

FM 57-30

Reference

FM 57-30

DEPARTMENT OF THE ARMY FIELD MANUAL

Reference

AIRBORNE OPERATIONS

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AIRBORNE OPERATIONS

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CHAPTER I

GENERAL

Section I. INTRODUCTION

1. General

a. Airborne operations consist of the movement and delivery by air, into an objective area, of combat forces and their administrative support for the execution of tactical and strategic missions. Such operations are normally joint in nature and are conducted by Army combat forces using aircraft from other services. Army transport aviation may be used in air-mobile operations as part of airborne operations.

b. The capability to conduct airborne operations affords the commander a means of decisively influencing tactical or strategic operations through the ability of the airborne force to overcome the limitations of time, and distance, to cross geographical barriers, and to bypass hostile areas at high speed and with little warning to the enemy. When used in conjunction with nuclear weapons, a unique capability is presented to attack, destroy, or seize important objectives deep in hostile territory that are inaccessible to other combat forces.

c. Airborne forces are composed of both ground and air units, organized, equipped, and trained for airborne operations. The Army combat forces may consist of airborne divisions, infantry divisions, air-transportable missile commands, and any other air-transportable units as required by the combat mission.

d. Airborne divisions and other airborne units are organized, equipped, and trained primarily for the purpose of entering combat by parachute or air-landed means. Other units are employed in an airborne operation in an air-landed role

2. Scope

a. This manual provides information concerning the employment of all Army combat forces participating in airborne operations in nuclear or nonactive nuclear warfare. It further indicates, for guidance of Army commanders and staffs, procedures to be used in the planning and execution of such operations. In general, the manual is applicable to joint airborne operations. See FM 57-35 for details of air-mobile operations.

b. The subject matter is concerned principally with the tactics and techniques employed in airborne operations. Detailed techniques applicable to the airborne division and to nonairborne unit operations are included in other appropriate field manuals.

c. Where reference is made to functions and responsibilities of the theater army logistical command, it should be understood that similar functions are performed by any administrative area from which an airborne operation is mounted.

3. Operational Environment

a. *General.* The great strategic mobility of airborne forces and the rapidly changing political balances in the world today indicate that such forces may be employed in a wide range of operational environments. The situation may require employment of airborne forces in a general or limited war, or in a situation short of war. The variables of these operational environments will involve such factors as the scale of the use of nuclear weapons, the geographic locale, and the size of the forces employed.

b. *Nuclear Weapons.* The scale of usage of nuclear weapons may vary in a wide range from a very high level of usage through a low level of usage to none at all during a war or campaign. Airborne forces will be affected by the level of usage and commanders must carefully evaluate the scale of usage to determine the allowable pattern of operations for each situation. The strategic and tactical mobility of the airborne force facilitates exploitation of nuclear firepower on the nuclear battlefield.

c. *Geographic Locale.* The air mobility of airborne forces gives them a capability of strategic employment in a wide range of areas and locales. Airborne forces must be capable of operating under varying conditions which may involve difficult and varied types of terrain, extremes of climate, and widely disparate characteristics of population, degree of development, and political-social-economic factors.

d. *Forces.* The size, tactics, and techniques of the airborne forces employed will vary with the type war and other factors of the operational environment. Application of airborne doctrine must reflect the specific conditions of a particular situation within the type of war and wide range of operational environments possible in modern warfare.

4. Command Structure

a. Airborne operations require effective and authoritative direction of all participating forces regardless of which Service commands the airborne forces. The successful employment of airborne

forces in joint airborne operations requires well-defined command relationships. In order to obtain proper coordination and effective direction, one or a combination of the following command relationships will be established :

- (1) Unified command.
- (2) Joint task force.
- (3) Attachment of one force to another.
- (4) Ordered support of one force by another force.
- (5) Any combination of the foregoing.

b. When significant elements of the Army and Air Force are participating in a joint airborne operation, the unified command or joint task force type command structure is necessary to insure unity of command. Command by the joint force commander is effected through appropriate component commanders of forces comprising the joint force. The commander of the joint force may also command his Service component in a joint task force.

Section II. BASIC CONSIDERATIONS

5. Types of Airborne Operations

Airborne operations may be classified into two general types, *short-duration* and *long-duration* operations. Either may be of a tactical or strategic nature.

a. *Short-duration* operations will normally be conducted by an airborne force with minimum, nondivisional reinforcing units. Combat in a short-duration operation is conducted utilizing accompanying supplies and minimum followup supply. There is no routine supply phase. Minimum service support is provided in the objective area, and the operation terminates with the early relief, withdrawal, or relief of the airborne force from combat.

b. *Long-duration* operations normally require that airborne units be reinforced by nondivisional combat, combat support, and service support units. The forces employed will usually be committed to sustained ground combat. This type operation will involve a substantial buildup of troops, supplies, and equipment primarily utilizing air lines of communication (ALOC). The type of operation being conducted will be determined by the mission assigned the airborne force. An airborne raid normally will be of short duration while an operation conducted deep in the enemy's rear will usually be of long duration with a substantial buildup by air lines of communication. Other type missions may fall under either category of operations.

6. Phases

a. Joint airborne operations are usually initiated by an assault phase executed by parachute or parachute and air-landed elements of the force whose mission is the seizure of initial objectives, airhead or airhead(s) in hostile territory. This phase is followed by one or more of the following phases: an offensive phase and subsequent link-up or withdrawal; a defensive phase until planned buildup by air lines of communication permits a major exploitation; a defensive phase until link-up with friendly surface forces; or a defensive phase until air withdrawal. Airborne forces seek to retain the initiative while operating in enemy territory.

b. The offensive phase normally is initiated after reinforcement of forces within the airhead. Concurrently with a defensive phase, limited offensive operations may be conducted to seize additional objectives which facilitate the defense or favor future operations. Relief, withdrawal, or relift for subsequent operations is executed after accomplishment of a specific mission as required by the situation.

7. Concepts of Employment

The concepts of employment of airborne forces in airborne operations recognize the specialized nature of airborne forces. Airborne forces are not normally committed on missions that can be performed as economically or as expeditiously by other combat forces. Movement by long-range aircraft allows deployment of strategic airborne forces on short notice to any area of the world. These forces may be moved directly to the area of employment or may be moved to forward bases from which they can be relifted by medium transport and assault aircraft to conduct airborne assault operations. An airborne capability constitutes a strategic threat which may compel the enemy to disperse and dissipate his forces to protect vital installations deep in his rear areas and on his flanks.

a. Airborne forces may be committed after an all-out nuclear exchange to exploit the results of such an exchange. The damage to surface lines of communication and reduction in enemy air defense effectiveness suffered in the exchange will heighten the value of forces that move and are supplied by air.

b. Joint airborne operations require a high degree of coordination between participating Army, Air Force, and Navy forces as well as other forces operating in or near the area of operations. Although the control and overall planning for these operations should be under theater control, with the responsibility for a single operation vested in one commander, commanders of subordinate commands should be alert for opportunities to employ airborne

forces profitably and should request their commitment where warranted.

c. Airborne operations require sufficient command of the air to protect the airborne forces during the period of air movement and establishment in the objective area and to protect the air lines of communication. Small-scale operations may be executed when the enemy has command of the air by massing friendly air defense means or by obtaining surprise. As in other combat operations, the enemy's nuclear capability either must be insufficient to cause unacceptable losses, or the probability of his employment of nuclear weapons must be sufficiently unlikely to justify the risk in light of the mission.

d. Airborne operations may be conducted in areas occupied by well-organized enemy combat forces when preceded by effective, preassault nuclear or CB attack. To obtain maximum effectiveness, airborne assault operations take maximum advantage of surprise, and the forces are delivered in the shortest practicable time. Airborne operations can be conducted in daylight or during darkness. The inherent difficulties of night operations favor launching major airborne assaults during daylight. It is desirable, however, to conduct loading and the major portion of the air movement during darkness in order to provide concealment. In major airborne operations, the initial assault will normally be made by parachute elements of airborne units. Air-landed units may then move into protected landing areas and attack to exploit the tactical advantage gained or to conduct operations to accomplish assigned missions. When required, airborne operations may be conducted entirely by parachute delivery of personnel and equipment. Air-landed units can conduct assault operations without having been preceded by a parachute assault if the landing area is undefended or lightly defended, or if it can be neutralized by fire. When conducted in conjunction with ground or amphibious operations, airborne operations constitute the main attack or are conducted to give maximum assistance to the main attack.

e. Dependent upon its mission and the situation, the airborne force may attack in one or two ways. It may be employed in its entirety in one general area with all combat elements within supporting distance of each other, or its subordinate combat elements may be deployed beyond mutual support in widely separated areas on missions independent of, or only partially dependent upon, the action of the remainder of the force. (par. 56c.) Within the confines of the mission, the actual size (and number) of any airhead (or airheads) selected for seizure is influenced by the enemy capa-

bilities, forces available, the terrain, and the planned time until link-up, reinforcement, or withdrawal.

f. The objective areas in long-duration operations must contain an adequate number of airfields, drop zones, or terrain suitable for air-landing facilities to support the logistical requirements for this type operation.

8. Missions

Airborne forces may be assigned missions of strategic as well as tactical significance in general war, limited war, or situations short of war. The principal types of missions are—

- a.* To attack, seize, and hold important objectives.
- b.* To conduct an exploitation from an area seized by an airborne assault.
- c.* To occupy areas or reinforce units beyond the immediate reach of surface forces.
- d.* To conduct airborne raids.
- e.* To conduct blocking and screening operations.
- f.* To conduct blocking and counterattack operations by airborne assault during a strategic defensive.
- g.* To conduct tactical reconnaissance and reconnaissance in force.
- h.* To deny the use of an area to the enemy.
- i.* To seize an advance base for the further operational or logistical deployment of any of the Services.
- j.* To assist in deterring the outbreak of a war by a show of force.
- k.* To constitute a strategic reserve.
- l.* To conduct counterairborne operations.
- m.* To initiate, reinforce, support, and coordinate friendly guerrilla activities.
- n.* To conduct area interdiction operations.
- o.* To control areas and the civilian population therein.

9. Characteristics of Airborne Operations

a. Tactical operations of Army airborne combat forces are similar to operations of other Army combat forces, differing in that usually there is a limited amount of artillery and an absence of armor and other heavy equipment in the objective area(s). Army airborne combat forces place a greater reliance on artillery missile, air, and naval fire support from outside the objective area since their organic fires are not normally reinforced by the fires of adjacent and higher echelons. The general disposition of forces in the objective area(s) facilitates rapid shifting of reserves and fires. Joint airborne operations require multiple dispersed airfields and air-landing facilities in the departure area. They are also required

in the objective area if air-landings are planned. High winds and low visibility may be more restrictive on joint airborne operations. Sufficient air transport means must be available to insure successful movement of all necessary equipment and combat units to the objective area and to supply these forces for an appropriate length of time. Airborne combat forces land on or near their objectives, in mass, with resultant shock effect, thus facilitating tactical surprise.

b. Relative characteristics of parachute air-landed operations, and aircraft are as follows:

- (1) Parachute operations require specially trained units and aerial delivery equipment. Army units employed in an air-landed role require a lesser degree of specialized training and equipment.
- (2) Parachute delivery may be made on any terrain relatively free of obstacles dangerous to the individual or heavy equipment. Assault landings, using Air Force assault aircraft, can be made on any moderately level and unobstructed terrain having suitable trafficability.
- (3) Air Force aircraft, other than assault aircraft, normally require the use of airfields or improved air-landing facilities. Rotary-wing aircraft and other aircraft with short or vertical takeoff and landing characteristics require minimum landing zones and extend the flexibility of airborne forces through their ability to land in areas otherwise accessible only to parachute units.
- (4) Parachute operations permit rapid delivery of forces into the objective area. Air-landed units can be delivered in small, tactical groupings organized to facilitate assembly and commitment in combat.
- (5) All equipment organic to the airborne division, planned for use in an objective area, can be delivered by parachute. Air-landed operations permit the movement of heavier and bulkier combat and combat support equipment.
- (6) Air-landed operations permit utilization of aircraft both to and from the objective area.

10. Capabilities and Limitations of Airborne Forces

a. *Capabilities.* Airborne forces provide a means by which a commander may decisively influence combat operations. They possess intertheater, as well as intratheater mobility, which extends the opportunities for rapid and decisive maneuver. A commander may rapidly concentrate airborne forces to gain decisive tactical

advantages. Airborne forces permit great freedom of choice as to the geographical area in which they can be employed. Strategic surprise may be attained by rapid shifts of airborne forces over great distances. These forces can cross major terrain barriers and conduct sustained military operations for an extended period of time. Airborne forces can retain their mobility by use of aircraft when ground combat forces lose their mobility because of poor soil trafficability. Airborne forces are particularly well suited for execution of turning movements, for employment in conjunction with armored or other mobile forces; and for exploitation of artillery missile, air and naval fires on distant objectives, particularly those fires which employ nuclear weapons. Airborne forces can conduct small scale, widely dispersed operations during a high level nuclear exchange and seize, neutralize, or destroy enemy nuclear means.

b. Limitations. Airborne forces are vulnerable to enemy armored attacks where terrain permits employment of massed armor, but accurate, highly mobile antitank weapons, strong air support, and proper selection of terrain compensate for and reduce this vulnerability. Enemy air defense means must be neutralized, avoided, or suppressed. Bad weather, primarily low visibility, very heavy rains, and high winds, as they influence aircraft capabilities, may be more restrictive on airborne operations than on ground operations; however, some effects can be reduced by appropriate use of electronic navigational and landing aids. The airborne division requires nondivisional service support to maintain itself in a state of readiness. Execution of sustained combat operations over a prolonged period requires augmentation by additional combat, combat support, and service support units. Once on the ground, the mobility of airborne combat forces is directly related to the numbers and types of ground and air vehicles which can be brought into the objective area, as well as the number of enemy vehicles captured.

11. Counterairborne Operations

Airborne forces provide the commander with a means of rapidly launching counterairborne operations to destroy or contain attacks by enemy airborne and air-mobile forces. This type operation has

the advantage of using air-mobile forces to eliminate quickly enemy airborne attacks in areas where friendly forces have relatively few tactical troops or where there is a lack of suitable ground transportation for rapid deployment of friendly combat forces to threatened areas. The delivery of the counterairborne force can be accomplished when our forces have achieved local command of the air during temporary lulls in the enemy's superiority, at night, or during other periods of low visibility.

CHAPTER 2

COMMAND, ORGANIZATION, AND FUNCTIONS OF UNITS

12. Strategic Reserve

a. The maintenance of an Army strategic ready force in the continental United States (CONUS) as a strategic reserve is a basic military requirement of the US National Military Program. This force must be trained, equipped, and maintained in a state of readiness which will permit it to be readily deployed to any part of the world to meet sudden aggression against ourselves and our Allies, or to reinforce currently deployed US or Allied forces. Airborne forces are specifically organized and equipped as highly mobile, completely air-transportable units capable of rapid, strategic air movement. These characteristics make them ideally suited for employment as part of the strategic reserve located overseas in pre-deployment areas or within CONUS.

b. The normal method of employment will be to by the strategic reserve from the United States to forward friendly bases for re-deployment in accordance with the plans of the oversea theater (area) of operations commander or the Joint Chiefs of Staff, or from overseas predeployment areas to the objective area. When designated as part of a strategic reserve, however, Army airborne forces must prepare plans which will enable the force, with its combat and service support elements, to move from bases in the United States directly to the area of employment. The plans should include situations in which the airborne force is committed to an area where US forces are not currently deployed. Units of the strategic reserve must maintain current loading plans which consider all types of aircraft likely to be employed.

13. Theater of Operations

a. The theater commander requests the forces and facilities needed to execute and support desired airborne operations. Within the limits of the means provided, he determines the scope of airborne operations to be conducted within his area of responsibility. He also provides support as directed and maintains required stocks of supplies and equipment, including aerial delivery equipment, for a strategic force deployed from CONUS or another area of opera-

tions. For further details of theater organization and command of airborne forces, see appendix VII.

b. Figure 1 illustrates a type theater organization wherein an airborne unified command has been established to command airborne and troop carrier units. The airborne unified command has formed a subordinate joint airborne task force for the execution of specific airborne operations.

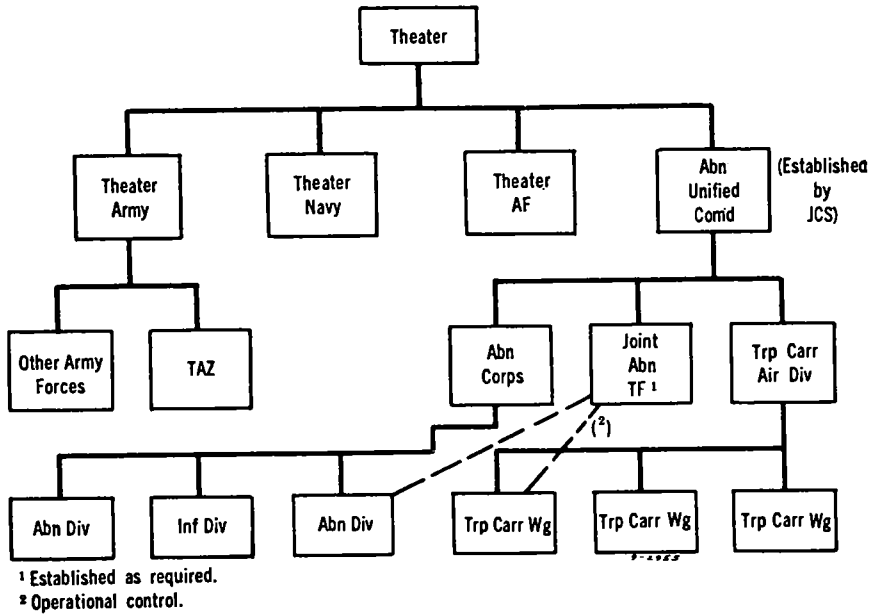


Figure 1. A type theater organization

14. Field Army

Every field army must be capable of planning, participating in, and conducting airborne operations. A field army designated to conduct airborne operations is issued a warning directive sufficiently in advance to insure adequate time for planning and preparation. The staff must be suitably augmented with qualified airborne planners experienced in airborne operations if such planners are not assigned to the staff. A field army, with necessary supporting troops, may be directed to emphasize training for participation in airborne operations. This will assist in decreasing the time necessary for the Army and subordinate units to plan and prepare to execute airborne missions. See appendix VIII for details of Army organization and command of airborne forces in joint airborne operations.

15. Corps

a. General. When joint airborne operations involving two or more divisions are to be conducted, a corps headquarters is designated to direct and control operations. A corps headquarters, properly augmented with qualified and experienced airborne staff personnel, should be able to plan and conduct large airborne operations. When frequent large scale airborne operations involving two or more divisions are to be conducted, an airborne corps headquarters should be organized, trained, and equipped to control and participate in these operations. A corps designated to conduct or participate in an airborne operation is given a warning directive early.

b. Planning and Administration. One or more corps headquarters, with appropriate supporting units, may be directed to emphasize planning and training for airborne operations. This does not preclude the subsequent commitment of the designated corps headquarters to normal ground operations. Such specialization depends largely on the anticipated number of corps headquarters available in the theater. An independent corps operates necessary administrative installations and functions similarly to a small field army. A corps subordinate to an army for an airborne operation is relieved of most administrative functions and confines its preparations principally to planning and training for its part in the tactical operation.

c. Employment. A corps may participate in airborne operations as follows:

- (1) An operation by a division or smaller unit in which the corps supervises the planning and execution of the operation, but the corps itself is not committed in the objective area.
- (2) An airborne operation of two or more divisions when early link-up with surface forces is expected. The corps participates by supervising the planning and execution and establishes a small headquarters with a minimum number of corps troops in the objective area.
- (3) An operation of larger scale in which the corps is the senior Army headquarters and in which a prolonged period in the objective area is contemplated. In such an operation, the corps requires augmentation to carry out essential administrative functions normally performed by the field army.
- (4) Large airborne operations in which the corps is one of several committed. The assault corps performs essential

administrative functions in the objective area until relieved of this responsibility by higher headquarters.

16. Divisions

a. Airborne Division.

- (1) *General.* The airborne division is the basic, large tactical airborne unit. It is a specialized unit designed with primary emphasis on its capability to perform airborne assault missions. Entry into combat can be by parachute or air-landed means, or a combination of both, with the capability of rapidly and effectively engaging the enemy. The division has limited organic ground mobility and artillery support in the objective area which may be compensated for by additional transportation, and by supporting artillery, air, and naval fires from outside the objective area. Factors which influence the length of time the division can operate independent of reinforcement are the enemy situation, the tactical and logistical support provided, and the weather and terrain.

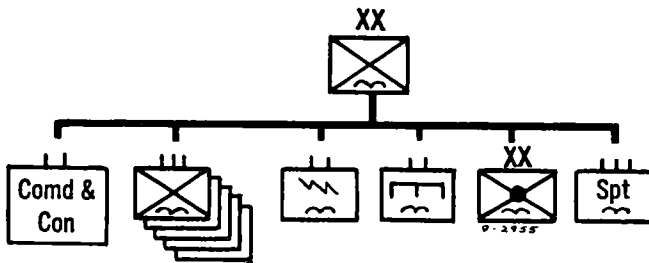


Figure 2. Airborne division.

- (2) *Organization and command.* For an airborne operation, the division normally has attached to it other units and detachments. The exact number of these depends upon the mission; type operation; expected length of time before link-up, relift, or relief; enemy situation; civilian problems in the objective area; and the size of the airborne force. Normally included in the attachments for the assault are one air liaison party forward air controllers, combat control teams (CCT), additional military intelligence and counterintelligence units or teams, and civil affairs military government units as required.

b. Infantry Division. The infantry division is air-transportable except for medium tanks and tank recovery vehicles. Light gun tanks and armored carriers are transportable in heavy transport aircraft only. For most effective participation in an airborne op-

eration, substitute support in artillery, antitank, and reconnaissance units is desirable. See FM 7-100 for aircraft requirement tables for the infantry division.

17. Army Missile Command (Air Transportable)

a. Significant fire support can be provided the commander of an airborne operation by utilizing an Army missile command (air transportable). This type force is a self-contained unit composed of field artillery missile, reconnaissance, engineer, and signal support units designed to provide field artillery missile support for ground forces (US or Allied forces). This command can be entirely transported by aircraft and can perform the following functions in connection with artillery missile support:

- (1) Liaison, to include appropriate language interpreter and translator personnel.
- (2) Target analysis.
- (3) Target acquisition.
- (4) Post strike analysis.
- (5) Signal communication.
- (6) Intelligence.
- (7) Internal security.
- (8) Limited logistical support.

b. The air-transportable missile command is organized with the field artillery missile battalion (762-mm rocket) as its major unit. The missile provides a means of carrying nuclear or nonnuclear warheads to a range comparable to that of heavy cannon field artillery, but with lighter and more mobile equipment.

CHAPTER 3

SUPPORT OF AIRBORNE OPERATIONS

Section I. PLANNING IN CONTINENTAL UNITED STATES

18. Employment of Strategic Reserve

a. Plans for the deployment of the strategic reserve by air must include provision for the following :

- (1) Release of timely intelligence on the areas of probable employment to the airborne force commander.
- (2) Establishment of an Army continental US command structure for the planning, commitment, and support of the deployed force.
- (3) Direct communication between the airborne force and the Air Force headquarters executing the air movement.
- (4) Designation and allocation of priorities for use of adequate marshalling areas, departure airfields, refueling bases, and arrival airfield complexes in the oversea areas.
- (5) Determination of the types, quantities, and location of supplies, equipment, and service support agencies required to support the anticipated deployments of the airborne force.
- (6) Coordination of deception planning and operations; unconventional warfare planning and operations; relationships with Allied military and civil agencies; determination of policies essential for operational guidance with respect to civil populations, the government, and economy in areas of probable employment; and relationships with United States executive departments in the areas of probable employment.
- (7) Plans and procedures for the allocation, control, and employment of nuclear weapons. These functions must be in consonance with established procedures in the area of operations, or such procedures must be established immediately in the planning phase.

b. After the airborne elements of the strategic reserve have been committed to a new area of operations, efforts will be made to provide logistical support by surface means from an existing theater of operations or from the continental United States.

19. Stockage of Equipment and Supplies

Under some circumstances, great savings in airlift can be realized by the stockage of aerial delivery equipment and other supplies in the vicinity of forward friendly bases near areas of anticipated employment of the airborne strategic reserve force. Heavy, bulky items, and bulky aerial delivery equipment require large numbers of aircraft out of proportion to the tonnages involved. Certain categories of supplies and equipment, such as aerial delivery platforms, are relatively inexpensive items and are suitable for long-term storage in oversea areas. Other items, such as parachutes, have a high initial cost and require continuing maintenance and repacking to keep them in a state of operational readiness. For this reason, a careful evaluation of the advantages gained in terms of aircraft requirement savings is made against the possible disadvantages of uneconomical duplication of equipment and maintenance facilities. As a general rule, selective stockage will permit some savings in aircraft without unreasonable expense.

Section II. PREPARATION FOR AIRBORNE OPERATIONS

20. General Considerations

Preparation for airborne operations includes necessary planning, assembly of participating forces and logistical support means, accomplishment of unilateral and joint training as required, marshalling of forces for the assault, and implementation of intelligence security measures.

21. Coordination and Control

Coordination between the mounting agency, Army, and Air Force elements of the airborne force, the supporting Air Force units, and other supporting forces is initiated early and must be detailed and continuous. Establishment of a joint headquarters, with representation of all participating forces and necessary communications, facilitates control and coordination. Direct liaison should be established between appropriate headquarters in the initial planning stage. Problems of control vary with the degree of dispersion employed during mounting and the speed required during marshalling.

22. Concentration

a. Air Force Forces. The length of time Air Force elements are assembled prior to the operation is dependent upon other requirements for troop carrier support, state of training, experience in airborne operations, condition of aircraft, maintenance require-

ments and facilities available, and requirements for joint training and rehearsals. Early liaison is established with major airborne headquarters and theater army logistical command agencies. This liaison facilitates planning for mounting, arranging for necessary facilities, participating in operational planning, and coordinating Air Force training with that of the Army forces.

b. Army Forces. Assembly of participating Army units is planned with consideration to unit availability, available service support, necessary rehabilitation, special training or equipping required, security, and planned employment of each unit. Whenever possible, airborne units are located in bivouacs or base camps from which no further long moves will have to be made prior to marshalling. While airborne units normally are made available first, it is desirable to have followup combat, combat support, and service units made available to the airborne force commander throughout the period of preparation for the airborne operation. If such units cannot be made available during the period of preparation, they must be available in the mounting area, fully equipped and trained, a minimum of 48 hours prior to scheduled outloading. Agencies designated to support the mounting and conduct of the operation will normally be already present in the area.

Section III. THEATER

23. Mounting

Mounting a joint airborne operation requires planning, coordination, and direction from theater level. Theater insures that the mounting of the airborne operation is in accordance with the theater campaign plan and coordinated, when required, with agencies outside the theater. Theater responsibilities include—

- a.* Designation of the general mounting area.
- b.* Determination of time of mounting.
- c.* Action to obtain additional forces, supplies, and equipment required from outside the theater.
- d.* Delineation of service responsibilities for mounting, and general direction and coordination as necessary of the major commands involved (ch. 2).
- e.* Plans for further operations from the objective area.

24. Planning

a. General. Airborne operations will normally be included in the campaign plans of theater of operations, and extensive long-range planning is accomplished for provision of the necessary support. Certain troops, facilities, and materiel are required which are different from those required for other military operations.

Support of airborne operations falls generally within the two principal categories of combat support and administrative support. Combat support usually involves all Services within the theater. Administrative support primarily involves theater Army.

b. Facilities. The impact of support of proposed airborne operations on base development planning within a theater is particularly significant. Airborne operations pose an early requirement for numerous departure airfields and air-landing facilities and camps or bivouacs for airborne forces. These facilities must be properly dispersed and must be integrated into the overall plan for combat operations and logistical support within the theater.

c. Nuclear Weapons. If the enemy has the capability of employing nuclear weapons against forces and installations in the departure area or in the objective area, continued action is necessary to reduce this capability to an acceptable degree. This includes attacks against the enemy stockpile, production facilities, delivery means, support means, sources of raw material, and target acquisition means. The reduction of enemy capabilities must be sufficient to permit conduct of airborne operations without incurring unacceptable losses.

d. Procedures. Planning for support of airborne operations includes the compilation of essential information relative to missions and proposed actions of the command concerned; the analysis and evaluation of assembled information to determine methods of accomplishing effective support; and the dissemination of required information, directives, orders, instructions, and plans to enable performance by appropriate agencies of the necessary functions involved in planning for and providing support.

e. Theater Organization. See FM 100-10, FM 100-15, and appendix VIII.

25. Troops and Facilities Required

a. Army Troops. Army forces employed in airborne operations must be properly trained and equipped to accomplish the combat missions assigned. Air-transportable engineer units must be available which are trained and equipped to repair and maintain airfields and construct air-landing facilities within the airhead(s). Service troops adequate in number, type, and training to mount and support participating forces must be provided.

b. Air Force. Troop carrier forces employed in airborne operations must be at sufficient strength and state of training, and have proper types of aircraft to insure successful movement of necessary combat and service units, equipment, and supplies. Air Force combat control teams, weather detachments, navigational teams, and other elements needed to assist in providing air traffic control,

weather data, and electronic and visual aids must be available. Other Air Force support sufficient to insure necessary air superiority and tactical support of operations is required.

c. *Facilities.* Supply levels and storage facilities within the theater must be available to insure support of airborne operations on the scale envisioned. Sufficient dispersed departure airfields and air-landing facilities within operational radius of proposed objective areas and dispersed camps or bivouacs in the general area of departure sites must be provided.

26. Air Movement Planning and Control

a. In order for the system for logistical support to be responsive to the needs of the commander, effective air transportation control of movements must be established. This requires detailed planning and coordination between Army and Air Force elements of the airborne force and with the theater army logistical command (TA Log Comd).

b. Movement planning specifies what is to be moved, when, where, and what mode of transportation will be used. The movement plan reflects the commander's priorities and is the authority for the movement of the shipments specified. Its preparation involves the following four steps:

- (1) *Establishment of requirements.* At each echelon, the users prepare estimates of their transportation requirements. These are received at the next higher headquarters, modified as required, and the final product then becomes the requirements for that particular command.
- (2) *Analysis of capabilities.* An analysis of capabilities must be made to determine movement capacity. This includes the capability of units and installations to receive and ship.
- (3) *Priorities.* As certain requirements may exceed the capabilities, priorities must be established in order that the movement plan will best support the overall plan for the operations.
- (4) *Preparation of the plan.* The physical preparation of the plan is then accomplished based on the information obtained under the first three steps.

c. Detailed air transportation control of movements is a function of an agency of supporting troop carrier units with overall responsibility vested in the joint force commander (app. III).

27. Logistical Organization

a. The organization of the theater and the number, type, and scope of airborne operations contemplated in theater campaign

plans influence the theater logistical organization for support of airborne operations.

b. Normally, logistical support of airborne operations is furnished on a uni-Service basis; however, a joint logistical organization may be established when uni-Service support is impracticable because of the scale of forces involved; the complex nature of the operation; or the peculiarities of the theater such as geography, location, size, and service interest.

c. The theater commander controls, administers, and supervises theater policies regarding air transportation utilized for logistical support through the theater joint staff.

28. Theater Army

Theater Army responsibilities for support of airborne operations include provision of Army forces trained and equipped to accomplish assigned combat and logistical tasks, long-range artillery (surface-to-surface) missile support and coordination with air defense artillery, administrative support required by Army forces participating in airborne operations, and coordination of actions of forces conducting ground operations in conjunction with airborne operations, as well as construction and maintenance of airfields and air-landing facilities.

29. Theater Air Force

Theater Air Force responsibilities for support of airborne operations include provision of air transport; operation of air terminal facilities, including combat control teams; offensive tactical air and missile support; air rescue operations; air defense forces; air weather service support; and administrative support of Air Force forces participating in airborne operations (par. 31).

30. Theater Navy

Theater Navy responsibilities for support of airborne operations include, when appropriate, search and rescue operations, provision of navigational aids, sea transport for followup forces and administrative support, naval air support, missile and gunfire support, and coordination of other naval operations in conjunction with airborne operations.

31. Other Air Forces

Forces, such as military air transport service (MATS), strategic air command (SAC), and others not under command of the theater commander, may be involved in providing combat or logistical support for airborne operations. When such is the case, coordination is effected by the theater commander.

Section IV. THEATER ARMY LOGISTICAL COMMAND

32. General

The mission of administratively supporting airborne operations is assigned to the theater army logistical command (TA Log Comd), or similar agency. Planning for such operations is on a continuing long-range basis. Theater Army provides TA Log Comd with plans for the contemplated employment of airborne forces sufficiently early to permit the preparation of supporting administrative plans. Close coordination is effected from the outset of the operation. TA Log Comd coordinates its supporting operations with other forces as appropriate. For further details of TA Log Comd support, see appendix IX.

33. Organization

TA Log Comd normally assigns the responsibility for mounting and supporting an airborne operation to one of its subordinate agencies. In the event none of the existing subordinate commands is capable of mounting and supporting the planned airborne operation, TA Log Comd will augment the section or command concerned as necessary, or establish a subordinate command with the specific mission of mounting and supporting the airborne operation, or control the support of the operation through headquarters, TA Log Comd.

34. Mounting Support

The TA Log Comd will be directed to support the mounting of an airborne force in one of the following ways:

a. Provide no personnel for unit camps. Camps are operated by followup and/or rear echelon personnel of the airborne force. This method would be appropriate when followup and rear echelons are not scheduled to move into the objective area early and also contain sufficient personnel to handle the workload. TA Log Comd provides evacuation and hospitalization support and augments equipment and supplies as required.

b. Provide a small detachment of specialist personnel with appropriate equipment to assist in performing administrative operations at unit camps. Such detachments operate under TA Log Comd control, coordinating closely with unit camp commanders. If all elements of the airborne force leave the unit camp, TA Log Comd assumes control of the camp and may employ it for other purposes or close it.

c. Provide an operating detachment including medical support and necessary equipment to administer temporary camps estab-

lished for marshalling an airborne force for a specific operation. Such temporary camps are controlled and operated by TA Log Comd with airborne forces using these camps on a transient basis.

Section V. AIR FORCE

35. General

a. Mission. Missions of Air Force forces in support of airborne operations include air transport of troops, equipment, and supplies to the objective area; evacuation of personnel and materiel from the objective area; and operation of air terminals, including provision of combat control teams and combat airlift support units (CALSU). Additionally, the Air Force must provide for logistical support of Air Force units and the provision of logistical support for the other elements of the airborne force which have been determined to be an Air Force responsibility; tactical air support throughout the airborne operation, and air defense forces, air weather service, and air rescue operations.

b. Organization. Theater Air Force forces consist of—

- (1) *Tactical forces.* Tactical air forces join in the early planning for an airborne operation and provide air support throughout the operation.
- (2) *Troop carrier forces.* Troop carrier forces provide air transportation for personnel and cargo, provide combat airlift support units, and operate air terminals.
- (3) *Air defense forces.* Air defense forces as a part of a theater joint air defense command provide air defense for theater administrative zone (TAZ) to include departure airfields, training areas, and general marshalling areas used by the airborne force.
- (4) *Air weather service.* Air weather service provides weather data for the airborne force prior to and during an airborne operation.
- (5) *Air materiel command.* Air materiel command provides logistical support for Air Force units participating in an airborne operation and for other elements of the airborne force determined to be an Air Force responsibility.
- (6) *Air rescue service.* Air rescue service locates and rescues the survivors of disabled aircraft transporting the airborne force.

36. Strategic Air Force

Strategic air force units normally are not assigned to or placed under operational control of the commander of a theater of operations. Strategic air forces may support airborne operations by as-

sisting in maintaining air superiority; reducing enemy mobility and capabilities by attacks on his transportation and defense systems, vital installations, and large troop concentrations; and conducting aerial reconnaissance deep into enemy controlled territory.

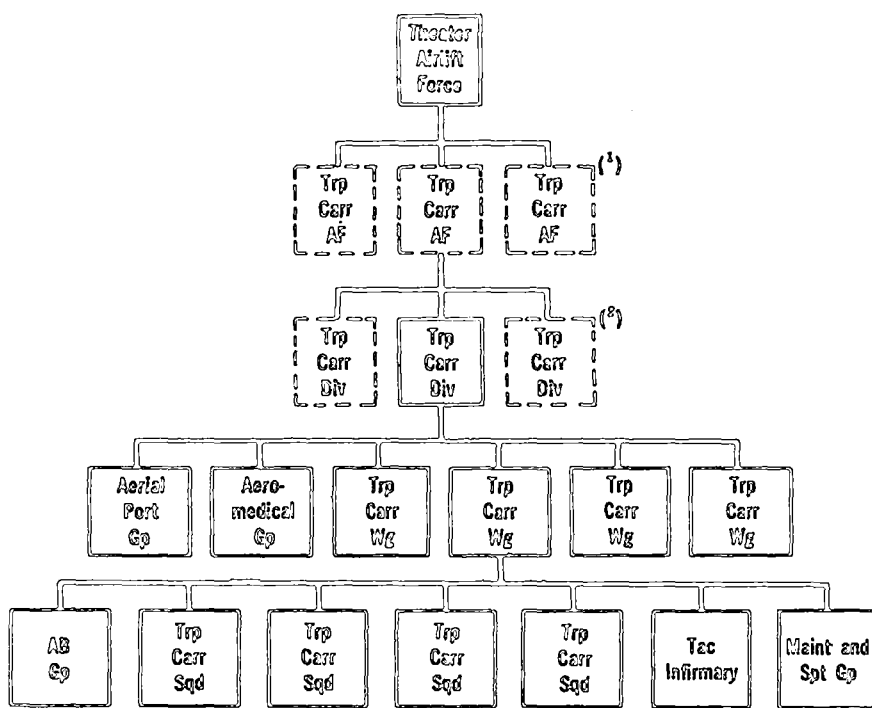
37. Troop Carrier

a. Organization. Troop carrier units within a fully developed theater of operations usually are organized into a Theater Airlift Force of one or more air divisions (fig. 3). Air Force combat control teams, part of the joint airborne advance party (not shown on fig. 3), are especially equipped and trained to serve as air coordination parties for troop carrier forces in the airborne objective area during the assault. These teams may precede or accompany the airborne force into the objective area. Through radio communications with the rear troop carrier headquarters or aircraft en route, these teams transmit weather reports, information concerning known enemy resistance which may be avoided en route to or in vicinity of drop zones or landing zones, hazards on landing zones, changes in location of landing areas, and other information vital to air operations. Control teams may be withdrawn, evacuated, or may, within their capabilities, initiate airfield communication and control facilities, including essential control of ground traffic at airfields to prevent surface transportation from interfering with the landing, taxiing, and takeoff of aircraft. See paragraph 41e for functions of aerial port squadrons.

b. Combat Airlift Support Unit. The troop carrier commander provides and designates a location for a coordination facility at each departure and arrival airfield prior to the arrival of participating units. This facility is the combat airlift support unit (CALSU) and includes liaison representation of the unit being transported. In addition, the CALSU normally includes an operations function, an aerial port operations function, and aerial medical evacuation function. Representatives of the two commanders will be present at the coordination facility at all times during the conduct of the airborne operation until departure of the followup echelon for the objective area.

c. Capabilities. The mobility of troop carrier forces permits a rapid concentration of air transportation. Troop carrier units are equipped with aircraft suitable for parachute, assault, and air-landed operations. Operations can be conducted by day or night. Troop carrier pilots are trained in close-formation flying in both daylight and darkness. Assault aircraft pilots are trained to make landings on unprepared fields by day or night.

d. Limitations. Troop carrier aircraft are relatively slow, not readily maneuverable, and may become easy targets for enemy



¹ This Headquarters may not be utilized.

² Number of divisions is variable.

Figure 3. Typical organization of a Theater Airlift Force.

fighter aircraft and ground fire. There is no armor protection for passengers and no armament for defense against enemy fire. Special navigational aids may be required for locating specific landing areas.

e. Operational Effectiveness. During the initial stages of an airborne operation, it will be unusual for aircraft to fly their full range because of lack of refueling facilities in the objective area. Radius of action normally is the limiting factor in tactical operations. Range may be the limiting consideration in strategic and administrative moves.

f. Aircraft Availability. The number of aircraft which a troop carrier wing can make available for an airborne operation normally is less than its organic strength in aircraft since some aircraft are grounded for routine inspections, maintenance, or as a result of battle loss or damage. The actual number or percentage of aircraft available will be expressed as sorties available and will vary with the type of aircraft, maintenance conditions, type of missions, unit training, duration of operation, airfield conditions, and enemy opposition. For short periods of a month or less and under favorable conditions, a troop carrier wing or larger unit can furnish approxi-

mately 80 percent of its organic aircraft daily. By grounding troop carrier units for 2 or 3 days prior to an operation to perform maintenance, a greater number of aircraft can be made available for D-day operations. For each operation, the troop carrier commander advises the airborne commander as to the number and type of aircraft and sorties that will be available on D-day and the estimated number to be available on each subsequent day of the operation. The total airlift for any 1 day may be increased by flying two or more sorties per aircraft per day, conditions permitting.

g. Types of Aircraft. The following aircraft are particularly suited for troop carrier operations:

- (1) *Medium assault aircraft* with 16,000-pound design capacity (*h* below). This aircraft is designed to permit landing, unloading, and takeoff in selected, hastily prepared areas conforming to minimum established criteria. This aircraft can be adapted to parachute operations, thus being suited to all types of airborne missions. The current standard medium assault aircraft is the C-123.
- (2) *Medium transport aircraft* with a 16,000-pound and 30,000-pound design cargo capacity (*h* below). The medium transport aircraft is the principal type used in an airborne assault. Its primary uses are delivery of troops, supply, heavy equipment, vehicles, and weapons by parachute or air-landing on airfields or other prepared facilities. As a result of this flexibility, it can participate in any phase of airborne operation except assault landings. The standard medium transport aircraft are the C-119 which has a 16,000-pound design capacity and the C-130 which has a design capacity of 30,000-pounds.
- (3) *Heavy transport aircraft* with a 40,000-pound and 95,000-pound design cargo capacity (*h* below). The primary use of the heavy transport aircraft is the transport of cargo and personnel. Its secondary uses are the delivery of troops, supply, and heavy equipment by parachute. The current standard heavy transport aircraft are the C-124 and C-133.

h. Cargo Load. The cargo load of an aircraft varies with the range or radius of action. It also varies with the anticipated condition of the landing areas and airfields, meteorological conditions, and the altitude at which the aircraft must fly. As a result, the allowable cargo load for each type aircraft available to the airborne forces must be established by the troop carrier commander for each operation. This is done early in the planning stage to permit army forces to determine aircraft requirements and plan for nonstandard or awkward loads.

i. *Delivery.* By using modern navigation and landing aids in the departure area and in the objective area, troop carrier forces can deliver a small number of troops and supplies under weather and visibility conditions less favorable than the minimum requirements for mass delivery. Single aircraft, carefully controlled and spaced by intervals along flight routes, may fly to and from the objective area under instrument conditions.

38. Troop Carrier Planning for Air Movement

a. Upon receipt of directives or orders to participate in training or combat missions, Army and troop carrier units concerned immediately exchange qualified liaison officers through all echelons to include battle group level, or lower when required.

b. For general responsibilities of the troop carrier commander for planning, see appendix V. Upon designation of general areas, troop carrier staffs initiate planning for the air movement. The plan for air movement prescribes the use and allocation of troop carrier units and facilities to best meet the requirements of the Army elements of the airborne force so far as technical and tactical limitations permit. Final approach routes and air traffic in the objective area, routes over enemy and friendly territory, serial formation assembly, air traffic, takeoff, and concentration of aircraft at departure airfields and air-landing facilities are considered in that order. Plans are based upon consideration of the predicted weather, enemy capabilities, strengths and weaknesses, and enemy air and ground dispositions which can be avoided or neutralized. Distinctive terrain features for use as aids to navigation or control, or both; the nature, location, and extent of suitable landing areas and location of terrain obstacles; and other terrain features which affect ground observation and ground fire are considered. Centers of population, main roads, proximity to interceptor airfields, air warning systems, air defense system, lightly held frontline areas, and time and distance in enemy territory are all considered for effect on the movement. Air traffic density as it may be affected by day or night operations, requirements for intermediate lift of airborne units, and operations of friendly land, naval, and air forces are also important considerations.

c. The air routes selected should be as short as practicable, delay alerting the enemy air defense system, bypass enemy air defenses so far as possible, take advantage of terrain features for navigation and control points, establish a free air-passage corridor over naval forces when required, and minimize conflict with other theater air traffic.

d. Serials take off, assemble in formation, and take their assigned positions in the air columns. A detailed air traffic analysis

is required to determine the sequence of takeoff of serial components. The flight plan and the airborne force commander's landing priorities are coordinated to form the basis for the air movement table.

e. The flight plan is checked for accuracy, timing, effective operating radius, and allowable cargo load. The plan then is coordinated with other forces such as strategic and tactical air commands, air defense command, air rescue service, Marine Corps, Navy, and interested Army headquarters. Final details for emergency procedure, recognition signals, and the siting of electronic and visual navigation aids are then added to complete the air movement plan.

39. Responsibilities of Troop Carrier Commander

a. Commanding officers of groups and squadrons are responsible for—

- (1) Proper functioning of lighting, intercommunication, aerial delivery, and similar aircraft equipment.
- (2) Provision of all Air Force accessories and special equipment required by Army units for a particular operation, such as loading ramps and tiedown devices.
- (3) Provision of qualified personnel to furnish technical assistance and advice to the loading unit.
- (4) Conduct of air rescue drills and ditching procedure.
- (5) Completion of all forms applicable to their units.

b. Prior to enplaning, the aircraft pilot is responsible for accompanying the Army plane load commander in the inspection of the aircraft as outlined on the aircraft inspection card posted in the aircraft. He will be present during the loading of the containers and equipment. He must immediately advise his commanding officer and the airborne liaison officer if his aircraft will not be able to take off on schedule, and assist in the transfer of the load to the spare aircraft assigned.

c. During parachute delivery, the aircraft pilot is responsible for maintaining the prescribed altitude, attitude, and speed; giving warning and jump signals; and actuating the release mechanism which initiates ejection of monorail and aerial delivery loads.

40. Departure Area

a. The location of departure airfields is affected by road, rail, pipeline, and water transportation routes; airfield availability; and assigned missions. Troop carrier air installations are located so as to be readily accessible over good routes of communications to

depots and hospital facilities. Well-planned locations for depots and airfields reduce requirements for surface transportation to move units and supplies destined for air shipment.

b. A joint command post is established at each airfield for the use of the air and ground unit commanders. The command post is close to the airfield operations office. The joint command post maintains communications with all headquarters responsible for controlling movement and enplaning troops and materiel.

c. Movement and dispatch of troop carrier aircraft from the airfield is controlled by the Air Force. Army representatives, operating on the airfield and working in close coordination with Air Force personnel, coordinate the movement of Army units and cargo to the airfield.

d. When plans are made to load units at air-landing facilities other than airfields, minimum air terminal facilities are provided and coordination is effected at the facility with the Army unit to be transported. The troop carrier unit will provide a minimum size CALSU. Loading of aircraft at these facilities will frequently require use of field expedients.

41. Air Terminals

a. Army responsibilities relative to air terminal operations fall into two categories: air movement of units and air movement of traffic such as cargo, mail, passengers (casual), and baggage. See AR 59-106. During air movement of traffic, Army responsibilities are as follows:

- (1) Establishment and maintenance of liaison at air terminals during the operation.
- (2) Control of movements of cargo and personnel to and from air terminals during all phases of the operation and determining by report and inspection the status of all traffic received, held, and shipped by air terminals.
- (3) Movement of traffic to departure air terminals and acceptance at the objective area terminals during all phases of the operation.
- (4) Preparation of traffic for air shipment, including packing, crating, appropriate documentation, and furnishing special storage and handling instructions as required.

b. During the movement of Army units, as differentiated from movement of cargo and casual personnel, the following additional functions are performed by the Army:

- (1) Preparation of aircraft loading and movement plans in conjunction with the Air Force.
- (2) Loading, tie-down, and unloading of supplies and equipment which accompany the units.

- (3) Ejection of supplies and equipment containers pushed from the aircraft by parachutists immediately prior to their exit from the aircraft. In-flight ejection of other type loads is done by the Air Force.

c. During air movement of traffic, Air Force responsibilities are—

- (1) Providing and operating intransit storage and transient facilities for authorized traffic, including necessary special storage facilities.
- (2) Accepting properly authorized and packaged traffic at the departure air terminal. Acceptance to include inspection, receipt, and unloading of traffic from consignor vehicles.
- (3) Processing traffic for air movement, to include manifesting cargo and briefing passengers.
- (4) Loading, tying down, providing en route service and supervision, unloading, notifying consignee, and delivering, to include loading on consignee vehicles, at destination air terminal.

d. Air Force responsibilities during movement of units are as follows:

- (1) Developing plans for aircraft loads and sequence of movement in conjunction with the unit being moved.
- (2) Furnishing and operating materials-handling equipment required in aircraft loading and unloading which is not normally organic to the unit being moved.
- (3) Providing technical assistance to personnel engaged in loading and unloading accompanying organic supplies and equipment being transported by air.

e. Aerial port squadrons, part of the aerial port group, are equipped and trained to operate Air Force air terminals. These terminals are located at designated airfields which are required for intratheater air movement of materiel or personnel in support of combat or administrative operations. The functions performed at air terminals include air and ground movement control, unloading, documentation, intransit storage, and loading, and connected activities of manifesting, briefing, and evacuation.

f. Air Force air terminal organizations assist in mounting airborne operations. Since airborne operations normally are mounted from a considerable number of airfields or air-landing facilities other than those which have been designated as air terminals, air terminal detachments, combat airlift support units (CALSU), will be placed on temporary duty at additional airfields as required. The location, number, and composition of air terminals depend upon

the number and characteristics of airfields and the tonnages to be handled at each airfield and the estimated flow of casualties and other personnel.

42. Signal Communications

Troop carrier forces establish an advance command post and adequate radio communications for liaison and coordination jointly with the tactical air force and the airborne force in the objective area during the initial phase of the airborne operation. Troop carrier headquarters and the departure airfields are informed of developments in the objective area. Information concerning changes in flight schedules and other matters is transmitted to the advance command post. For air warning information and flight instruction, communication is established with the air control center. Radio range, radar, radar beacons, flashing lights, smoke signals, and panels may be used by the Air Force to mark the flight routes over enemy territory and friendly frontlines.

43. Combat Control of Troop Carrier Aircraft

a. Responsibility. The direction of aircraft to and the marking of drop zones and landing zones is an Air Force responsibility. Selected Army and Air Force personnel who make up the joint airborne advance party (JAAP) are jointly trained to precede an airborne force to the objective area, when required to establish navigational aids for troop carrier formations to insure accurate delivery of airborne forces; to assist with the ground assembly of troops after landing; to land in forward areas, survey landing sites, and report the practicability of landing troops, equipment, and supplies; to assist aircraft in landing at selected sites by pointing out obstacles to landing and acting as flight control personnel; and to remove obstacles from landing sites.

b. Organization. Normally qualified Army personnel from airborne units, trained in selection of landing areas, in radiological survey, and in providing terminal guidance for Army aircraft, are part of the JAAP. Additionally, they provide security for the Air Force element as directed by the airborne force commander. Air Force combat control teams and specially equipped aircraft and crews are assigned to appropriate troop carrier units. These teams are employed as the basic element of the JAAP.

c. Employment. When used, the JAAP for selected drop or landing zones may precede or accompany the first serial of each air column. When the JAAP precedes the air columns, the exact time interval is established by the joint force commander. Serials of the air column must be prepared to drop or land as scheduled even though the JAAP may have been neutralized.

44. Tactical Air Support

a. *General.* Tactical air support of airborne operations is integrated with the overall tactical air operations within the theater. Close air support in a short-duration airborne operation usually is provided by the tactical air force which is supporting the Army unit designated to effect juncture.

b. *Types of Missions.* The principal types of missions executed by tactical air are:

- (1) *Air defense.* See paragraph 45.
- (2) *Air escort* for the troop carrier air columns of the assault airborne force as well as those for the followup air-landed forces and air supply operations.
- (3) *Suppression of ground-to-air defenses* along the air corridors as required and in the vicinity of the objective area.
- (4) *Reconnaissance* (photo, visual, electronic, and weather) during both the planning and operational phases of the airborne operation.
- (5) *Counterair* to gain and maintain command of the air in the vicinity of the air corridors used by the troop carrier elements and in the objective area.
- (6) *Preassault bombardment* of the immediate area of the contemplated airhead(s) as well as for deception.
- (7) *Interdiction* of the objective area to prevent or delay enemy reinforcements attempting to counterattack the airborne force.
- (8) *Close support* of airborne forces in the objective area.

c. *Control.*

- (1) *Preassault phase.* In the event the joint airborne force includes tactical air elements, the airborne force commander directs the preassault air effort. If the airborne force does not include tactical air elements, preassault air support must be requested from the Air Force. Requests for missions will be processed through normal channels.
- (2) *Assault phase.* During the initial stages of an airborne assault, aircraft are maintained on air alert over the objective area and on runway, and ground alert. Control of this close air support requires a tactical air coordinator, accompanied by a representative of the airborne commander, until the tactical operations center (TOC) is established on the ground. The tactical air coordinator, who remains airborne over the objective area, may direct an air strike if it does not interfere with his primary role. Initially, requests for air strikes are transmitted by air control teams (ACT) directly to the tactical air coordinator, who allocates aircraft to execute approved missions.

The forward air controller (FAC) with the ACT then directs the strike. When the TOC becomes operational within the objective area, control of tactical air support follows normal procedures.

45. Air Defense

a. During mounting and marshalling, air defense for the airborne force is provided by a theater joint air defense command. Operations of the Air Force defense forces and the air defense artillery are coordinated at the appropriate air defense control facility.

b. Air defense in the objective area is the joint responsibility of the Air Force and the airborne units when air defense artillery is available. Integration of air defense artillery operations with Air Force interceptor operations is accomplished in accordance with procedures outlined in FM 44-1.

CHAPTER 4

TACTICAL PLANNING

Section I. GENERAL

46. Theater and Field Army

a. Broad planning for joint airborne operations is normally initiated at theater or comparable level. Subordinate commands are directed to conduct the more detailed planning. To facilitate rapid planning for and launching an airborne operation, studies must be made of all possible areas of employment in the theater or area of operations. Field armies plan for the employment of airborne forces to obtain maximum speed in offensive operations. The organization of the airborne and infantry division encourages planning frequent operations of battle group size. Preliminary planning includes selection of tentative airborne missions based on—

- (1) Planned strategic or tactical operations.
- (2) Progress of current tactical operations.
- (3) State of readiness for combat of airborne units, air-transported units, and troop carrier forces.
- (4) Availability of logistical support.
- (5) Availability of departure airfields and air-landing facilities.
- (6) Enemy situation, capabilities, strengths and weaknesses.
- (7) Terrain analysis.
- (8) Weather conditions and forecasts.
- (9) Industrial and civilian complex.

b. Plans for the operation should include a concept for operations projected from the initial objective area. The phasing of troops and supplies into the area is conducted to support the current operation, future operations, and the overall mission of the airborne force.

47. Directives

a. Warning directives from higher headquarters may be oral and fragmentary in the early stages of planning. A complete directive is issued later, usually following a joint conference. Directives issued at all levels of command for planning of airborne operations contains the—

- (1) Mission and general plan.
- (2) Approximate time and duration of operation.

- (3) Necessary intelligence.
- (4) Plans for insuring secrecy.
- (5) Tentative troop list.
- (6) Fires available from other agencies to include nuclear fires.
- (7) Objective area.
- (8) Allocation of airlift and departure airfields and air-landing facilities.
- (9) Necessary logistical information and instructions.
- (10) Signal communication instructions.
- (11) Special equipment authorized.
- (12) Arrangements for postponing, canceling, or changing to alternate operations.

b. A command directed to plan one or more airborne operations begins planning immediately upon receipt of a directive and continues until the operation is either canceled or executed. The command plans its tactical operation within the limits of availability of aircraft, logistical support, and intelligence of the objective area. The amount of detail in planning and the detail in which intelligence is sought vary with the echelon of command.

48. Liaison

a. Upon receipt of directives or orders to plan for or participate in an airborne operation, commanders of Army, Navy, and Air Force units concerned immediately exchange qualified liaison officers to act as advisers and coordinators on all matters of common interest. Such exchange of liaison officers extends through all echelons as orders are issued and as appropriate within and between the Army elements of the airborne force; Army field artillery and air defense missile units supporting the operation from outside the objective area; supporting TA Log Comd agencies, and the juncture forces.

b. Liaison officers perform duties as outlined in FM 101-5 and such additional specific duties as listed in appendix X.

49. Planning Techniques

a. General. A joint airborne operation plan is the outgrowth of continuous preliminary planning by theater and subordinate echelons. This continuous planning must be consistent with the changing tactical and logistical conditions in the theater.

b. Procedures. Detailed planning is best developed by backward planning from the objective area in the following sequence:

- (1) Ground tactical plan to include determining strength and composition of the forces required and development of the logistical plan to support the tactical plan.

- (2) A landing plan which indicates the sequence, time, and place of arrival of troops and materiel.
- (3) Flight and air movement plans based on the landing plan.
- (4) Marshalling plan based on the air movement plan.

c. Simplicity. Simplicity is the guiding principle in the preparation of plans. To attain simplicity, the planner will not inject an airborne operation into a major ground operation which is already planned when insufficient time is available to integrate completely the airborne participation and will not depend on a plan which is entirely contingent upon the arrival of any one air serial or tactical unit. Additionally, the planner will avoid involved landing and assembly plans, make allowance for operational delays in takeoff and landing, and maintain optimum tactical integrity of units in loading plans.

d. Coordination. Planning staffs of participating Air Force units and Army units, at the various levels, plan concurrently to achieve maximum coordination. The necessity for continuous liaison, mutual interchange of information, and frequent coordinating conferences emphasizes the desirability of locating planning staffs in close proximity.

50. Planning Time Required

Joint airborne operations are inherently more complex than other operations and warning directives must be issued as early as practicable, consistent with security requirements, to allow subordinate echelons adequate time for planning and preparation. Airborne forces should have available all current intelligence documents produced by other headquarters pertaining to likely areas of employment. The larger the operation, in terms of size of participating forces and required logistical support, the greater is the time which must be allowed for planning and preparation. Joint airborne operations of division size require approximately 7 days for planning and preparation depending on the state of readiness of the division. If the airborne force is in a state of operational and logistical readiness and located in proximity of departure sites, operations may be planned and launched in 48 hours or less after receipt of essential planning information. Operations of battle group size may be launched within 24 hours or less. Operations involving the employment of an independent corps or a field army will require proportionately longer periods.

51. Operation Plans

Plans used in airborne operations are prepared in the same general form and by the same methods common throughout the

Services. Staff action and staff responsibilities set forth in FM 101-5 are applicable with the following modifications:

a. Plans for the assault are in detail since the plan initiates a complete new military action and action will be decentralized.

b. Plans of interest to both Services are either published jointly by troop carrier and Army units or are very closely coordinated.

c. Information peculiar to airborne operations requires plans and orders which are not normally used for ground operations (apps. V and VI).

52. Deception and Security

a. The necessary cover and deception planning for an airborne operation will normally be coordinated and the general plan initiated at theater or comparable level.

b. Security problems of airborne operations are complicated by the fact that airborne units are fewer in number than other types of units. For this reason, they are more easily located by enemy intelligence agencies. The assembling of transport aircraft, movement to departure sites, and associated marshalling activities are difficult to conceal. Security of these activities becomes increasingly important when the enemy has a nuclear weapon capability. Certain factors counterbalance these problems to some extent, such as the capability of airborne forces for rapid air movement and the fact that airborne operations normally are launched from deep within friendly territory.

53. Dispersion

Attempts should be made to eliminate occasions when airborne forces, installations, and reserves or reinforcements are massed to the extent that they constitute profitable targets for nuclear attack. This dispersion is facilitated by extensive use of assault transports operating from temporary, minimum criteria air-landing facilities. The mobility of airborne forces greatly facilitates such dispersion, making it possible to launch an attack from widely scattered bases within one or more areas of operations. Combat dispersion measures aid greatly in the attainment of surprise.

Section II. OPERATIONS

54. Tactical Planning

a. *Preliminary Planning.* Preliminary planning is essential if any specific operation is to be executed efficiently on short notice. A major task in this planning is the preparation of aircraft requirement tables (app. III). Units facilitate rapid planning for specific operations by preparing and maintaining current tables showing

the number of aircraft required for optimum operating conditions and the requirements for minimum operating conditions. Supplementary tables for conditions between optimum and minimum expedite planning upon receipt of a mission. These tables serve as a basis for the allocation of aircraft for a particular operation. Exact numbers and types of aircraft may remain unknown until the actual order is issued. For this reason it is necessary that all plans be flexible enough to adjust to several types of aircraft on short notice.

b. Sequence. The sequence of planning and the tactical principles and techniques outlined herein are applicable to all airborne forces regardless of size. For responsibilities of the airborne commander in planning, see appendix V.

c. Development of Operation Plans. Upon receipt of a directive and assembly of necessary planning data and intelligence, detailed planning is begun. Planning follows the same principles as in other ground operations. The plan for the airborne assault and seizure of objectives is prepared with minimum delay. Much detailed planning, particularly as to supply, communications, and air operations, is dependent on this plan. Development of the plan involves consideration of the strength and composition of forces, mission assignments, area of attack to include principal drop and landing zones and air-landing facilities or sites to be captured, fire missions required, the general plan of maneuver for major combat elements, enemy capabilities, civilian attitudes, availability of local resources, the approximate date and time of the landing, the general plan of supply required by the force, and the assignment of troop carrier units to lift elements of the force. The final operation plan is based on assault plans as modified by and integrated with troop carrier, tactical air, and supporting Army missile unit capabilities.

d. Organization for Combat. Army combat elements of the airborne force are organized in accordance with the mission and operating conditions imposed. These may include parachute or airlanded units, or a combination of both. These units should be made available to the airborne force commander throughout the period of preparation for, and the execution of, the airborne operation. Troop and materiel-carrying capabilities and availability of aircraft, capacity of landing areas in the objective area, and other limitations impose restrictions on the organization and size of the airborne force. Special planning is necessary to reduce aircraft requirements and insure necessary firepower and mobility in the assault elements.

e. Phase Back. Sufficient aircraft of appropriate types must be available to transport the airborne unit to the objective area in

mass at the desired time. If a shortage of aircraft exists, it first must be determined if sufficient aircraft are available to execute the tactical plan. Based upon the degree of aircraft shortage and tactical considerations, a specific plan may have to be revised or canceled. Frequently, however, it is feasible and desirable to continue planning for a specific operation by phasing back selected elements of the assault units (app. III). Those units, portions of units, equipment, or supplies that can be eliminated or delivered in a subsequent lift without jeopardizing the mission can be considered for phase back. Each element to be phased back should be tested by these criteria as well as those listed below.

- (1) Units not required for seizure of initial objectives or accomplishment of other first priority tasks.
- (2) Units assigned areas which are most distant from the enemy from a time standpoint.
- (3) Units whose tasks appear less significant in the specific operation being undertaken.
- (4) Units which can accomplish their mission at reduced strength for a short period of time.
- (5) Advance detachments of units scheduled for subsequent entry into the objective area whose arrival can be deferred.

f. Alternate Plans. Tactical assault plans must provide for alternate courses of action. These plans must be instituted in the event of faulty intelligence, malfunction or failure of nuclear weapons, adverse weather in the departure area, en route or in the objective area, misdelivery or failure of any part of the assault force to accomplish its mission, enemy employment of nuclear weapons, or failure of communications. An alternate tactical assault plan is prepared for each serial scheduled for a particular drop or landing zone. Special provisions are made for communicating the decision to execute an alternate plan.

55. Echelonment for Airborne Assault

Upon assignment of a specific airborne mission, the Army combat elements of the airborne force are normally organized into three echelons: the assault, the followup, and the rear.

a. Assault Echelon. The assault echelon is composed of those forces required to seize the assault objectives and the initial airhead(s), and includes the reserve and supporting troops. In division operations, the assault echelon consists of the combat teams, the division reserve, and division troops.

b. Followup Echelon. The followup echelon is that part of the airborne force (less rear echelon) which is not brought into the objective area in the assault but normally enters the objective area

as soon as practicable, by air or surface movement, or a combination of these methods. Depending on the means of transportation used, the followup echelon will consist of additional vehicles and equipment of units in the assault echelon and combat, combat support, and service units not required in the assault echelon.

c. Rear Echelon. The rear echelon is that part of the force which is left in the departure area to perform administrative and service functions not required in the objective area or those units whose function can be performed more efficiently in the departure area.

56. Ground Tactical Plan

a. Mission Analysis. A studied analysis of the mission assigned is the first step in tactical planning. This analysis discloses the task or tasks which must be accomplished and their priority and determines the general locale of the objective area or areas.

b. Selection of Objectives and Airhead(s). After determination of the objective area, or areas, specific objectives are selected, the early seizure of which will assist the accomplishment of the mission. The principal factors that influence the selection of objectives and determine the location, extent, and form of an airhead or airheads are: the mission of the force, enemy capabilities, offensive and defensive characteristics of the terrain, capabilities of the airborne force, landing areas available, and the expected time of link-up, reinforcement, or withdrawal. Additionally, objectives normally are selected to block high speed and secondary avenues of approach and at division level and below should include those areas whose early seizure is required for defense of the airhead. Concurrently with the selection of objectives, the selection of airhead(s) is considered. The size, configuration, number, and distance between the required objectives may require designation of multiple airheads. The airhead(s) must contain adequate space to permit defense in depth and necessary room for maneuver to insure contemplated landing of troops, supplies, and equipment, and protection of critical installations, and to allow for sufficient dispersion to reduce vulnerability to nuclear weapons to an acceptable degree of risk.

c. Distribution of Forces. Dependent upon the assigned mission, the airborne force may be committed in a variety of ways. Three possible methods of employment are shown in figures 4 through 6.

d. Boundaries and Task Organization. When the airhead(s) and objectives have been selected, sectors of responsibility are assigned to major subordinate combat elements by the placement of boundaries. A commander assigned a sector of responsibility seizes the objectives located therein, clears the area of enemy

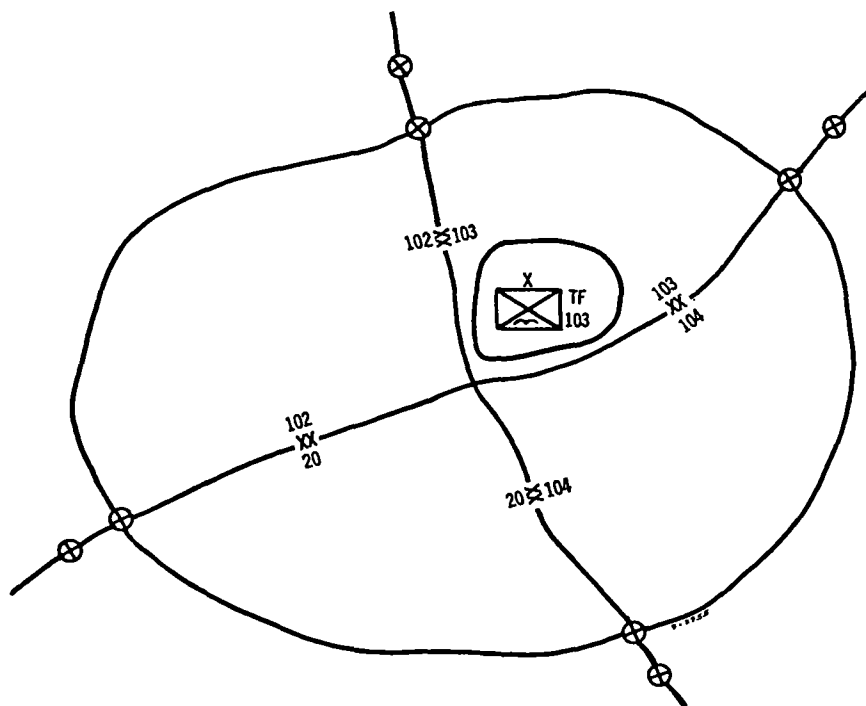


Figure 4. All elements in a corps airhead.

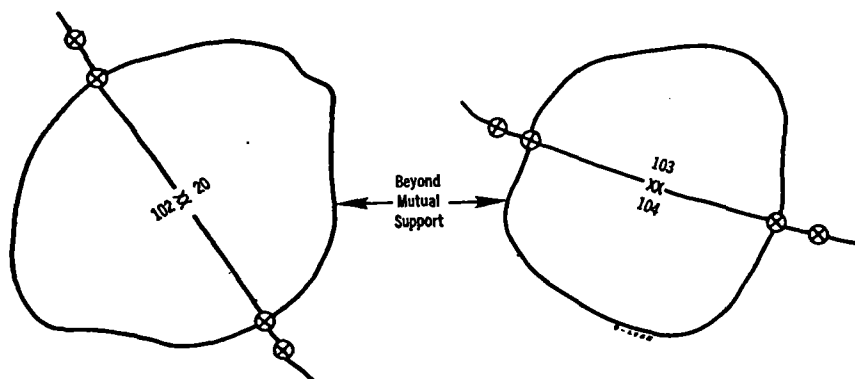


Figure 5. Corps in two major task groupings.

forces, and defends the sector. Boundaries are extended beyond the airhead and forward of the reconnaissance and security positions to the distance necessary to coordinate fires and ground observation. In selecting and designating assault boundaries for airborne operations, the same criteria are used as in other ground operations. Additional considerations are the requirement for adequate drop and landing zones and maneuver room for each subordinate unit within its sector; readjustment should be minimized in transition from the assault to following phases; and the neces-

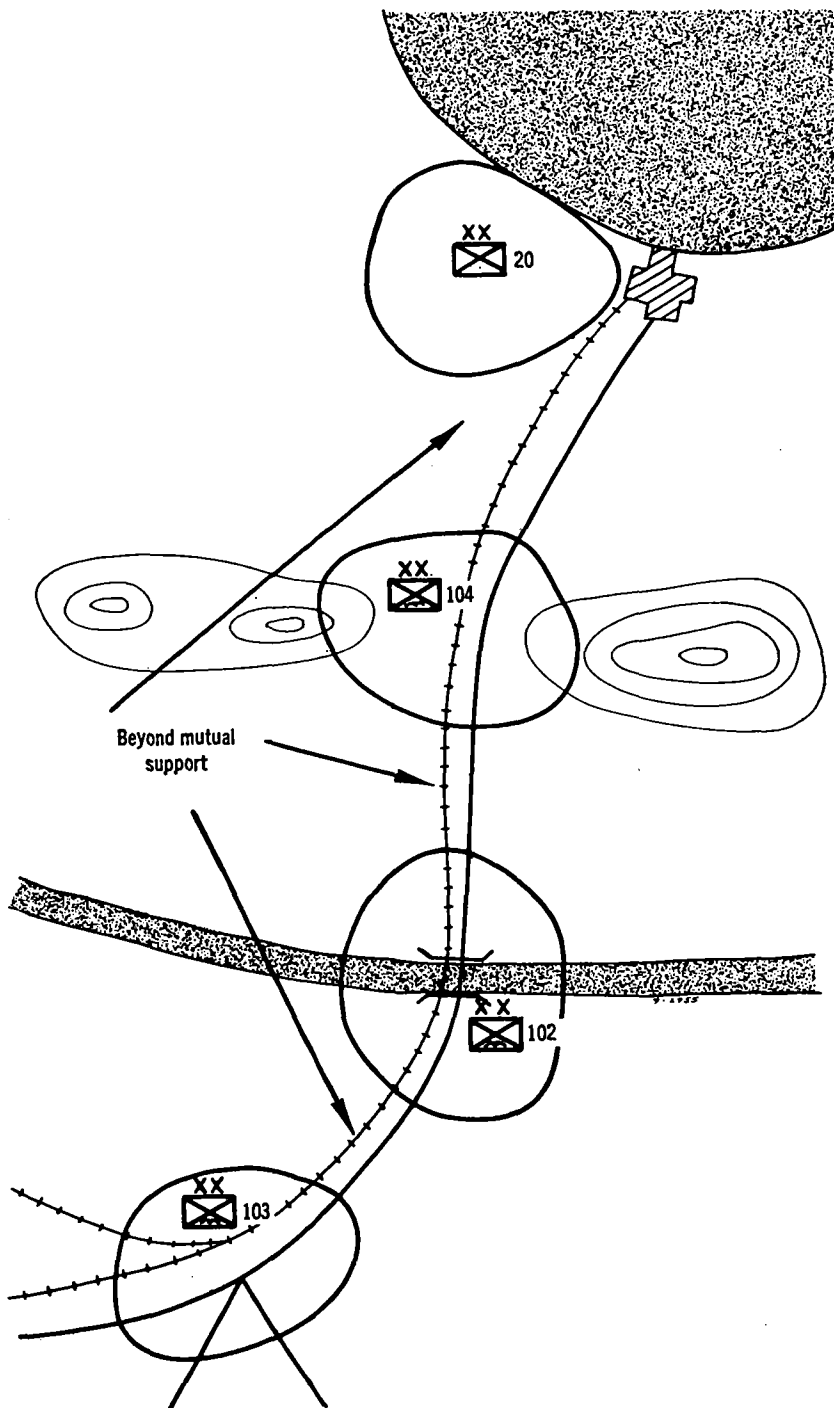


Figure 6. Divisions committed independently.

sity for a subordinate unit to fight in divergent directions simultaneously should be avoided so far as possible. The task organization of the army combat forces must be considered concurrently with boundaries. So far as practicable, the task assigned, including area responsibilities, is proportionate to the combat capability of the unit to which assigned. The task organization provides for a reserve, even though no immediate task or area of responsibility may be assigned the reserve.

e. Reserve. The reserve normally is brought into the objective area in the assault echelon. When initial tasks assigned other elements of the airborne force have been accomplished, additional forces may become available for reserves. The reserve is located within the airhead with consideration of—

- (1) Proximity to areas of probable employment.
- (2) Availability of routes for movement.
- (3) Availability of cover and concealment.
- (4) Capability of the enemy to interfere with movement.
- (5) Provision of depth to defense in the most threatened sector.
- (6) Vulnerability and passive protection from enemy nuclear attack. When elements of the airborne force are simultaneously committed in widely separated areas, the force may maintain a general reserve in readiness in the departure area prepared for air delivery in an assault role should the situation so require. The reserve may be located in the objective area if terrain affords a well-protected assembly area. When so located, rapid commitment by Army transport aircraft is facilitated.

f. Reconnaissance and Security Positions. The reconnaissance and security positions (RSP) consist of a series of roadblocks, observation posts, and reconnaissance detachments located forward of the airhead. Reconnaissance and security forces (RSF) land early on their assigned positions or proceed outward from the airhead rapidly in order to provide early warning of impending enemy attack, provide security against surprise attack, prevent enemy ground reconnaissance and close observation into the airhead(s), and delay and disorganize enemy forces without becoming decisively engaged. In some cases it may be desirable to place a sizable force in a critical RSP with the mission of blocking for an indefinite period. The extension of boundaries through the RSP fixes the responsibility upon subordinate commanders for provision of forces to perform the reconnaissance and security (R&S) mission. Of great importance to the RSF is information obtained by higher headquarters long-range reconnaissance elements operating forward of the RSP. Considerations influencing the location

and composition of RSF are the reconnaissance and security mission; the location of dominant terrain, obstacles, and observation forward of the airhead; the troops available; the enemy threats and likely avenues of approach; the communication facilities available, and the capabilities of fire support means.

g. Scheme of Maneuver. The scheme of maneuver for seizing and defending an airhead is prescribed by assigning missions and objectives, designating an airhead and RSP, prescribing a task organization and boundaries, and providing for a reserve. The ground scheme of maneuver after landing is based upon normal considerations governing the conduct of ground operations. Some modification is necessary, however, because of decentralization of initial command control. Special consideration must be given to the times and places at which the assault and reserve elements are landed, and assembly and reorganization of the assault forces. Freedom of maneuver of the airborne force may be restricted to some extent because of the assigned mission or a requirement to protect airfields or air-landing facilities upon which additional troops, supplies, and equipment are to be delivered and from which evacuation will take place.

h. Drop and Landing Zones. The nature and location of drop and landing zones are important considerations in formulating the landing plan and scheme of maneuver. Selection of specific sites is dependent to a large extent upon the mission, the number, the size, condition, and relative position and proximity of drop and landing zones to objectives. Drop and landing zones must be of sufficient size to accommodate assault forces and provide for an initial disposition of troops which facilitates seizure of assigned objectives (par. 64).

i. Assembly. Once landed, speed in obtaining equipment and reorganizing is of paramount importance. Smaller units normally have immediate specific missions and proceed on those missions without waiting for the assembly of entire units.

j. Regaining of Command Control. Dispersion of troops during landing requires that the initial effort of all commanders and staff officers be devoted to regaining the command control necessary for effective direction of the assault force. Of particular importance is the immediate establishment of the assault radio net.

k. Timing of Operation. In selecting the hour of landing, consideration is given to the enemy situation and capabilities, the effect of predicted weather, and visibility, and the plans of cooperating or supporting forces. The inherent difficulties of night operations, which occur in formation flying, assembly, and reorganization, favor launching large-scale airborne attacks in daylight; however, care must be exercised to prevent setting a pattern

of habitually launching airborne assaults at a particular time, such as BMNT. The principal advantages of landing at night are that darkness aids in gaining tactical surprise and reduces the effectiveness of enemy fire. Disadvantages are the increased difficulties of assembling troops and equipment and the decrease in effectiveness of supporting fires.

57. Landing Plan

a. The landing plan is prepared to support the scheme of maneuver. The plan contains the sequence, time, and place of arrival of troops and material in the objective area.

b. Army and troop carrier commanders at higher echelons allocate supporting troop carrier units based on the mission, forces required, and general landing areas selected. Army and troop carrier commanders study assigned landing areas to select specific drop and landing zones suitable to both. The following procedure is employed:

- (1) Concurrently with the development of the tactical plan, the troop carrier intelligence officer, force G2 (J2), and force engineer select all usable drop and landing zones in or near the proposed airhead(s).
- (2) Based upon this information, and in coordination with subordinate units, the G3 (J3) selects drop and landing zones to be used by each unit and determines the order in which units will land. Units normally are landed in their assigned sectors; however, when insufficient or inadequate drop and landing zones exist, boundaries may be shifted or particular units may be permitted to land either in the sector assigned another unit or outside the airhead(s).

c. The troop carrier commander is informed of the desired order of landing of units, time of landing, and the selection of drop and landing zones to be used.

58. Air Movement Plan

a. The air movement plan is prepared jointly by the Army and troop carrier commanders concerned. Included in this plan are the flight route diagram (prepared by troop carrier), the air movement table (prepared jointly), the loading plan (prepared by Army elements), and similar documents prepared unilaterally or jointly but all having to do with the air movement phase.

b. Army combat forces, within a given combat team, are assigned to serials scheduled to depart from airfields and air-landing facilities located in the same general area, thus facilitating control during marshalling.

c. The air movement table sets forth the assignment of Army airborne forces to serials within the air columns. The placement of units in successive serials is in accordance with priorities established for landing to support the scheme of maneuver. Tactical integrity of Army combat forces, as well as troop carrier units, is maintained so far as practicable. Serials normally do not exceed 20 aircraft. The need for dispersion in an active nuclear situation through use of even smaller serials may limit tactical integrity to company-size units. All elements in a given serial are landed on the same drop or landing zone in the objective area.

59. Signal Communication Plan

a. Joint signal plans are prepared in order that communication facilities of each component of the force may be integrated and coordinated. Coordinated plans for signal communication are necessary with troop carrier units; Navy, Air Force, and Army units providing supporting fires, the next higher headquarters; the commander designated to assume command of forces in the objective area upon juncture; and friendly advancing units with whom contact is expected in the objective area.

b. In addition to those common to other operations, signal plans for airborne forces include, as appropriate, the procurement of additional personnel and equipment required for special installations; the signal equipment and supplies to be landed by aircraft and the sequence of their delivery to include equipment to replace losses expected in the assault; and elements of signal units, if any, which are to remain in the departure area to aid in the movement of signal supplies and equipment. Additionally, the installation and operation of air support request communication channels; the provision of public information signal communication facilities; the procedures to counter, restrict, or avoid enemy electronic countermeasures; and the arrangements for communications for and with the rear echelon must be included as required.

60. Special Forces Operations

a. Special forces operations involve the infiltration of special forces teams into enemy rear areas to conduct unconventional warfare operations. The primary objective is to foster and organize the indigenous resistance potential behind the enemy lines and to exploit this potential to support the military objective. Detailed discussion of these operations is contained in FM 31-21 and (S) FM 31-21A.

b. Special forces operating in the area of a projected airborne operation can assist the airborne commander by interdicting enemy movement in and near the objective area; attacking enemy com-

mand, signal, and supply installations in and near the objective area; executing secondary attacks; seizing critical terrain features in or near the objective area; and executing deception plans. Special forces teams also assist in evasion and escape; provide information to include likely nuclear targets; assist in selecting, marking, and securing drop and landing zones, and coordinate guerilla activities.

c. Consideration should be given to integrating the above listed capabilities into the overall operation.

Section III. INTELLIGENCE

61. General

a. Intelligence planning for airborne operations is conducted in accordance with the same principles and procedures as for normal operations. Techniques employed in the preparation and implementation of intelligence plans and the production and dissemination of intelligence are influenced by the following considerations characteristic of airborne operations:

- (1) Planning is highly centralized.
- (2) Intelligence disseminated to subordinate units is as extensive and detailed as time permits.
- (3) Details of coordination and organization of intelligence agencies are carefully planned and directed before initial contact with the enemy.
- (4) Higher headquarters provides most of the information and intelligence for airborne units during the planning phase.
- (5) Terrain analysis is more detailed with special emphasis on areas suitable for drop zones and for landing zones for assault aircraft.
- (6) Weather conditions are of great importance.
- (7) Secrecy measures are stringent and rigidly enforced because of the tactical and strategic importance of operations and the absolute necessity of denying information to the enemy.
- (8) Briefing of all personnel, down to and including the individual soldier, is essential.
- (9) Surprise is vital to the success of the mission.

b. Intelligence planning for the collection of information and for producing and disseminating intelligence is conducted concurrently with, and integrated into, the planning of other staff sections. Intelligence planning begins as soon as the mission is assigned and is continuous.

c. When the mission is announced, G2 (J2) prepares a preliminary estimate based on immediately available intelligence. He further requests from higher headquarters all available additional pertinent intelligence. He makes this available to other staff planners at the earliest possible time to enable them to proceed with their planning.

62. Weather

a. Airborne operations are affected by weather to a greater degree than other ground operations. The mass delivery of airborne forces requires precision flying. With present equipment, visual reference is required for pilots to maintain position and spacing in the formation. Also important is the effect of surface wind speed on the ability of parachute forces to land with acceptable landing losses. For these reasons, weather intelligence includes data on visibility as affected by precipitation, fog, or the effects of preparatory fires including nuclear support; cloud cover and ceilings, and surface and drop altitude wind velocities in the objective area that may adversely affect parachute or air landing operations. These weather data are obtained from an analysis of climatological studies, long and short-range forecasts, and weather reconnaissance of the objective area.

b. A study of the weather conditions likely to prevail during the proposed operation, both prior to and after the anticipated time of assault, is made early in the planning stage. The study includes an analysis of the possible effects of the forecasted weather on all phases of the contemplated operation. This will indicate the overall feasibility of the operation from the weather viewpoint, assist in determining an advantageous time of attack, and permit implementation of timely countermeasures to offset the effects of forecasted adverse weather.

c. In analyzing the effects of weather on airborne operations, G2 (J2) determines the general impact of the forecasted weather on enemy capabilities and friendly courses of action. This general analysis of weather by G2 (J2) enables other staff officers to reach conclusions as to the detailed effect of weather on aspects of the operation important to them. For example, weather may—

- (1) Prevent the Air Force forces from completing preliminary missions essential to preparing the objective area for the assault.
- (2) Curtail training for the operation.
- (3) Require provisions for special types and unusual quantities of clothing, lubricants, food, and other materiel.
- (4) Necessitate postponement or cancellation of the operation.

- (5) Delay takeoff of aircraft or prevent serials in flight from reaching the objective area.
- (6) Prevent accurate or mass delivery of units into the objective area.
- (7) Prevent or delay supply or reinforcement of units in the objective area.
- (8) Interfere with tactical air support of the force.
- (9) Cause significant variations in the effects of friendly or enemy employment of nuclear weapons.
- (10) Prevent or delay the rehabilitation, preparation, or construction of airfields, or air-landing facilities.

d. Weather minimums prescribe the worst weather allowing full-scale participation by all forces. Parachute elements of the airborne forces specify the strongest acceptable surface wind in the objective area. Troop carrier and supporting fighter forces specify the minimum ceiling and visibility which must prevail in the departure area, en route, and in the objective area. At the time the operation is launched, the weather conditions prevailing should preferably be equal to or better than the weather minimums specified. When weather conditions are less favorable than specified minimums, the operation must either be canceled or delayed to await more suitable weather, or a decision is made to execute the operation despite resultant effects from the weather. By using modern navigational aids, troop carrier forces can deliver troops and supplies under weather conditions less favorable than the minimum requirements for mass delivery. Single aircraft or aircraft in widely dispersed formations may fly to and from the objective area under instrument conditions. The rate of takeoff and landing is considerably reduced when subminimal weather prevails.

63. Terrain

a. Terrain in the objective area influences the size and extent of the airhead(s) and assignment of missions to subordinate units. Adequate terrain intelligence must be provided to permit units to select landing and assembly areas; to plan operations to seize and defend objectives; and to plan reconnaissance and routes to objectives, assembly areas, or position areas. The nature and extent of obstacles to enemy movement, particularly armor, must be evaluated before preparation of barrier plans. The effects of employment of nuclear weapons by either side must be evaluated, selected targets evaluated, and information furnished to plan essential construction, with particular attention to air-landing facilities. The availability of water supplies and other indigenous resources and planned locations and routes to be used for administrative support must be evaluated.

b. Intelligence data on terrain are disseminated, as available, to include maps, small and large-scale airphotos of the objective area, airphoto interpretation reports covering enemy installations within and near the objective area, aerial reconnaissance reports, and terrain studies. Descriptions of obstacles, defensive works, navigational hindrances, and landing areas as well as large-scale terrain models are furnished as available.

64. Selection of Landing Areas

a. The general area in which landing areas are to be established may be assigned by higher command levels. In lower units, specific designation of locations is required. Consideration must be given to conditions created by friendly use of nuclear weapons when employed.

b. Desirable characteristics of drop zones and landing zones are—

- (1) Ease of identification from the air under expected conditions of visibility.
- (2) A straight approach for aircraft.
- (3) Close proximity to ground objectives.
- (4) Cover and concealment in close proximity to landing areas.
- (5) Relative freedom from antiairborne obstacles and air defenses.
- (6) Sufficient capacity for the force to be delivered.
- (7) Minimum construction and maintenance required.

c. Desirable characteristics of air-landing facilities are—

- (1) Area of sufficient length and trafficability to accommodate the number and type of aircraft to be landed.
- (2) Parking and dispersal areas to accommodate the planned capacity of the facility.
- (3) A road net to handle traffic to and from the facility.
- (4) Proximity of suitable assembly areas.
- (5) Areas and facilities for supply and evacuation.
- (6) Clear approaches to landing strip or runway.

d. The landing area intelligence study is peculiar to airborne planning. After general landing areas have been prescribed, intelligence officers of airborne and troop carrier units make an intensive study of the landing areas. This study is continuous and is disseminated in the form of annotated mosaics, overlays, or written summaries. For each area, the study should include the location and landmarks; size, shape, and capacity of landing zones and drop zones; location of assembly areas and cover, natural and artificial obstacles; and location of enemy defenses and troops capable of interfering with landings.

e. The enemy airfield summary includes information regarding the number, condition, capacity, and description of all airfields in the objective area. The summary also includes a description of possible sites for construction of air-landing facilities in sufficient detail to assist engineer planning. The summary may be issued as a separate study or be published as a portion of the intelligence plan.

65. Political, Sociological, and Economic Factors

The following considerations are sufficiently important in airborne operations to warrant inclusion in the intelligence estimate:

- a. Assistance or resistance expected from political or paramilitary groups or organizations.
- b. Availability of indigenous resources for support of the particular operation or projected operations.
- c. Policies relating to civilian population in the objective area.

66. Enemy Capabilities

a. Enemy capabilities which receive special emphasis are his capability for employing nuclear weapons, chemicals, and air against the airborne force in the departure area, en route, and in the objective area; redistributing forces in the objective area prior to the airborne assault, with particular attention to armor and air defense artillery; attacking the airborne force during landing and reorganization; and reinforcing his defense or attack, with particular attention to armor. Additionally, the capability of civilian and quasi-military forces to interfere with the landings and his electronic countermeasures capability must be considered.

b. Enemy strengths and weaknesses, as differentiated from enemy capabilities, must be considered in all planning. Such items include, but are not limited to, consideration of personnel, to include personalities of individual commanders, the replacement situation, morale, disproportionate number of very young and very old men, and sickness rates. Vulnerability to existing climate, vulnerable points in the logistics system or lines of communication, and his status of equipment are also considered.

67. Reconnaissance and Observation Missions

In planning for airborne operations, the following are emphasized:

a. From the outset, missions are carefully planned, coordinated, and assigned before commitment to insure rapid exploitation of existing means at all levels of command.

b. The air reconnaissance plan is developed and implemented early. Requirements of subordinate units must be anticipated.

Emphasis is placed on photo reconnaissance during the planning phase, shifting to visual and electronic reconnaissance during the operational phase. Aerial reconnaissance is oriented on enemy units and areas and routes that the enemy may use in reacting to an airborne assault.

68. Maps, Airphotos, and Briefing Aids

a. Supply of maps and airphotos in airborne operations must satisfy the requirements caused by detailed planning and increased distribution to subordinate units. Large-scale maps with antiairborne obstacles and defenses overprinted on them are very useful. Accurate sandtable models and terrain models can be made from these maps.

b. Thorough briefing of units and individuals participating in an airborne operation is essential. Briefing aids are prepared in sufficient time to be available during marshalling. Desirable aids include maps, airphotos, slide projectors, terrain models, movie projectors, charts, sketches, diagrams, and sandtables. Requirements for briefing aids vary with the operation, construction facilities available, and supply of materials and equipment. No standard set of briefing aids is prescribed. Units must be prepared to conduct an operation with a minimum variety of briefing aids.

69. Counterintelligence

a. Appropriate counterintelligence measures are undertaken during all phases of the operation. Counterintelligence measures seek to deny to the enemy all information relating to the date, time, and place of the airborne operation in order to retain surprise and to deny knowledge of the strength, disposition, tactics, and equipment of the troops employed. Counterintelligence measures are planned, coordinated, promulgated, and rigidly enforced by the airborne force, Army, Air Force, TA Log Comd and other commanders concerned.

b. Counterintelligence units capable of planning and executing counterintelligence operations may be attached to airborne units of division size and larger. Such units advise and assist in planning counterintelligence operations of all types. Counterintelligence units may be required early in the objective area to exploit or neutralize specific intelligence targets.

c. Detailed instructions for implementation of counterintelligence measures lend themselves to inclusion in unit standing operation procedures.

Section IV. INTEGRATIONS OF TACTICAL AND TACTICAL SUPPORT OPERATIONS

70. Tactical Operations Center (TOC)

a. General. The TOC is an integrated facility of the field army, independent corps or corps commander in which are grouped representatives of those staff sections concerned with control, coordination, and integration of current tactical and tactical support operations. This grouping facilitates rapid and continuous accomplishment of the above functions.

b. Organization. The TOC is flexible in organization. The number of elements therein will vary with the command echelon, the tactical mission, and the component force structure. Those staff elements concerned with future planning or other nonimmediate functions will not normally be incorporated into the TOC. At field army level, the TOC will normally include these sections: G2-G3 Operations; Air Defense Section (ADS); Fire Support Coordination Section (FSCS); Tactical Air Support Section (TASS); Electronic Warfare Section (EWS); Chemical, Biological and Radiological Section (CBRS); Engineer Section (EngrS); and Army Aviation Section (AAS). Other staff representatives and representatives of agencies whose activities from time to time require detailed coordination with TOC, over an extended period of time, may be included. The G1, G4, and G5 maintain minimal liaison representation in the G2-G3 Operations Section.

c. Functions. The TOC performs the following general functions:

- (1) Provides the field army, independent corps or corps commander a central facility for the control, coordination, and integration of current tactical operations including such activities as intelligence, fire support, Army aviation, signal, air defense, chemical, engineer, and such others as required.
- (2) Provides for the control, coordination, and integration of current tactical and organic tactical support operations.
- (3) Provides a central agency for the coordination and integration of tactical support provided by other Army forces and by the other Services with current tactical operations.
- (4) Facilitates the control and regulation of the air space over the commander's area of responsibility.
- (5) Provides essential display of current data on the air and ground situation so that prompt reaction to sudden changes in the combat situation can be effected.

d. Direction of the TOC. The ACofS, G3, has staff responsibility for tactical operations and for coordination and integration of tactical support with tactical operations. He directs the operations of the TOC.

e. Staff Representation. The senior staff representative in the TOC of other staff sections is responsible under the direction of G3, for discharging the staff responsibility of his section in the TOC as applied to control and coordination of current tactical and tactical support operations.

71. Fire Support Coordination

a. Fire Support Coordination Section. The Fire Support Coordination Section (FSCS) is furnished to the TOC by the artillery officer of the airborne force. Under direction of the G2-G3 operations section, the FSCS performs fire support coordination to include recommending the allocation of fire support; selecting appropriate fire support means for specific tasks or targets of interest; effecting detailed target analysis and damage assessment for employment of nuclear weapons (except for prediction of fallout); maintaining current status of nuclear weapons; and transmitting missions to fire support agencies. The presence of this section within the TOC facilitates the rapid integration and coordination of field artillery fire support, naval gunfire support, air fire support, and air defense support with other tactical support and with the tactical operations of the command.

b. Artillery Fire Plan. Artillery fire plans are prepared by the FSCS under direction of the Chief, FSCS. Artillery fire plans in support of the ground tactical plan are the same as for other operations.

c. Air Defense Plan. The ADS monitors of the air defense situation and air defense operations; and advises other sections of the TOC on air defense matters. For short-duration missions under conditions where the necessary degree of command of the air has been achieved, the airborne force will normally operate without attached air defense. The increased number of aircraft supporting an airborne operation dictates careful consideration of the quantitative requirements for air defense artillery support. Attached air defense artillery is normally employed under centralized control; however, elements may be attached to subordinate units for the execution of specific air defense missions or for employment in a ground support role.

d. Naval Fire Plan. When the situation permits, naval forces are especially well-suited for provision of supporting fires prior to the time organic airborne artillery lands, reorganizes, and is ready to deliver fires. Naval fires may augment airborne artillery fires

in the normal direct support and general support roles. When naval fires are available, naval gunfire spotting and liaison teams normally accompany supported airborne elements into the airhead(s).

e. Air Fire Plan. The air fire plan is prepared by the TASS and is based on the ground tactical mission and the amount of strategic and tactical air effort available. The detailed air fire plan is based on such factors as: required degree of command of the air and the extent of the area over which it must be maintained; the requirement for interdiction; the extent of visual, electronic, weather, and photo reconnaissance required; and the requirements for air defense forces for the departure areas, air escort of serials, preassault air bombardment, and close support of forces in the objective area. The availability of forward air controllers; plan of troop carrier forces; requirement to prevent premature disclosure of the assault, and the air deception plan influence the air fire plan.

f. Nuclear Weapons.

- (1) Nuclear weapons are integrated into the above fire plans as appropriate, and the overall tactical plan. Employment of nuclear weapons in the assault will permit achievement of greater speed in the seizure of objectives, the use of smaller forces, and facilitate the delivery of air-landed units directly on, or immediately adjacent to, objectives that otherwise might be too heavily defended.
- (2) Authority for commitment of medium and high-yield nuclear weapons allocated is not normally delegated below the level of division. During the preassault bombardment and the assault phase, authority for commitment rests with the commander of the airborne force. Subordinate commanders are encouraged to make recommendations and requests for nuclear weapons. The airborne force commander will specify delivery data for all such weapons.
- (3) Nuclear weapons employed in defense of the airhead are planned for delivery on areas and targets on which a need for fire can be foreseen, and are delivered on targets of opportunity as they arise. Use of surface and subsurface burst weapons with their associated cratering, and residual contamination may effectively strengthen the defensive characteristics of an airhead.
- (4) Procedures must provide for efficient and responsive coordination of nuclear fires delivered from within the airhead(s) by organic or attached delivery means, and those obtained from Army or other delivery agencies located outside the airhead(s).

g. Selection of Bomb Lines. The selection of bomb lines is an Army force responsibility. Agreement on the selected bomb line is, however, always obtained from the supporting air commander to insure ease of identification from the air. The two systems to be used for selection of bomb lines are—

- (1) *System A.* Under this system, the selection of the bomb line is based upon recommendations submitted by subordinate headquarters. The recommendations of subordinate headquarters are considered, and a recommendation for a new bomb line is furnished to the next higher headquarters until it reaches Army headquarters, a similar joint operational organization. Upon approval by the army force commander at this level, and acceptance by the supporting air commander, the bomb line is established.
- (2) *System B.* Under this system, subordinate headquarters send position reports giving the locations of their leading troops and future movements, in code, over the air request net direct to the joint operational headquarters at Army or similar headquarters. The bomb line is then established by the Army force commander, with the agreement of the supporting air commander.

h. Chemical Agents. For employment of chemical agents in support of airborne operations see FM 3-5.

Section V. PLANNING SUBSEQUENT OPERATIONS

72. Buildup of Troops and Material

a. An extensive buildup of troops and supplies is common in long-duration operations and is infrequent in short-duration operations. If an expansion of or exploitation from the airhead(s) is to be conducted, it frequently is accompanied by a buildup of troops and materiel. The expansion will be phased with the buildup to avoid congestion in the airhead(s).

b. The extent of buildup of troops and supplies in the objective area is dictated by the overall size and mission of the airborne force. The plan, after coordination and adjustment, is reflected in the air movement plan. Major factors to be considered in the buildup plan are the requirements for air-landing facility construction, the reception of troops and materiel, the preparation of units for further operations, the requirement for logistical facilities and service troops on a minimum scale to support contemplated operations, and the availability of aircraft.

73. Further Operations

a. General. Airborne operations should be followed by other airborne or ground operations in order to exploit the effects of the airborne attack. Plans for the operation should include a concept for operations projected from the initial airborne objective area. Maximum benefit to major combat operations can be derived from the frequent, planned employment of airborne forces in their primary role of airborne assault.

b. Missions. Suitable missions for airborne forces operating from the objective area are—

- (1) To seize, or deny the enemy use of, critical terrain, signal communication facilities, airfields, or missile sites.
- (2) To conduct raids against targets of opportunity.
- (3) To block enemy reinforcement or withdrawal.
- (4) To reinforce units which have been operating independently.
- (5) To advance successively to secure critical areas ahead of or to the flanks of armored or other mobile forces.

c. Ground Operations. Ground forces operating from the objective area are capable of conducting operations such as enlarging the area as an advance airbase, naval base, port, or missile site, and providing for its security, launching large-scale ground operations from the area, and blocking or counterattacking enemy penetrations of other ground forces.

d. Procedures. Assaults from the objective area may be launched by use of Army transport aircraft or by employment of parachutists from assault aircraft. Personnel parachutes can be brought into the initial objective area for use by assault elements in subsequent operations. Aerial delivery loads, if required can be rigged by personnel of the rear echelon from stocks provided by the supporting logistical agency or can be rigged in the objective area. Followup forces can be landed by either Army or Air Force aircraft.

74. Juncture with Friendly Forces

a. General. In operations involving a juncture, detailed coordination between the airborne force and friendly forces designated to effect the link-up is essential. Direct contact between these forces is normally authorized beginning with the initial planning phase. This contact is established by command and staff liaison and is continued throughout the execution phase to link-up. The actual link-up should be effected as rapidly as possible and in such a manner as to minimize the possibility of casualties to either the airborne force or link-up force from friendly fires. Link-up points,

fire coordination measures, communication plans to include recognition measures, liaison, command relationships and responsibilities and actions following link-up are of particular significance to the planning and execution of juncture with friendly forces.

b. Link-Up Points. To minimize confusion and possible attack on friendly forces as link-up becomes imminent, specific link-up points are mutually agreed upon early in the planning phase. These are points on the terrain at which physical contact will occur between the airborne force in the objective area and the leading elements of the link-up force. Normally, such points will be located at the intersections of RSP and routes of advance of the link-up force. Frequently, elements of the deep reconnaissance units will establish first contact with the advancing friendly forces. Link-up points should be readily recognizable. Airborne troops at the link-up point, as well as the leading units of the link-up force, must be thoroughly acquainted with mutual identification procedures and plans for rapid passage of the link-up elements into, through, or around the airhead(s). Alternate link-up points should also be established to be used in the event the airborne force is under attack at the time of link-up or if the RSP has been driven in. Normally, these points will be located on the outer limits of the airhead intersecting routes of advance into the airhead. Although link-up points are thoroughly coordinated by both forces, enemy action may force link-up to occur at places other than those planned. Close liaison and exchange of information is therefore required. If initial contact is with amphibious forces at a port or shore line, plans are made for eliminating enemy opposition, coordinating naval gunfire and air support, and signalling safe entry to amphibious units.

c. Fire Coordination Measures. Fire coordination measures are of major importance in link-up operations in order to prevent casualties to both the link-up force and the airborne force from friendly fires. In addition to such measures as communications and liaison, the principal measure for fire coordination is the establishment of a mutually agreed-upon fire coordination line (FCL). The function of the FCL is to regulate the flat-trajectory and high-angle fires as well as offensive air strikes. The FCL, where feasible, should be delineated by terrain features clearly recognizable from both the ground and air. The FCL becomes effective at a predetermined time and place or on order. The airborne force will not deliver fires beyond the FCL or permit more than negligible effects of fires to extend beyond the FCL without prior coordination with the link-up force. Conversely, the link-up elements must not deliver fires on the airborne force side of the FCL or permit more than negligible effects of fires on the airborne force side

of the FCL at any time without prior clearance from the airborne force. The location of the FCL must be subject to rapid change to adjust to the situation as it develops. Additionally, both the link-up force and the airborne force will establish bomb lines. The advancing link-up force will coordinate its own bomb line, which will be separate from that encircling the airhead(s) in the early stages of the operation. As the area between these two bomb lines diminishes and link-up becomes imminent, a single bomb line will be established, encompassing both the airhead(s) and the link-up force. Air strikes not controlled by an FAC in the area between the two forces must then be cleared by both the airborne force and the link-up force. Upon link-up, responsibility for fire support coordination for the force as a whole must be clearly established; responsibility for such coordination is usually that of higher headquarters, if present in the area, or of the force having primary interest in the operations following link-up.

d. Communication Plan. The communication plan for link-up operations must include the channels for radio communications between major units of the airborne force and major commands of the link-up force. This will require an exchange of call signs, authentication procedures, and assignment of mutually agreed-upon common frequencies well in advance of the actual link-up. The communication plan must also prescribe the identification procedures for use of combat units during both daylight and darkness. Visual signals may be used for this purpose. Flares, colored smoke, or panels may be used during daylight; infrared devices or flashing light codes during darkness. Army aircraft of both the airborne force and the link-up force may be employed to extend the range of communications or to deliver messages between the two forces as link-up becomes imminent. Channels for radar and electronic warfare equipment must also be coordinated.

e. Liaison. Command and staff liaison between the airborne force and the link-up force during the planning phase is essential for effective coordination of plans. During the operational phase, an exchange of liaison officers between the two commands is necessary to insure coordination of schemes of maneuver, transfer of command, and a clear understanding of responsibilities at each echelon of command. Liaison officers may accompany the airborne force into the objective area or may join the airborne force in the objective area after the assault phase. Just before physical contact is made, liaison officers of leading elements of the link-up force and its supporting artillery should be exchanged with the corresponding levels of the airborne force controlling the link-up points. This exchange will normally be accomplished by using Army aircraft (app. X).

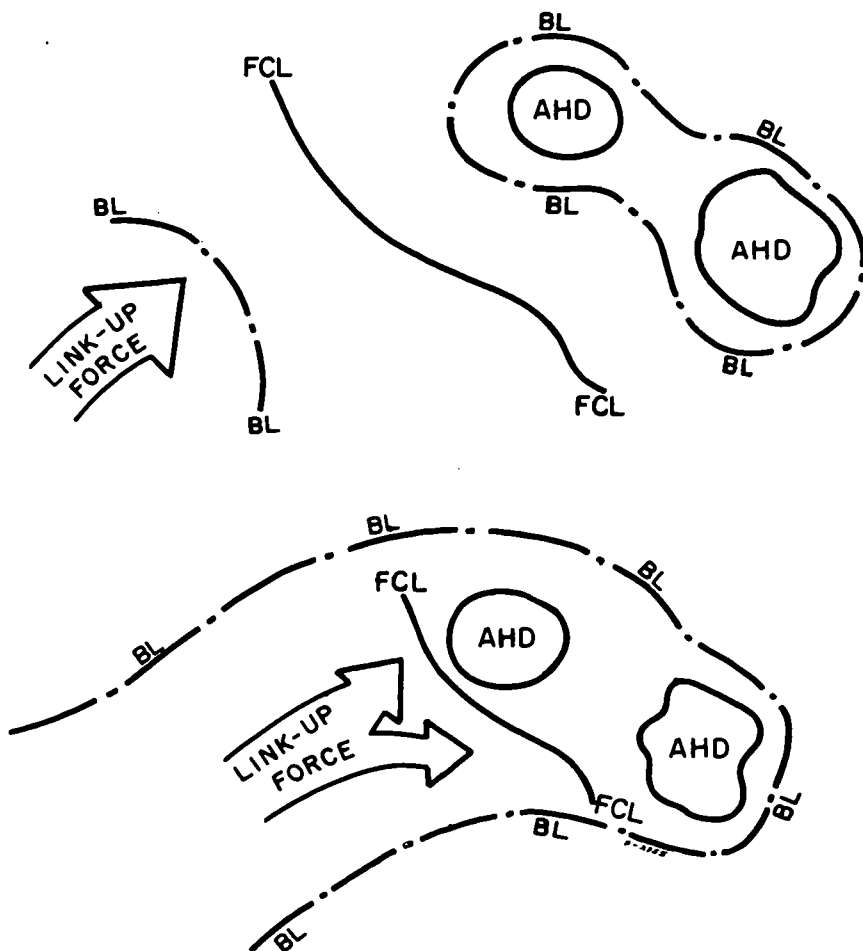


Figure 7. Fire coordination measures in link-up operations.

f. Command Relationships. Link-up operations normally take place at a considerable distance from higher command headquarters. Therefore, to insure unity of effort, the higher headquarters exercising overall command must specify the command relationships and responsibilities of the link-up force and the airborne force commanders subsequent to link-up. The units in the objective area normally come under the command of the advancing corps or field army commander when such commander is able to control and support or influence the action of the airborne force. When circumstances prevent the corps or army commander from exercising direct control of the link-up and subsequent ground action, provisions must be made for an alternate single control headquarters. The alternate headquarters will normally be the force having primary interest in the operations after link-up.

g. Actions Following Link-Up. Upon link-up with the airborne force, the mission of the link-up force may require it to reinforce or assume the defense of the airhead area, to continue the attack in conjunction and coordination with the airborne force in order to seize objectives beyond the airhead(s), or to pass through or around the airborne force and continue the attack independently to seize more distant objectives. In the first two cases plans must be prepared for the further coordinated action of the link-up and airborne force. In the latter instance, plans must include provisions for the airborne force to assist in the rapid passage of the link-up force through or around the airhead as quickly as possible. After the link-up is made and elements of the link-up force close into the airhead area, both forces become increasingly vulnerable to enemy nuclear attack. For this reason, the final objectives of the link-up force should be located well outside the airhead(s), if possible.

75. Air Withdrawal

When airborne forces are used on short duration missions in isolated objective areas, plans will frequently entail a withdrawal by air. These plans are developed concurrently with other plans and include provision for seizure of existing airfields or other areas of favorable terrain to facilitate relief of the force by either fixed-wing assault aircraft or Army aircraft (par. 64c); the strength and conduct of security forces, to include detachments left in contact; deception measures; the time, priority, and control of withdrawal of units; the evacuation of casualties and civilians (when pertinent); the evacuation of supplies and equipment and destruction of supplies and equipment which cannot be evacuated; the movement control of units on the ground and air traffic control; and the requirement for air support.

Section VI. TRAINING AND REHEARSALS

76. General

a. Scope. Training for airborne operations involves unilateral and joint training in air movement, operations in the objective area, and administrative and logistical procedures. It is essential that airborne forces possess the capability of launching an operation on extremely short notice. To attain this end, training between operations should emphasize a variety of operations. Training should ensure retention by the unit of maximum skill in rapid planning, rigging of equipment, and conduct of briefings with minimum training aids. Standing operating procedures are kept

current and knowledge of these procedures by all key personnel must be insured. Training is progressive, beginning with the smaller units and continuing through the largest units. Rehearsals are conducted whenever possible to improve the status of training and to test joint and unilateral procedures. Rehearsals may include loading and unloading of transport aircraft, communication procedures, assembly and control procedures, execution of the tactical plan, and supply and transportation procedures. Every effort should be made to stage rehearsals under conditions paralleling those to be found in the actual operation, with emphasis on decentralized small unit actions.

b. Responsibilities.

- (1) *The airborne force commander* prescribes the nature and scope of unilateral and joint training and rehearsals to be conducted. He also ensures coordination of training and rehearsals between appropriate subordinate forces.
- (2) *The Army force commander* is responsible for the conduct of airborne, ground, and joint training as required in preparation for the air movement and ground operations in the objective area.
- (3) *The Air Force force commander* is responsible for providing Army forces with necessary facilities for air training and rehearsals, for conduct of training of Air Force units, and for participation in necessary joint training.

77. Training of Army Forces

a. Training Objective. The training objective for the Army airborne force is attainment of maximum combat efficiency in conducting an airborne assault and subsequent operations in the objective area. Army airborne forces must be capable of planning and executing assault airborne operations by day or night. Airborne units must be capable of operating with other Army units, naval or seaborne forces, and troop carrier and other supporting air forces.

b. Specific Training.

- (1) *Airborne units.* Individual training, in addition to normal ground training, includes training in parachute techniques, flight discipline, and loading and unloading of aircraft.
 - (a) Unit training, peculiar to airborne operations, includes unit loading of aircraft, techniques for mass delivery in assault landings, assembly after landing, familiarization with tactics suitable for expected conditions in the objective area, special measures for antitank defense, and special problems of administration and logistics.

- (b) Command and staff training includes technique of preparing airborne operation orders, annexes, and air movement forms; marshalling techniques and procedures; organization and functions of participating forces of other Services; communication procedures and techniques; logistical procedures; employment of combined arms, conduct of tactical operations; and command post exercises.
 - (c) Combined arms training emphasizes the tactics and techniques employed by tactical groupings during the early phases of airborne operations. Training of attachments such as air liaison teams, forward air controllers, naval gunfire liaison teams, shore fire control parties, and intelligence and military government teams is integrated with that of the airborne units.
- (2) *Air-landed units.* Air-landed units preparing for airborne operations conduct essentially the same training as airborne units except for training in parachute and aerial delivery techniques (ch. 8).

78. Training of Air Forces

Air Force training for airborne operations includes technique of formation flying, execution of mass parachute drops, and assault aircraft landings; qualification of necessary specialists; command and staff techniques, to include operations of CALSU; logistical procedures; individual flight techniques; air exercises; joint training; and rehearsals.

79. Joint Training

a. Joint training is preceded by appropriate uni-Service training. Airborne and troop carrier units engage in the maximum amount of joint training permitted by time and facilities. Such training is conducted at all echelons and includes staff as well as unit training. Necessary training of joint airborne advance parties is accomplished.

b. Joint command post exercises, field maneuvers, and tests are conducted, so far as practicable, during each training phase to ascertain progress and insure standardization of procedures of Army and troop carrier forces. Included are day and night operations of sufficient extent to insure a high standard of proficiency and readiness to perform assigned missions.

c. Joint training is culminated by full-scale rehearsals for specific operations, where practicable.

80. Training for Specific Operations

a. The extent of the training actually required for any specific operation will vary with the state of training of the unit, time and facilities available, and complexity of the operation. A training program is developed for the specific training required by the unit to accomplish its mission. To add realism, training areas are selected that resemble the objective area. Mockups are made of installations, obstacles, landmarks, and enemy defenses in the objective area.

b. Training also is conducted in techniques of the specific air movement, landing, and reorganization after landing. As the detailed plan develops, specialized or refresher training is given in the methods or techniques to be used in the impending operation.

c. Rehearsals are a desirable part of preparation of airborne operations. Every effort is made to stage rehearsals under conditions paralleling those to be encountered in actual operations. Lack of equipment, suitable training areas, and security considerations may limit the size of rehearsals or necessitate acceptance of artificial conditions.

CHAPTER 5

ADMINISTRATIVE PLANNING AND PROCEDURES

Section I. GENERAL

81. General

a. All aspects of administrative planning are coordinated with and designed to support the tactical plan. The basis for planning administrative support of airborne operations is similar to that for other combat operations. Collection and compilation of administrative planning data are initiated early. These data are modified and supplemented as planning progresses. Commanders and staffs employ procedures outlined in FM 100-10 and FM 101-5. The influence of logistical support is particularly marked in long-duration airborne operations.

b. For details of the administrative support provided by TA Log Comd or other agency, see paragraphs 23 through 31, and appendix IX.

Section II. PERSONNEL AND CIVIL AFFAIRS

82. General

Personnel planning for airborne operations is more detailed than for normal operations because of the requirement for early anticipation of the events that take place prior to and during the early phases of the airborne assault. Coordination of personnel plans is effected with TA Log Comd agencies involved.

83. Strengths

Airborne operations should be launched with units at full strength or overstrength in personnel. Energetic action is necessary during the preparatory period to eliminate any existing understrength of trained airborne personnel and to eliminate ineffectives.

84. Replacements

a. General. A basic problem is the availability of parachute qualified specialists as replacements for airborne units.

b. Overstrength Replacements. Overstrength replacements for the initial stages of the airborne operations are requisitioned on

the basis of estimated losses. These replacements are received prior to the operation, resulting in a temporary overstrength which permits early replacement of initial losses in the objective area. Estimates of losses for procurement of overstrength replacements are computed separately for the air movement and ground combat phases. Computations are based on current experience tables for airborne operations in the theater, when available, or factors set forth in FM 101-10, modified as appropriate by planned employment of each major subordinate element of the command and the nature and duration of the operation. The latter is influenced by the time of assault—whether the assault is to be conducted during daylight or at night; plans for reinforcement, juncture, and relief or withdrawal of forces in the objective area; weather and terrain; and the enemy situation and capabilities, including employment of nuclear weapons. Overstrength replacements normally do not participate in the initial airborne assault. They are held in departure areas and are delivered to the objective area to replace known losses. Replacements are forwarded to the units on the basis of their original assignment with such minimum adjustments as are necessary to conform to the actual losses incurred. Plans must provide for an allocation of aircraft for movement of overstrength replacements to the objective area. Replacements are air-landed in the objective area and are not delivered by parachute except in an emergency.

c. Normal Replacements. Replacements required after the overstrength replacements have been absorbed by losses are requisitioned in the normal manner.

d. Replacement Units. It is desirable to have replacement units of company to battle group-size briefed and available in the departure area for commitment as required. These units will remain under the control of the next higher headquarters until released to the airborne commander.

85. Discipline, Law and Order

a. Provision is made to take into custody personnel refusing either to enter aircraft at departure sites or to leave aircraft on arrival in the objective area. Procedures must be initiated to handle jump refusals when aircraft return with suspected cases.

b. Control of stragglers is decentralized during the assault phase. Division and higher echelons assume the responsibility of straggler control as soon as practicable. There is little problem with stragglers in airborne operations.

86. Prisoners of War

Normally prisoners of war are evacuated by air from prisoner of war collecting points within the airhead. TA Log Comd furnishes guards on aircraft for evacuation when requested by the airborne force. Corps has the same responsibilities as field army in handling prisoners of war in corps-size airborne operations.

87. Graves Registration Service

Decentralization of responsibility for graves registration is necessary in the initial stages of the operation. Thereafter, decentralization normally is not below division level unless the subordinate elements are so separated from the remainder of the division that evacuation is not feasible. Battlefield search is a unit responsibility. In airborne operations, corps approves or designates burial locations with a view towards taking over control as soon as practicable. Evacuation of dead by air is not desirable.

88. Morale and Personnel Services

a. Personnel on leave are recalled when a mission is assigned or a unit is alerted for operations. During the early stages of an airborne operation, quotas to leave areas usually are suspended, however, care must be exercised to maintain the secrecy of the operation.

b. Measures which are more comprehensive than those of normal operations must be planned in advance for maintaining high morale during marshalling. Measures to be implemented in event of postponement or cancellation of the operation are also included.

c. Outgoing mail is suspended several days prior to D-day for security reasons. Provisions are made for the expeditious delivery of incoming mail throughout the operation except when units are on a short-duration mission. In long-duration operations, units having an organic APO should echelon postal personnel between the followup echelon and the rear echelon thus insuring adequate mail delivery. Mail is normally air-landed.

89. Interior Management

a. The headquarters of an airborne division and higher echelons are divided into tactical, main, and rear echelons in the same manner as in other ground operations. The tactical and main command posts participate in the assault and are located in the objective area. The tactical command post normally parachutes into the objective area whereas the main elements of the command post are air-landed.

b. The rear echelon of the headquarters will normally remain in the departure area but may accompany the followup echelon, depending upon the size and duration of the operation. The rear echelon maintains liaison with the Air Force and TA Log Comd to coordinate movement of supplies and personnel to the objective area.

90. Public Information

a. Planning insures the establishment of a program for the conduct of public information activities. Provision must be made for continuous dissemination of unclassified information to the public.

b. Plans further include provisions for briefing, transportation, and billeting of correspondents accredited to the Department of Defense and for transmission of their news copy and photographs to the next higher headquarters having field press censorship facilities.

91. Civil Affairs

Plans are made to have the civil affairs personnel and units enter the objective area early in the operation. Civil affairs activities frequently assume added importance in airborne operations because of exploitation of local civilian resources. Civil affairs personnel normally enter the airhead by air-landing. See FM 41-10.

Section III. LOGISTICS

92. General

The system for logistical support must be responsive to the needs of the combat commander. This is accomplished through supply planning, air movement planning, and air movement control. The commander establishes general priorities to insure effective air movement planning.

93. Planning Schedule

Logistical planning for airborne operations is initiated as early as possible; however, the actual mounting of the operation is compressed into the shortest feasible time. Logistical planning schedules for airborne operations are dependent on the basic need for adequate overall planning data and time and security. Depending on the overall situation, time schedules vary considerably and the timing of events during specific periods of these schedules is adjusted accordingly. For an example of a planning schedule, see appendix V.

94. Planning Procedures

a. Logistical Support. Logistical support of the airborne forces will vary in accordance with the assigned mission. Combat elements are committed with an initial high degree of logistical self-sufficiency by provision of supplies and attachment of support means

b. Basic Decisions Required. In order that the preparation of a logistical plan may progress, certain basic decisions are made as early as possible, enabling the responsible Services to prepare and execute plans for procurement and assembly of aircraft, supplies, equipment, and personnel. These decisions include forces involved, their organization, and the principal objectives to be attained; tentative strength and composition of logistical units in the airborne force; equipment to accompany the airborne force; supplies to accompany the airborne force; level of supply to be maintained each day in the objective area; selection of landing areas; location of marshalling installations and determination of the troops and materiel to be marshalled at each; airhead organization required for logistical support; organization and method of movement of the followup echelon (where employed); location of airfields and airlanding facilities in departure area to be used for supply; allocation of available aircraft; time by which airborne forces must be ready for loading on aircraft; initial evacuation policy; and requirement, if any, for support of civilian population.

c. Planning Information. Preliminary data needed to initiate logistical planning includes the mission and general plan of the operation, troop lists and strength reports, and station lists. The number and type of aircraft available, typical loading plans for the unit(s) participating, locations and capacities of mounting facilities, locations and capacities of landing areas in the objective area, and logistical support to be provided by participating Air Force forces are important planning items affecting the logistical plan of the force. The levels of supply required, available supply rates, estimated materiel losses, equipment status reports, and the age and condition of materiel must be established before planning begins. The requirement, if any, for support of civilian population must be determined.

d. Consideration. Considerations which affect development of the logistical plan include facilities available for marshalling; quantities of supplies to be delivered to departure airfields and the time of delivery; number, size, type, and loading characteristics of aircraft available; materials handling equipment available; distance between departure airfields and landing areas in the objective area; and the characteristics of the proposed airhead(s), including

road net, storage, and other facilities. Additionally, the duration of automatic followup supply; estimate of supplies, equipment, manpower, and materials available from local sources in the objective area and the amount necessary to meet minimum civilian requirements; climate and season of the year; amount and type of transport available within the objective area; and the capabilities and limitations of combat support elements in mounting and objective areas are important considerations.

95. Supply

a. General. The quantity and type of supplies and equipment carried by assault airborne forces are dictated by the initial combat requirements. They are influenced by the availability and carrying capacity of aircraft, projected date of link-up or withdrawal, all-weather flight capability of the aircraft, anticipated weather, and enemy capabilities. Surface followup forces normally carry supplies for airborne forces within the objective area within limitations of transportation available to them. Documentation of supplies delivered to the airhead facilitates allocation and shifting of logistical means to support planned or unexpected situations. A minimum level of 2 days' supply should be maintained in the airhead at all times, with the exception of raid and relift operations. When feasible, maintenance of a 3-day level is desirable.

b. Phases of Supply. Phases of supply are accompanying supply, followup supply, and routine supply. Procedures employed vary with the category of supply being delivered.

(1) *Accompanying supplies* are those supplies of all classes which accompany the elements of airborne units into the objective area. So far as possible, such supplies are issued to units prior to marshalling. With the exception of raid-type operations, the desired quantity of accompanying supplies carried is sufficient to sustain operations for 3 days, particularly in classes I, II, and IV. The tonnage in classes III and V may be such as to require a second lift on D-day in order to obtain on hand the desired level. Accompanying supplies are carried as follows:

- (a) *Unit prescribed load*—on individuals, in aerial delivery containers, and in unit vehicles.
- (b) *Additional supplies*—in heavy drop load and/or bulk loaded in assault aircraft.

(2) *Followup supply* consists of preassembled supply delivered direct to forces in the objective area. Delivery is made by air-landing, parachute, or free fall. Followup supply is packed to correspond to anticipated daily requirements. Provision is made to permit flexibility in

composition and delivery of daily requirements. Follow-up supply is discontinued as soon as routine supply procedures can be reasonably implemented. Followup supply is classed as automatic and on-call.

- (a) *Automatic.* Automatic followup supply is delivered to units in the airhead(s) on a preplanned schedule. The quantities and times of delivery of automatic followup supply depend upon the specific situation. Automatic followup supply continues until replaced by routine supply procedures.
 - (b) *On-call.* On-call followup supply is prepackaged and held in readiness in the departure area. It is delivered to units in the objective area on a specific request basis. Classes I, III, and V, and selected classes II and IV supplies and repair parts are prepackaged to correspond to anticipated daily requirements. Normally, a minimum of 2 days' requirements is so prepared. In addition, a small stock of specific critical items, normally classes II and IV and repair parts, are packaged on an individual basis to meet emergency requests for such items from forces in the objective area. In event on-call followup supply is used, expended amounts are reconstituted immediately in the departure area. These on-call supplies provide for emergencies throughout the operation.
- (3) *Routine supply* consists of replacement and consumption supplies delivered to the objective area in bulk, based on actual needs for distribution by normal supply procedures plus reserve supplies to build up to the desired level. The TA Log Comd agency designated to support the airborne operation is responsible for supervising the preparation delivery of followup and routine supply.

96. Supply Procedures

a. Accompanying supplies are recovered by combat and service units of assault airborne forces. Each unit recovers or protects its own accompanying supplies.

b. Prior to the availability of air-landing facilities in the objective area, supplies are delivered to major using units by aerial delivery and/or air-landing on unprepared landing zones. Later, followup supplies are delivered, so far as possible, by air-landing on prepared minimum criteria air-landing facilities. Habitually high tonnage items (classes I, III, IIIA, and V) will be delivered fully forward whereas those items of class IV and repair parts that are consumed at a less predictable rate will be delivered to division

distributing points. So far as practicable, planned use of cargo helicopters organic or attached to the airborne forces for relift and shifting of supply will be employed to reduce or eliminate the need for ground transport.

c. Routine supply procedures usually are instituted only in long-duration operations, after link-up, or when the airborne force is not committed for tactical operations. Such supply is handled in generally the same manner as in normal ground operations. Army type supply points are established as required. Delivery of supply by air should be as far forward as possible, consistent with the situation. This procedure will shorten the surface communication distance, improve service to the consumer, and reduce security and service troop requirements. The supply level in the airhead(s) normally does not exceed 3 days. Units requisition in the normal manner, and stock control records are maintained.

97. Special Supplies and Equipment

Airborne operations may necessitate additions, deletions, and substitution in standard equipment and prescribed loads of units. Pallets and materials handling equipment may be employed to expedite the handling of cargo.

98. Type of Loading

a. Assault airborne forces are combat loaded in order that equipment and supplies essential to initiation of combat are readily accessible on landing. Combat loading distributes assault supplies among aircraft in such a manner that units are self-sustaining on landing. Particularly critical equipment may be duplicated to safeguard against loss or damage.

b. Followup and routine supply may be loaded in delivering aircraft by classes of supply to facilitate unloading, handling, and delivery in the airhead.

99. Method of Delivery

a. Supplies may be landed by aircraft or dropped by parachute or free fall. However, landing supplies by aircraft is the most efficient method. Aircraft are capable of landing larger loads than can be delivered by parachute or free fall. In addition, aircraft landed may be used for evacuation when returning from the objective area.

b. Delivery of supplies by parachute is the most economical method when aircraft cannot land. This procedure entails the use of a large amount of aerial delivery equipment and specially trained personnel. This method is used to supply assault airborne forces or isolated units when air-landing is impracticable or undesirable.

In some situations, enemy action or weather conditions may dictate the use of parachute delivery even though suitable landing areas exist.

c. The free-fall delivery of supplies is the least efficient method of aerial supply. For certain items of supply there is a saving of delivery equipment but this is offset by the greater loss or damage to the supplies dropped.

100. Supply by Class

a. *Class I.* Assault and individual combat rations are carried by all airborne units entering the objective area. Combat rations are normally used for followup supply of airborne forces. All types of rations may be included in routine supply.

b. *Class II.* Limited amounts of essential class II items are included in supply. Minimum stocks of individual clothing and equipment are included in followup and routine supply. Major items of equipment will be included in resupply as dictated by the situation.

c. *Class III and IIIA.* Powered vehicles and machinery are enplaned with fuel tanks filled to the safe level (generally three-fourths full). Additional amounts of fuel and lubricants are carried on each vehicle. Followup supply includes fuel and lubricants for powered vehicles, machinery, and aircraft in the objective area. Supply of fuel and lubricants for vehicles normally is delivered in small containers. When facilities permit, fuel may be delivered to the objective area in bulk. Aviation gasoline is dispensed from 55-gallon or other large containers when possible. Five-gallon containers may be required by the tactical situation or for other reasons.

d. *Class IV.* The amount of class IV supply brought into the objective area is limited. Consequently, local resources are exploited to the fullest extent.

e. *Class V.*

- (1) The amount and type of class V assault supply vary with each operation. A prescribed load is designated for each operation and is based upon—
 - (a) Degree of opposition anticipated during and after the landing.
 - (b) Number and type of weapons landed with the airborne force and requirements for bulk allotment items.
 - (c) Planned time followup supply becomes available.
 - (d) Number and types of aircraft to be used.
 - (e) Experience factors.
- (2) Followup supply includes all types of class V supply and must be sufficient to allow continuity of combat opera-

tions. The actual enemy opposition encountered in the objective area frequently requires changes in the amounts and types of followup supply planned for delivery.

f. Repair Parts. Repair parts consist of spare parts, assemblies, and secondary items used primarily in support of maintenance. Included are individual tools, components of tool sets, common hardware, cleaning and preserving materials, and technical publications pertaining to maintenance. Specifically excluded are quartermaster expendables, such as office supplies, and engineer expendables, such as grease pencils and acetate.

g. Water. Airborne troops carry filled canteens and water purification tablets. Water containers are carried filled both for use en route and for consumption in the objective area. Location of possible water supply points is predetermined and water purification units are made available in the objective area as early as practicable.

h. Captured Supplies and Salvage. Within limitations prescribed by technical services and technical intelligence requirements, full utilization is made of captured or abandoned enemy materiel. Logistical considerations require recovery of salvageable equipment, especially parachutes and aerial delivery containers.

101. Medical Evacuation and Hospitalization

a. In short duration operations, short-term evacuation policy of approximately 48 hours is normal. Air-transportable casualties are evacuated by air if aircraft can land in the objective area. When air evacuation is possible, necessary medical installations are located in proximity to suitable air-landing facilities. When aircraft cannot land for purposes of evacuation, additional medical units may be required.

b. In long-duration operations, circumstances, such as the establishment of medical facilities, may permit a lengthening of the evacuation policy as the operation progresses. A firm evacuation policy for a long period of time cannot be established in advance; it will be modified as circumstances either permit or require.

102. Transportation

a. Air. Airborn forces, prior to effecting junction, are dependent upon air lines of communication. Movement of troops, materiel, and supplies over air lines of communication is planned by Air Force and Army commanders and controlled by the airborne force commander. Air operations and flight routes are planned by the troop carrier commander. Flexibility of cargo airlift is exploited and ground transportation is saved by landing supplies as

close to using units as practicable. In many situations and particularly in raid and in long-duration airborne operations, tactical planning is influenced greatly by landing area requirements. In such cases, the early seizure of an airhead(s) containing airfields or air-landing facility sites, upon which additional troops, supplies, and equipment may be landed, or from which troops, supplies, and equipment may be withdrawn, is of paramount importance.

b. Highway, Rail, and Pipeline. Provisions for employment of surface means of transportation within an objective area conform generally to the provisions of FM 100-10. Of these means, rail and pipeline will seldom be available. Highway transport is pooled as necessary and consists of organic vehicles, attached truck units, and such captured motor vehicles as are available and usable.

c. Transportation Movements. Transportation movements include control over movement of troops, civilians, supplies, into, within, and out of the airborne objective area, in conformity with the movement plan. Transportation movements are largely achieved through centralized control and coordination of movement planning and through timely dissemination of information and direction to those agencies exercising control over the transport means. While control and employment of transportation means are decentralized in the early phases of the operation, a degree of centralized control is achieved by allocations made during the planning for the operation. Maximum utilization of returning aircraft for evacuation of casualties, prisoners of war, civilians, and equipment is obtained through planning and control of return movements. Control over routing and scheduling of movements within the objective area enables the commander to utilize the available transport most effectively.

d. Air Terminal Operations. Army functions concerning transportation movements, employment of surface transportation, and similar matters related to the operation of air terminals must be carefully coordinated with the Air Force agency controlling air terminal operations (par. 41).

103. Service

a. Service Troops. Only minimum required service elements accompany airborne forces in the initial assault. Depending upon the nature and duration of the operation, additional service units may be phased in subsequent to the assault. As a general rule, only such service units are phased in as are absolutely essential. These service units are phased in at the latest practicable time on a when-needed basis. Many services are either performed in the rear area or deferred, thus reducing the requirement for service units in the objective area.

b. Maintenance. The problem of maintenance is magnified by the relatively limited number of service troops in an objective area and by the damage incident to methods of delivery employed in airborne operations. To minimize requirements, intensive maintenance is performed prior to departure to insure the highest standard of operational readiness of all equipment entering the objective area.

c. Construction and Real Estate Allocation. Centralized control is exercised over construction and allocation of real estate in the airhead(s). Indigenous facilities are utilized to the maximum possible extent to reduce construction requirements. Principles of real estate allocation are similar to those outlined in FM 100-10.

Section IV. AIR-LANDING FACILITIES AND AIRFIELD DEVELOPMENT

104. General

In airborne operations requiring construction of air-landing facilities or rehabilitation of existent facilities, such work is initiated as early as is practicable. The seizure of air-landing facilities and airfields sufficient to support the tactical and logistical plans must be provided for in the assault plan. Assault units are given the responsibility and are augmented as necessary to perform the minimum required initial construction. In the development of these facilities during nuclear warfare, reliance is placed upon a large number of widely dispersed, low-activity, air-landing facilities in preference to a few highly developed airfield complexes both in the mounting and objective areas. The number and location of air-landing facilities vary with the —

- a.* Size of the force to be employed and supported.
- b.* Planned buildup including the number and type of aircraft to be accommodated.
- c.* Tactical and logistical plans.
- d.* Terrain in the objective area, with particular attention to—
 - (1) Airfields that can be seized intact or rehabilitated.
 - (2) Availability of water-landing sites.
 - (3) Super highways and other roads, beaches, or open areas of reasonably well-compacted soil.
 - (4) Soil characteristics, relief, and vegetation.
- e.* Enemy capabilities.
- f.* Engineer capabilities.
- g.* Weather during the time of operations.

105. Airfield and Air-Landing Facilities Acquisition

In general, airfield and air-landing facilities are acquired as follows:

- a. Seizure of an adequate undamaged existing airfield complex in the objective area.
- b. Seizure of an adequate, but damaged, airfield complex in the objective area.
- c. Construction of necessary air-landing facilities on landing zones in the objective area to accomplish the mission.

106. Operational Requirements

a. *Assault Phase.* In the assault phase of an airborne operation, the initial delivery of troops and equipment is normally made by parachute, followed by assault aircraft landings on selected, unprepared landing zones. Depending on the landing characteristics of assault aircraft, landing facilities may consist of general areas or specific strips. In the event suitable assault airlanding facilities are available initially in the assault, landings may be executed without delay. Under such circumstances landing zones are normally checked for hidden hazards. In those cases in which suitable landing zones exist, a minimum of engineer effort will be required to maintain necessary facilities, however, there will be instances where the landing zones are inadequate and will require varying degrees of engineer effort to make them usable for the assault aircraft. By making maximum use of existing roads, moderately level cleared fields, open grassed areas, and beaches, the amount of engineer construction effort required may be reduced. The construction criteria used for development of landing zones are dependent on such factors as the characteristics of the assault aircraft, the soil, and the weather. Engineer troops to accomplish construction necessary for support of the tactical plan are phased into the objective area. The assault echelon contains engineer personnel and equipment to improve the initial air-landing facilities as required. Certain designated landing zones may subsequently be developed into air-landing facilities to accommodate medium and heavy transport aircraft.

b. *Followup Phase.* During the followup phase of an airborne operation, normally, there will be a requirement for sustained air-landing operations. Under good terrain conditions and good weather, it will normally take approximately 3 to 4 days to construct the minimum facilities required. The force engineer will establish guide figures for each operation. Repair of existing airfields which have become damaged by demolitions and weapons other than nuclear may take less time.

c. *Buildup Phase.* Normally in an airborne operation of long duration, there is a requirement for the air-landing of heavy items of equipment weighing in excess of the load capability of assault and medium transport aircraft. Because of the engineer effort required in the construction of airfields for heavy aircraft, consideration should be given to the rehabilitation of existing airfields or the use of multilane highways. Engineer personnel and equipment provided for the rehabilitation of airfields for the heavy transport aircraft will normally be in addition to those required to construct facilities in assault and followup phases.



Figure 8. Air-landing facilities in airborne operations.

107. Engineer Support

The engineer construction support required will depend upon the amount of work required, the schedule of operations, and the air-landing facilities criteria. Weather during the period of operation, availability of construction materials on site, and engineer capabilities will have direct effects upon the development of air-landing facilities. If adequate sites are not available in the objective area, a highly effective engineer construction capability is required to support the operation. Unrealistic air-landing facilities criteria and operation time schedules could result in early air movement of large tonnages of engineer equipment and material during a critical period when aircraft are required for the support of the tactical units. Provision of specially tailored, equipped, and trained engineer units, lowering the existing minimum construction criteria standards and skillful site selection will assist in reducing construction and development problems.

108. Number of Air-Landing Facilities Required

a. The number and location of air-landing facilities to support an airborne operation are generally as follows:

- (1) One assault air-landing facility per committed battle group and one for use of the division as a whole.
- (2) One medium transport air-landing facility per division.
- (3) One heavy transport air-landing facility per corps.

b. The above represents the average operational requirements and does not take into account the provision for alternate or additional air-landing facilities to offset the losses due to enemy action, particularly that destruction caused by nuclear weapons. These facilities do not provide for the employment of organic and attached Army aviation. The assault air-landing facilities in each battle group area and at division would continue in operation throughout the operation in order to provide sufficient facilities to accommodate the tonnage requirement during all phases of the operation; to provide flexibility for air-landing due to enemy action; and to minimize the requirement for ground movement of supplies by delivering them as close as possible to the using agency.

109. Site Selection and Classification

a. *Site selection.* Site selection is the initial consideration in planning air-landing facilities because of the stringent construction time limitations imposed by airborne operations. Factors primarily affecting construction are weather, topography, drainage, ground cover, soil conditions, availability of local construction materials, and dispersion. The Army, Air Force, and Navy, as appro-

priate, have joint responsibility for this important phase of planning. The selection of landing zones and development of air-landing facilities will depend directly upon the characteristics of the aircraft to be employed and the degree of risk to be accepted. Site selection must facilitate construction and support the ground tactical plan. It also must meet the requirements set forth by the agencies whose aircraft will use the air-landing facilities. There may be instances in which a site with undesirable characteristics must be chosen because of some overriding tactical consideration; however, the importance of selecting sites favorable for development of air-landing facilities is taken into consideration by tactical planners. It is envisioned that tactical considerations will be the overriding factor of site selection because of the criticality of the tactical situation during the assault phase and the reduced criteria of assault landing zones. It is probable that technical considerations will be the overriding factor of site selection for the development of medium and heavy transport air-landing facilities. Both weather and soil conditions influence landing zone selection. Therefore, site selection should be as specific as possible. Most types of soil are adversely affected by high moisture content and this factor usually restricts air-landing facilities construction to periods of favorable weather. Further, bearing capacity is adversely affected by inclement weather prior to the time that weather-proofing of the surface can be provided. It is desirable to bring soil technicians into the objective area early in the operation to confirm the engineering data, to make adjustments in site selection in order to reduce the construction effort, and to advise the construction force on technical matters concerning soil stabilization and compaction.

b. Classification. Air-landing facilities criteria must be furnished the engineer battalion commander to provide design and construction guidance. Both construction time available and safety and efficiency of landing operations must be considered in establishing minimum criteria. If a facility is going to be used after the initial assault landings, provision should be made for subsequent improvement of the facility. In the progression of airfield development, the following general standards of airfield construction are established:

- (1) *Emergency*—Can be utilized only under favorable operating conditions; safety factors at a minimum; operations may be hazardous and inefficient.
- (2) *Minimum Operational*—Operations may be jeopardized seriously under adverse operating conditions; safety factors substandard but with operable margin.

- (3) *Full Operational*—Operations practicable under all operating conditions; safety factors at normal established levels; high efficiency level of operations.

c. *Construction Criteria.* The criteria for the various standards of construction apply to the quality and quantity of facilities for the initial landings; however, future utilization will determine improvements and additions which may be made. The same general quantitative criteria would apply for a minimum and full operational standard, although the quality of the full operational facilities are such that operations would be practicable when factors such as weather or increased utilization might render a minimum operational location unusable. The emergency standard may be used in combat conditions when the situation does not provide or permit use of minimum or full operational sites. Under these conditions, certain criteria may be waived or changed at the discretion of the troop carrier commander. The exact configuration and layout of an airstrip is situational. Maximum use must be made of existing facilities such as roads and open areas to reduce the time and construction effort to a minimum. Consideration should be given to layouts which facilitate future expansion and provide maximum deployment and flexibility.

110. Water-Based Aircraft Facilities

In those areas of operations where there are large lakes or water areas of sufficient size and depth, water-based transport aircraft can be employed in support of the operations. Development of water-based, air-landing facilities is relatively simple. The development consists initially of removing or marking of obstacles in the water and providing beaching facilities; improving beaching facilities; constructing access roads; clearing beach obstacles such as trees, debris, and boulders; and constructing ramps. As time will permit, the water-landing facilities will be further developed to expedite unloading and loading. These facilities may include barges or similar floats to which water-based aircraft can moor for unloading operations with relative ease and safety.

Section V. MARSHALLING

111. General

a. *Marshalling* is the process by which units of the airborne force complete final preparations for combat, move to departure airfields or air-landing facilities, and load for takeoff. Marshalling begins when elements of the force are sealed in the mounting area and terminates upon takeoff. Marshalling procedures are designed to

facilitate a rapid and orderly launching of an airborne operation under conditions of maximum security. Assault units of airborne forces are marshalled simultaneously.

b. Marshalling is initiated in the camps and bivouacs in which units are located in the mounting area. When departure airfields or air-landing facilities are located an excessive distance from the objective area it may be necessary for troop carrier elements to land and refuel en route. The number and location of marshalling camps will vary with the enemy's nuclear capability, the availability of airfields and air-landing facilities in the mounting area, the terrain in the mounting area, the characteristics of available aircraft, and the risk which can be accepted.

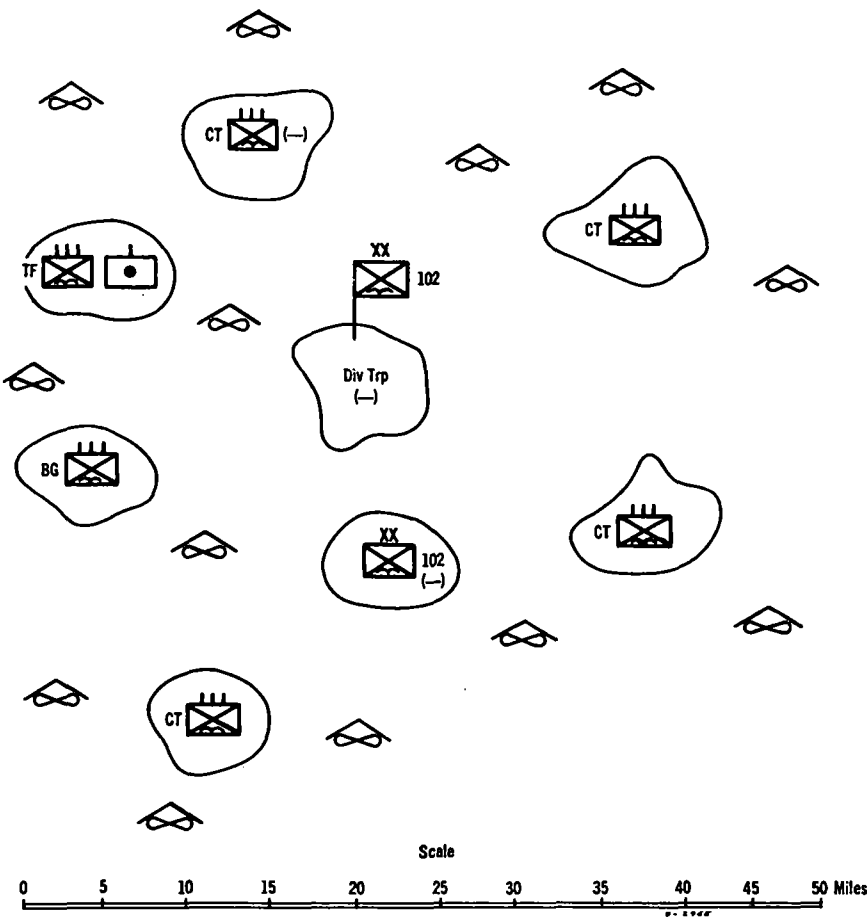


Figure 9. Airborne division dispersed in the mounting area.

112. Preparation Prior to Marshalling

a. Marshalling is accomplished in the minimum possible time and usually will not exceed 48 hours for units of division size be-

cause of the requirement for security and the threat of enemy employment of nuclear weapons. Chemical agents may be employed to aid security and deception. Therefore, units complete maximum preparation prior to marshalling.

b. As early as practicable, units obtain the equipment and supplies which are to accompany them into the objective area. Inspections are held to determine the status of equipment. Maintenance is conducted; and parachutes, aerial delivery containers, and aerial delivery loads are prepared.

113. Marshalling Plan

The marshalling plan is based on the air movement plan which provides necessary information for determination of the date and time units are sealed, the personnel, vehicles, and the equipment to depart from each airfield or air-landing facility. The marshalling plan covers movement of units of the airborne force to departure airfields or air-landing facilities, responsibility for provision of certain facilities and services while units are marshalling, plans for loading of aircraft, and briefing of troops for the operation.

114. Preparation

a. G4 (J4) has primary interest in developing and supervising the marshalling process. He is the coordinating general staff officer for all plans affecting marshalling. The G4 (J4) of a command to be marshalled advises the appropriate TA Log Comd agency of his requirements for supplies, communications, transportation, maintenance and service support, and other logistical assistance. This information must be provided far enough in advance to enable the TA Log Comd to plan for and provide the support required. Much of the necessary maintenance and transportation support will already be supporting the airborne unit to keep it in a state of readiness. Standing operating procedures and prepackaged supplies and equipment will facilitate logistical preparations.

b. TA Log Comd (or supporting agency) supports the airborne force by furnishing additional communication facilities, transportation, service support, storage facilities, materials handling equipment, and supplies.

c. Airborne units assist TA Log Comd agencies to the extent possible during marshalling. Such assistance, however, must not interfere with the preparation for, or execution of, the operational mission.

d. Supplies and equipment which are to accompany units into the objective area are procured by the unit, packed, and prepared for delivery prior to and during marshalling. This includes parachutes, aerial delivery containers, and aerial delivery loads.

e. Individual clothing and equipment and unit equipment, not needed in the objective area, are packed in suitable containers and left for storage with the rear echelon or TA Log Comd agency.

115. Final Preparations During Marshalling

Detailed schedules are developed to insure that all final preparations are expeditiously accomplished and that efficient administration is provided. Final preparation includes—

a. Briefings which are primarily the responsibility of the G3 (J3), but which are planned and conducted in close coordination with G2 (J2). G3 (J3) prepares a briefing plan which states the time, place, personnel involved, and scope of detail to be covered. Prior to sealing, the dissemination of information is limited to those who actually require it in performance of their duties. Information is given to individuals no sooner than necessary for the accomplishment of their task. During marshalling, all units are briefed on the overall operation plan and each unit then is briefed thoroughly on the details of its particular mission. Unit briefings usually are conducted in small groups and normally do not exceed company-size units. Unit commanders insure that each individual has sufficient knowledge of the plan of operations to perform his duties effectively. Procedures are developed to permit adequate briefing with a minimum amount of detailed training aids.

b. Inspections. After inspections, shortages are filled and necessary maintenance is accomplished.

c. Provision of necessary personnel services. Among these are currency exchange, disposition of unit and personal funds, recreation programs, religious services, and mail service.

d. Fitting of personnel parachutes and preparation of accompanying aerial delivery containers.

e. Issue of individual maps, photos, and escape kits.

f. Security inspection for diaries, letters, or other unauthorized documents.

g. Issue of individual assault rations and ammunition.

h. Check of air movement forms.

i. Submission of required reports.

116. Movement to Departure Sites

The airborne force commander assigns priorities for the movement of units, supplies, and equipment to departure sites based on the time required for loading and the scheduled times of takeoff. G4 (J4), in coordination with G3 (J3), is responsible for the preparation of the movement table for this move. The TA Log Comd provides ground transportation as required and exercises overall

control of movements. Movements are made at night when possible. Maximum security measures are enforced.

117. Loading

a. The troop carrier unit commander provides, through the liaison officer, parking diagrams of aircraft. These diagrams show the number, location, and sequence of takeoff of aircraft and the location of reserve aircraft.

b. Aircraft normally are loaded in dispersed sites at departure airfields or air-landing facilities.

c. Each aircraft is marked with a number which corresponds to the load number on the load manifest. At air-landing facilities, this number may be affixed immediately prior to loading by a member of the CALSU.

d. Rapid marshalling for airborne operations requires adequate trucks and materials handling equipment to assist in loading of heavy equipment and supplies for aerial delivery. Particularly when loading from dispersed departure areas, heavy drop loads should be prepared in the vicinity of loading sites in order to reduce the requirement for transportation support. Loading will require vehicles and equipment which are not available to the assault airborne force. Air terminal units, or portions thereof, may assist in loading.

e. Movement on the airfield and air-landing facilities is restricted to a minimum and is under Air Force control. Routes to and from enplaning and loading areas are clearly marked. Strict control of both air and ground traffic is maintained on and across runways and strips. Guides, when required, may be provided by Army units.

f. Aircraft personnel loads are moved to a control point in accordance with the loading plan. Guides then lead them to their respective aircraft for loading.

g. Army units are responsible for enplaning, loading, and lashing their accompanying supplies and equipment with technical assistance of the troop carrier representative. The pilot of the aircraft has the final decision on matters affecting his aircraft. Loading of each aircraft is performed, as far as practicable, by the passengers with assistance provided by aircrews.

h. Provision for loading aids and materials such as ramps, roller conveyors, and tie-down equipment is a troop carrier responsibility. The Army representative inspects to insure adequacy of these facilities.

i. It is desirable that a reserve of aircraft (operational spares) be rapidly available on-call to insure complete serials in the event of last minute failure of individual aircraft. The time of takeoff of allotted reserve aircraft is dependent on the situation at the moment and is the responsibility of the Air Force commander.

j. See chapter 3 and appendix III.

CHAPTER 6

CONDUCT OF AIRBORNE OPERATIONS

Section I. AIR MOVEMENT

118. General

a. The air movement of assault airborne troops delivers the force to assigned landing areas with minimum delay. Enplaning, takeoff, and assembly of air serials from all departure sites are closely scheduled by the Air Force headquarters controlling the air movement.

b. The troop carrier commander prescribes the system used to expedite takeoff and landing, rendezvous and departure points, flight formation, assembly pattern and flight routes, emergency and crash procedures, and similar details concerning airfield operations and air movement.

119. Aircraft Departure

Aircraft will assemble at departure airfields and air-landing facilities at the latest practicable time for loading. It is desirable that units and their major items of equipment be outloaded from the same departure sites. Aircraft serials depart in multiple columns with sufficient spacing to prevent loss of more than one serial by attack from a single nuclear weapon. So far as possible, loading of aircraft should take place during darkness.

120. Air Movement

a. The flight to the objective area is closely regulated. Each serial takes off and assembles into formation before departing on a course to the rendezvous point(s). Air serials take position in the air columns while moving at a high rate of speed. By variation of airspeed and minor deviations in course, serials pass over rendezvous points and then to the departure point on a precise time schedule. This assembly procedure funnels the air serials into the air columns in the desired priority of landing and with the proper space between serials. From the departure point, all serials fly at a specified airspeed over the remainder of the route.

b. Navigation aids such as lights, radios, and radar beacons are placed at each control point and at intervals along the routes over friendly territory to insure accurate navigation.

c. Troop carrier forces fly in serials varying in size as required to support the landing plan. An air column composed of several large serials has a shorter time and space length than an air column composed of a greater number of small serials, even though the total number of aircraft involved is the same. A time interval between serials is necessary to provide tolerance for minor variations in timing at the various control points and protection from nuclear attack. The accordion effect, which occurs when parachute serials reduce speed to discharge their loads, is an important consideration. Succeeding serials are still proceeding at cruising speed and are closing on the discharging serials. The interval between serials must absorb the difference in speed between cruising and drop speed.

d. Multiple columns reduce the time length. A reduction in the time and space length reduces the area which must be protected by fighter escort and decreases the time required to land the force in the objective area. Use of small serials and multiple columns will reduce the number of aircraft affected by any particular nuclear weapon delivered against the airborne force en route to the objective area.

e. Parachute serials precede assault aircraft serials going to the same drop and landing zone. A time interval between the last parachute landing and the first assault aircraft landing is necessary to permit parachute troops to clear the landing zone of enemy, to remove obstacles, and to otherwise insure the successful landing and assembly of the air-landed troops. When it is necessary for assault aircraft to land on a drop zone, equipment bundles, parachutes, vehicles, weapons, and drop casualties must be cleared from the area.

f. The decision to implement alternate plans should be made prior to reaching the target approach point (TAP).

121. Aircraft Over the Objective Area

a. *Parachute Release Point.* Normally, Air Force units will use the computed air release point (CARP) system for aerial delivery in determining the point at which parachuting personnel and equipment are released to land at a given point. This system is satisfactory only for visual flight rule (VFR) conditions since it involves dead reckoning navigation and predetermined parachute characteristics. During instrument flight rules (IFR) conditions, employment of joint airborne advance parties is nearly always essential. Combat control aircraft, when required, precede or accompany the main troop carrier columns to drop the joint airborne advance party, which places and operates navigation aids

in the landing area. Combat control aircraft are equipped with electronic devices for precise navigation and are operated by specially trained air crews.

b. Parachute Serials. The ground dispersion from parachute serials depends upon the skill of the aircraft crews and the parachute troops they transport. To attain good results on the drop requires precise navigation to the proper drop zone, compact formation, correct speed and altitude for the drop, and rapid and proper exit of personnel, supplies, and equipment. As parachute serials approach the drop zones, troops are alerted by the pilots in sufficient time to make last-minute equipment inspections and prepare for exit. Before reaching its drop zone, the serial reduces speed. The drop is made on signal of the pilot at correct speed and altitude. Empty aircraft increase speed, execute the planned traffic pattern and may return over the same route or alternate route but at a higher altitude to avoid inbound traffic.

c. Air-Landed Serials. As serials approach the landing zones, individual aircraft execute the landing plan. Upon landing, aircraft are parked and unloaded according to plan. Aircraft are unloaded rapidly and returned to departure airfields over predesignated routes. They may return empty or may be used to evacuate casualties, prisoners of war, or equipment.

Section II. THE ASSAULT

122. Landing and Reorganization

a. The airborne force should be delivered to its assigned landing areas with controlled dispersion in time and space to execute the scheme of maneuver. Combat elements are landed by serials on or as close to their objectives as possible, organized to facilitate implementation of the tactical plan and to avoid presenting profitable targets for nuclear attack in the departure area and in the air. Dispersion of landing areas is essential to minimize vulnerability of the force to nuclear attack. The landing and reorganization during the initial assault is the most critical period as concerns the vulnerability of the airborne force to enemy attack. When necessary, security during and after landing is sacrificed for speed and control of reorganization. Time is required to collect equipment and assemble as tactical units; however, reorganization of units is accomplished as rapidly as possible. Seizure of assault objectives will be undertaken without waiting for the reorganization of all elements of the force.

b. Air-landed elements of the assault echelon follow the parachute elements and land on landing zones as near as practicable to parent unit dispositions. The rapidity with which air-landed ele-

ments land is dependent upon the availability and capacity of secured landing areas or airfields. When equipment and supply must be air-landed on a continuing basis, time is required for the construction of airfields or improvement of existing airfields or air-landing facility sites to support repeated aircraft landings.

123. Initial Assault

a. The initial assault stresses the coordinated action of small units to seize initial objectives rapidly before the advantage of shock and surprise is lost. All commanders attack as rapidly as the situation permits, utilizing all available supporting fires. The fact that an airborne force usually lands with a high degree of surprise facilitates rapid seizure of initial objectives. Missions of units are changed as required by enemy defense of initial objectives. Combat in airborne operations is conducted as in other ground combat but under unusual conditions. Once these unusual conditions are appreciated, the tactics and technique of normal ground combat can be applied to combat in airborne operations (par. 9).

b. It can be expected that the enemy will react rapidly. Initial counterattacks are likely to be hasty, uncoordinated thrusts along main avenues of approach with any units available. These attacks progressively increase in strength and degree of coordination. Preparation of early defense against armored and nuclear attack is a major consideration.

c. The initial airhead(s) seized must be of sufficient size to permit rapid and safe landing of subsequent forces. When initial objectives have been seized, the airborne force continues the attack to seize such other objectives as will facilitate future operations or passes to the defense as required by the mission. In long-duration operations, when sufficient buildup has been accomplished, the airborne force normally resumes the offensive.

d. Control of the maneuver of the airborne force is facilitated by the designation of reconnaissance and security positions (RSP), airhead(s), objectives, and boundaries (ch. 4). As soon as communications and the tactical situation permit, centralized control is regained. The commander influences the action by shifting or allocating fire support means, redispersing forces, modifying missions, changing objectives and boundaries, employing reserves, and by placing himself where he can best exercise personal influence.

e. The quantities and types of equipment accompanying units in an airborne assault are restricted because of the limitations of aircraft. Units in the objective area usually have less vehicular mobility than similar units engaged in other ground operations. The reduced vehicular mobility of the airborne force increases the

difficulty of conducting offensive or defensive operations requiring shock action or high mobility. Aircraft, employed in the objective area, help overcome the lack of ground mobility means.

f. Personnel are thoroughly briefed on unit plans, plans of adjacent and higher units, and alternate plans in order that any units or personnel landed in areas other than those planned can direct their efforts to the accomplishment of the general mission. Misdelayed units or personnel establish contact with their respective headquarters as soon as practicable.

124. Establishment of Command Posts and Communications

a. Early establishment of communications is essential for effective control of ground operations. Sufficient communication personnel and equipment are phased into the objective area early in the assault to insure timely installation of vital communications for the command post which they are to serve. The signal communication system is developed by successive steps to meet the requirements of the commander.

b. Special provisions are made for communications with supporting troop carrier forces, bases in friendly territory, link-up forces, or other ground forces with a common or coordinated mission.

125. Organization of Objective Area

a. The major consideration after the initial assault landings have been made and the initial ground missions accomplished is the organization of the airhead(s). Seizure of terrain features blocking critical avenues of approach is accomplished with maximum speed. The degree to which the airhead is actually occupied and organized for defense is determined by the mission, enemy capabilities, troops available, and defensive characteristics of the terrain. Rarely, if ever, will the airhead be defended in its entirety by positioning troops along the entire perimeter. Adjustments in planned dispositions of troops and installations are made by appropriate commanders to fit the realities of the terrain and situation. If the mission calls for an early continuation of the ground offensive beyond the initial limits of the airhead and if the likelihood of enemy ground or nuclear attack during the interim appears negligible, a minimum of effort need be expended on the organization of the airhead for the defense. On the other hand, if the mission calls for defense of the initial airhead for a considerable period of time, or if an early enemy attack appears likely, more effort is expended in organizing defense in depth. As reinforcing units are landed in the airhead, positions are organized more strongly.

b. Reinforcement of forces on the RSP is accomplished relatively early in the operation. Reconnaissance forward of the RSP is

intensified both by air and surface means. Artillery may be displaced beyond the airhead to provide longer-range fire support to R&S forces. Roadblocks, minefields, and similar artificial obstacles are continuously improved along all likely avenues of approach, particularly those suitable for enemy armor.

126. Army Aviation

a. Whenever possible, organic and attached Army aircraft are moved to the objective area under their own power. Flights are closely controlled and regulated to avoid interference with flights of the troop carrier elements. Navigational aids sited in friendly territory for use by troop carrier elements are used and flights over enemy held areas are planned to exploit the low and slow-flying characteristics of Army aircraft as a primary means of avoiding enemy counteraction.

b. When the distance from the departure area to the objective area is beyond the range of Army aircraft, but the distance from forward battle areas is within their range capabilities, the procedures outlined below are normally adopted. Aircraft are serviced in the departure area. Aircraft then fly from the departure area on a planned schedule, reservice in the forward areas (prior arrangements are made for servicing by forward area units), and then depart over planned routes to the objective area. A variation of this technique is the employment of naval vessels as a refueling base or for transport on one leg of the trip to the objective area. When none of the methods cited above can be used because of the extreme range to the objective area, Army aircraft may require disassembly for transport by troop carrier aircraft. Partial disassembly for transport and reassembly for use in the objective area of lighter Army aircraft is reasonably simple but time consuming and the impact of this on tactical plans must be considered. For other aircraft, the complexity of the reassembly process in the objective areas makes their availability when needed questionable. This restriction applies particularly to the larger helicopters, where lack of head space in the transport aircraft requires striking of the rotor mast and disassembly of the fuselage. Disassembly of those machines to accomplish movement will deprive the airborne forces of their service in any assault mission of short duration. Current developments of in-flight refueling techniques and auxiliary fuel cells for extension of range offer far more feasible solutions to the larger aircraft movement problem.

Section III. OPERATIONS IN THE OBJECTIVE AREA

127. General

Operations in the objective area will vary depending upon the mission assigned, the size and composition of the force, enemy reaction, and the type operation contemplated.

128. Techniques

a. In short-duration airborne operations, buildup of troops, supplies, and equipment is seldom contemplated except for air-landing of followup elements. In some operations, the followup echelon may not join forces in the objective area until surface link-up has been effected. The requirement for a defensive phase in short-duration operations undertaken in isolated objective areas may often be eliminated. This may be accomplished by complete or virtually complete destruction or dispersion of the enemy forces in the immediate objective area during the assault, followed by a relief of the striking force prior to the execution of an enemy attack. Such conditions do not reduce the requirement for security, particularly if the force is not on the move.

b. In long-duration operations, as additional combat troops arrive they are organized by unit and are used to reinforce committed units, to constitute reserves, or to prepare for such offensive operations as the mission requires. Logistical development in the objective area in long-duration operations is described in chapter 5.

129. Buildup

a. The rate of buildup may well determine the success or failure of long-duration operations. The plan for buildup of supplies must consider the effect of adverse weather and include provisions for establishment of reserves early in the operation.

b. Supply installations within the airhead(s) are oriented on landing facilities and roads. They are located to facilitate support of future operations. Service troops are phased into the objective area at the latest practicable time which permits them to be on hand when their services are needed.

130. Defense

a. The defense, when required, is employed during the period in which sufficient reinforcements are air-landed to enable the force to resume the offensive, the objectives seized are defended until a ground link-up is effected, or the units are withdrawn from the airhead. Forces are dispersed to minimize the effects of enemy nuclear attack. The defense of the airhead is conducted by aggressive action, and as much as possible forward of the airhead. Strong

points are organized in depth on dominant terrain and cover main avenues of approach leading into the airhead. Secondary avenues of approach and intervening gaps are covered by fire, mines, artificial and natural obstacles, continuous reconnaissance, and surveillance. A small reserve is withheld and priorities established for designation of new or additional reserves. Aerial surveillance and aerial combat reconnaissance elements provide information of enemy operations. Enemy attacks are countered by shifting units not heavily engaged and by changing boundaries, reinforcing threatened areas, massing supporting fires, and by counterattacking. The configuration of the airhead affords the airborne force interior lines of communication facilitating shifting of troops and commitment of available reserves. Reserves are held in positions of readiness prepared to counterattack, to occupy defense positions, or to execute blocking missions.

b. Conduct of delaying action envisions seizure of a large airhead or several small separated airheads initially, followed by delaying operations on successive positions when forced to withdraw by enemy action. Space is traded for time. This type defense may be feasible for large-scale operations or for small unit actions in difficult terrain but it will seldom be feasible for operations of division or smaller size. The comparative mobility of opposing forces determines the feasibility of these operations. The availability of aircraft facilitates employment of elements of the airborne force in execution of delaying action along major avenues of approach. The inherent lack of ground vehicular mobility of airborne forces, their lack of armor, limited artillery, considerations of communication and command control over relatively great distances, and the sacrifice of mutual support usually make adoption of delaying action impracticable.

c. If withdrawal from the initial positions is required, the final area to which the airborne force withdraws must contain adequate space for maneuver, for protection of critical installations, and for such air-landing or air withdrawal operations as are planned.

131. Exploitation

An exploitation may be conducted from the objective area by Army, Air Force, or Navy units or a combination thereof to capitalize on surprise and success and to achieve a major tactical or strategic decision. In long-duration operations conducted deep in hostile territory, secure air lines of communication are first established and then additional combat, combat support, and service units are brought in to reinforce the airborne forces. After a link-up has been established, reinforcements may come in by surface means. The exploitation is launched at the earliest possible time

with minimum troops to prevent undue congestion in the objective area. Air-landing facilities will be constructed as the force advances or supplies and equipment will be dropped by parachute to reduce the road construction effort. When no longer required, installations in the original objective area will be closed, and supplies will be transferred to another agency or destroyed.

132. Subsequent Airborne Operations From the Objective Area

Airborne operations may be conducted from the objective area in conjunction with other services or air mobile operations may be conducted unilaterally. Normally, these operations will be made to capitalize on a temporary tactical situation and are launched with minimum preparations and with the forces executing mission type orders. Unless a major operation is planned from an isolated objective area, elements lifted in a single lift to conduct further operations will normally be of battle group or smaller size.

133. Defense Against Armor

a. Antitank planning is essentially a problem of coordination. It is based on the commander's decision governing the selection of objectives and the airhead, and the scheme of maneuver as considered in light of terrain and the enemy's armored attack capability. Planning provides for a continuing estimate of enemy armored attack capability, based on intelligence from higher headquarters and evaluated information from the unit collection agencies; establishment of reconnaissance and surveillance; determination of antitank operational requirements, such as antitank mines, and the provision of necessary labor to implement the barrier plan; and integration of all antitank means, both active and passive, to provide the best possible antitank defense.

b. During the initial phases of an airborne operation, one of the primary defenses against enemy armor is tactical air support. Throughout the operation, enemy armor is attacked as far as possible from the objective area and is maintained under observation and attack as long as it poses a threat to the airborne force.

c. Antitank weapons are located in depth along favorable avenues of approach for armor. All dangerous avenues of approach are covered by planned nonnuclear and nuclear fire. The antitank weapons organic to units holding sectors not under armored attack may be either concentrated, pending anticipated employment, or moved to threatened sectors.

134. Defense Against Nuclear Attack

a. The conduct of an airborne operation against an enemy possessing a nuclear capability will generally require that one of two conditions be present. First, the enemy's nuclear capability

must be sufficiently reduced to provide a reasonable probability of conducting the operation without unacceptable losses; or, second, the probability of his using nuclear weapons must be sufficiently low to justify acceptance of the risk. Under the first condition, the depleted status of the enemy's nuclear capability will generally require him to combine the delivery of nuclear weapon(s) with the execution of a counterattack in order to obtain decisive results. Examples of the second condition are in a raid when the enemy cannot react in the time available, when the airborne forces are committed against a target which the enemy hesitates to destroy, or when the airborne forces committed in a single location do not constitute a profitable target.

b. Defense against enemy nuclear attack will emphasize those measures which further reduce and destroy the enemy's nuclear capability, those measures which defeat the enemy's effort to obtain timely and accurate target intelligence, and employment of those measures which minimize damage from nuclear weapons effects.

c. The airborne force normally seizes objectives of significant tactical or strategic importance. Therefore, attack by enemy mobile forces, supported by nuclear as well as nonnuclear weapons, must be anticipated. The possibility of losing a major element to one or more nuclear weapons requires emphasis on replacement and reinforcement planning to include provision of units of company and battle group size for emergency movement into the airhead (par. 84d). Normal active and passive defensive measures are employed with emphasis on individual measures. Particular stress is placed on importance of deep foxholes and the provision of overhead cover. Alternate or duplicate key command, control, and logistical installations are provided and are moved frequently.

d. The intermingling of opposing forces and/or a requirement by the enemy for early use of terrain features in the objective area may prohibit or restrict enemy nuclear employment.

135. Defense Against Air Attack

The airborne division has no organic air defense units. In long-duration operations, protection against enemy air attack will be provided by the attachment of air defense artillery units, by air defense artillery units of higher headquarters, and or the Air Force. For short-duration missions, the airborne force may operate without air defense artillery. Standing operating procedures for air defense include emphasis on camouflage and concealment, deception, and air raid warning.

136. Defense Against Airborne Attack, Guerilla Action, and Infiltration

All units of the airborne force are trained in defense against airborne, guerilla, and infiltration attacks. The element of surprise that is inherent in airborne, guerilla, and infiltration tactics is lessened or eliminated by establishing an observation and warning system and insuring that all units and installations provide their own local security. In addition, a mobile striking force, using Army aircraft when available, is designated from the reserve to destroy any enemy force that gains access to the area or infiltrates between major elements of the airborne force.

137. Withdrawal by Air

Withdrawal from an objective area may be forced by the enemy or may be made voluntarily. Advance planning is imperative as the nature of the area of operations and the limitations of transport aircraft introduce complicating factors not present in other ground actions. The plan usually provides for evacuation in the following sequence: supplies, materiel, and troops. Supplies and materiel which cannot be evacuated are destroyed. Control of the air and effective fire support are usually prerequisites for a successful air withdrawal. Infiltration by Army aircraft provides a means of air withdrawal when conditions will not permit successful operations by the Air Force. In operations involving a planned relief or aerial withdrawal, air-landing facilities for fixed-wing assault aircraft or Army aircraft must be included in the objective area (pars. 75 and 105).

Section IV. AIR TRAFFIC CONTROL

138. General

The air traffic control plan for an airborne operation is developed concurrently and coordinated with the air movement and signal communication plans. Control is exercised over all aircraft operating within a designated regulation area and remains in force until the operation has been completed. In joint airborne operations, control is vested in the joint force commander.

139. Joint Airborne Operations

a. Air traffic regulation will be exercised by an airhead air traffic control center (AATCC) established within the objective area. The characteristics of joint operations preclude, to a large extent, development of detailed air traffic control procedures applicable to all airborne operations. Detailed air traffic control procedures, to

include rules for flight under VFR night and IFR conditions, should be developed by the joint force commander early in the planning phase of each operation. Such procedures should be developed in coordination with the Army, Air Force, and Navy commanders concerned and should permit maximum freedom of operation for all aircraft consistent with safety. Special effort should be made to refrain from establishing arbitrary restriction on altitudes, distances from takeoff points, unnecessary grounding of aircraft, or other restrictions not deemed absolutely essential. The joint force commander will determine, in coordination with Army, Air Force, and Navy commanders concerned, the extent of the airhead air traffic regulation area required for the operation and establish an airhead air traffic control center (AATCC). Major functions of the AATCC are—

- (1) To establish rules and procedures for the regulation of the flight of all aircraft operating within the designated regulation area.
- (2) To receive and display flight plan information as required, and monitor all air traffic within the regulation area.
- (3) To maintain intelligence, operational, and weather data necessary to provide warning, identification, inflight assistance, and weather information to aircraft operating in its area of responsibility.
- (4) Effect necessary coordination and liaison with the tactical operations center (TOC).
- (5) To monitor the air traffic situation on a continuous basis and to issue necessary instructions to operating agencies under the policies established by the joint force commander.
- (6) To establish and operate adequate communication facilities to permit ground-to-air and/or point-to-point communication between the AATCC and all elements operating within the control area.
- (7) To establish communications and liaison with appropriate air defense agencies.

b. The joint commander will also designate an air traffic director (ATD) from one of the elements of the AATCC for each phase of the operation based upon which Service has dominant or primary interest in air space control. Arrangements for Army, Navy, and Air Force representation and communication in the AATCC are made as required for control of their respective aircraft in accordance with regulation procedures directed by the ATD. The joint commander will provide guidance to the ATD.

Section V. AIRBORNE RAIDS

140. General

Airborne forces are highly suited for employment on strategic or tactical airborne raids because of their organization, training, and equipment. The dispersion of forces on the nuclear battlefield will present frequent opportunities for conducting airborne raids. Air transport permits the raiding force to bypass intervening enemy positions and terrain, and overcomes the limitations imposed on other forces by distance.

141. Characteristics

Airborne raids are characterized by boldness of concept. A planned withdrawal, to be executed upon completion of the assigned mission, is a marked characteristic of all raids. Airborne raids are similar to other raids except that the raiding force uses air transport to move to the objective area and may be withdrawn by air. The airborne raid is more apt to go beyond the supporting distance of the parent unit than other types of raids.

142. Objectives and Missions

a. Airborne raids may be conducted against a variety of objectives. The raiding force may be assigned an area of operations rather than a specific objective. Suitable objectives may be found deep in enemy territory or relatively close to the area of combat. The airborne force may operate separately or in conjunction with guerilla forces to attain the objectives desired.

b. Suitable missions for the raid are: to destroy, capture, kill, or harass enemy forces; to destroy installations; to seize critical equipment or other intelligence objectives; to rescue friendly personnel; and to disrupt the operation of enemy headquarters or other facilities.

143. Planning and Preparation

Since the raiding force is to be withdrawn from the objective area, withdrawal plans must be considered concurrently with all other aspects of the planning and in some circumstances may be the overriding consideration for all other planning. Other aspects of planning and preparation for airborne raids closely parallel that required for the airborne assault. Plans for movement should be designed to deliver the raiding force to the objective area intact with the minimum risk of detection. Army, Air Force, or Naval aircraft or any combination thereof may be used to deliver the raiding force. Detailed intelligence is essential to the successful planning and conduct of the airborne raid. Plans must be made to

isolate the objective area. A coordinated effort is directed toward destroying or disrupting enemy forces moving towards the objective area. This is accomplished by fires from aircraft, missiles, and naval forces. Guerilla forces can be used to assist the effort by destroying bridges, and communications, and by blocking defiles. Withdrawal from a raid under heavy enemy pressure may be difficult and therefore requires detailed flexible plans.

144. Raid Forces

The major factors determining the size and composition of the raiding force are the mission, enemy situation, and resources available to support the intended operation. The size must be kept to the minimum required to accomplish the assigned mission. Forces are tailored for the specific mission. Special equipment required for the operation may have to be destroyed prior to the withdrawal because of limited air transport, weight and configuration, or low evacuation priority. The decision to employ special equipment on an expendable basis requires careful analysis. The raid may be conducted without a reserve if the situation warrants or the raiding force may be reinforced over and above that required for the actual mission in order to provide a reserve. The reserve may be kept outside the objective area to be flown in when required.

145. Timing

Airborne raids can be carried out at night, dawn, twilight, or under other conditions of low visibility to facilitate surprise. Raids may be executed in daylight. The execution of daylight raids normally requires a greater use of supporting fires as well as utilization of measures to limit enemy ground observation and electronic detection. The raid is executed as swiftly as possible, and the force is withdrawn before the enemy can react with significant force.

146. Rehearsals

Rehearsals are essential for raids. The more complex the raid the more extensive and important the rehearsal. When air and naval forces are to participate in the raid, they must also participate in the rehearsal. The ground phase should be rehearsed on terrain similar to the objective area and under conditions similar to those anticipated for the actual raid.

147. Conduct of the Raid

The actions of the raiding parties are normally decentralized with each party operating to accomplish its portion of the overall mission. Immediately upon landing, the elements of the raiding

force assemble independently and carry out their assigned mission. Speed is essential to complete the mission before the enemy can react in sufficient force to endanger the success of the operation. The raid commander can influence the action by massing supporting fires at the critical points, shifting forces, reassigning missions, and executing alternate plans.

148. Withdrawal

a. The raiding force may be withdrawn by air, land, sea, or a combination thereof. The withdrawal must be carefully planned since it is frequently the most difficult part of the operation. Alternate withdrawal plans must be made to overcome unforeseen developments. Normally, units are not withdrawn from the same area in which they were initially landed.

b. The airborne withdrawal may be made by assault or medium transport aircraft, helicopter, or water-based aircraft and may be preceded by overland withdrawal to pickup points. Evacuation by sea is practicable whenever water approaches exist. Small boats, submarines, or destroyers may be used. The raiding force may withdraw overland by using evasion and infiltration tactics.

c. Every effort must be made to evacuate all equipment and supplies; however, priority is given to evacuation of personnel. Equipment which cannot be evacuated is destroyed.

149. Stay-Behind Forces

Airborne raids present an opportunity to leave stay-behind forces deep behind the enemy lines for the purpose of obtaining target intelligence information. Such operations must be well coordinated in advance with other agencies. Personnel must be highly trained and will include specially trained intelligence personnel and others trained in intelligence procedures, evasion tactics, and communication procedures. Provision must be made to transmit intelligence information obtained.

150. Supply

Normally, the raiding force carries only the supplies and equipment necessary to accomplish its mission; however, the withdrawal plans may require resupply. Resupply may be made by airdrop direct to the raiding force or through guerilla forces. Captured materiel and weapons are used to the maximum.

151. Command and Communications

a. Strategic raids will be controlled at the highest levels of command and will normally be joint in nature. Tactical raids, depending on the scope, size, and resources available, may be unilateral or

joint in nature. Raids require detailed coordination of effort and control. It is essential that the headquarters controlling the raid have command of all units directly participating in the operation in order to insure complete coordination and control.

b. A reliable communication system between the raiding force and the next higher headquarters outside the objective area is essential for overall coordination of the operation.

Section VI. AREA INTERDICTION OPERATIONS

152. Mission

a. The airborne force or elements thereof may be assigned an area interdiction mission to prevent or hinder enemy operations in a specified area. This type operation is appropriate in conjunction with a major offensive by friendly forces and may be of short or long duration. Although the force commander retains overall control of the operation, the operation is characterized by assignment of areas of operation to subordinate units along with mission type orders.

b. Elements of the airborne force operate over a large area and accomplish such tasks as destroying enemy communication facilities and supply installations; destroying or neutralizing enemy anti-aircraft, missile, and electronic facilities; cutting rail lines, cratering roads, and destroying bridges; preventing or disrupting movement of enemy supplies and combat forces; and creating obstacles of all types to impede enemy movement.

153. Terrain

Terrain suitable for guerilla operations that includes adequate cover and concealment for the airborne force will facilitate the conduct of the operation. Any type terrain that limits or restricts the off-road mobility of enemy forces will assist the airborne force in the accomplishment of the interdiction mission.

154. Tactics Employed

a. The overall area assigned to the airborne force is subdivided into task force battle group sectors. Each of the subordinate elements of the airborne force is responsible for operations within its assigned sector. The force, dispersed over such a large area, presents few, if any, profitable targets for enemy nuclear weapons.

b. The elements of the airborne force employ guerilla tactics to reduce the risk of being defeated in detail.

c. The elements of the force operating in the various sectors inflict maximum damage on any enemy forces in, or entering, the objective area. No attempt is made to deny completely the inter-

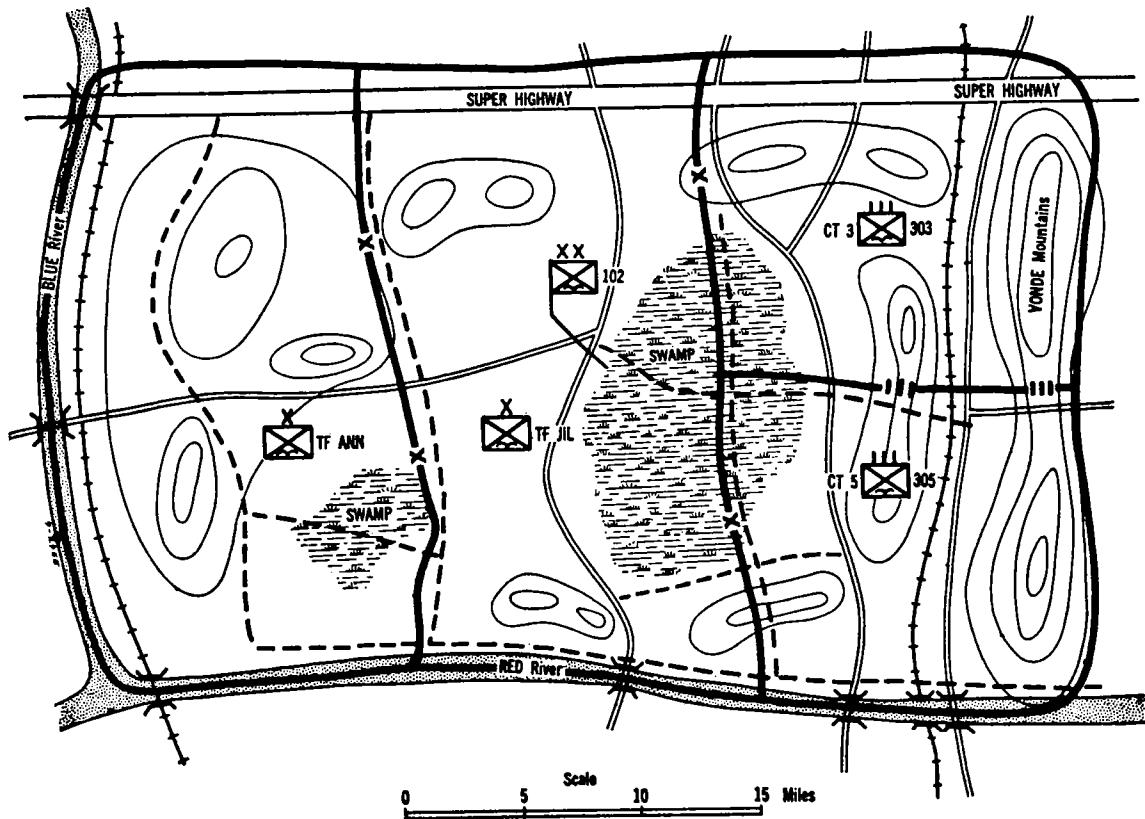


Figure 10. Sectors in area interdiction mission.

diction area to the enemy. Any enemy forces in the area are subjected to maximum harassment and may be engaged in decisive combat if they are inferior in combat power to the airborne force opposing them.

d. Specific tasks to be accomplished within the interdiction area may be assigned by higher headquarters. In this event, designated elements of the force may be required to engage in decisive combat in order to accomplish the assigned tasks.

e. Movement into the interdiction area of any equipment, weapons, or supplies that reduce the off-road mobility of the airborne force is carefully considered.

f. Certain locations may be controlled by the airborne force to provide for aid stations, evacuation points, refueling facilities, and the receipt of supplies delivered to the interdiction area. Necessary areas are designated and controlled as required by the situation.

155. Mobility

a. Sufficient ground and air transportation is introduced into the objective area to enable the airborne force both to accomplish its mission and to avoid being pinned down in one location and defeated in detail.

b. Selected elements of the airborne force may be moved within the interdiction area by means of vertical takeoff and landing (VTOL) and short takeoff and landing (STOL) aircraft. The number of aircraft introduced into the area of operations is dependent on the distance from friendly areas and the ability of the aircraft to survive and operate within enemy territory.

c. If a reserve is not taken into the objective area, the commander may provide additional forces to threatened sectors by the movement of an on-call reserve force from the departure area to the interdiction area or by the shifting of uncommitted forces from one subordinate unit to another within the interdiction area.

156. Movement Restrictions

a. The airborne force operates in the assigned interdiction area. Forces do not move outside of the designated area without specific authority of the higher headquarters coordinating the entire ground-air-airborne efforts. The restriction on movement is necessary to reduce coordination problems and to allow higher headquarters to deliver fires of all types in the enemy area not included within the interdiction area.

b. The interdiction area assigned the airborne force is large enough to provide space for maneuver and permit the use of R&S

forces. There would be few occasions when any elements, other than aerial surveillance forces, would need to operate outside the assigned interdiction area.

157. Coordination and Control

Considerations of control and coordination of the forces in the interdiction area are highlighted in three general areas.

a. Control of Nuclear Fires. Maximum control of fires is required to avoid casualties among the dispersed and moving elements of the airborne force. Certain areas where targets for nuclear weapons either exist, or probably will exist, during the course of the operation are designed as "no entry" areas. These areas are reserved for attack by nuclear weapons and their location is disseminated to all appropriate levels of command. Entry into these areas by any forces is allowed only upon specific approval of a designated control headquarters of the force.

b. Communications. The dispersion of the airborne force over such a large area complicates communication problems and requires the augmentation of existing radio facilities.

c. Supply. The airborne force enters the objective area with enough accompanying supplies to insure a high degree of self-sufficiency. Additional supplies required are delivered on an on-call basis to selected locations. The fluid situation existing within the interdiction area requires that the majority of aircraft landing in the objective area or air-dropped supplies be directed to usable areas by air controllers operating with the interdiction area. Operations are based on the maintenance of a minimum of supply and the force has a greater requirement to utilize captured enemy stocks and to live off the land.

CHAPTER 7

AIRBORNE CORPS OPERATIONS

Section I. GENERAL

158. General

The airborne corps is organized to execute tactical or strategic combat operations independently or as part of the field army. The composition of the corps is variable and will depend upon its mission, the situation, and whether it is operating independently or as part of the field army. The independent airborne corps requires augmentation of the staff, combat support, and service support units. The combat elements of the corps can be readily increased or decreased as the situation and mission require.

159. Tactical Considerations

The size of the forces involved, as well as the techniques and methods employed in mounting, conducting, and supplying an airborne corps operation, requires careful consideration of the following factors:

a. Characteristics of the Objective Area. In long-duration operations, the objective area must be capable of being held for a considerable period of time, must contain suitable areas for multiple air-landing facilities, and must frequently serve as a base to extend the activities of the Army, Navy, or Air Force.

b. Intelligence. The scope of intelligence required for large, long-duration operations is much greater than for short-duration operations. Because of the increased time of the long-duration operation, the enemy's capability to attack with forces located a considerable distance from the objective area must be considered. Weather and terrain are of greater concern because of the requirement for air-landing facilities and the complete reliance of the force on air lines of communication for an extended period of time.

c. Capability for Sustained Action. Airborne forces employed in long-duration operations require a greater capability for sustained action. This necessitates augmentation of logistical means as well as combat means.

Section II. OPERATIONS

160. General

a. Plans for the employment of the airborne corps must be continuous and made well in advance of the time of employment, to include organization and employment of a tactical operations center (TOC) in the objective area. Subordinate units must receive timely information of the airborne corps plan in order to permit their effective participation in the corps effort.

b. The airborne corps employs the same principles and techniques for ground combat as other, similarly organized, corps. The fundamental differences lie in the scope of the maneuver and types of heavy equipment in the objective area.

161. Planning Techniques

The techniques employed in the preparation of airborne corps plans are the same as used in other airborne operations. Plans are based on the directive from higher headquarters, the mission, and general situation. The initial step in the planning process is the preparation of a preliminary intelligence estimate, which lays the ground work for later planning. This is followed by formulation of a general concept of operations and a tactical plan. The aircraft and logistical support available must be constantly considered in the formulation of the tactical plan.

162. Operation Plans

The corps plans are similar to plans prepared at division level. Corps planning includes selection of the final airhead, corps objectives, division boundaries, and the task organization to include the composition and source of the corps reserve.

a. Airhead(s). The seizure and development of an airhead(s) of sufficient size to serve as a secure base of operations is essential to the success of an airborne corps operation. The airhead(s) must contain either an adequate number of airfields, water landing sites, or sites for air-landing facilities and must be large enough to facilitate the required buildup and logistical support of the airborne force. The entire final airhead area may not be seized in the initial assault.

b. Objectives. The corps selects only those objectives essential to the accomplishment of the corps mission without prescribing the division schemes of maneuver to seize them. The selection and designation of objectives for the defense of the airhead are performed by the divisions.

c. Boundaries. Boundaries between divisions when used for the initial assault should consider the relative importance and diffi-

culty of tasks, avoid splitting major avenues of approach, require minimum change for the initial phase of the defense, provide adequate depth and maneuver room, provide adequate drop and landing zones in each division sector, and recognize the reduced strength of the division furnishing the corps reserve.

d. Reconnaissance and Security Positions Reconnaissance and security positions are not designated by corps. Limiting points are located on the boundaries for coordination of adjacent reconnaissance and security positions. The selection of reconnaissance and security positions is delegated to division or lower echelon.

e. Task Organization. The task organization is developed concurrently with other elements of the tactical plan and is determined by the allocation of adequate forces to accomplish the tasks to be performed.

f. Reserve. The corps reserve is normally one or more combat teams designated from a division with the easiest, early, overall tasks. The reserve, if landed in the objective area, is frequently assigned a tactical mission of short duration during the assault phase. As such, it will not be readily available for employment as a reserve. The corps reserve may be held as an air-mobile force in the departure area.

163. Phasing Plan and Aircraft Allocation

The phases of the operation are related to the planned phasing of units into the objective area. The phases consist of a brief of the operations in an orderly sequence. The number of aircraft available and the tactical plan determine the planned phasing of units and the priority in which they will be landed in the objective area. Shortages of aircraft may require phasing back of units. When such a condition exists, it first must be determined if sufficient aircraft are available to execute the tactical plan (app. III).

164. Operations After the Assault

Operations after the assault are conducted as in other ground operations. Plans for future operations are determined by the mission assigned the airborne corps (pars. 127-137). Alternate plans are prepared on the basis of certain assumptions as to the possible outcome of the action.

165. Juncture Plans

A successful juncture requires thorough planning with detailed coordination between and within the Services and headquarters concerned. Passage of command and control in the objective area must be planned and executed (par. 74).

166. Fire Coordination

a. Joint operations pose difficult problems in fire coordination and, for that reason, concurrent and continuous planning by all major elements involved in the operation is necessary to insure integration of final plans and to provide assurance that directives resulting from such plans will give maximum support to the airborne forces.

b. Fire planning must provide for the integration of fires of land-based aircraft, carrier-based aircraft, and artillery missiles when these fires are available. Coordination is required with all interested agencies. When multiple airheads are employed, fire coordination lines between airheads must be delineated (pars. 70 and 71).

Section III. ADMINISTRATIVE SUPPORT

167. General

a. The scope of personnel, service, and supply problems is extensive in large airborne operations. Sufficient airlift must be provided to meet the logistical requirements of the airborne force. Early seizure or construction of usable air-landing facilities is essential.

b. An independent airborne corps may be supported by a logistical command. When this command is operating the corps' base, the logistical command will provide TA Log Comd type planning and support required to mount an airborne operation.

c. Logistical planning entails a determination of the requirements, a determination of capabilities, and a comparison of the two to determine limiting features. In large airborne operations, provision of sufficient aircraft to meet the tactical requirement for delivery of units in the airborne assault will normally provide sufficient airlift to meet the airborne force logistical requirements. It is essential that detailed planning be conducted to permit sound decisions and timely preparation of tactical plans.

168. Supply Planning

a. In long-duration operations, the followup and routine phases of supply will be utilized. Supply must be provided over air lines of communication for an extended period of time.

b. Based on the strength to be supported in the objective area, plans are made for delivery of supplies and materiel. Early estimation of supply requirements facilitates allocation of adequate aircraft for movement of required tonnages.

169. Airfield Development

Airfield development in a long-duration operation is initiated early. Assault units are made responsible for the initiation of construction and rehabilitation of existing airfields, and necessary engineer means must be allocated. The number and location of air-landing facilities varies with the size of the forces to be supported, planned buildup, terrain in the objective area, enemy capabilities, and engineer capabilities of the airborne force. Reliance is placed on a large number of widely dispersed, low-activity, air-landing facilities in preference to a few highly developed airfield complexes. Seizure of suitable airfields and air-landing facilities sufficient to support the tactical and logistical plans must be provided for in the plan for the assault (pars. 104-110).

CHAPTER 8

AIR-LANDED UNITS

Section I. GENERAL

170. Concept

a. Air-landed units may be employed in war or in situations short of war. They may be part of a strategic force available for deployment by air on short notice to any area of the world. Plans for movement as part of a strategic force should include intransit transfer from one type of aircraft to another or from surface transportation to air transportation and vice versa.

b. If there is no requirement for a parachute assault, air-landed units alone may be employed. The power of nuclear weapons increases the capability for the employment of air-landed units without preceding them by an airborne assault. Some of the type missions which might be assigned an air-landed unit are to deter the outbreak of a war by a show of force, to exploit initial airborne assaults, and to occupy areas or to reinforce units beyond the immediate reach of surface forces.

c. All units of the field army capable of moving by air should be trained in air-transportability, in a combat role and in administrative movements, and should be prepared to function with only that equipment which can be air-transported. Any unit may be adapted for air movement after sufficient training and with certain modifications or substitution of equipment. Extensive modification or substitution may affect the unit's ability to perform its primary mission and therefore make air movement undesirable. Air movement is desirable when geographical obstacles, hostile forces, distances, and time considerations preclude or seriously limit the use of other types of movement.

d. For data on air-transportability of various items of equipment in the field army, see TM 57-210 and TM 57-210A (C).

e. For data on air-landed operations employing Army Aviation, see FM 57-35.

171. Planning

a. An air-landed unit commander, upon receipt of a plan or directive for participation in an airborne operation, will—

- (1) Prepare an operation plan.

- (2) Establish liaison with troop carrier units assigned to transport the unit.
- (3) Conduct air movement training.
- (4) Marshal the unit as required.

b. Backward-planning techniques in the sequence of tactical plan, assembly plan, landing plan, air movement plan, and marshalling plan, facilitate planning the air movement and employment of air-landing units. Planning by air-landing units for participation in airborne operations is similar to that of airborne units (ch. 4).

c. Preliminary planning is essential for efficient execution of an air movement. Standard unit loading plans are prepared and kept current. They must be sufficiently flexible to permit rapid change. Alternate loading plans are developed to serve as the basis for adjustments due to increases or decreases in numbers and capabilities of aircraft, or the mission assigned for a specific operation.

Section II. PREPARATION AND TRAINING

172. Preparation for Air Movement

a. *General.* For guidance in preparation of operational and logistical plans, to include the air movement plan, and the techniques of mounting an operation, refer to chapters 4, 5, and 6 of this manual; and to TM 57-210 and TM 57-210A (C).

b. *Equipment.* Characteristics of aircraft impose certain limitations on the equipment which can accompany air-landed units. If modifications or substitutions of equipment are necessary to facilitate loading, such changes must be completed prior to marshalling.

173. Training

a. Air-landed units undertake the same general type training and rehearsals as airborne units except for parachute delivery aspects. With a suitable training environment and qualified instructional teams and equipment available an Army unit of battle group or battalion size can be prepared to execute an efficient air movement with 3 to 5 days of air movement training. Periodic repetition of the instructional phases is necessary to maintain an acceptable readiness.

b. Senior commanders and staff officers must have a thorough knowledge of tactical and technical procedures involved in planning and executing an air-landed operation. These include Air Force and Army coordination at all echelons; staff planning, with emphasis on preparation of plans, standing operating procedures, and air movement forms; marshalling procedures; army responsibility

ities and functions as departure and arrival airfields and air-landing facilities; assembly, reorganization, and conduct of operations in the objective area; and supply by air.

c. Training of small-unit commanders and selected noncommissioned officers includes orientation on characteristics and capabilities of transport aircraft; safety procedures in and around aircraft; preparation and documentation of equipment for air movement; loading of equipment, to include use of tiedown devices; unloading, reorganization, and assembly procedures in the objective area; marshalling procedures; development of unit standing operating procedures; preparation of unit air movement forms; and unit procedures for requesting and receiving supply by air.

d. Individual training includes familiarization with transport aircraft, safety procedures in and around aircraft, proficiency in rapid loading and unloading of personnel and equipment from aircraft, and assembly after landing.

e. Air movement training usually is presented in the following order:

- (1) General orientation and indoctrination of senior commanders and principal staff officers.
- (2) Schools to develop necessary instructional teams and to prepare specialists such as liaison, loading, and air movement officers.
- (3) Basic individual and group instruction.
- (4) Unit training to include loading and unloading of heavy equipment, and the outloading of the unit by organic means from dispersed airfields.
- (5) Small-unit flight exercises.
- (6) Command post exercises.
- (7) Rehearsals.

Section III. TACTICAL PLANNING AND EMPLOYMENT

174. General

a. The significant principles and techniques of ground combat action are the same for air-landed units participating in airborne operations as for units engaged in other combat operations. Minor variations occur because of the means employed to enter combat, or because some reduction or substitution may be necessary in equipment which accompanies the air-landed unit as a result of aircraft limitations.

b. When the air-landed unit is to be committed soon after arrival in the objective area, tactical integrity is maintained in loading aircraft. If the landing area is secure and time for reorganization

is available, tactical integrity may be sacrificed to the degree necessary to attain the maximum use of the available aircraft.

c. If there is a shortage of aircraft, elements of units or entire units are phased back or left out of the operation. Consideration of the mission dictates how the phase back is accomplished. Based upon tactical considerations and the degree of aircraft shortage, it may be necessary to revise or even cancel a specific plan.

d. The airborne force commander prescribes the overall priority of movement of units. Priorities are based upon the planned requirement for combat and supporting units in the objective area. Priorities also include the phasing of logistical support. Unit commanders establish priorities of movement within their units based upon the overall plan and the allocation of aircraft. Priority of movement and phase back are interdependent. This is particularly true in air movements extending over a number of days.

175. Missions

Missions normally are assigned prior to movement of the unit to the objective area since the mission influences the manner of loading, priority of movement, types and quantities of supplies and equipment carried, and similar considerations. Missions will vary widely. The situation may require immediate commitment into combat piecemeal, or it may allow a deliberate assembly and reorganization before commitment.

176. Selection of Assembly and Landing Areas

a. Assembly areas for air-landed units in the objective area are selected to support the planned tactical employment of these units. Assembly areas assigned are of sufficient size to accommodate the using unit and to permit necessary dispersion. Cover and concealment from enemy observation and fire should be available, as well as adequate access routes to and from landing areas and areas of planned or likely employment. Assembly areas are located so as not to interfere with tactical or logistical operations in progress in the objective area.

b. Landing areas for air-landed units are selected to deliver the unit as close as possible to assembly areas. By so doing, ground movement within the airhead and interference with other operations and units are minimized. In addition to proximity to assembly areas, the following considerations influence the selection of landing areas:

- (1) Type of aircraft being employed.
- (2) Rate of landing of aircraft and capacity of the airfield or air-landing facilities.
- (3) Protection from enemy observation and fire.

(4) Availability of road net.

(5) Tactical and logistical operations concurrently in progress.

c. Landing plans, assembly plans, and plans for tactical employment of air-landed units are closely coordinated with elements of the airborne force already in the objective area (ch. 4 and 7).

177. Assembly Plan

The assembly plan for air-landed units provides for regaining effective control of units at the earliest possible time. Rapid assembly and establishment of effective control is facilitated when tactical integrity of units is maintained in loading, air movement, and landing. The assembly plan normally includes—

- a. Designation of units to assemble in specific areas.
- b. Route and method of movement from landing areas to rendezvous points and assembly areas.
- c. Communication systems to be employed.
- d. Marking of routes and areas.
- e. Reporting procedures.
- f. Security provisions, both tactical and intelligence.
- g. Restrictions on movement, communications, and activity in assembly areas.
- h. Mission, composition, and function of advance parties.

178. Landing and Reorganization

a. The landing plan for air-landed units is prepared similarly to that of airborne units. Landing priorities are based principally upon planned tactical employment of the air-landed units in the objective area. The landing plan indicates the place, priority, and time of arrival in the objective area (ch. 4).

b. *Landing.* Based on the capacities of air-landing facilities or airfields, air-landed units land as rapidly as possible. When battle groups are expected to enter combat within a few hours after landing, unit integrity is maintained by landing on one facility or adjoining facilities. Advance parties land prior to the arrival of their parent unit, if possible, with the assault aircraft elements of the assault echelon. Advance parties include command and staff representation, representatives of major subordinate units, communication personnel and equipment, and minimum essential vehicles. Advance parties facilitate the unloading, reorganization, and employment of units arriving in the objective area.

c. *Reorganization.* From the deplaning area, air-landed units move to rendezvous points and designated assembly areas, carrying with them the equipment needed for their immediate task. Movement is expedited by guides and route markers. Upon arrival

in assembly areas, groups are directed to their subordinate areas where units report the status of personnel and equipment. Communication is established as rapidly as possible by all echelons. Wire and messenger are the normal means. Radio nets usually are not opened during this phase unless required by the tactical situation. Designated personnel will remain at landing areas to care for any casualties and to complete the removal of supplies and equipment.

APPENDIX I

REFERENCES

DA Pam 108-1	Index of Army Motion Pictures, Film Strips, Slides and Phonograph Recordings.
DA Pam 310-series	Military Publications
DA Pam 320-1	Dictionary of United States Military Terms for Joint Usage
AR 59-106	Operation of Air Force Terminals
AR 320-5	Dictionary of United States Army Terms
AR 320-50	Authorized Abbreviations
FM 3-5	Tactics and Techniques of Chemical, Biological, and Radiological Warfare
FM 6-20	Artillery Tactics and Technique
FM 7-100	Infantry Division
FM 10-33	Airborne Quartermaster Parachute Supply and Maintenance Company
FM 17-100	The Armored Division and Combat Command
FM 19-10	Military Police in Towns and Cities
FM 19-40	Handling Prisoners of War
FM 21-5	Military Training
FM 21-6	Techniques of Military Instruction
FM 21-30	Military Symbols
FM 27-10	The Law of Land Warfare
FM 30-5	Combat Intelligence
FM 30-7	Combat Intelligence; Battle Group, Combat Command, and Smaller Units
FM 31-8	Medical Service in Joint Oversea Operations
FM 31-21	Guerilla Warfare and Special Forces Operations
(C) FM 31-40	Tactical Cover and Deception (U)
FM 41-5	Joint Manual of Civil Affairs/Military Government
FM 41-10	Civil Affairs/Military Government Operations
FM 41-15	Civil Affairs/Military Government Units
FM 57-35	Army Transport Aviation, Combat Operations
FM 100-1	Field Service Regulations; Doctrinal Guidance (U)
FM 100-5	Field Service Regulations; Operations

FM 100-10	Field Service Regulations; Administration
FM 100-15	Field Service Regulations; Larger Units
FM 101-1	The G1 Manual
FM 101-5	Staff Officers' Field Manual: Staff Organization and Procedure
FM 101-10	Staff Officers' Field Manual: Organization, Technical, and Logistical Data
FM 101-31	Staff Officers' Field Manual: Atomic Weapons Employment (U)
FM 110-5	Joint Action: Armed Forces
TM 9-2800	Military Vehicles
TM 9-2800-1	Military Vehicles (Ordnance Corps Responsibility)
TM 57-210	Air-Movement of Troops and Equipment
TM 57-210A (C)	Air-Movement of Troops and Equipment (U)
TM 57-220	Technical Training of Parachutes
TC 10-1 (1955)	Field Expedients and Vehicles for Outloading Heavy-drop Equipment

APPENDIX II A TYPE AIRBORNE CORPS

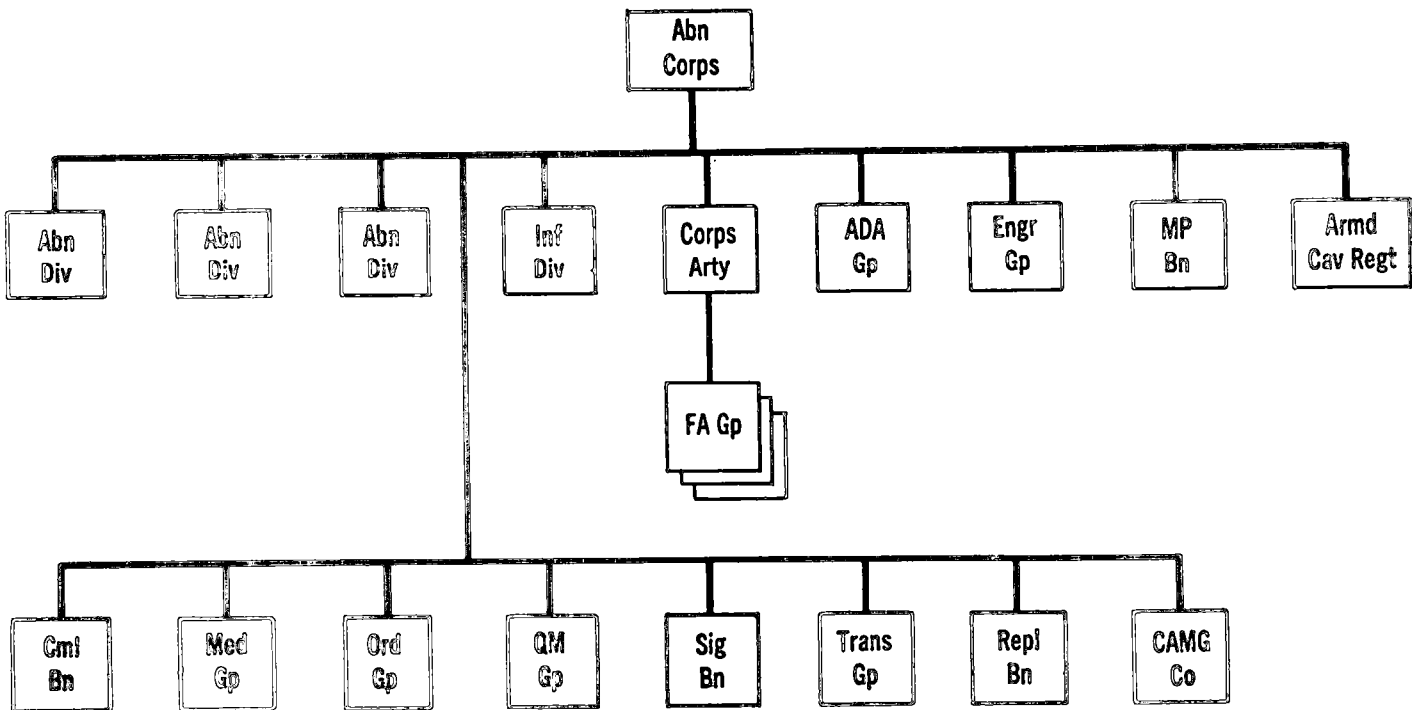


Figure 11. A type airborne corps.

APPENDIX III

AIR MOVEMENT PROCEDURES

I. General

a. Movement of personnel and cargo by aircraft provides the most rapid means of long-range transport available. The aircraft, however, is a much more sensitive carrier than other transportation as it requires precise balancing of loads. There is also a wide variation in such factors as payload, range, and airfield requirements.

b. Many of the limitations imposed by the above factors can be overcome by developing unit plans and standing operating procedures in advance of air movement. The procedures outlined herein are generally applicable to airborne assault operations as well as to administrative air movements.

2. Principles

a. Basic principles which apply in loading aircraft for assault operations are:

- (1) Unit commanders strive for tactical loading.
- (2) All individuals carry complete combat equipment.
- (3) Ammunition and crew accompanies each weapon so far as possible.
- (4) Drivers accompany vehicles; prime movers are loaded with their towed loads.
- (5) Component parts of equipment accompany the item of equipment in the same aircraft.
- (6) Key personnel, with equipment, are distributed throughout several aircraft.
- (7) Every load is safely balanced and lashed and is listed on a flight manifest form.
- (8) Each aircraft is loaded to take maximum advantage of its cargo capabilities so far as tactical loading permits.
- (9) If there is a critical leg in a long-range move, the aircraft is loaded in accordance with its cargo-carrying capabilities over this leg. Otherwise, off-loading of equipment en route will be necessary.

b. The situation will determine which of the above principles will apply in air movements not involving an airborne assault.

3. Computation of Aircraft Requirements

a. When planning for movement by air, commanders and staff officers must know the exact number and types of aircraft required to move their unit. Even when the number of aircraft available for the move is less than the total force requirements, it is essential that accurate requirements be known in order that appropriate aircraft allocations can be made. They must also be familiar with the types and characteristics of aircraft available for the move. Types and characteristics of aircraft are contained in TM 57-210.

b. There are various methods of computing aircraft requirements, but the two methods utilized most frequently are—

- (1) The type load method for tactical operations.
- (2) The weight method for administrative movements.

c. The type load method is a typical arrangement of personnel and cargo within load limits and center of gravity for safe flight in a particular type of aircraft. For example, a type load for one kind of aircraft under certain conditions might be 20 personnel and two $\frac{1}{4}$ -ton trucks.

d. The weight method of computing aircraft requirements considers only the total weight of cargo to be moved. For example, an aircraft might have a total capacity of 15,000 pounds of cargo. The aircraft would then be loaded with any combination of cargo and personnel which would most nearly utilize this capacity.

e. For details of determining type loads and weight loads, see TM 57-210.

4. Loads for Nonassault Movements

a. Army loads break naturally into three broad categories because of basic differences in loading and unloading times, requirements for materials handling equipment and/or field expedients, and aircraft characteristics.

b. Load categories are normally as follows:

- (1) *Category I.* Bulk personnel loads including—
 - (a) Personnel with individual combat equipment.
 - (b) Accompanying personal baggage.
 - (c) Light crew-served weapons.
 - (d) Parachutes if required.
- (2) *Category II.* Composite loads including—
 - (a) Wheeled or track vehicles.
 - (b) Vehicles loaded with cargo.
 - (c) Accompanying personnel.
- (3) *Category III.* Bulk cargo loads including—
 - (a) Unit supplies and equipment not transported on unit transportation in category II loads.

(b) Bulk supplies and equipment prescribed for a given operation.

c. Types of cargo aircraft and their capabilities for each of the above load categories is contained in TM 57-210.

5. Procedures

a. The movement of forces by air for airborne assault is best accomplished by developing plans in an orderly sequence involving the following steps:

- (1) Determine the size or task organization of the force to be moved and compute the number of personnel and the equipment which are to be moved.
- (2) List the units and their equipment on the basic planning guide. (TM 57-210.) Organize the force into assault, followup, and rear echelons in accordance with the tactical plan.
- (3) Allocate the available aircraft on the aircraft allocation and phasing plan worksheet. If insufficient aircraft are available to move all desired personnel and equipment in the assault echelon, phase back low priority items to the followup echelon.
- (4) Prepare the aircraft loading worksheet.
- (5) Prepare the air movement table.

b. The details in preparing the above forms and sample forms are contained in TM 57-210.

c. For movement by air not involving an airborne assault, the procedures and steps outlined above are employed except that the lead echelon of the force is called the initial echelon rather than the assault. Tactical integrity of units will have to be dispensed with in many cases to allow for more efficient utilization of aircraft.

6. Airfield Traffic Control

a. Traffic control is essential for assault operations as well as for other air moves in order to avoid congestion in the airfield area. In out-loading any force, control is accomplished by using a call forward system in which loads are only brought into the loading area as required.

b. The control system outlined below is adaptable to airborne assault operations as well as other air moves. The system is organized and established with separate loading facilities for personnel, heavy drop loads, and aerial supply, or for each of the three categories of loads as listed in paragraph 4. This separation is essential for effective control as well as for decreasing the time required to load. The airfield control system is established with minimum required personnel and communications equipment with

careful regard to the size of the forces being moved. See figure 12 for a concept of outloading control.

c. Outloading Procedures.

- (1) Initially, personnel and equipment are dispersed in marshalling areas distant from the airfield but in close communication with control groups at departure airfields.
- (2) In accord with the air movement plan and when called, the unit or equipment is moved by plane load to the call forward area. The call forward area maintains a minimum number of plane loads on hand to insure uninterrupted loading. Guides and military police are used as required.
- (3) As aircraft becomes available in the loading area, plane loads are called forward and the members of the load board the aircraft and tie down equipment with technical assistance of the Air Force personnel. Speed is essential in order that each aircraft will spend the minimum of time on the ground.
- (4) A log listing the departure of each aircraft is maintained by control personnel. The log contains the following information:
 - (a) Aircraft tail number.
 - (b) Summary of load or unit load number. (Manifests are correlated with this entry.)
 - (c) Time aircraft was available for loading.
 - (d) Station time.
 - (e) Takeoff time.
 - (f) Remarks.

d. A control system at arrival airfields is essential for tactical and other air movements to prevent congestion and facilitate orderly movement of cargo and personnel. At arrival airfields, the control system is essentially reversed. On arrival, aircraft are unloaded and the loads moved to dispersed holding areas where arriving elements are allowed to build up to convenient size for further movements. Load categories are kept separated as far as possible in order to facilitate control and movement.

7. General

If less than the optimum number of aircraft are available for an airborne operation, the operation may still be feasible by phasing back loads or units to later elements or echelons.

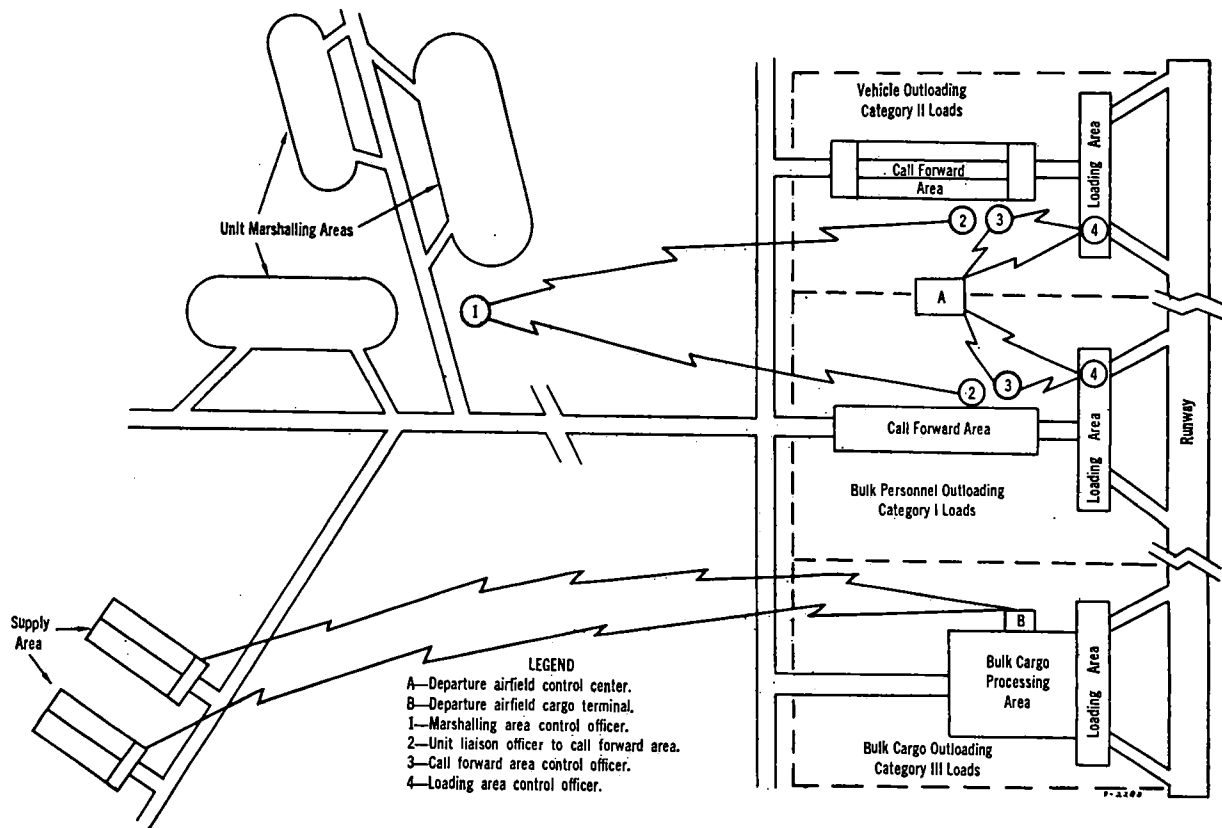


Figure 12. Concept of outloading control.

Assault (Initial) Echelon			
	<i>C-119 parachute</i>	<i>C-123 air-landed</i>	<i>Total sorties</i>
Aircraft required	481	228	709
Aircraft available	431	238	669
Over or short	¹ 50	+10	-40
Phase back to followup			40
Followup Echelon			
Aircraft required plus phase back	0	290	290
Aircraft available	² 20	220	240
Over or short	+20	-70	-50
Phase back to rear		50	50

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¹ Parachute elements are phased back to the assault aircraft (air-landed) elements of the assault echelon not to the followup echelon.

² Portions of the followup echelon may parachute if insufficient C-123 aircraft are available to airland the entire followup echelon.

Figure 13. Phase back diagram.

8. Procedures

a. The first step in phasing back loads or units is the determination of what shortages exist and how many aircraft loads must be phased back to what elements or echelons. This process is illustrated below. The diagram is applicable to an air-landed unit by omitting the C-119 (parachute) column.

b. From the above diagram, the planning officer knows that he must phase back 50 plane loads from the parachute element of the assault echelon to the air-landed element of the assault echelon. Forty aircraft loads must be phased back from the assault (initial) echelon to the followup echelon and fifty aircraft loads from the followup echelon to the rear echelon.

c. Using this information, the planning officer must now go to the aircraft requirement tables and reduce various unit aircraft allocations based on the phase back requirements. This now permits the planner to complete his aircraft assignment and phasing table.

APPENDIX IV

AIRCRAFT REQUIREMENTS— NONDIVISIONAL UNITS

I. General

a. This appendix shows aircraft requirements for air-landed operations of selected nondivisional units. These tables are prepared for general planning purposes only and do not necessarily reflect either the final echelonment of units or the exact number of aircraft required.

b. The data contained in these tables are based upon the latest approved tables of organization and equipment and the following assumptions:

(1) Allowable cargo load of aircraft:

Table 1

C-119.....	12,000 pounds
C-123.....	10,500 pounds
C-124.....	40,500 pounds
C-130.....	29,500 pounds

(2) Weight of personnel: 240 pounds.

(3) Vehicles carry sufficient gasoline for a 300-mile operation. If the fuel tank capacity of the vehicle does not provide this, 5-gallon gasoline cans are provided.

(4) The followup echelon arrives within 72 hours.

(5) All units carry a full basic load of ammunition and 3 days of class I supply.

c. All Army aircraft are transported to the objective area in transport aircraft with sufficient aviation gas and lubricants to permit 24 hours of operation for each aircraft after arrival in the objective area. This is an inefficient method of delivering the Army aircraft and should be employed only when extra fuel tanks, refueling stops, or in-flight refueling facilities are not available or are infeasible.

d. The rear echelon consists of those items of heavy equipment that are not transportable in heavy aircraft and those units and individuals whose normal functions are not required during the early stages of the operation. A minimum of two personnel per unit remain in the rear area to guard unit and personal equipment.

2. Nondivisional Units—Table II

a. The units listed in this table are typical of the type units that might be employed in an air-landed operation. These units would perform such missions or tasks as—

- (1) Providing the means for a higher headquarters to assume control in an airborne objective area after completion of the assault phase of an airborne operation.
- (2) Increasing logistical and tactical support means.
- (3) Expanding the reconnaissance capability.
- (4) Providing increased fire support.

b. Load method 1 utilizes a combination of medium and heavy aircraft. Either the C-119/123 aircraft (col. 5) and the C-124 aircraft (col. 7) or the C-130 aircraft (col. 6) and C-124 aircraft (col. 7) are used in combination. Load method 2 utilizes only heavy aircraft (col. 7).

Table II. Aircraft Requirements—Nondivisional Units—Air-landed—1,000 MM Range Medium and Heavy Aircraft.

1	2	3	4	5	6	7	8
Unit	TOE	Total weight unit in short tons	Load method	C-123 C-119	C-130	C-124	Remarks
Armd cav regt*	17-5R	8,214	1	326	209	266	Lt tk substituted for med tk
			2	.....	.....	392	
Armd FA btry, 105-mm how (SP)*	6-317C	334	1	14	9	11	
			2	.....	.....	17	
Tk co, 90-mm gun*	17-27C	575	1	13	9	23	Lt tk substituted for med tk
			2	.....	.....	29	
Tk co, 76-mm gun (sep) (SP)*	17-17R	627	1	20	13	23	
			2	.....	.....	32	
HQ & HQ co, armor gp*	17-32R	73	1	10	7	.....
			2	.....	.....	5	
HQ & HQ btry, corps arty*	6-501C	250	1	31	20	.....
			2	.....	.....	12	
HQ & HQ btry, FA gp*	6-401C	136	1	18	12	.....
			2	.....	.....	8	
FA obsn bn*	6-575C	1,197	1	102	66	18	
			2	.....	.....	58	

See footnote on page 131.

1	2	3	4	5	6	7	8
Unit	TOE	Total weight unit in short tons	Load method	C-123 C-119	C-130	C-124	Remarks
Armd FA bn, 105-mm how (SP)*	6-315C	1,537	1 2	49	32	55 73	Veh tk re-cov not air-trans
FA bn, 155-mm how (towed)*	6-135C	868	1 2	81	52	12 42	
FA how bn, 8-in*	6-415D	1,778	1 2	98	63	48 86	
ADA AW bn (mbl)*	44-25C	1,278	1 2	158	101	1 65	
AAA AW bn (mbl)*	44-25C	1,485	1 2	49	32	53 72	
ADA Gun bn, skysweeper*	44-35D	1,169	1 2	64	41	34 56	
Cml smk genr co	3-267D	316	1 2	40	26 .....	..... 16	
Engr cmbt bn Army	5-35D	1,170	1 2	97	63	20 56	
Engr pnl brg co	5-317C	576	1 2	57	37	6 29	
Engr float brg co	5-138D	1,526	1 2	101	65	35 74	
Engr lt eqp co	5-367C	1,243	1 2	47	30	42 60	
Med coll co (sep)	8-27C	59	1 2	8	6 .....	..... 3	
Med clr co (sep)	8-28R	184	1 2	23	15 .....	..... 9	
Med holding co	8-57C	77	1 2	10	7 .....	..... 4	
Med amb co (sep)	8-317R	164	1 2	21	14 .....	..... 8	
MP esc gd co	19-47D	106	1 2	15	10 .....	..... 6	
MP bn Army	19-35D	102	1 2	27	18 .....	..... 10	

See footnote on page 131.

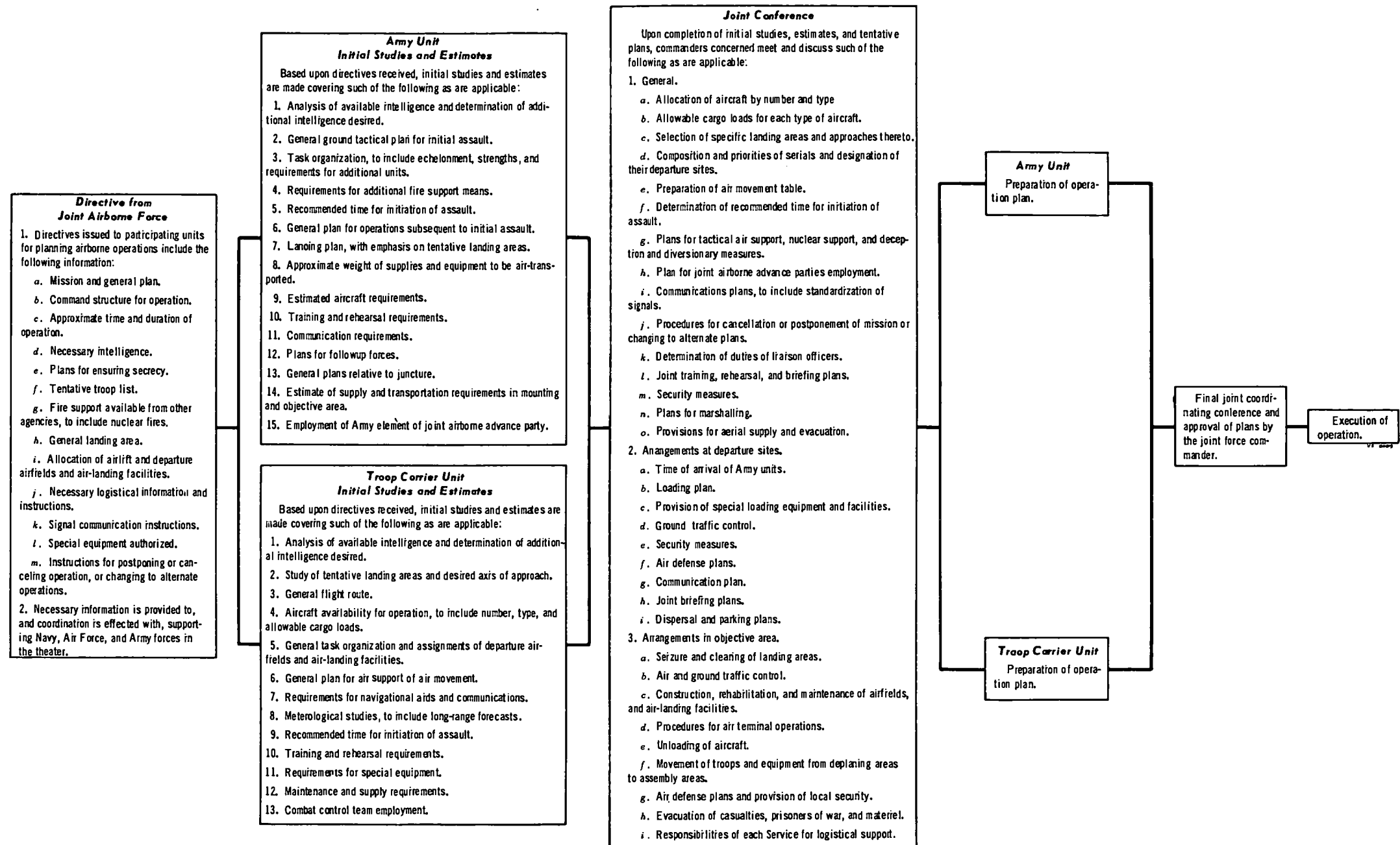
1	2	3	4	5	6	7	8
Unit	TOE	Total weight unit in short tons	Load method	C-123 C-119	C-130	C-124	Remarks
Ord DS co	9-7D	470	1 2	43	28	10 29	
Ord sp wpn spt bn	9-45R	662	1 2	26	17	30 45	
QM petr1 sup co	10-77R	297	1 2	35	23	1 15	
Sig bn (Abn)	11-15D	2,306	1 2	254	163	30 160	
Cmd op co Sig bn Abn corps	11-17D	420	1 2	43	28	4 22	
Sig op bn	11-95R	2,712	1 2	282	180	28 160	
Wire op co	11-97R	903	1 2	79	51	13 51	
Rad op co	11-98R	1,212	1 2	136	87	6 70	
Trans lt trk co	55-17D	487	1 2	63	41	1 36	
Trans lt hepctr co	55-57C	121	1 2	12	8	1 6	Does not include cgo hel
Trans army acft maint co	55-457R	257	1 2	20	13	4 13	
Repl co**	20-57C	12	1 2	2	2 .....	..... 1	
Aerial Photo intpr team	30-600C	8	1 2	1	1 .....	..... 1	

*Indicates that the unit designations and TOE numbers only are correct. Short-ton weights do not reflect recent TOE changes and should be used as a guide only.

**When using load method 1, use *either* column 5 or 6 in conjunction with column 7. Do not use columns 5 and 6 at the same time.

APPENDIX V PLANNING SCHEDULES

1. Schedule of Planning for Airborne Operations



2. Example of a Logistical Time-Planning Schedule

a. General. This example is for a large-scale operation for which there is ample planning time.

b. Field Army.

Prior to D-45, based upon directives from higher headquarters, determines—

- Tentative selection of additional camps required for concentration and marshalling.

- Estimated duration of operation.

- Estimated daily supply requirements.

- Desired level of supply in the objective area for military and civil requirements.

- Availability of supplies required for operation.

- Availability of logistical resources within objective area.

- Availability of aircraft for operation.

- Ability to deliver required supplies to departure airfields at the required times.

- Characteristics of air-landing facilities within objective area.

- Availability of evacuation and hospitalization facilities for the support of the operation.

D-45:

- Receives higher headquarters logistical plan.

- Preparation of army logistical plan commences.

- Preparation of detailed service troop list commences.

- Preparation of camps for concentration and marshalling commences.

D-40:

- G4 conference on logistical support with corps concerned.

- Alerting of service units to be used for the operation.

- Allocation of specific camps to all units participating in the operation.

- Conference with supporting TA Log Comd agency concerning availability of equipment and supplies and projected readiness dates of camps for concentration and marshalling.

D-37:

- Conference with troop carrier unit commander on logistical organization and facilities for delivery and support of forces in the objective area.

D-33:

- Logistical plan completed.

- D-30 :
 Completed logistical plan furnished subordinate corps.
 Assault corps relieved of current tactical operations.
 Service troops receive directive for participation in operation.
- D-25 :
 Coordination with corps on phasing of army service units into the objective area.
- D-20 :
 Movement of army service units to mounting area commences.
 Followup corps relieved of current tactical operations.
- D-15 (up to D-7) :
 Assault airborne division close in mounting area.
- D-14 :
 Preparation of followup supply in departure areas commences.
- D-8 (up to D-4) :
 Reorganization and equipping of army service units completed.
 Air-landed divisions close in mounting area.
- D-2 :
 Assault airborne forces sealed for marshalling.
- D-1 :
 Movement of assault echelon to departure sites commences.
 Movement, as required, of followup divisions and service units to camps to be used for marshalling commences.
 Loading of equipment of assault airborne forces.
- D-day :
 Loading of personnel, equipment, and accompanying supplies completed.
 Departure of airborne assault forces.
- c. *Corps.*
- D-40 :
 Warning order for airborne operation received.
 Initial logistical planning commences.
- D-35 :
 Units to participate alerted for airborne operation.
- D-30 :
 Army logistical plan received by corps.
 Assault corps relieved from current tactical operations.
- D-28 :
 Assault airborne divisions attached to assault corps.
- D-21 :
 Corps logistical plans completed.

D-20 :

Followup corps relieved from current tactical operations.
Followup divisions attached for operation.
Corps logistical plan furnished divisions.

D-9 :

Completion of reorganization and equipping of corps troops.

D-7 :

Assault corps checks on followup supply in departure areas.

D-2 :

Assault airborne force sealed for marshalling.

D-1 :

Movement of assault echelon to departure sites commences.
Movement, as required, of followup divisions and service troops to camps to be used for marshalling commences.
Loading of equipment of assault airborne forces.

D-day :

Loading of personnel, equipment, and accompanying supplies completed.

Departure of assault force.

d. Division.

D-35 :

Alerted for participation in airborne operation.

D-28 (up to D-10) :

Assault airborne divisions attached to assault corps.

D-20 :

Followup divisions attached to corps for operation.
Divisions receive corps logistical plan.
Preparation of division administrative order commences.

D-11 (up to D-5) :

Marshalling plan completed.

D-10 (up to D-4) :

Procurement of required supplies for operation from supporting supply installations commences.

Sufficient personnel and cargo parachutes packed for the operation.

D-7 (up to D-4) :

Final shortages of supplies determined and requisitions submitted.

Issue of accompanying supplies to assault units.

Intensive maintenance of equipment initiated.

D-5 (up to D-3) :

Attain full authorization of equipment and desired amounts of accompanying supplies.

Complete arrangements for additional transportation required for marshalling.

Complete administrative order and issue to units.

Recheck completeness of supply and equipment.

D-2:

Assault airborne divisions sealed for marshalling.

D-1:

Movement of assault echelon to departure sites commences.

Movement, as required, of followup divisions and service troops to camps to be used for marshalling commences.

Assault divisions load equipment.

D-day:

Loading of personnel, equipment, and accompanying supplies completed.

Departure of assault echelon.

APPENDIX VI

OPERATION PLANS AND ANNEXES

1. This appendix contains an example of an operation plan for an airborne corps in an assault operation and the following sample annexes:

- a. Task organization.
- b. Operation overlay.
- c. Concept of operation.
- d. Signal annex.

2. Example of an operation plan is as follows:

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Copy Nr 3
3d Abn Corps
CAIRO (30°04'N, 31°22'E), EGYPT
231530B May 19.....
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Operation Plan 5-58 (COUNTERVAIL)

Reference: Maps Eastern MEDITERRANEAN 1:6,336,000;
CYPRUS, 1:100,000, NICOSIA—LARNACA;
CYPRUS, 1:250,000.

Time zone: B.

Task organization: Annex A, Task Organization
Annex B, Corps Troop List

I. Situation

a. Enemy forces. Annex C, Intelligence Plan.

b. Friendly forces.

(1) Army forces, MTO—

(a) Continue present mission

(b) Provide logistical support for this operation.

(2) Air Force forces, MTO—

(a) General. Theater Air Force forces provide—

1. Neutralization of enemy air and naval forces in the eastern MEDITERRANEAN area.

2. Diversionary air attacks as required.

(Classification)

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(Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

3. Weather reconnaissance.
4. Air defense of departure areas.
5. Preassault bombing on CYPRUS.
- (b) 1st TAC provides—
 1. Fighter protection for air corridor during air movement.
 2. Flak suppression along air corridor during air movement.
 3. Fighter sweeps north and east of CYPRUS.
 4. 9th TAF for general and close air support of 1st Abn TF.
- (c) 9th TAF provides—
 1. Four fighter-bomber wings on ground alert beginning H-hour, D-day, for missions as requested by 1st Abn TF through Naval TF 40 tactical air control facilities.
 2. Air reconnaissance as requested.
 3. Air defense suppression on island of CYPRUS as required.
- (3) Naval TF 40 provides—
 - (a) Preassault bombing, air defense, and close air support from carrier forces.
 - (b) Naval units for navigational aids for air movement over water.
 - (c) Naval gunfire support.
 - (d) In-flight control of all aircraft in the objective area.
 - (e) Carrier task element to lift 1 army helicopter battalion and 1 infantry battalion.
- (4) 2d TAC provides air transportation of personnel, equipment, and supplies for 3d Abn Corps.
- (5) Annex D, Fire Support Plan.
- (6) Annex E, Air Defense Plan.
- (7) Annex F, Air-Sea Rescue Plan.
- c. Attachments and detachments. Annex A, Task Organization.
- d. Assumptions.
 - (1) Strength of defensive forces on CYPRUS will not materially change prior to D-day.
 - (2) Friendly air forces will maintain control of the air to the extent that enemy air forces will be incapable of appreciable interference.

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(Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

- (3) Approximately 30 nuclear weapons, from 2 to 100 KT, will be allocated in support of 1st Abn TF operations on CYPRUS with the restriction that nuclear weapons not be employed against cities or towns of 3,000 or greater population.
- (4) Sufficient troop carrier aircraft will be available to lift simultaneously the equivalent of the assault echelons of three airborne divisions and minimum headquarters and supporting troops.
- (5) Adequate logistical support by theater administrative zone will be available for this operation.
- (6) Weather.
 - (a) Good flying weather will exist during period of operations, except that morning mist may be expected to exist, dissipating by 0900.
 - (b) Prevailing westerly winds will be moderate (9 to 13 knots).

2. Mission

Corps by airborne assault H-hour, D-day, seizes airhead in the vicinity of NICOSIA (S0469), CYPRUS, and conducts operations to destroy Aggressor forces on CYPRUS. Annex G, Operation Overlay.

3. Execution

a. Concept of operation. This operation involves a daylight airborne assault in which 3 airborne divisions are delivered simultaneously into the objective area in 2 air columns, the early seizure of NICOSIA and existing airfields, the air-landing of an infantry division preparatory to clearing the island of CYPRUS, and the development of an advanced base. This operation is supported throughout by the use of nuclear weapons, to include preparatory attack prior to the assault. Sea link-up on D+10. Annex H, Concept of Operation, and Annex D, Fire Support Plan.

b. 20th Inf Div:

- (1) Land in sector of 102d and 104th Abn Div beginning morning D+1.
- (2) Assemble in the vicinity of SANATORIUM (S0563).
- (3) Prepare to attack from airhead to the south and southeast on corps order to seize LARNACA (S2841).

(Classification)

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(Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

c. 102d Abn Div :

- (1) Land in sector and seize objective 2.
- (2) Initiate development of air-landing facilities.
- (3) Upon seizure objective 2, and on corps order assemble 306th Abn Inf in corps reserve in the vicinity of R9865.
- (4) Prepare to assist landing of the 20th Inf Div.
- (5) Prepare to relieve elements of 104th Abn Div on airhead line west of DHALI (S0952) on corps order.

d. 103d Abn Div :

- (1) Land in sector and seize objective 1.
- (2) Initiate development of air-landing facilities.
- (3) Prepare to attack from airhead to the north and east on corps order.

e. 104th Abn Div :

- (1) Land in sector and seize objectives 3 and 4.
- (2) Initiate development of air-landing facilities.
- (3) Prepare to assist landing of the 20th Inf Div and its passage to the south and southeast.
- (4) Prepare to attack from airhead to the east and southeast on corps order.

f. Corps arty :

- (1) Field arty.
 - (a) Land in designated sectors beginning D+1.
 - (b) 603d Arty Gp: GS ; reinforce 103d Abn Div Arty.
 - (c) 606th Arty Gp: GS ; reinforce 104th Abn Div Arty with 1 medium battalion and 20th Div Arty with 1 medium and 1 heavy battalion.
 - (d) 609th Arty Gp: GS.
 - (e) 699th Arty Obsn Bn : GS.
- (2) Air defense Arty :
 - (a) 615th Arty Gp (AD) : protect in priority: airfields, corps logistical installations, corps arty.
 - (b) 618th Arty Gp (AD) : coordinate air defense in corps sector; protect in priority: airfields, corps logistical installations, corps arty.
- (3) Fire Spt Plan, Annex D.

g. 532d Engr Cmbt Gp: land in air head beginning D-day in designated sectors; rehabilitate airfields and initiate construction of air-landing facilities as designated. Annex I, Engineer Plan.

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(Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

h. 533d Engr Cmbt Gp: land in airhead beginning D-day in designated sectors; support divisions; priority: 20th Inf Div, 104th Abn Div, 103d Abn Div, 102d Abn Div. Annex I, Engineer Plan.

i. 412th Trans Avn Bn: attached 103d Abn Div for operational control for period of helicopter assault only. Thereafter corps control in vicinity of NICOSIA.

j. Corps res:

- (1) 306th Abn Inf on corps order: upon seizure of objective 2, prepare for employment in corps sector; in priority: 103d Abn Div, 104th Abn Div, 102d Abn Div.
- (2) 203d Armd Cav (—): prepare for employment in corps sector; priority to southeast.

k. Coordinating instructions.

- (1) This plan is effective for planning upon receipt and for execution on order.
- (2) Target date for D-day is 22 June 19..... H-hour is tentatively set at 1100.
- (3) CA authority delegated to battle group commanders.
- (4) Annex J, Phased Planning Schedule.
- (5) Annex K, Air Movement Plan.
- (6) Annex L, Counterattack Plans.
- (7) Annex M, Personnel Plans.

4. Administration and Logistics

- a.* Annex N, Logistics Plan.
- b.* Annex O, Marshalling Plan.
- c.* Annex P, Civil Affairs Plan.

5. Command and Signal

a. Signal.

- (1) Index 2, Signal Operation Instructions.
- (2) Annex Q, Signal Plan.

b. Command posts.

Unit	Rear (EGYPT)	Main (CYPRUS)
3d Abn Corps	CAIRO, EGYPT (30°04'N, 31°22'E)	LAXIA (D-day) (S0560) NICOSIA (D+1) (S0469)
102d Abn Div	AZGAZIG, EGYPT (30°35'N, 31°30'E)	MAMMARI (R8968)

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(Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

103d Abn Div	DAMANHUR, EGYPT	MANDRES HAMID
	(31°02'N, 30°28'E)	(S0574)
104th Abn Div	ISMAILIYA, EGYPT	(S0965)
	(30°38'N, 32°15'E)	
20th Inf Div	EL FAIYUM, EGYPT	SANATORIUM
	(29°18'N, 30°50'E)	(D+1) (S0563)

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Annexes: A—Task Organization
B—3d Abn Corps Troop List (omitted)
C—Intelligence Plan (omitted)
D—Fire Support Plan (omitted)
E—Air Defense Plan (omitted)
F—Air-Sea Rescue Plan (omitted)
G—Operation Overlay
H—Concept of Operation
I—Engineer Plan (omitted)
J—Phased Planning Schedule (omitted)
K—Air Movement Plan (omitted)
L—Counterattack Plans (omitted)
M—Personnel Plan (omitted)
N—Logistics Plan (omitted)
O—Marshalling Plan (omitted)
P—Civil Affairs Plan (omitted)
Q—Signal Plan
R—Distribution (omitted)

Distribution: Annex R, Distribution (omitted)

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3d Abn Corps

CAIRO (30°04'N, 31°22'E), EGYPT

231530B May 19.....

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Annex A (Task Organization) to Operation Plan 5-58
(COUNTERVAIL)

102d Abn Div	103d Abn Div
(Maj Gen ALFA,	(Maj Gen CHARLIE,
Commanding)	Commanding)
102d Abn Div	103d Abn Div
628th How Bn	2d Hosp Unit, 883d Fld
1st Hosp Unit, 883d Fld	Hosp
Hosp	412th Trans Hel Bn (Op con
CIC det	for helicopter assault
Mil intel plat (AB, 7 IC, 2	only)
IG, IK)	CIC det
CAMG plat (AA, AD, CB,	Mil intel plat (AB, 7 IC, 2
DA, EA, ED)	IG, IK)
560th Engr Cmbt Bn	CAMG plat (AA, AD, CB,
563d Engr Lt Eqp Co	DA, EA, ED)
5941st EOD Det	One co, 562d Engr Cmbt Bn
Det, 709th Sig Bn (Corps)	One plat, 568th Engr Lt
Air Force teams	Eqp Co
One trp carr cmbt con	5943d EOD Det
team	Det, 709th Sig Bn (Corps)
One AirLO team	Air Force teams
Twelve FAC	One trp carr cmbt con
Navy teams	team
One div naval gunfire ln	One AirLO team
team	Twelve FAC
Three naval gunfire ln	Navy teams
teams	One div naval gunfire ln
Nine shore fire con	team
parties	Three naval gunfire ln
	teams
	Nine shore fire con
	parties

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{Anx A (Task Org) to Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps}

104th Abn Div
(Maj Gen BRAVO,
Commanding)

104th Abn Div
1st Sq, 203d Armd Cav
3d Hosp Unit, 883 Fld Hosp
CIC det
Mil intel plat (AB, 7 IC, 2
IG, IK, 2 FF, FJ)
CAMG plat (AA, AD, CB,
DA, EA, ED)
561st Engr Cmbt Bn
562d Engr Cmbt Bn (—)
567th Engr Lt Eqp Co
568th Engr Lt Eqp Co (—)
5942d EOD Det
Det, 709th Sig Bn (Corps)
Air Force teams
One trp carr cmbt con
team
One AirLO team
Twelve FAC
Navy teams
One div naval gunfire ln
team
Three naval gunfire ln
teams
Nine shore fire con
parties

Corps Arty
(Brig Gen ECHO,
Commanding)

603d Arty Gp
1st How Bn (155-mm),
629th Arty
2d How Bn (8-in),
630th Arty

20th Inf Div
(Maj Gen DELTA,
Commanding)

20th Inf Div
2d Sq, 203d Armd Cav
1st Hosp Unit, 884th Fld
Hosp
CIC det
Mil intel Plat (AB, 2 FA,
4 FB, FC, 2 FF, FJ)
CAMG plat (AA, AD, CB,
DA, EA, ED)
Det, 709th Sig Bn (Corps)
Air Force teams
One AirLO team
Seven FAC
Navy teams
One div naval gunfire ln
team
Three naval gunfire ln
teams
Nine shore fire con
parties

Corps Res
(Col BLACK, Commanding)

306th Abn Inf (on order)
203d Armd Cav (—2 Sq)

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(Anx A (Task Org) to Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

606th Arty Gp
4th How Bn (155-mm),
637th Arty
3d How Bn (155-mm),
638th Arty
5th How Bn (8-in),
639th Arty
609th Arty Gp
2d Gun Bn (155-mm),
646th Arty
4th Gun Bn (155-mm)
657th Arty
Btry A (HONEST JOHN)
(SP) 1605th Arty
699th Obsn Bn
615th Arty Gp (AD)
3d AW Bn 693rd Arty
4th AW Bn 694th Arty
1st AW Bn 695th Arty
5th Gun Bn (SKY-
SWEEPER) 677th Arty
618th Arty Gp (AD)
4th Msl Bn (NIKE-AJAX)
626th Arty
2d Gun Bn (SKY-
SWEEPER) 690th Arty
5th Gun Bn (SKY-
SWEEPER) 691st Arty

Corps Trp

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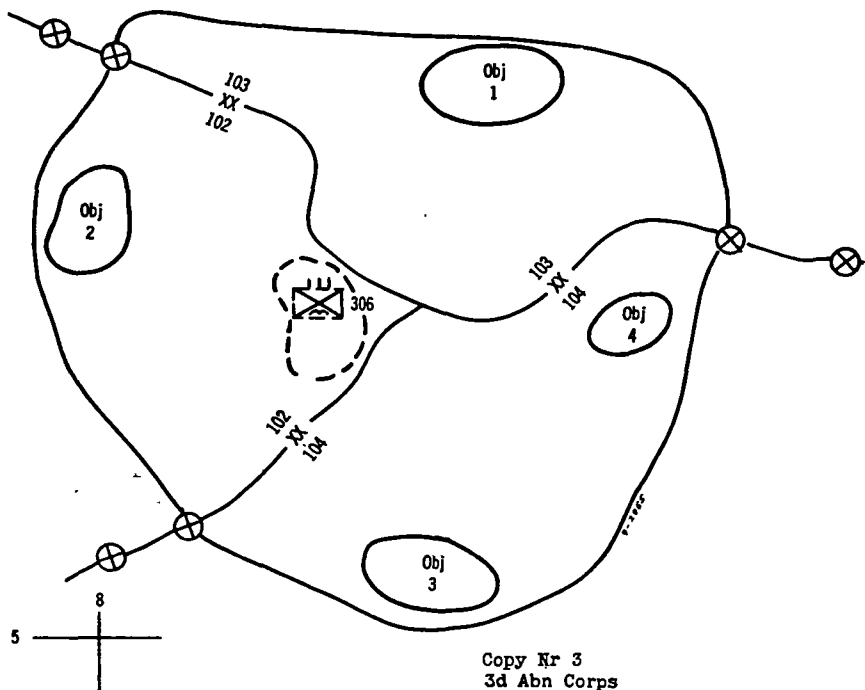
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3d Abn Corps
CAIRO (30°04'N, 31°22'E), EGYPT
231530B May 19__

Annex G (Operation Overlay) to Operation Plan 5-58 (COUNTERVAIL)

Reference: Map, CYPRUS, 1:100,000, NICOSIA--LARNACA.

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3d Abn Corps

CAIRO (30°04'N, 31°22'E), EGYPT

231530B May 19.....

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Annex H (Concept of Operation) to Operation Plan 5-58
(COUNTERVAIL)

Reference: Maps, Eastern MEDITERRANEAN, 1:6,336,000;
CYPRUS, 1:100,000, NICOSIA-LARNACA.

1. Limiting Factors

a. Sole dependence upon air lines of communication will be necessary until approximately D+10.

b. Good flying weather should exist during the period of operations. However, morning mists may be expected to exist, dissipating by 0900 daily.

c. Nuclear weapons will not be used against cities or towns of 3,000 or greater population.

2. Supporting Operations of Friendly Forces

a. Neutralization of enemy air and naval forces in eastern MEDITERRANEAN area by theater Air Force and Navy forces.

b. Aerial visual, photo, and weather reconnaissance by theater Air Force elements.

c. Air transportation of personnel, equipment, and supplies by 2d TAC.

d. Logistical support by CAIRO Base Section.

e. General and close air support by 1st TAC.

f. Close air support, air defense, and naval gunfire support by Naval TF 40.

3. Phases of Accomplishment

a. Preparatory phase (D-45 to D-day).

(1) Concentration of forces by D-45.

(2) Training initiated D-39 and completed by D-7.

(3) Marshalling of forces commencing D-2.

b. Assault phase (D-day).

(1) H-1 to H-hour, preparatory attack of CYPRUS by aerial bombardment and naval gunfire using both nuclear and nonnuclear weapons with following priorities:

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(Anx H (Concept of Op) to Op Plan 5-58 (COUNTERVAIL)—
3d Abn Corps)

- (a) Airfields.
- (b) Air defense installations.
- (c) Armored forces.
- (d) Command posts and troop concentrations within the objective area.
- (e) Destruction of designated bridges on major avenues of approach into the objective area.
- (f) Troop concentrations outside the objective area.
- (g) Logistical installations.
- (2) H-hour commence airborne assault by major portions of assault echelons of three airborne divisions, and land airfield construction units and minimum other supporting units.
- (3) By end of D-day, airhead line seized, major enemy resistance within airhead eliminated, and air-landing facility construction initiated with emphasis on rehabilitation of NICOSIA, LAKATAMIA, and TYMBOU Airfields.
- (4) Corps headquarters becomes operational in airhead on D-day.

c. Defensive phase (D+1).

- (1) Complete consolidation of airhead, dispose forces for exploitation, and defend airhead.
- (2) Land—
 - (a) Initial echelon, 20th Inf Div.
 - (b) 203d Armd Cav (one Squadron).
 - (c) Elements of followup echelons of airborne divisions.
 - (d) Approximately 60 percent of corps field artillery units.
 - (e) Other elements of corps troops with emphasis on additional medical, signal, and transportation units.
- (3) Air-landing facilities operational: 2 airfields for heavy and medium transport aircraft, 1 airfield for medium transport aircraft, and 12 minimum standard air-landing facilities for C-123's.

d. Exploitation phase (D+2 through D+10). Appendix 1, Overlay of Phase Lines.

(1) D+2 through D+4:

- (a) Phase in major portion of 3d Abn Corps combat and combat support units by end of D+4.

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(Anx H (Concept of Op) to Op Plan 5-58 (COUNTERVAIL)—
3d Abn Corps)

- (b) Land one squadron, 203d Armd Cav.
- (c) Initiate expansion of airhead to phase line ALFA.
 - 1. 20th Inf Div seize high ground southeast of airhead and continue attack to capture LARNACA.
 - 2. 104th Abn Div seize LYSI (S3361) and continue attack to seize the PYLA (S3551)—hospital (S3847) area.
 - 3. 103d Abn Div capture KYRENIA, expand airhead to north coast, continue attack to the east, and capture LEFKONIKO.
- (d) Complete improvement of air-landing facilities to allow optimum landing rate for C-123 aircraft.
- (e) Initiate delivery of replacement and consumption supplies into the airhead in preparation for opening of corps supply points.
- (2) D+5 through D+7:
 - (a) Phase in remaining 3d Abn Corps troops.
 - (b) Seize phase line BRAVO by the end of D+7.
 - (c) Initiate rehabilitation of the port of FAMAGUSTA (S5863).
 - (d) Air-landing facilities operational: 2 airfields for heavy or medium transport aircraft, 2 airfields for medium transport aircraft, and 17 air-landing facilities for C-123 aircraft.
- (3) D+8 through D+10:
 - (a) Complete destruction of Aggressor forces on CYPRUS.
 - (b) Continue development of advance base.
 - (c) Continue defense of CYPRUS.
 - (d) Shipping available for surface support and development of advance base on D+10.
- e. Final phase (D+11 through D+20).
 - (1) Continue development of advanced base.
 - (2) Continue defense of CYPRUS until relieved by CYPRUS Base command (target date D+20).

4. Development of the Objective

* * * * *

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(Anx H (Concept of Op) to Op Plan 5-58 (COUNTERVAIL)—
3d Abn Corps)

5. Command Relationships and Coordination

* * * * *

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Appendix: 1—Overlay of Phase Lines (omitted)

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3d Abn Corps
CAIRO (30°04'N, 31°22'E), EGYPT
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Annex Q (Signal) to Operation Plan 5-58 (COUNTERVAIL)
Reference: Map, CYPRUS, 1:100,000, NICOSIA—LARNACA.

I. Situation

a. Enemy forces.

- (1) Annex C (Intel) to Op Plan 5-58 (COUNTERVAIL).
- (2) Jamming of radio circuits and transmission of false messages can be expected to continue.

b. Friendly forces.

- (1) Annex G (Op Overlay) to Op Plan 5-58 (COUNTERVAIL).
- (2) Command posts.

	Headquarters	Location
	Mediterranean Theater of Operations	
Main		TRIPOLI
	3d Abn Corps	
Initial main		CAIRO
Subsequent main		LAXIA (50560)
Initial advance		NICOSIA (50469)

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(Anx Q (Signal Plan) to Op Plan 5-58 (COUNTERVAIL)—3d Abn Corps)

c. Attachments and detachments. Annex A (Task Organization).

2. Mission

Install and maintain continuous communications between all echelons of this command.

3. Execution

a. Concept. Primary means of communication will be radio relay and RTT to attacking divisions. Wire communication to be established after link-up is affected.

b. 709th Abn Sig Bn (Abn Corps). Install, operate, and maintain communication system as outlined below.

(1) Radio.

(a) Per Appendix 1, Radio Net Diagram.

(b) Scene of action frequencies and call sign per item 25-(1) current SOI.

(c) Be prepared to attach AN/GRC-26 teams to engineer units on order.

(d) Attach two AN/GRC-26 teams to 203d Armd Cav.

(2) Wire.

(a) Per Appendix 2, Circuit Diagram.

(b) Be prepared to install S-4 carrier system on order to divisions.

(3) Carrier-radio relay.

(a) Per Appendix 2, Circuit Diagram.

(b) Attach two AN/TRC-3 and carrier teams to each of the following units upon receipt of this order:

1. 203d Armd Cav.

2. 20th Inf Div.

(c) Attach two AN/TRC-35 and carrier teams to each of the following units upon receipt of this order:

1. 102d Abn Div.

2. 103d Abn Div.

3. 104th Abn Div.

(4) Messenger services. Initially, air messenger service only until situation permits other means.

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(Anx Q (Signal Plan) to Op Plan 5-58 (COUNTERVAIL)—3d
Abn Corps)

c. Coordinating instructions. Signal elements of major subordinate units will—

- (1) Assist in the establishment of signal intelligence activities within the objective area.
- (2) Emphasize the prompt locating, gathering, safeguarding, and dispatching of captured enemy documents by courier to higher headquarters.
- (3) Provide communications to marshalling areas by CAIRO Base Section.

4. Administration and Logistics

Admin O.....

5. Command and Signal

Index.....to current SOL.

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Appendixes: 1—Radio Net Diagram (omitted)

2—Circuit Diagram (omitted)

3—Telephone and Teletypewriter Traffic Diagram
(omitted)

4—Marshalling Area Communication Diagram
(omitted)

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APPENDIX VII

ORGANIZATION AND COMMAND OF THEATER AIRBORNE FORCES

1. Organization and Command

a. Within a theater, organization and command of forces for the conduct of joint airborne operations are established in accordance with FM 110-5. The theater commander determines the overall organization and designates command relationships for the conduct of airborne operations. This determination is influenced by such factors as the organization of the theater; the campaign plans of the theater; the composition and size of the forces available; the size, type, frequency, and duration of planned operations; and the geographical considerations in the theater which influence airborne operations.

b. The command structure established should provide for a single commander of all participating units at an echelon which will insure effective direction and continuity of planning accomplished by a staff which includes representatives of participating forces.

2. Staff

To facilitate and insure integrated planning for joint airborne operations, an adequate number of trained personnel, qualified in the techniques, capabilities, and limitations of airborne operations, are included in a permanent planning group in the theater.

3. Unified Command

For planning and executing airborne operations in a theater which has large airborne forces assigned for frequent employment, the theater commander may establish an airborne unified command when so authorized by the Joint Chiefs of Staff. When established, such a unified command normally commands all airborne forces in the theater except those which the theater commander temporarily assigns to other forces in the theater. This unified command normally plans and executes operations which employ the major portion of the theater airborne forces. The unified command may establish subordinate joint airborne task forces for the execution of joint airborne operations which employ smaller forces within the theater.

4. Joint Task Force

In a theater where a relatively small airborne force is assigned and where contemplated employment of this force is infrequent, the theater commander normally establishes joint airborne task forces for the execution of joint airborne operations.

5. Procedures

a. When a joint airborne operation is contemplated, the theater commander—

- (1) Issues a directive to the theater Army, Navy, and Air Force commanders outlining their operational or supporting missions.
- (2) Issues necessary directives to the designated commander of the airborne force.
- (3) Directs theater intelligence and logistical agencies to provide necessary information and support.
- (4) Plans and controls measures for deception.
- (5) Effects coordination with supporting forces, not under theater command, such as the Strategic Air Command.
- (6) Allocates nuclear weapons to the airborne force.

b. On receipt of the theater directive, theater Army, Air Force, and Navy commanders—

- (1) Assign supporting tactical and administrative missions to subordinate commanders.
- (2) Allocate necessary forces and facilities.
- (3) Supervise planning and execution by subordinate commands.

c. The airborne force commander, on receipt of the theater plan or directive—

- (1) Establishes liaison with appropriate theater Army, Air Force, and Navy commanders.
- (2) Issue warning orders to units allocated to the airborne force.
- (3) Organizes the airborne force.
- (4) Allocates nuclear weapons to subordinate elements.
- (5) Secures and disseminates all available intelligence.
- (6) Issues necessary directives and planning guidance.
- (7) Directs necessary joint training.
- (8) Supervises preparation of plans of forces allocated.
- (9) Coordinates with theater Army, Air Force, and Navy commanders to insure that the necessary administrative and operational support is provided to include capabilities to deliver nuclear weapons.
- (10) Plans and recommends measures for deception.

(11) Issues instructions to insure secrecy.

(12) Supervises execution of the operation.

d. If an airborne operation is an integral part of a larger operation, the airborne operation plan may be published as part of the overall plan.

e. The theater commander, or the commander directing the operation if at a lower level, normally establishes provisions for passage of command of forces in the objective area. Command of the Army element of the airborne force in the objective area usually passes, on order, to a designated commander of friendly forces in whose zone or area it is operating at such time as the designated commander is able to control, support, or appreciably influence the overall action.

APPENDIX VIII

ORGANIZATION AND COMMAND OF ARMY AND CORPS AIRBORNE FORCES

1. Organization and Command

a. The strength, composition, and equipment of units assigned to an army or corps for the conduct of an airborne operation are contingent on the mission, characteristics of the objective area, enemy capabilities, civilian attitudes and economic structures, probable duration of the operation, and aircraft and troops available.

b. The command influences the action in airborne operations by the same means as in normal ground operations, and additionally, by timely shifts of priorities for air movement of troops, supplies, and equipment into the objective area.

2. Procedures

On receipt of a plan or directive for an airborne operation, the field army (or corps) commander implements the following measures as applicable and required:

a. Augments the staff with personnel experienced in the airborne operations as needed.

b. Develops the troop list.

c. Assembles and distributes planning data.

d. Prepares the operation plan.

e. Establishes a requirement for Army, Air Force, and Navy delivered nuclear weapons.

f. Establishes direct liaison with higher and appropriate participating forces, such as troop carrier units and followup units.

g. In conjunction with the troop carrier commander, determines general landing areas, allocates available airlift, designates departure sites (airfields) to be used by major units, and establishes priority for movement of army units, equipment, and subsequent supply.

h. In conjunction with the appropriate air commander, develops the airground and fire support plan.

i. Directs and supervises equipping and training of units of his command.

j. Coordinates with the troop carrier commander for joint training requirements.

k. Submits requests for Air Force and Navy support and for additional artillery support when appropriate.

l. Conducts conferences to insure coordination and understanding of all problems.

m. Establishes special liaison for the operation with TA Log Comd and advises higher headquarters and TA Log Comd as to logistical, administrative, and marshalling requirements.

n. Requisitions supplies and equipment necessary for the operation.

o. Issues instructions on and supervises measures to insure secrecy.

p. In coordination with the TA Log Comd and troop carrier commanders, prepares the army marshalling plan.

q. Supervises marshalling of the army.

r. Directs the army in the ground operations.

s. Exercises overall command in the objective area until relieved of this responsibility by higher authority.

t. Coordinates surface juncture if planned.

3. Independent Corps

The functions and procedures of an independent corps in an airborne operation are similar to those of a field army as outlined in appendix VII.

APPENDIX IX

THEATER ARMY LOGISTICAL COMMAND SUPPORT OF AIRBORNE OPERATIONS

1. Scope

Responsibilities of the theater army logistical command (TA Log Comd) for support of airborne operations extend throughout the following periods:

- a. Planning.
- b. Mounting.
- c. Assault
- d. Buildup.
- e. Closeout and rehabilitation.

2. Planning

a. During the planning for support of an airborne operation, TA Log Comd makes provisions for mounting facilities to include training areas and facilities. The mounting area is located and developed to permit the rapid marshalling of the airborne force. Camps or bivouacs, departure airfields and air-landing facilities, and other installations are dispersed to minimize the vulnerability to nuclear attack. Sufficient camps are developed in the mounting area to permit the required dispersion of the airborne force by small units for rehabilitation, training, and preparation for airborne operations. Criteria used in the selection of camp areas are—

- (1) Adequate dispersion of troops and materiel in each area.
- (2) Cover and concealment from air observation.
- (3) Accessibility to departure sites.
- (4) Availability of signal and surface communications.
- (5) Maximum security.
- (6) Availability of sites and facilities for administrative support and training.

b. TA Log Comd must also provide for air defense artillery protection and multiple communication means between camps and departure sites. Maximum use is made of existing communication facilities provided by theater Army and theater Air Force agencies.

3. Mounting

During the mounting of an airborne force, TA Log Comd provides administrative support to include—

- a.* Provisions for rehabilitation of airborne forces.
- b.* Maintenance and service support.
- c.* Transportation for mounting and marshalling.
- d.* Overall control of movements.
- e.* Personnel and equipment to assist during marshalling as necessary.
- f.* Packaging and preparing supplies and equipment for delivery into the objective area.

4. Assault

During the execution of the airborne assault, the TA Log Comd will—

- a.* Continue assistance in operation of camps.
- b.* Provide support for the airborne force to include the maintenance of prescribed levels of followup supply at or near designated departure airfields as well as the delivery of supply required by the forces in the objective area to designated departure airfields according to prearranged plans.
- c.* Provide guards as necessary for air evacuation of prisoners of war from the objective area.
- d.* Provide evacuation facilities for personnel and materiel from departure airfields to TA Log Comd installations.

5. Buildup

During the buildup of an airborne force in the objective area, TA Log Comd usually exercises control of movements and provides the major portion of the transportation for the movement of follow-up units of the airborne force to camps and departure sites in accordance with priorities prescribed by the airborne force. Movement of supplies to departure airfields is also a major activity during the buildup of an airborne force. A surface transportation movements system must exist which can react rapidly and efficiently to changes in priorities in the movement of personnel, supplies, or materiel to the airhead(s) as required by the airborne force.

6. Closeout and Rehabilitation

Camps and facilities provided by TA Log Comd are closed out or placed on a standby status when no longer required to support the airborne operation. When Army units are withdrawn from combat, a requirement will exist for providing facilities for rehabilitating these units. New camps and facilities may be required in areas farther forward because of the advance of friendly forces.

7. Personnel Services

Provisions are made for religious, postal, recreational, and other miscellaneous personnel services and facilities.

8. Counterintelligence

TA Log Comd will—

- a.* Provide necessary additional counterintelligence corps personnel and units.
- b.* Insure that proper security measures are coordinated and enforce by transient units and the permanent party at each camp.
- c.* Maintain liaison with airborne force, civil security personnel, and other forces and agencies to insure uniformity of security plans.

9. Camps and Bivouacs

- a.* TA Log Comd allocates areas and facilities to airborne units as required for training and marshalling, based on the requirements of the airborne force.
- b.* Facilities are allocated to maintain unit integrity.
- c.* Covered storage is required for dry storage and maintenance of parachutes, special equipment, and some items of individual and organizational equipment stocked at camps.
- d.* Shop space or hardstanding facilities preparing equipment for airaircraft loading and the final inspection and maintenance of unit equipment.
- e.* Equipment of assault units or their immediate followup elements normally cannot be used as the equipment must be prepared for movement to the objective area.
- f.* Provisions for sealing camps during marshalling are required.

10. Logistics

- a.* Selected stocks of supplies may be maintained at camps during marshalling to provide immediate replacement for essential supplies or equipment which is lost or damaged.
- b.* Followup and other supply delivered after the assault is prepared by TA Log Comd and delivered to departure airfields at such times as required for scheduled air movement into the objective area. Preparation may require prepackaging in aerial delivery containers, palletization, or other similar measures.

11. Evacuation and Hospitalization

TA Log Comd provides medical service and evacuation facilities for camps when required, and necessary hospitalization facilities in the general area. Personnel hospitalized during or after briefings

are isolated until the information they possess no longer constitutes a security risk.

12. Transportation

TA Log Comd provides—

- a.* Transportation for the marshalling of airborne forces.
- b.* Transportation for essential administrative operations in support of the airborne force during marshalling.

13. Service

- a.* TA Log Comd provides necessary engineer construction effort and ordnance and other technical service maintenance.
- b.* A coordinated communication system is installed and maintained by TA Log Comd for use by the airborne force. This system also assists TA Log Comd in establishing and maintaining movement control in mounting and supporting the airborne operation.
- c.* Joint troop carrier-Army command post facilities are made available.

APPENDIX X

DUTIES OF ARMY LIAISON OFFICERS

1. Army liaison officers must be thoroughly familiar with all aspects of the airborne operations and must be briefed in detail on all airborne force plans. They must be accredited to attend required briefings and conferences conducted by Army, Air Force, and other services as appropriate.

2. Transportation and communication facilities must be planned in advance and must be adequate to insure proper functioning of liaison officers.

3. Specific duties of airborne force liaison officers are—

a. The coordination of matters involving dual responsibility such as—

- (1) Joint staff meetings.
- (2) Joint briefings.
- (3) Availability of equipment.
- (4) Examination of parallel orders to insure complete agreement of plans and arrangements.
- (5) Procurement of equipment and facilities belonging to his own command which are required by the command to which he is detailed.
- (6) Provision and implementation of plans for marshalling to include loading of aircraft.
- (7) Preparation of joint reports.

b. To be familiar with plans and arrangements for reserve aircraft in the event of last-minute failures and to be prepared to assist in the movement of troops from aborting aircraft to reserve aircraft.

c. To represent his commander at the Air Force combat airlift support unit (CALSU).

d. To be familiar with the location and capacity of all installations at the airfield(s) and air-landing facilities with which his unit will be concerned.

GLOSSARY

- Abort*—An aircraft that is required to turn back from an aerial mission before its completion, especially for reasons other than enemy action.
- Airborne assault*—The landing of parachute and assault aircraft elements of an airborne force on unsecured and unprepared drop and landing zones to attack and seize selected objectives. The transport aircraft will normally be executing a radius-type air movement.
- Air column*—Two or more serials following a lead formation over the same flight route.
- Airfield*—A complex landing facility normally consisting of paved or surfaced runways and taxiways, operations tower, fire-fighting equipment, fuel storage facilities, permanent night lighting, water system, personnel messes and quarters, and other refinements. Construction requires several engineer battalion months.
- Airhead(s)*—Area seized in an airborne operation which provides the space necessary for the accomplishment of the mission.
- Airhead Line(s)*—Line(s) defining the outer limits of the air-head(s).
- Air-landing facilities*—Air-landing facilities are those minimum provisions for landing, handling, and takeoff of aircraft which can be constructed to meet minimum essential requirements, with full recognition given to the risks justified. These areas are selected to make maximum use of existing features such as roads and compacted and level cleared fields. Engineer effort is required to remove or mark obstacles, improve glide angles and landing clearances, and facilitate ground traffic.
- Airhead air traffic coordination center (AATCC)*—An agency established by a joint force commander to exercise air traffic regulation over all aircraft operating within a designated regulation area, including the airborne objective area. It contains Army, Air Force, and Navy elements as required and operates as directed by the joint force commander.
- Air traffic director (ATD)*—A deputy for the joint force commander, vested with authority to direct effective operations of the ATCC. The ATD for each phase of the operation will normally be selected from the Service which has dominant interest at that time in airspace control.

Combat airlift support unit (CALSU)—A functional troop carrier unit established to provide movement control and unit ground support at an airfield or airlanding facility during combat operations, usually under field conditions.

Combat control team—A small team of highly trained Air Force personnel, qualified parachutists, with the mission of establishing and operating navigational and aircraft control facilities in connection with airborne assault operations. They are part of the joint airborne advance party (see below).

Computed air release point (CARP)—A computed air position at which parachutists, supplies, and equipment to be dropped by parachute are released to land at a specified point on the ground.

Departure area—The general area encompassing all base camps, bivouacs, departure airfields, and air-landing facilities. (See marshalling area.)

Departure site(s)—Includes individual airfields and/or air-landing facilities which are used by an airborne force to launch an airborne operation.

Fire coordination line (FCL)—A line established between airborne forces and link-up forces and between elements of the airborne force operating in separate airheads. It is used to regulate flat-trajectory and high-angle fires as well as offensive air strikes. Units will not fire beyond the FCL or permit more than negligible effects of fires to extend beyond the FCL without coordinating with the unit on the other side.

Followup supply—That supply which is prepackaged for automatic or on-call delivery direct to forces in the objective area.

Joint airborne advance party (JAAP)—Selected airborne (pathfinder trained) and Air Force (combat control team) personnel who are jointly trained to precede or accompany the lead elements of an airborne force into an objective area. The JAAP establishes navigational aids, assists in assembly of troops, surveys landing sites, acts as flight control, performs radiological survey, and provides terminal guidance for Army aircraft.

Landing strip or landing field—A prepared area suitable for landing and takeoff of aircraft. See air-landing facility.

Landing zone (LZ)—An unimproved area used for landing assault aircraft.

Marshalling area—The general area in which a unit camps and from which the air movement is initiated.

Mounting area—A general locality where forces preparing for an airborne operation, with all their authorized equipment and supplies, are assembled, prepared, and loaded into aircraft

preparatory to an assault operation. It includes or has available in installations nearby the following:

- a. Camp area for the unit.
- b. Storage facilities for all equipment and supplies of the force.
- c. Maintenance and repair facilities for the equipment of the force.
- d. Airfield areas for the aircraft involved.
- e. Loading facilities.
- f. Spotting area for equipment and supplies to be loaded, located in vicinity of loading facilities. Provision must be made for personnel of rear echelon and equipment and supplies left behind. A training area nearby should be provided in case the units remain for a considerable time in the mounting area. A mounting area includes a marshalling area.

Phase back—The term used in connection with the echelonment of an airborne unit for an airborne operation. It means that an element of the force or equipment that was scheduled to enter the objective area at a particular time in the operation must enter the objective area at a time later than that originally planned. Phasing back is usually a result of a shortage of aircraft or the sudden insertion into the movement plan of a high priority unit that must be delivered to the objective area early in the operation.

Range—The maximum distance that an airplane can safely travel without refueling. Operations under range conditions are those in which the aircraft fly to a destination at which they must be refueled before further flight can be made.

Routine supply—Supply which consists of replacement and consumption supplies delivered to the airhead in bulk, based on actual need for distribution by normal supply procedures plus reserve supplies to build up to the desired level.

Reconnaissance and security positions (RSP)—A series of outposts, observation posts, road blocks and reconnaissance elements located on principal approaches and/or dominating terrain outside an airhead.

Repair parts—Supplies which consist of spare parts, assemblies, and secondary items used primarily in support of maintenance. Included are individual tools, components of tool sets, common hardware, cleaning and preserving material, and technical publications pertaining to maintenance. Excluded are expendables, such as office supplies, grease pencils, acetate and like items.

Serial—A compact formation of aircraft, under control of one commander, separated from other formations by time and space, traveling from the departure area to a single drop or landing zone or airfield.

Strategic air movement—A long-range movement of units by air, usually intertheater in nature. The move may be made by either medium or heavy transport aircraft and is a range-type air movement. It may be culminated by an airborne assault launched from an intermediate base.

Target approach point (TAP)—A navigational check point over which the final turn on drop zone/landing zone run-in heading is made.

Weather minimums—The minimums which prescribe the worst weather allowing full scale participation by all forces.

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[AG 360 (16 Jun 59)]

By Order of *Wilber M. Brucker*, Secretary of the Army:

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For explanation of abbreviations used, see AR 320-50.

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