attack by hostile combat aviation is probable, troops may be directed to march on both sides of the road; the middle of the road is kept clear for other traffic.

■ 384. *Rest periods during a march* are a necessity and are habitually taken at regular intervals to rest men and animals, to service vehicles, to adjust equipment, and for other purposes. Halts generally are regulated by standing procedure. Unit commanders are promptly notified of the time and approximate length of any halts not provided for in the march order.

■ 385. After the first halt, which usually lasts 15 minutes, columns containing foot elements halt 10 minutes each hour; mounted troops halt from 5 to 10 minutes each hour. The halts of motor columns are made every 2 or 3 hours and are regulated with reference to the location of facilities for servicing vehicles and making adjustments.

Each march unit of foot troops halts and resumes marching simultaneously; each march unit of mounted, motorized, or armored troops may halt and resume marching simultaneously or successively. At the signal for the halt, units bear to the side of the road and troops fall out or dismount to rest. The road must be left clear by units at a halt.

Shortly before the termination of the halt, the commander of each march unit gives the preparatory signal for the resumption of the march. Foot troops fall in, mounted men remount, drivers resume their seats. Each unit moves out at the signal of its unit commander.

■ 386. It is desirable to finish the day's march early. However, the length of the march or the desirability of avoiding excessive midday heat may render it advantageous to make a long halt toward the middle of the day.

At long halts, each unit or group moves to a previously reconnoitered location in proximity to the route of march. Mounted units are located near sources of water supply.

■ 387. Men are not permitted to fall out during the march or to leave the immediate vicinity of their unit during halts without the specific authority of an officer of their unit. An officer marches at the tail of each march unit. He is charged with keeping the unit closed up and with preventing *straggling*. He examines men who fall out on account of sickness or sore feet. He gives them a written note to the surgeon or requires them to continue the march.

A small guard marches at the tail of each regiment and separate unit to control stragglers not admitted to the medical vehicle by the surgeon.

A detachment of military police marches in rear of the combat troops of a division. It arrests men found absent from their units without authority and, except in cases of men apprehended for serious offenses, turns them over to their units at the first opportunity with a statement of the circumstances of their apprehension. For organization and duties of military police, see FM 29-5.

■ 388. One of the medical officers attached to a troop unit marches at the tail of the unit. He examines men authorized to await his passage. He admits them to the medical vehicle or authorizes them to place arms and equipment (in whole or in part) on that vehicle or other transportation provided for that purpose, or directs them to report to the guard at the tail of the regiment. One or more medical vehicles march at the tail of each regiment and similar unit for the transportation of men who become sick or disabled.

For details concerning collection and evacuation of casualties, see FM 100-10.

■ 389. A vehicle which is compelled to halt moves off to one side of the road. Disabled vehicles are promptly removed from the road.

■ 390. Assemblies from march columns occur incident to long halts, occupation of assembly positions during development for combat, entrucking and detrucking, and for other purposes. The column commander selects the assembly area in accordance with the situation or instructions received. He allots portions of the area to component elements according to the situation and probable future action. Whenever practicable, arrangements for the occupation of the area are based upon detailed reconnaissance.

■ 391. Assembly areas may be announced in the initial march orders or during the course of the movement. In either case, subsequent arrangements are greatly facilitated by having representatives of the major units march near the head of the column. The column commander announces the location of his command post and indicates to the representatives of the major units their respective areas in sufficient detail to prevent congestion and delay in clearing the roads. These representatives, after reconnoitering their respective areas and routes thereto, meet their units and conduct them to their assembly areas.

Provision is made for traffic control and security. (See FM 25-10 and ch. 6.)

Roads are promptly cleared. This is expedited and wear and tear on motor vehicles are reduced by preparing turn-outs at places where motor columns leave the roads. For this purpose, motorized engineers equipped with tractor-bulldozers are especially useful.

■ 392. Special precautions are taken to avoid congestion and delay during the *passage of obstacles and defiles*. Provision is made promptly for antiaircraft protection. The massing of troops, especially in the vicinity of an obstacle or defile, is to be avoided.

■ 393. *Fordable streams* are reconnoitered, and provisions are made in advance for avoiding confusion and unnecessary delay at crossings to include the regaining of distances and the preparation of additional crossings.

When a road leads through swamps or quicksand or across a stream with treacherous bottom, the limits of the road are marked or warnings are placed at dangerous points.

■ 394. The engineer officer in charge of a *bridge* is responsible for its structural adequacy and the regulation of traffic on the bridge and its approaches. Instructions issued by the engineer officer and the engineer bridge guard relative to the use of the bridge are strictly obeyed.

March commanders are responsible that vehicles exceeding the maximum load capacity of the bridge are cut out of the column for crossing at some other bridge or by ferry.

■ 395. Foot troops crossing bridges march without cadence. In crossing on a ponton bridge, mounted men lead their animals in column of twos; pairs of draft animals in front of the wheel pair are led; motor vehicles travel slowly, holding to the center of the bridge and maintaining the distance prescribed by the engineer officer.

■ 396. In case of an air attack during a crossing, all commanders of units en route to the bridge halt their troops to prevent jamming at the bridge approaches. Troops on the bridge and its approaches are evacuated as directed by the engineer officer in charge.

■ 397. In *ferrying foot troops* by assault boats, individual ponton boats, ponton rafts, or other means, troops first are brought to assembly areas under cover in the vicinity of the embarkation point. Here they are organized into tactical groupings corresponding to the capacity of the means for ferrying. Engineer equipment needed for the crossing but not already at the river, such as assault boats or foot bridge equipment, is issued to troops at the final assembly area where instructions for embarking and disembarking and for con-

duct during the crossing are given. At the proper time, each tactical grouping is conducted by an engineer guide to the point of embarkation. Movement from the final assembly area to the river is under control of the engineer troops.

On arrival at the embarkation point, troops enter the boat or raft in the manner directed by the engineer in charge. The engineer in charge is responsible for the arrangement of the loads and the handling of the boats. Individual equipment is loosened so that it may be removed easily.

■ 398. Vehicles may be ferried on a standard ponton raft ferry, or on an existing or improvised ferry. Vehicles awaiting passage are held under cover at a point where they will not block the approaches. Vehicles are loaded as directed by the engineer officer in charge. They usually are secured by brakes and blocking. Horses may be crossed by swimming. In unloading, the debarkation point is cleared promptly.

#### MOVEMENTS BY RAIL

■ 399. The general organization, operation, and control of rail transportation are discussed in FM 100-10.

■ 400. The larger aspects of rail movements are covered in FM 100-15.

■ 401. The time required by a unit to prepare for a rail movement, assemble at entraining stations, load equipment, clear entraining stations, unload equipment and re-form or re-distribute its forces in the detraining area determines the minimum distance over which troops can be moved more rapidly by rail than by marching. The time required for the transfer by rail of an infantry division from one area to another can seldom be reckoned at less than 4 days; rail movement will seldom be more rapid than marching for distances less than 150 miles. For distances less than 150 miles, it is generally expedient to move an entire infantry division by marching or by a combination of marching and rail or motor transportation; smaller units may be moved by rail over shorter distances.

■ 402. In order that they may make timely preparations for a movement by rail, units are given timely notification of impending movements.

■ 403. Orders directing the movement of a unit by rail generally designate the stations at which the entrainment of the unit will take place, indicate the number of trains and the hours of departure, and state the detraining area or destination of the movement; the detraining stations may also be designated when these are definitely known and considerations of secrecy do not oppose. The movement is, however, frequently directed to a regulating station from which the several units are routed to detraining stations.

■ 404. In conjunction with a representative of the railway transportation service, the commander of the troops prepares a table regulating the entrainment and departure of the various elements of his command. The services of qualified commercial railroad employees should be utilized to the maximum in planning troop movements by rail.

■ 405. The order in which troops of a division or other unit are dispatched varies with the situation.

When the movement is carried out in connection with the execution of a tactical mission, tactical considerations influence the priority in which the troops are moved. In movements which merely involve the transfer of a unit from one quartering area to another, the order of movement is influenced chiefly by considerations of administration and convenience.

Command elements, antiaircraft and ground security forces, signal communication troops, military police, medical, and engineer units generally are placed early on the schedule of movement.

Unit trains usually move with their units.

The reestablishment of the normal system of supply is facilitated by forwarding a part of the division supply column on the early railway trains.

Quartering detachments are forwarded on one of the first trains when it is impracticable to send them to the new area in advance of the troop movement.

Usually echelons of signal, military police, and medical units, and occasionally elements for antiaircraft and anti-mechanized protection will be required in the old area until evacuation of the area is nearly completed. Their movement is regulated accordingly.

■ 406. The assignment of units to entraining stations is determined by the loading facilities available at the several stations, the character of the matériel of the several units, the desirability of equalizing the number of trains leaving from each station, and the priority fixed for the arrival of the several elements of the command in the detraining area.

Units equipped with exceptionally heavy vehicles are assigned to stations provided with loading facilities adequate to the handling of such special matériel.

As far as practicable, other units are assigned according to their accessibility to entraining stations and with a view to equalizing as nearly as possible the number of trains leaving from each station. The priority fixed for the arrival of the several elements of the command in the detraining area may, however, require the assignment of a unit to a station other than the one most accessible to it.

■ 407. Check lists for orders and entraining and detraining tables are contained in FM 101-5. Technical and logistical data pertaining to rail movements are contained in FM 101-10.

■ 408. A transportation grouping consists of the troops, equipment, and supplies transported on one train. The order of entrainment of the several transportation groupings at each entraining station is fixed in accordance with the priorities established for the arrival of the several elements of the command in the detraining area. So far as is consistent with these priorities, it will usually be advantageous to regulate the order of entrainment in the order of the proximity of units to the entraining stations.

■ 409. An officer is detailed in charge of each entraining station. He supervises the entrainment, police, and anti-aircraft security at the station and is furnished with the necessary guard, transportation, and other assistance.

■ 410. Each unit moves to its entraining station in time to complete its entrainment before the scheduled hour of departure. Units should be directed to arrive at their designated entraining points at an hour amply sufficient to allow entraining but not so early as to result in congestion on routes to or at the entraining station. Premature entraining of personnel should be avoided.

The commander of each transportation grouping furnishes the representative of the railway transportation service at the entraining station with a statement showing the number of officers, men, horses, mules, vehicles by type, and the amount of baggage to be transported on his train.

■ 411. The commander of the transportation grouping causes the cars to be numbered in serial order, beginning at the head of the train. He then prepares a list showing the number of each car and the purpose to which it is assigned.

Methods to be employed in loading animals and equipment are indicated in the basic field manuals.

Troops are formed in the vicinity of the railroad station, and are divided into carload groups, each of which is assigned a car number, a noncommissioned officer is placed in charge of each group, and the command is marched to the train. Each carload group halts alongside the car to which it is assigned, the noncommissioned officer in charge regulates the boarding of the car and the distribution of the men.

■ 412. The commander of the transportation grouping details a guard and provides for the antiaircraft defense of his train, supplementing when necessary the antiaircraft weapons on the train with weapons of his own troops.

The commander of the transportation grouping is responsible for the maintenance of order, but exercises no control over the operation or movement of the train. The noncommissioned officer in charge of each car is responsible for the maintenance of order in his car; he does not permit soldiers to leave the train without authority or to ride on the top of the car.

■ 413. A representative of the command and an officer of the railway transportation service proceed to the detraining area in advance of the troops or arrive on the first train of the troop movement. The representative of the command determines the distribution of the troops in the detraining area in accordance with the commander's instructions, and, in conjunction with the representative of the railway transportation service, locates the detraining stations for each transportation grouping and prepares a detraining table. When the movement is not directed through a regulating sta-

tion already in operation, they establish a regulating station on the side of the detraining area from which the troops are due to arrive. The representative of the railway transportation service gives the necessary instructions to the railway personnel for routing each train to its detraining station. As each train arrives at the regulating station, the representative of the command gives the commander of the transportation grouping an extract of the detraining table pertaining to his unit and such other instructions as may be required.

■ 414. Units which consist largely of foot troops and ordinary motor vehicles may be moved rapidly and economically without special entraining or detraining facilities by a combination of movement by rail and marching, the foot troops only being moved by rail. When the available rolling stock is limited, the normal density of car loading may be greatly increased for short moves or the normal loads of motor vehicles may be moved by rail, foot troops being transported by the motor transportation thus made available. This latter method also may be advantageous when a well-balanced motorized covering force is desired, or when the threat of air attack requires a lesser density of loading of personnel in railway cars.

#### MOVEMENTS BY AIR

■ 415. *Air transport* may be employed advantageously for moving troops and supplies over great distances at high speed. The ability of troops transported by aircraft to land at any point permitted by the terrain with a great radius of action facilitates surprise.

■ 416. Troops transported by air are formed into tactical groupings which correspond to the carrying capacity of the available transport. These groupings are constituted according to their tactical missions and are landed in accordance with the requirements of security and in the order of their probable participation in subsequent operations.

■ 417. Because of the possible loss of individual airplanes, essential items of equipment and special weapons are duplicated and transported separately. Personnel and equipment essential in the exercise of command are distributed among the available airplanes.

Provision is made for security. Security of the landing areas is essential to a successful movement by air.

■ 418. For operations by troops transported by aircraft, see chapter 13.

#### SECURITY DURING MOVEMENT

■ 419. The *march order* for a command includes instructions relative to security. Additional instructions are given from time to time in accordance with the situation. Provision is made for cooperation between the security detachments and advanced reconnaissance elements.

■ 420. In a large command, some security is provided by the reconnaissance detachments or other troops operating between the enemy and the moving columns.

Each column provides for its own security to the extent required by the situation. A force in two or more columns may employ one security detachment for the whole force.

■ 421. Elements of antiaircraft artillery moving by bounds along the route of movement or on parallel roads protect the passage of defiles and points of congestion. To protect a motor movement, sufficient antiaircraft artillery to cover all such dangerous points at the same time is required since the speed of the column makes moving by bounds impracticable. For a short column or a particular unit within a column whose uninterrupted progress is particularly important, it is sometimes feasible to afford continuous protection by providing sufficient automatic antiaircraft weapons to accompany it throughout the march.

It must be expected that moving columns will be attacked by low-flying aircraft. All troops therefore must be thoroughly instructed in protective measures against such attacks and they must be permeated with the conviction that their organic weapons, especially automatic weapons, are effective in shooting down these low-flying planes.

■ 422. Security detachments regulate their movements so as to give the main body the protection required by the tactical situation and the terrain. When contact is imminent, the detachments having a higher rate of march than the main body move by bounds to successive critical terrain lines, halting on each line a sufficient time to assure the uninter-

rupted advance or retirement of the main body. Terrain lines which may be used to cover the passage of rivers and defiles are of special importance.

■ 423. A mechanized or motorized security detachment operates at greater distance from the main body. Its mobility permits early contact with the enemy. It is supplemented by other security forces operating between it and the main body.

■ 424. The *mission of an advance guard* is to prevent unnecessary delay of the main body and to protect it against surprise and observation. The advance guard insures for the main body the time and space required for its deployment for action. When contact with important enemy forces is made, the action of the advance guard depends upon the plan for the employment of the main body. The advance guard commander is given early information of this plan.

■ 425. The *strength and composition of an advance guard* vary with the strength and mobility of the command, its mission, the situation, the terrain, and the time of day. It should be no stronger than is necessary for security. Greater strength is required as the distance from the enemy decreases. For large commands it comprises components of all arms.

When contact is imminent, light artillery and engineers usually are attached to an advance guard. Medium artillery is attached when its need can be foreseen as, for example, to interdict distant defiles. In large advance guards, a portion of its artillery may be attached to the support.

Observation aviation transmits pertinent information directly to advance guards and to the column commanders.

In a march conducted entirely under cover of darkness, the advance guard needs less strength and less support. It may comprise only infantry and engineers.

■ 426. The *distance* between the advance guard and the main body is sufficient to preserve for the commander his freedom of action in the employment of the main body, but is never so great as to expose the advance guard to defeat before assistance can reach it. Distances are reduced at night, in close terrain, under conditions of low visibility and restricted observation, or when the advance guard is small.

■ 427. The *formation* of the advance guard is such as to assure its own security and provide sufficient distribution in

depth and width for its maneuver. From front to rear, it is divided into the advance guard cavalry or motorized detachment, the advance party, the support, and the reserve. In small advance guards the reserve may be omitted, the support then performing the functions of the reserve.

■ 428. The *support* is given sufficient strength for the execution of its security and reconnaissance missions. An artillery liaison section habitually marches with the support. Motorcycle and other messengers are attached for purposes of signal communication.

■ 429. The infantry strength of the *advance party* sent forward by the support seldom exceeds one platoon. The attachment of antitank weapons and mechanized vehicles may be desirable.

■ 430. The *reserve* constitutes the principal maneuvering and offensive element of the advance guard. It comprises as large a part of the strength of the advance guard as is consistent with its own security and the preservation of its freedom of maneuver. The bulk of the artillery and other auxiliary troops attached to the advance guard usually marches with the reserve.

■ 431. The order of the advance guard commander gives such information of hostile and friendly forces as is necessary for the guidance of subordinates, states the zone or route and objective of the march, designates the troops for the several elements of the advance guard, fixes the hour at which the support and, when necessary, the advance guard cavalry or motorized detachment will reach or clear the initial point, and gives such instructions to the several fractions and elements of the advance guard as may be required by the mission and the situation. (For further details, see FM 101-5.)

■ 432. The advance guard accomplishes its mission by reconnoitering the terrain to the front and on each side of the line of march, overcoming isolated hostile resistance, reconnoitering and preparing so far as practicable the route of advance for the movement of the troops (removal of obstacles, repair of bridges and roads, construction of turn-outs for motor columns, etc.). It reconnoiters those points which afford extended observation of the dispositions of the main body or which provide concealment for hostile recon-

noitering or harassing detachments. In proximity to the enemy, it seizes and holds important features of the terrain, particularly those that will cover the deployment of the main body from hostile observation and provide good observation and deflade for the employment of the artillery. According to circumstances, it pushes back hostile covering detachments, or opposes an enemy advance in force long enough to permit the main body to make its dispositions.

■ 433. The *cavalry* or other highly mobile reconnaissance detachments of the advance guard reconnoiter far enough to the front and flanks of the line of march to guard the column against surprise by hostile mechanized forces and artillery fire, and to secure timely information of the enemy and the terrain. If sufficient in strength and the situation so demands, they seize and hold terrain features covering river crossings, town exits, defiles, and the like. They thus assure as far as practicable the continuous movement of the advance guard and the possession of ground facilitating its deployment. In close proximity to the enemy, the requirements of local security and the necessity for flank protection increase, and cavalry of the advance guard is employed in the exploration of the terrain on the immediate front and flanks of the advance guard.

■ 434. The *advance party* protects the march and deployment of the support. It sends forward a *point* and other necessary patrols for local reconnaissance of the front of advance.

■ 435. The *support* protects the march of the reserve and executes the necessary local reconnaissance on the front of advance. It precedes the reserve at a distance sufficient to enable the reserve to deploy effectively. In the face of an enemy advance in force, it offers sufficient resistance to permit the reserve to prepare for action.

■ 436. As soon as hostile resistance is encountered, the leading elements of the advance guard move on a broader front. Zones of action may be assigned to components. Prompt support of the leading elements in dealing with hostile resistance is necessary. At the earliest indication of contact, the advance guard artillery occupies positions to render timely support and thereafter displaces or resumes the march as

appropriate. Provision is made to prevent infiltration of hostile mechanized elements seeking to attack the main body or rear subdivisions of the advance guard.

■ 437. The combat action of the advance guard is regulated by the contemplated maneuver of the main body. The mass of the advance guard is therefore put into action only for the purpose of gaining or retaining advantages which contribute to the tactical success or security of the main body.

■ 438. When a marching command develops for combat, the advance guard is employed as a covering force to protect the development. It seizes or holds the terrain requisite to the development and the contemplated scheme of maneuver.

■ 439. When the command makes a long halt during the course of a march, the advance or rear guard establishes a *march outpost*, usually from the support. Units of the support occupy critical terrain features controlling the approaches to the column, establish outguards or lookouts at commanding points, and when necessary send out patrols.

■ 440. The considerations governing the advance guard of a combined force of all arms also apply to the security of the more *mobile forces*, cavalry, armored, and completely motorized units. The principal modifications result from superior mobility of these units. Advance guards operate at greater distances from the main body and with greater distances between their own elements. The zone of reconnaissance is more extensive, both to the front and flanks. Close cooperation of observation aviation is of special importance.

■ 441. In addition to the reconnaissance carried out by the supports of advance and rear guards, it sometimes is necessary for the reserve and the main body to send patrols to the flanks of the line of march. These special flank reconnaissances are ordered by the commander of the advance guard and the commander of the troops.

■ 442. When the flanks of the command are not protected by adjacent units, it frequently will become necessary to provide stronger flank protection by the detail of a *flank guard*.

Flank guard duty is most efficiently performed by troops of high mobility. Greater distances must be covered than by troops of the main body. Frequently there is need to move

rapidly from one position to another. When available, Cavalry or motorized Infantry comprise the principal force. Flank guards are reinforced by artillery, engineers, chemical troops, and antitank units; they are given special matériel such as antitank mines and chemicals, and the means for constructing obstacles and executing demolitions. In some situations they are supported by combat aviation. Observation aviation transmits pertinent information directly to flank guards.

■ 443. The operations of flank guards are conducted with especial reference to the routes which favor attack against the flanks of the command. When the locality from which an attack can be expected is well defined, a flank guard occupies a position covering the routes of hostile approach until the command has passed. Full use is made of the available means of antimechanized defense. Infantry on foot assigned a mission of this kind must start its march in advance of the movement of the main body; on the completion of its mission, it joins the rear of the column.

When several such localities must be passed during the progress of a march, echelons of the flank guard move by bounds from one position to another. The execution of a mission of this character requires especially mobile troops.

When a route generally parallel to the line of march of the main body exists, and more or less continuous flank protection is required throughout the depth of the column during the march, the flank guard marches parallel to the main body, distributed in detachments over sufficient depth to be able to offer resistance to attack at various points on the flank of the main body and to deal with the inroads of small hostile detachments.

■ 444. When the main body executes a flank march in proximity to the enemy, flank protection assumes great importance; a strong flank guard is detailed. The advance guard may be converted into a flank guard to provide protection required by a change in the direction of march.

■ 445. During movements by shuttling, the flank guards may establish progressively a screen on the exposed flanks and thus provide a protected corridor which is maintained until the completion of the movement. When only minor forces

are likely to be encountered or when a protected corridor is impracticable, each contingent provides for its own protection and an escort is provided for the protection of returning transportation.

■ 446. A flank guard makes the necessary provision for its own frontal and flank security.

■ 447. A retiring force covers its retirement by the detail of a *rear guard*. For the strength, mission, and operations of a rear guard for a retiring force, see chapter 11.

■ 448. A force advancing toward the enemy details a rear guard if attack or harassing action, especially by mechanized or other highly mobile forces, is possible.

The mission of the *rear guard for an advancing force* is to assure the uninterrupted movement of the main body and its protection from hostile attack and ground observation from the rear. Its strength and composition are such as to permit the execution of its mission without the intervention of the main body. Usually a small detachment strong in engineers, automatic weapons, and antitank guns will suffice for the rear guard of an advancing force. Cavalry or mechanized vehicles are desirable to forestall attempts to pass the rear guard on the flanks.

The formation and method of operation of the rear guard are adapted to the situation. When the distance from the enemy permits, the rear guard retires in march formation. When in contact with the enemy, the rear guard distributes groups over a wide front and opens fire at long range in order to force the enemy to deploy and thus delay his advance. According to the requirements for protection of the main body, the rear guard attacks, defends, conducts delaying action on successive positions, or retires.

The rear guard of an advancing force executes only such demolition of bridges as are authorized by the commander of troops. If it appears necessary to prevent the destruction of important bridges by the enemy, the rear guard commander details the necessary bridge guards and notifies the commander of troops of his action.

■ 449. *Troop movements by air transport* in areas subject to attack from the air or ground require special security measures; transport aircraft are particularly vulnerable to attack

by hostile aviation and troops at loading and unloading points afford excellent objectives for attack either from the air or from the ground.

In flight, security is provided for such movements by flying in formation under escort of pursuit aviation, by dispersing, or by flying at night or under other conditions of low visibility.

Loading and unloading points in areas under our control are protected by pursuit aviation and ground forces, including antiaircraft artillery and antitank weapons.

Unloading points within the hostile lines are protected by pursuit and bombardment aviation and by parachute troops dropped in advance augmented, when necessary, by detachments landed on the ground by airplanes. Surprise, boldness, and detailed planning are the essence of such operations.