FM 31-13

DEPARTMENT OF THE ARMY FIELD MANUAL

BATTLE GROUP LANDING TEAM (AMPHIBIOUS)

HEADQUARTERS, DEPARTMENT OF THE ARMY

SEPTEMBER 1961

AGO 1425B

FOREWORD

A battle group landing team is the basic task organization used as a nucleus of an infantry division landing team in an amphibious operation. It may however, be employed as a semiindependent or independent landing team. In either role it will normally employ both air and water ship-to-shore mobility means, i.e., assault craft (landing craft and amphibious vehicles) and aircraft, primarily helicopters, operating from naval ships. The ground and air-mobile tactics and techniques employed after landing are substantially the same as those used in normal ground warfare, but modified during the period of joint operations to integrate joint command and control facilities and multiple Service resources.

This manual is written primarily as a guide for the battle group level commanders and staff and must be used in conjunction with FM 31–12, Army Forces in Amphibious Operations (The Army Landing Force). It outlines the organization, planning, embarkation, ship-to-shore movement, and landing techniques employed by army forces planning for and participating in an (joint) amphibious assault. Repetition of doctrine and technique covered in other army field manuals is avoided wherever practicable.

In using this field manual it is important to immediately recognize those characteristics of amphibious operations that differentiate from normal ground warfare—they are:

a. Army forces participate in an amphibious operation as the Army component of a joint force and within the principles, doctrine and procedures for unified and joint operations as established by the Joint Chiefs of Staff.

b. The amphibious operation is a complete operation in itself. However, when it is conducted by a joint force it is usually one phase or part of a campaign of larger magnitude.

Note. When an amphibious type assault is conducted exclusively by Navy and United States Marine Corps forces it is called a uni-Service force and functions exclusively under naval doctrine. A combined water and airmobile attack conducted as a unilateral operation by the Army, using primarily army assault craft and aircraft involved in amphibious type technique, is called a "shore-to-shore" operation. See chapter 16, FM 31–12, Army Forces in Amphibious Operations.

c. As an entity, the typical amphibious operation includes planning; embarkation of land forces and equipment in naval ships; amphibious task force rehearsals; movement to, or from, the objective area (includes ocean and land area); final preparation of

the objective; assault landing, or withdrawal, in landing craft, amphibious vehicles and aircraft (primarily helicopters) of the land forces with accompanying supplies and equipment; and joint Service support of the landing or withdrawing force until termination of the amphibious operation. The amphibious operation may include integrated, small scale airborne operations employing shore-to-shore airdropped or air landed forces and supplies and equipment.

d. The amphibious operation does not include marshalling of forces; preliminary training in amphibious techniques; initial preparation of the objective area; independent supporting operations; and operations prior to the initiation of or subsequent to the termination of the amphibious operation. However, these activities are discussed in this field manual where reference is appropriate for use at battle group level team (BGLT) level.

* FM 31–13

FIELD MANUAL
No. 31–13

HEADQUARTERS,
DEPARTMENT OF THE ARMY,
WASHINGTON 25, D.C., *29 September 1961*

BATTLE GROUP LANDING TEAM (AMPHIBIOUS)

* This manual supersedes FM 60–5, 21 February 1951.

CHAPTER 1
GENERAL

1. Purpose and Scope

a. This manual is a guide for the commander and staff of a battle group landing team (BGLT) in planning, training for, and participating in an amphibious operation. However, the doctrine and techniques reflected herein are also adaptable to assault landing teams formed with a battalion or company as the basic unit. Information pertaining to higher headquarters and other forces is limited to that necessary for an understanding of the BGLT's function. The principles and doctrine of amphibious operations in echelons above battle group level are covered in FM 31–12, Army Forces in Amphibious Operations.

b. This manual outlines the responsibilities of commanders and staff officers of the BGLT and the coordination with parallel commands of the Navy and Air Force. It covers organization, tactical, and administrative planning, embarkation, ship-to-shore movement, naval gunfire and air support, the role of supporting arms and service units, the employment of the shore party, signal communications, specialized amphibious operations, and amphibious training.

c. The text material is applicable to nuclear or nonnuclear warfare; appropriate modifying guidance for nonnuclear warfare is included where needed.

d. Users of this manual are encouraged to submit recommended changes or comments to improve the manual. Comments should be keyed to the specific page, paragraph, and line of the text in which the change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to Commandant, United States Army Infantry School, Fort Benning, Ga.

2. Related Navy and Marine Corps Doctrine

Related Navy and Marine Corps doctrine, procedures, and techniques are covered in detail in Naval Warfare Publication, NWP22; Naval Warfare Information Publications of the NWP22 series; and US Marine Corps Landing Force Manuals (LFM).

3. Characteristics of Amphibious Operations

a. Amphibious operations integrate virtually all types of ships, aircraft, weapons, and landing forces in a concerted military effort against a hostile shore. The essential usefulness of the amphibious operation stems from mobility and flexibility; i.e., the ability to concentrate balanced forces and to strike with great strength a selected point on the hostile shore. The amphibious operation exploits the element of surprise and capitalizes on enemy weakness through application of the required type and degree of force at the most advantageous location at the most opportune time.

b. The salient limiting characteristic of the amphibious operation is the necessity for building up combat power ashore from an initial zero to full coordinated striking power as the attack progresses toward the final objectives. The special measures introduced to meet this limitation form the basis of the organizational and technical differences between the amphibious and other type operations.

c. An amphibious operation must be conducted in the face of certain additional and distinguishing difficulties. The hydrographic characteristics of the water area—the presence of reefs and shoals and the nature of tides—and the effect of unfavorable weather on open sea and surf pose problems. The technical problems of logistics represented by loading thousands of troops and large quantities of material into ships at widely separated embarkation points, moving them to the landing area, then landing them in exactly the proper sequence, usually on open beaches or landing zones and under fire initially, all require extraordinary attention in the form of detailed planning. During the movement from ship-to-shore, troops are especially vulnerable. The possibility of enemy employment of CBR weapons is a threat to the amphibious task force that must be met with vigorous countermeasures, both active and passive, during all stages of the operation.

d. Close cooperation and most detailed coordination among all participating forces in an amphibious operation, to include extensive joint training, are essential to success. There must be a clear understanding of mutual obligations, and organization and techniques of operation and the special capabilities and problems of each Service component. These requirements tend to create problems in preparing for an amphibious operation that are more extensive than normally experienced for other types of military

operations. For a discussion of the principles of organization and command relationship at all levels see FM 31–12.

4. Definition and Characteristics

a. An amphibious operation is:

(1) An attack launched from the sea by Navy and Army or Marine Corps landing forces embarked in ships or craft involving a landing on hostile shore.

(2) Tactical withdrawal of land forces from a hostile shore, effected by naval forces.

b. Such an operation normally requires extensive air participation and is characterized by closely integrated efforts of forces trained, organized, and equipped for different combatant functions. Airmobility is normally used in conjunction with water movement techniques. It may also be made in conjunction with a joint airborne operation. See FM 31–12.

c. Combat operations which involve water movement, such as inland-water, ferrying, and shore to shore operations in which the landing forces are not embarked in naval ships; administrative landings on friendly territory; and water terminal and logistics over-the-shore operations; while reflecting certain amphibious characteristics and techniques, are not amphibious operations.

5. Types and Purpose of Amphibious Operations (See Discussion, FM 31–12)

a. Principal type—Amphibious assault.

b. Secondary types—Amphibious withdrawal.
Amphibious raid.
Amphibious demonstration.
Amphibious reconnaissance.

6. Operational Sequence (Phases)

The amphibious attack follows a well-defined pattern. It includes a sequence of events (activities) that is also recognizable, although to a lesser degree, in the secondary types of amphibious operations. These events occur as distinguishable phases in the general sequence of planning, embarkation, rehearsal, movement to the objective and finally, assault and capture of the objective resulting in termination of the amphibious operation. The sequence is qualified by the word "general" because some of the phases overlap. Planning, for example, continues throughout the entire operation, but it is dominant only in the period prior to the embarkation. The phases, therefore, bear the title of the

dominating activity that takes place within the period covered. Operational incidents which do not involve participation of the force as a whole are not so designated. See FM 31–12 for discussion of each phase and also chapter 13 of this field manual relative to rehearsals.

7. Pattern of the Operation

a. Preparation for an amphibious operation against a defended shore follow this general pattern:

(1) Air and naval reconnaissance of the objective area, including visual, sonic, photographic, and electronic reconnaissance. When possible, physical reconnaissance of the objective area is made.

(2) Psychological warfare, sabotage, and subversive and espionage activities in the objective area.

(3) Preliminary air and naval bombardment of the objective area where the advantage gained by such action outweighs the tactical surprise lost.

(4) Mine sweeping and underwater demolition operations in the landing area by naval forces supported by air and naval gunfire.

(5) Naval gunfire and air bombardment of the landing area immediately before the landing.

(6) Seizure of outlying islands for use as logistic, air, or seaplane bases, radar warning stations, or position areas for supporting artillery where the advantage gained by such action outweighs the tactical surprise lost.

(7) Feints and demonstrations outside the designated landing area.

(8) Long range naval air and surface striking force operations and long range Air Force striking force operations to secure and maintain air and sea superiority of the strategic area involved.

b. The assault normally follows this pattern:

(1) The main body of the amphibious task force arrives in the objective area.

(2) Air and naval gunfire provide intense pre-H-hour bombardment of the beaches, landing zones, and objectives.

(3) Units to land in the initial assault over beaches debark from ships into landing craft and amphibious vehicles, form into waves, and move across the line of departure to the beach. Airmobile units load into assault aircraft

(helicopters) for movement to and landing in designated landing zones ashore.

(4) As the leading waves near the landing beach, naval gunfire lifts to inland and flanking targets and tactical air elements make final strafing and bombing runs on enemy defenses.

(5) The initial assault units landing over beaches, breach the beach obstacles, overrun beach defenses, and destroy local enemy forces and installations.

(6) The leading platoons and companies seize initial objectives, reorganize and repulse counterattacks. Air and naval gunfire begin their on call close support when shore fire control parties and tactical air control parties land and establish communications. Initial equipment and supplies are landed and beach development begins.

(7) The controlled landing area is rapidly expanded through the employment of reserve troops landing in succeeding waves to exploit success where the advance is most rapid.

(8) Airmobile forces are concurrently striking the enemy in the rear or flanks, independently or in support of the beach assault.

(9) When the initial assault tasks are accomplished, the advance continues to seize objectives which will permit continued landing of tactical and supporting forces. Beach and landing zone development continues.

(10) Assault BGLT beachhead areas are secured. Additional troops, equipment, and supplies are landed, and counterattacks are repelled.

(11) Battle group landing teams advance beyond their beachhead lines to seize division objectives. Division reserves and support troops are landed.

(12) Control of the beach support area is centralized by the division shore party as more supplies and equipment land.

(13) Beach development continues. As additional reinforcements arrive, base facilities and airfields are established and when the amphibious operation terminates, the land offensive becomes a normal land campaign.

(14) Naval gunfire support continues until the land offensive progresses beyond the range of naval guns. Air support continues, initially by long-range and carrier-based aircraft and later by planes operating from fields prepared in the objective area.

8. Termination of Operation

The termination of an amphibious operation is predicated on the accomplishment of the mission of the amphibious task force in accordance with the specific conditions contained in the governing instructions set forth in the initiating directive. The firm establishment of the landing force ashore is specified as one of these conditions. For criteria to be considered by higher commanders in effecting termination, see paragraph 33, FM 31–12.

CHAPTER 2
ORGANIZATION

9. General

a. The assault landing team is the basic subordinate task organization of the assault echelon of the landing force. The BGLT consists of an infantry division battle group reinforced with elements from division and higher echelon and is normally commanded by the battle group commander. It may be embarked in assault shipping such as: attack transport (APA); attack cargo ship (AKA); landing ships (LST–LSD); amphibious assault ships (LPH); amphibious transport dock (LPD) or other type vessels, depending on the composition of the landing team and the mission. The desired organization for landing to carry out the scheme of maneuver ashore will be the primary factor in determining the organization for embarkation.

b. The BGLT is a task force that functions independently during the initial assault. It is organized to land; to overrun, destroy or neutralize beach defenses; and to secure terrain objectives. The ultimate success of any amphibious operation depends primarily on the success of the assault BGLT's.

c. Since normal artillery fire support is usually not available to landing elements in the initial part of the landing, supporting fires from naval ships and tactical aircraft will comprise the initial fire support until artillery can be landed and become operational.

10. Determining Factors

Factors to be considered in organizing a BGLT include the mission; enemy situation; weather, terrain, and hydrographic conditions in the objective area; the assault shipping and ship-to-shore means available; and the supporting troops available.

a. After completing an appropriate estimate, the BGLT commander can determine what attachments he needs to accomplish the assigned tasks. The BGLT is tailored to do a specialized job initially, rather than being formed into a well-rounded organization capable of accomplishing any normal ground mission.

(1) An assault BGLT requires enough combat power and support within the task organization to be self-sufficient until it can reorganize and obtain its normal support from units landed subsequent to the BGLT.

(2) A BGLT initially assigned a reserve mission is not only organized to land and exploit the success of the assault BGLT's, but it must also be prepared to take over the primary mission of any one of the assault BGLT's.

(3) A BGLT may also be organized to make a feint as part of a demonstration force, land as part of a diversionary force, or seize an island or area in support of the main landing. Anyone of these missions may dictate variations in task organization.

b. Organization of a BGLT is influenced in the normal manner by the enemy situation, (capabilities, limitations and disposition) as occurs in conventional land campaigns. However, items of particular importance in amphibious operations are the nature of beach fortifications; type and caliber of enemy weapons to be encountered; depth of fixed defenses and degree of mobility of enemy reserves. The probability of the enemy employing armor, extensive minefields and barbed wire all influence the nature of attachments and support the BGLT commander should request.

c. In addition to normal influences of weather and terrain, the nature of shoreline terrain and hydrographic conditions in the landing area are also considered. For example, underwater obstructions such as reefs, which preclude beaching of landing ships or crafts, may dictate a requirement for landing vehicles, tracked, to be employed in the initial assault.

d. Available shipping also affects the BGLT organization. This consideration usually requires that all units eliminate personnel and equipment not initially needed in the landing area.

e. After the BGLT commander determines the task organization necessary to accomplish his mission, he submits a request for necessary attachments to his division commander. If they are not available from higher echelon sources, the BGLT commander may have to train a portion of his own troops to perform the required special tasks.

11. BGLT Composition

a. An assault BGLT, using amphibious vehicles and landing craft to make the ship-to-shore movement, may be organized generally in a manner as outlined below. See appendix II for example task organization.

(1) Battle Group—less administrative elements not required in the initial assault, i.e., personnel section and selected administrative and logistical personnel and equipment.

(2) Medium Tank Company(s), Infantry Division—may be attached as a part of the task organization if landing area characteristics and available landing craft will permit early landing of tanks. Otherwise, normal supporting armor will be made available at a later time after beach development has progressed.

(3) A Direct Support Artillery Battalion (105/155-mm How Bn, SP or Towed)—may be attached dependent on the same conditions outlined in (2) above.

(4) Engineer Company (Reinf).

(5) BGLT Shore Party.

(6) BG Area Support Platoon, Division Signal Battalion.

(7) Ordnance Direct Support Section (Tailored).

(8) Division Medical Support—may be an ambulance platoon and clearing station(s) element.

(9) BG air—naval gunfire platoon (from ANGLICO).

(10) Combat support section (+) from the division aviation company.

(11) Intelligence team, military intelligence detachment (including technical service intelligence personnel).

(12) Additional attachments may include landing vehicles, tracked (LVTP), armored personnel carriers, amphibious truck and lighters (DUKW—LARC), air defense artillery, chemical, medical, civil affairs, and other support. Other personnel or elements may be attached only for landing such as electronic warfare elements, reconnaissance parties, liaison personnel from units to follow, and observers from higher units.

b. An airmobile BGLT or elements thereof employed in conjunction with or independent of a beach landing must be tailored according to the normal conditions for airmobile operations. Also, the techniques for ship-to-shore lift in helicopters or other assault aircraft may necessitate further variations in task organization.

c. Airmobility (particularly helicopter) is considered to be a normal type of mobility used as a part of amphibious operations; however, due to the specialized techniques of planning, organization for embarkation and landing, and flight control involved, the field manual includes both generalized coverage throughout and

specific discussion in chapter 8 and section I, chapter 11. Also, see section III, chapter 5, FM 57–35, and FM 31–12.

12. Troop Organization for Embarkation and Command Afloat

a. Paragraph 132 describes the organization of troops into embarkation teams, elements, units, and the embarkation group for the voyage to the objective area. These are administrative organizations only and are dissolved at debarkation. The commanding officer of troops aboard each ship (embarkation team commander) commands the troops in such activities as quartering, messing, guard, and physical training. None of his actions infringe on the authority of the commanding officer of the ship; so far as feasible, the orders of the ship's commanding officer are transmitted to the troops through the embarkation team commander.

b. Supporting units such as tank, artillery, and shore party elements, other than those attached to a BGLT for landing, may be embarked in the same ships with the BGLT. If so, they become a part of the embarkation team embarkation plans (for the voyage only) but are not included in BGLT landing plans. The division commander holds them aboard ship and orders them to debark as they are needed ashore.

13. Termination of BGLT Designation

Elimination of the landing force task organization designations peculiar to the amphibious operation, such as BGLT, is a consequence of dissolution of the amphibious task force. Actual change, however, in the BGLT task organization will occur at the discretion of the division commander. Normal land campaign task organization titles are adopted when the amphibious task force mission has been accomplished. See chapter 2, FM 31–12.

CHAPTER 3
OPERATIONAL PLANNING

Section I. INTRODUCTION

14. Coordination and Procedure

a. In planning for normal land operations, SOP's of long standing and the thorough familiarity acquired by troops through training permit the omission of much detail in final plans. In amphibious operations the special training required is rarely sufficient to instill in the troops the same degree of familiarity. For this reason, plans for an amphibious operation must be thorough and more detailed than is normal. Special amphibious SOP's should be developed in training, however, to assist in eliminating as much detail as practicable in final operations plans.

b. Planning begins long before D-day, so initial plans must be based on a number of assumptions later modified to reflect known conditions as reliable current information becomes available. The enemy situation, the attacking force's capabilities, and other factors affecting the plan may change considerably before D-day. This may necessitate changes in the plans of both the BGLT and higher headquarters. It is difficult and impractical to change plans after the troops have embarked on separate ships. For this reason, alternate plans (par. 16) are prepared to cover as many eventualities as feasible and the most appropriate plan is put into effect, when necessary, to modify the primary plan.

c. The operation requires joint planning at all levels among participating Services, beginning at its inception and continuing to its conclusion. In addition to joint planning, concurrent planning at all levels is also mandatory; thus all headquarters should prepare and disseminate outline plans early for use by subordinate echelons in their concurrent planning. Details of the completed plan are issued in appropriate annexes to the operation order. These annexes include details of naval gunfire support, air support, air defense artillery support, CBR weapon support, smoke support, ship-to-shore movement, priorities of landing, task organization, command and control, shore party plan, intelligence, logistics, communication, and civil affairs. When a linkup is contemplated, the linkup plan should be included as an annex.

d. The inherent dispersion of subordinate units and unusual communication problems occurring during the early stages of the landing and initial assault make it mandatory for the division commander to coordinate the tactical plans of each BGLT before embarkation. Coordination between elements of the landing force and naval elements is necessary to insure that landing craft allocation and types are adequate, and that stowage plans are feasible and meet the special requirements of elements of the landing force. Coordination of tactical planning and shore party planning insures that appropriate special equipment is available for use on the beach at the time required by landing teams and by supporting units after landing. Plans must include the integration of CBR weapon support, naval gunfire support, air support and smoke support with landing force schemes of maneuver ashore.

e. A division scheduled for an amphibious operation normally establishes a division planning headquarters. Battle group staff officers are made available to this headquarters to assist in working out the plans. Liaison with the Navy and Air Force is maintained through representatives of these Services located at division planning headquarters and by Army representatives at Navy and Air Force facilities.

f. Frequent conferences are held with Navy and Air Force representatives and other supporting units to resolve differences, coordinate details, and mutually share available information for the development of plans.

g. When the BGLT commander is required to establish a separate planning headquarters, his liaison officers coordinate with the supporting Service representatives at division headquarters. Attached unit commanders, working with the BGLT staff, coordinate the plans for their units.

15. Sequence of Planning

The major elements of the BGLT tactical plan are developed in the inverse order of their execution. Based on his assigned mission, higher echelon planning guidance, a study of the weather, terrain, hydrography, the enemy situation, and troops available (estimate of the situation), the BGLT commander determines his concept of operations ashore. This involves concurrent formulation of the scheme of maneuver ashore and the supporting fires needed to carry out his scheme of maneuver. Requirements for additional tactical and support units are also determined. Next, he develops the landing and embarkation plans to land all BGLT

elements in a sequence that will allow him to carry out his scheme of maneuver ashore. Close coordination with higher echelon is essential to insure that the BGLT scheme of maneuver can be supported within the availability of logistical resources such as helicopters, landing craft, amphibious vehicles and service elements of the amphibious task force.

16. Alternate Plans

a. Several operation plans are prepared to provide for changes in the enemy situation, loss of ships and equipment, and variations in meteorological and hydrographic conditions. They provide commanders with the flexibility needed to meet unforeseen developments in the assault or during movement to the objective area. Alternate plans may contain only a minor modification of the basic plan. For example, one alternate plan might require the assault units to land in the same relative order as in the basic plan, but on a different beach. By having this type of a plan(s), the objectives of the attack, in spite of unforeseen events, stand a better chance of being achieved. Alternate plans are prepared before embarkation, issued to unit commanders, and rehearsed when time permits. They are executed only on order.

b. The preparation of too many alternate plans is undesirable because it places a burden on assault element commanders in briefing troops and preparing for the multiple tasks. See chapter 3, FM 31–12.

17. Aids to Planning and Operations

The following operational aids are essential for planning an amphibious operation and briefing the participating troops:

a. Enough maps and charts to meet the needs of both the planning staffs and the participating troops. The maps and charts used very in scale according to the size of the unit concerned. Small units require large-scale maps.

b. Scale models and relief maps of selected landing beaches and beachhead terrain. These are especially useful in briefing assault troops. For best results, models and relief maps should be three-dimensional, grided, and 1:5,000 in scale with at least a 2:1 exaggeration in vertical scale. A minimum of one model for each planning staff and ship is required.

c. Shoreline sketches and photos that are distributed to all platoon leaders and boat commanders for orientation on their assigned beaches.

d. Beach studies that supplement information obtained from other sources.

e. Aerial and ground photographs.

(1) Aerial photographs provide great assistance in planning an amphibious operation. In some instances, they may be the only source of information on the objective area. Their greatest value results from a comparative analysis of a series of pictures taken over a period of time under varying weather conditions. Types of aerial prints needed for study and distribution include vertical and oblique views, annotated mosaics, stereopairs, color transparencies, and motion pictures. For detailed information concerning the capabilities and use of aerial photographs, see FM 30–5 and TM 5–240.

(2) Ground photographs give an immediate impression of the characteristics of the beaches, terrain, and offshore conditions. They are annotated with the exact location and time of exposure.

Section II. INTELLIGENCE PLANNING

18. Intelligence Requirements

Detailed intelligence on the following subjects is needed in planning and executing an amphibious operation.

a. Enemy. The composition of enemy forces in the objective area (ground, naval, and air) ; unit identification, strength, equipment, location, organization, disposition, mobility, history, and command personalities; location, nature, and extent of beach and inland defenses; and capabilities (especially CBR).

b. Hydrography. Surf and wave conditions, tides, currents, depths of water, water temperature, and nature of bottom, reefs, rocks, and shoals.

c. Meteorology. Temperature, precipitation, wind, visibility, frequency and nature of storms, flying conditions, and other natural phenomena.

d. Beaches. Exact location, length, width, gradient, physical consistency, exits, and underwater and beach obstacles, to include CBR contamination.

e. Terrain. Configuration of the shoreline, relief, compartmentation, vegetation, key terrain features, status of observation and fire, natural and artificial obstacles, concealment and cover, avenues of approach, landmarks for identification of the landing

beaches from the sea, drop zones for airborne troops, landing sites for helicopter and fixed-wing aircraft, and areas suitable for command post sites, storage, vehicle parks, and artillery.

f. Ports. Location in relation to the landing beaches; hydrography; berthing facilities; storage; and port facilities, to include piers and jetties for unloading supplies.

g. Local Population. Density, religion, health, politics, economy, attitude, and suitability for being employed to further military operations.

h. Communication and Transportation. Characteristics, construction, capacities, and condition of telephone, telegraph, and radio facilities and roads, railroads, airfields, rivers, and canals.

i. Civic Development. Location, type of construction, and characteristics of towns, villages, farm houses, and other buildings.

j. Miscellaneous. Water supply, public utilities, sanitation, dangerous animal and plant life, natural resources of military value, fallout shelters, and local construction materials.

19. Source of Information and Intelligence

Organic battle group intelligence agencies are not normally able to collect information for the battle group commander to use during his planning, so he relies on higher commanders to supply him with both information and intelligence on which to base his landing plan and scheme of maneuver. Emphasis is placed on the fact that at the battle group level intelligence information is obtained from the division and higher headquarters. For sources and agencies available to the higher echelons, see chapter 4, FM 31–12.

20. Development of Intelligence

a. When the battle group receives its mission, an intelligence estimate is prepared, based on a study of available information and intelligence received from division in the form of an intelligence annex or various intelligence summaries and spot reports. Requirements for additional intelligence are then determined by comparing the data in the estimate with the total intelligence needed for the operation. These additional intelligence requirements are the initial essential elements of information (EEI) determined by the commander. Due to the need to maintain secrecy of forthcoming amphibious operations initial EEI may not be disseminated to normal BGLT collection agencies until during the rehearsal or movement to objective area phase.

Every effort, however, will be made through staff and command channels of higher headquarters to request and obtain more detailed and accurate intelligence prior to actual landing.

b. As information is received, it is recorded, evaluated, and interpreted. New intelligence may require a revision of the EEI and the resulting new intelligence requirements may demand a modification of the collection plan. As required new requests for additional information are submitted to division headquarters.

c. Once the battle group is established ashore, normal intelligence collecting procedures are followed. It is important that the battle group collection plan not only provide for orders and requests for information needed prior to reaching shore, but also for information needed immediately after landing. It is at this time that the collection activity will shift from the higher levels back to the lower level collection agencies which are on the ground close to the enemy and terrain in the area of operations.

d. To facilitate the prompt collection of information, intelligence specialist teams may accompany subordinate elements ashore and begin operations before the battle group headquarters is established and functioning. Such teams may include the prisoner of war interrogator team, the interpreter team, the translator team, technical service intelligence teams, and the order of battle team.

e. For details of intelligence planning, see FM 30–5 and FM 30–7.

21. Dissemination of Intelligence

The battle group commander uses the time en route to the objective area (and, if necessary, additional time prior to embarkation) to disseminate intelligence. The battle group S2 procures enough copies of documents and adequate training aids to disseminate intelligence and brief the troops. These include maps, aerial photos, terrain models, charts, and blackboards. For documents and reports used in disseminating intelligence, see FM 30–5 and FM 30–7.

22. Security

a. The ultimate success of an amphibious operation depends greatly on the surprise gained by concealing true plans and intentions from the enemy. Required security measures include—

(1) *Controlled dissemination.* The intelligence required by a commander and his staff is never withheld from them, but dissemination of intelligence at random is avoided.

Only certain staff members need information and intelligence early in the planning phase. Before embarkation, commanders and staff officers are given only the essential information they need to complete their part of the plan. After embarkation, every member of the command is thoroughly briefed on the overall plan and mission and all pertinent intelligence of the enemy, weather, and terrain. Briefings are prepared to be of most value to the particular group receiving them; therefore, some must be more comprehensive than others.

(2) *Code names.* The initiating directive of an amphibious operation will contain a code name for use in planning. The name selected will give no hint that will relate it to anything connected with the operation. Outstanding terrain features may also be given code names. Use of the code name and the true geographic name of the objective area in the same document are avoided whenever practicable.

(3) *Physical security.* All rooms designated for planning work are kept under guard at all times. No documents, maps, charts, or material of any kind used in planning are removed from the room except under adequate security. Only authorized personnel are permitted to enter the room. Adequate physical security must be provided for the briefing aids and other classified material to be used aboard ship and/or to be taken ashore.

(4) *Precautionary measures.* Rigid censorship regulations are established and strictly enforced. All personnel are briefed on censorship procedures and regulations. All press releases are supervised, including photographs and material for broadcast. Counterreconnaissance and counterespionage measures are taken; communication security is enforced. Personnel already briefed on the plan are not permitted to accompany amphibious patrols or to fly over enemy territory. Personnel sent on amphibious reconnaissance patrols are given only the information they need for the accomplishment of their mission.

b. It is assumed that the enemy will obtain some information indicating that an amphibious operation is being mounted. Steps may be taken to deceive the enemy concerning true intentions and plans. The BGLT intelligence officer may submit recommenda-

tions and assist in planning tactical deception measures, to include demonstrations, ruses and feints, and radio traffic deception. However, in order to eliminate duplication and prevent compromise of the operation, tactical deception measures in support of a division or larger force are coordinated by higher headquarters.

23. The Intelligence Annex

The intelligence annex of the operation order follows the form prescribed in FM 30–5. To enable lower units to plan concurrently with higher headquarters, the necessary parts of the intelligence annex are distributed piecemeal, as soon as they are prepared. In addition to the information and instructions included in the annex for a normal land operation, the following may be attached as appendixes:

a. Hydrographic charts.

b. Meteorological tables.

c. Terrain and beach studies.

d. Sketches of the beach.

e. Tidal data.

24. Subsequent Intelligence Procedures

a. Radio silence is normally in effect when the landing force is embarked and under way. Visual signal, airdrop, helicopter, ship's boats, and courier craft are used at this time for the exchange of messages between ships. Intelligence and information received by the amphibious task force commander while en route to the objective area are disseminated as rapidly as possible at all units of the force.

b. After the amphibious task force is under way, personnel are briefed on whatever elements of the following essential information they did not receive during rehearsal periods.

(1) Tactical plan.

(2) Location and character of the landing beaches.

(3) Enemy situation and defenses.

(4) Weather.

(5) Terrain.

(6) Initial reconnaissance missions.

c. When troops are to be aboard ship for only one or two days before landing, much of this briefing must be accomplished before embarkation, with security measures imposed to prevent leaks of information.

d. Final distribution of maps, charts, and aerial photographs needed for the operation is made after the amphibious task force is under way.

e. As soon as the BGLT is established ashore, normal procedures are followed for the production and use of intelligence.

Section III. MAIN AND SECONDARY LANDINGS

25. General

a. While discussion in chapter V, section V of FM 31–12 outlines that the landing force scheme of maneuver in CBR warfare involves simultaneous assault on widely separated division, battle group or battalion landing team beachheads; it also provides for less dispersion in environment devoid of active use or threat of CBR weapons. In either condition the system of categorizing attack forces as main or secondary efforts at BGLT level is valid in amphibious operations the same as in normal land operations. The BGLT may take part in landings as a main attack, a secondary attack, or merely to carry out a demonstration in conjunction with the division assault landing.

b. When considering the scheme of maneuver of widely dispersed separate BGLT's it may not be practicable to categorize the landings in a main or secondary manner initially. Under these conditions, organization and support of the BGLT's are accomplished to give each the maximum capability of achieving early success.

26. Main Landing

The main landing is an attack in an area that appears to be the most likely to succeed in accomplishing the mission of the landing team. The units in the main attack receive first consideration in the assignment of troops, ships, and aircraft, if there are not sufficient resources available to equally support all attacking elements.

27. Secondary Landing

a. Secondary landings are those made outside the immediate area of the main landing but so oriented to support the main attack directly or indirectly. They may be made before, during, or after the main landing. A secondary landing may be exploited rather than the main landing. All secondary landings, therefore, are planned and executed in the same way as a main landing.

This fact is considered in selecting landing areas and in tactical and logistical planning. Secondary landings are made to—

(1) Secure a passage for naval vessels.

(2) Deny the use of an area to the enemy.

(3) Provide flank protection.

(4) Delay and divert enemy reserves, ships, and aircraft from the main landing.

(5) Seize position areas for supporting artillery and rocket units.

(6) Seize airfield sites suitable for land based aircraft in support of the main landing.

(7) Seize positions for navigational aids, air warning installations, safe anchorages, or temporary advance naval base facilities.

b. A secondary landing can be employed as a feint to confuse the enemy, to delay the establishment of or reduce the effectiveness of his dispositions, and to cause him to commit his reserve at an unfavorable time or place. The scheme of maneuver for a feint must provide for reembarkation and withdrawal of the force in an orderly manner. However, if a feint achieves an unlooked-for tactical success, it may be exploited by additional landings and become a major effort in the overall landing team scheme of maneuver.

c. After the main landing has been made and the situation ashore has been developed, the secondary landings may be executed to seize neighboring atolls and archipelagoes. These secondary landings may be executed to destroy isolated enemy groups on small islands adjacent to the main landing area and thus clear the way for subsequent unhindered landings in that area.

28. Withdrawals, Raids and Demonstrations

See chapter 9, FM 31–12, and chapter 12 of this manual.

Section IV. SELECTION OF THE LANDING BEACHES

29. General

a. Organization of the land portions of the landing area(s) is determined by the Army landing force commander when he coordinates and establishes beachhead lines and other control measures as indicated in section II, chapter V and figure 1, FM 31–12.

b. The BGLT commander is primarily concerned with the landing beaches and objectives selected within the landing area assigned to the division.

c. The selection of the landing area(s) is governed by the mission, the enemy situation, location of the division and BGLT objectives, configuration of the coastline, beach characteristics, suitability of the terrain for ground operations (including dispersion required for passive defense against CBR weapons), hydrographic considerations, and meteorological factors. See paragraph 50, FM 31–12.

30. Mission

The area selected should permit the rapid landing of enough troops, equipment, and supplies to accomplish the mission without delay. It should be so located that the troops can reach their objective within acceptable time limits before major enemy reinforcements can arrive to bolster the defense.

31. Enemy Situation

a. Landing beaches that have the best landing characteristics and the most favorable avenues leading inland are usually the most strongly defended. On the other hand, undefended or lightly held beaches with favorable landing characteristics are generally found only at a considerable distance from an important objective, and their use would entail an extended overland advance. Heavily defended beaches are attacked directly if control of the fortified area is vital to the mission, and if it can be neutralized with CBR and/or other weapons. They may also be attacked by airlanded or airdropped troops. A direct waterborne assault, on heavily defended beaches that cannot be adequately neutralized, should be avoided if possible.

b. The probable location of enemy land, sea, and air reserves and their reinforcing capability must be considered when the operation is to occur on a land mass or island of appreciable size. A landing beach(es) and/or certain objectives may be selected specifically to facilitate initial assault elements blocking or otherwise interfering with the movement of enemy forces, especially reserves.

32. Location of BGLT Initial Objectives

A landing beach that is near the initial objectives is desirable. This allows the attacker to take maximum advantage of the shock effect of the landing and follow it with a short advance to the

initial objectives, heavily supported by air and naval gunfire. A shallow attack increases the probability of achieving surprise because the initial objectives frequently can be seized before major enemy reinforcements arrive. Initial BGLT objective(s) may be selected after the landing area is selected by higher echelon.

33. Configuration of the Coastline

Shorelines are classified as convex, concave, straight, or a combination of these. In addition there are certain special types like coral atolls, estuaries, small island clusters, frozen shores, and fiords.

a. The convex shoreline takes the form of a peninsula, a large promotory, or a delta. It favors the attack by allowing flanking fire by naval guns and permitting attacking units to rest both flanks on the water (fig. 1). The convex shoreline is often the most favorable coastal formation for the attack since it invites dispersion of hostile defensive fires and prevents effective enfilade fire on the landing beach. If the enemy elects to defend the salient, his routes of withdrawal or reinforcement are usually restricted. A landing at the base places the enemy in danger of being cutoff. However, the base of a peninsula may constitute a strong enemy defensive position, and hydrographic characteristics are usually unfavorable.

b. The concave shoreline takes the form of harbors, bays, and

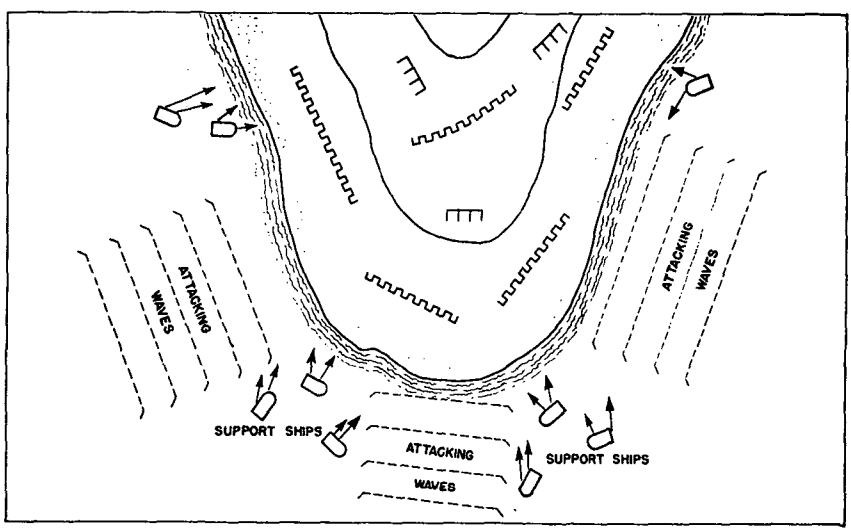


Figure 1. Convex shoreline.

indentations in the coastline (fig. 2). It is unfavorable because it provides the enemy with an opportunity to mass his fires at any point in the area and permits him to establish an organized system of crossfires. But the sheltered water and favorable landing conditions offered by harbors and bays may dictate the selection of a concave shoreline for the assault. Promontories that form the flanks of the landing beach can be reduced by direct assault or neutralized by fire before the landing. Both convex and concave shorelines may force the attacker to concentrate his troops and supplies. This greatly increases the problem of dispersion as a defense against CBR weapons.

c. A straight shoreline (fig. 3) is one which possesses no prominent indentations or promontories. Sofar as positions for flanking fire by heavy weapons are concerned, the straight form of the shoreline offers no decisive advantages to either the attacker or the defender, but very few shorelines are so straight that they do not allow flanking fire to some extent.

d. An atoll is a coral formation common to tropical seas (fig. 4). When an ordinary island is surrounded by a heavy coral growth in the shallow waters along its shore, the coral deposits form a more substantial land mass than the island itself. Generally, the circular coral formation is cut at intervals by channels through which the sea passes. The result is a circular chain of small flat islands surrounding a lagoon. An atoll can possess aspects of both concave and convex shorelines. If an attack is

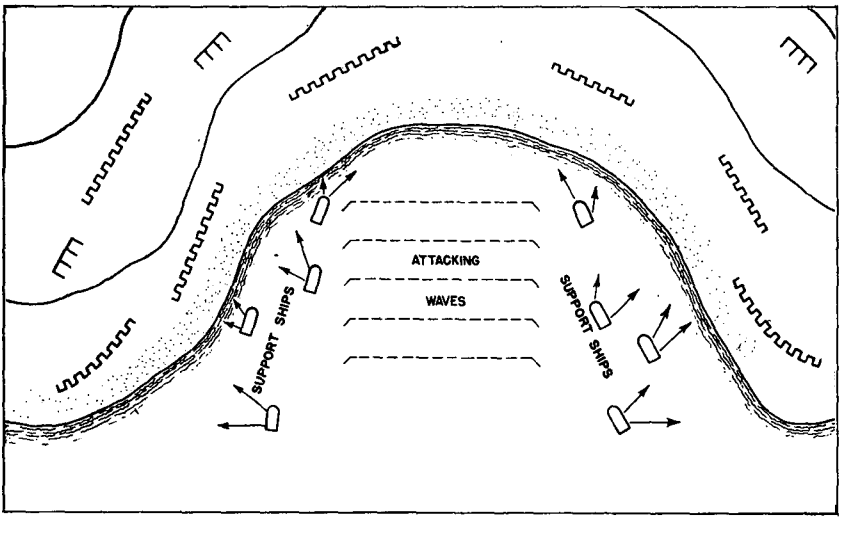


Figure 2. Concave shoreline.

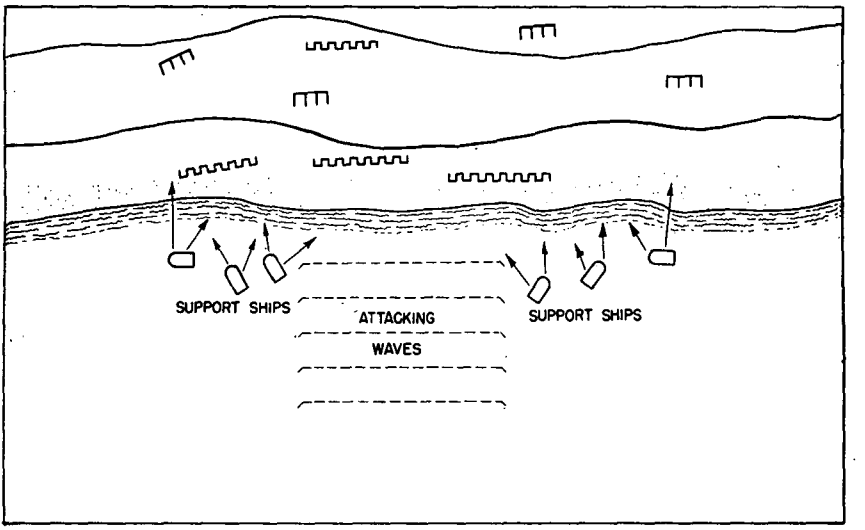


Figure 3. Straight shoreline.

launched from within the lagoon upon one of the islands, the landing beach may have a convex form while the adjoining islands form the typical flanking promontories of a concave shore. An attack on an atoll is influenced by the formation of the particular island concerned, and each case is decided on its own tactical merits.

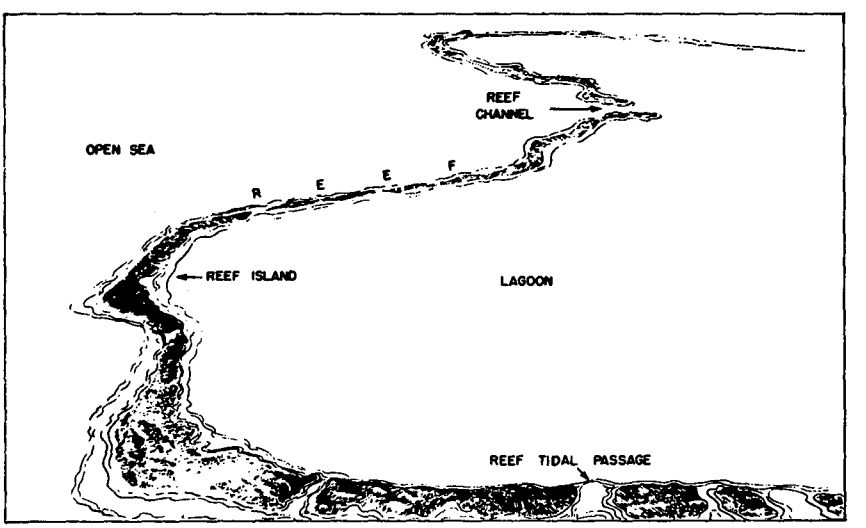


Figure 4. An atoll.

e. An estuary is the indention in a coastline formed by the mouth of a large river (fig. 5). The tides and currents that occur at the mouth of such a river are ordinarily unfavorable to a landing. Such a landing, however, must sometimes be undertaken because it frequently is the only place along a considerable distance of coastline, where a dangerous fringing reef has a gap. It is undesirable for the inland avenue of approach to be divided by the river. The tactics for landing at an estuary depend greatly on the scale of the operation. When a small attacking force is involved, it is usually desirable for it to land on only one bank of the estuary. Defending forces on the opposite bank may be in position to deliver flanking or enfilade fire into such a landing. In this case, those positions must be neutralized by fire or designated as an objective to be seized early in the attack.

f. Certain coastlines are protected by small island clusters lying so close to the mainland that they create a complicated system of offshore waterways. This formation presents difficult problems for the attacker and the defender. The water approaches for landing craft may be tortuous and restricted. The defender, by organizing most of the important individual islands, is able to fire from any direction on landing craft and amphibious vehicles attempting to thread their way to the coast of the mainland. However, such offshore island defensive positions are difficult to maintain if the attacker has command of air and sea at the time and place of landing. The islands may be isolated and reduced in detail by successive secondary landings or by nuclear

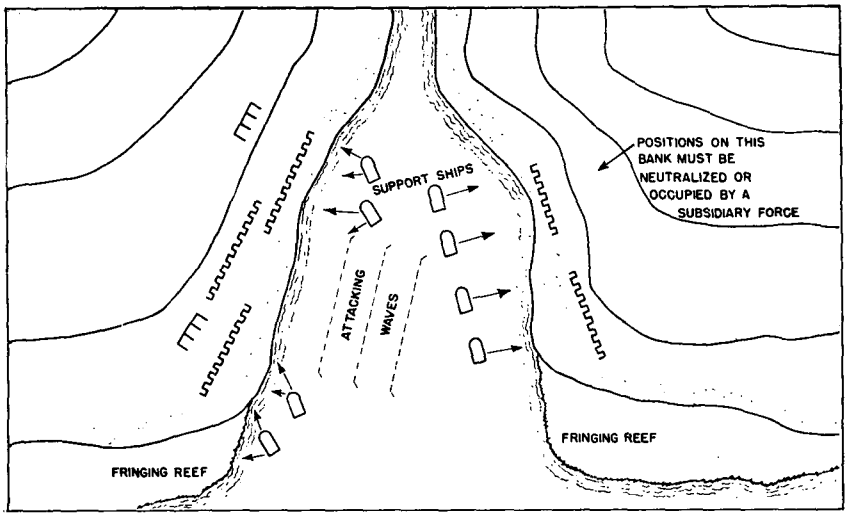


Figure 5. Landing in an estuary.

weapons. They may then be used to mask the assembly of assault craft. It may be advisable or necessary to seize one or more islands or clusters before executing the main landing. Artillery units often can be landed on the captured island to support the landing. It may also be used as a base for further operations.

g. The outline of frozen shores may constantly change due to temperature fluctuations. When the entire sea approach is frozen, the region does not favor amphibious operations. A level expanse of ice extending a few hundred yards seaward, that must be crossed by waterborne landing forces, is well suited to enemy organization of defensive small-arms fire.

h. A fiord is a long narrow inlet or arm of the sea between high rocks or banks. It often ends in a passable beach at the inland end and usually affords excellent anchorage. Landing against opposition presents unusual difficulties; ships have little maneuver room in a fiord; enemy fires can be concentrated against the landing, and the high, steep, rocky walls are serious obstacles to attacking troops. However, such coasts may be assaulted initially by airmobile forces and followed up with beach landings after key terrain has been seized or neutralized.

34. Beach Characteristics

a. The seizure of objectives that dominate a beachhead is greatly aided by a carefully considered selection and assignment of landing beaches within the beachhead area. A landing beach should be large enough for the landing of at least one BGLT. When the terrain dominating a beach is to be seized by helicopter landed forces, the extent of area to be seized initially is determined by the requirements for follow-up landings and logistic support.

b. From the point of view of landing conditions, favorable beaches are those that permit landing craft and landing ships to beach close to the shoreline so that troops and equipment can be debarked rapidly and moved inland without undue hindrance from navigational hazards, surf, tide, or the physical consistency of the beach itself. Beaches exposed to prevailing winds, where surf is likely to break during the period of a landing operation, are especially unfavorable, particularly where there are rocks and coral. Gently shelving beaches, or those having offshore bars or reefs, cause landing craft and ships to ground at a considerable distance from the shoreline, thereby lengthening the time for debarkation and increasing the risk from hostile fire.

c. Approaches to the beach for landing craft and amphibious

vehicles, should be free from natural and artificial obstructions to navigation under all tide conditions. It is particularly desirable to have enough room seaward to permit landing craft and vehicles to deploy into their attack formations before coming under effective artillery, mortar, or small-arms fire. Narrow entrances between islands and channels in reefs prevent deployment and greatly increase the effectiveness of the defender's fire.

d. Landing beaches should normally be trafficable by armored and wheeled vehicles and tractors, and have trafficable routes inland. When no vehicles are employed, they need only be suitable for foot troops. Precipitous beach slopes can be negotiated by foot troops and will provide some cover from direct enemy fire. Landings at the foot of rocky cliffs, however, are hazardous and generally are practicable only in calm seas. When possible, such areas should be secured by airmobile landing teams. Broad, flat beaches whose first covered position is a considerable distance inland, give the enemy clear fields of fire and observation. Narrow beaches benefit the attacker, permitting him to reach concealment and cover soon after landing. Woods or a bluff close to the beach can be an advantage if they do not greatly impede the advance of combat equipment and if they do not restrict naval gunfire and air support.

e. When supply is to be maintained indefinitely over landing beaches, special consideration must be given to their suitability for this traffic. The physical consistency of the beach, natural exits from it, and the proximity of suitable areas for extensive supply facilities are essential factors to be considered. Development of beach support areas often requires the use of special equipment such as earthmoving machinery. The type and quantity of material required for this development is determined by the characteristics of the soil, vegetation, and configuration of the ground in the beach area. Amphibious vehicles of special types may be required if there are water obstacles, swamps, or marshes.

f. Tactical requirements may demand that landings be made on beaches that have undesirable characteristics. Special consideration is therefore given to the types of landing craft or vehicles that can best be used, the limitations that adverse sea and weather conditions place on such landings, the capabilities of the amphibious task force for landing equipment over such beaches, and the specialized training required.

35. Suitability of Weather and Terrain for Operations Ashore

After the shoreline is evaluated, a tactical study is made of the inland area. The proposed zone of action is studied to determine key terrain, natural and artificial obstacles, concealment and cover, as well as avenues of approach. The tactical effect of the weather and terrain on enemy and friendly operations is then determined.

a. To protect the landing area from observed fire, the beachhead should include terrain features that mask observation from points farther inland or are deep enough to prevent ground observation. Where there is no dominating terrain inland, defensible manmade features such as antitank ditches, railroad banks, or small villages may assume increased importance in furthering the ground operation.

b. When the beach area gives the defender clear observation and fire over a depth of several hundred yards, the difficulty of landing is greatly increased. In such cases, the commanding terrain is seized by airmobile units or neutralized by nuclear and nonnuclear fires. Such terrain may particularly favor the use of LVTP's to provide mobility for exploiting the effects of a nuclear, chemical, or biological preparation.

c. Sand dunes, sea walls, shell holes, bomb craters, and built-up areas provide cover from direct fire, but may impede the movement of LVTP's inland. Grasslands, cultivated areas, built-up areas, and woods provide excellent concealment.

d. A landing area is chosen that allows the force to continue the attack beyond the beachhead line over suitable avenues of approach if the assigned mission requires movement overland to an interior objective. Such avenues of approach include corridors, ridges, roads, water, and rail nets; covered routes of advance free from natural and artificial obstacles. The force should not have to attack through comparatively impassable terrain that is suitable for strong enemy defensive positions.

36. Hydrographic Considerations

In considering naval requirements, the type and function of the ships and craft determine the desirable characteristics of a landing area. Shelter from heavy gales and storms is desirable. Special considerations are given to the beach gradient, approaches to the beach, surf, tide, currents, and the bottom.

a. Large vessels require extensive maneuver areas free from navigational hazards. Good holding ground is desirable for anchoring assault shipping. Fire support ships require maneuver

room to permit effective fire support. An essential requirement for short-range fire is deep water close inshore.

b. Assault craft require greater protection from the weather than do ships. In addition, assault craft require beaches of suitable gradient, negotiable surf conditions, and freedom from enemy mines and underwater or beach obstructions.

c. The hydrography of the landing area is a major consideration in the planning phase. A landing area may provide tactical advantages ashore, but it has doubtful value if the required troops, equipment, and supplies cannot be placed ashore without great difficulty.

d. The underwater gradient of a beach is the slope of the sea bottom off the beach. This slope is expressed as a ratio of depth to horizontal distance.

(1) A gradient of 1 to 40 indicates a uniform variation of depth of 1 foot in every 40 feet of horizontal distance. A commonly used gradient scale is—

(*a*) Steep—more than 1:15.

(*b*) Moderate—1:15 to 1:30.

(*c*) Gentle—1:30 to 1:60.

(*d*) Mild—1:60 to 1:120.

(*e*) Flat—less than 1:120.

(2) Since all types of landing craft have sloping bottoms, the slope of the gradient determines how far offshore each one will beach. The greater the distance from the beach, the longer the troops are exposed to hostile fire while wading ashore and the more complex becomes the problem of unloading equipment and supplies. A steep gradient permits craft of all types to beach satisfactorily, and it offers approaches that are usually free of natural obstacles. However, a boat grounding on this type of beach is unable to get a firm footing because the amount of boat bottom in contact with the beach is relatively small. In addition, the bow of the craft is forced up and the stern down, making the craft unstable and sensitive to the influence of currents, wind, and surf.

(3) The beach gradient also has an effect on the surf. On a steep beach where deep water is close inshore, the surf breaks near the shore. On a gently sloping beach the heaviest surf breaks at a considerable distance from the shore. The beach itself may supply clues as to the

underwater gradient. The form of the beach is determined in part, by the size of the waves which break on it, and by the topography and character of the sea bottom. In general, the coarser the beach material, the steeper the gradient. This generalization applies only to exposed beaches. Coarse material may form a shallow gradient if the beach is sheltered. A marked beach crest, one that is high and well defined, usually indicates a coarse material. A wide beach will usually indicate a fine material, firmness, flatness and a slight gradient. Narrow beaches tend to be steeper and usually are somewhat softer. Pebble and cobble beaches are narrow and steep, and the material is loose and rolling. The backshores of gravel beaches will be narrower and steeper than those of sand beaches.

(4) The beach gradient can provide a basis for estimating the effect of enemy beach obstacles. A long flat beach permits the installation of obstacles; a steep beach limits their extent and effectiveness. The gradient may be determined by hydrographic reconnaissance parties, underwater demolition teams, and aerial photography.

e. When planning an operation, surf conditions are studied in conjunction with the beach gradient because the surf depends on the beach exposure and the underwater topography. The surf may vary with the winds and the seasons. When the prevailing winds are onshore, the surf may be too high to permit a safe landing. When prevailing winds are offshore, the surf may be relatively light. The height of surf alone can be a critical factor that may disrupt landing formations and cause casualties.

(1) The operation of retracting a landing craft from the beach in heavy surf is difficult and dangerous.

(2) The surf and tide may completely alter the character of a beach, particularly one consisting of sand or gravel. Between the time of planning the operation and the day of landing, constant checking of the beach area is needed to discover such alterations.

f. The tide level relative to the beach gradient greatly influences the beaching of landing craft. When a relatively large tide range occurs on a gently sloping beach, landing craft may be stranded on a dry bottom before they are able to retract. Unless this possibility is calculated, a critical number of landing craft may become inoperative until the next rise of tide. A falling tide may cause craft to ground far off the beach proper, compelling

the troops to wade a great distance to shore. A landing at high tide, if determined to be present, may be desirable to overcome the disadvantages of a gentle gradient, but it must be assumed that the enemy may have placed additional defensive obstacles to be effective at high tide.

g. A current is the continued motion of the water in a given direction. It may disrupt landing formations or impede the movement of landing craft or vehicles so much that time schedules will be disrupted unless it is allowed for. A current flowing parallel to a landing beach can be strong enough to cause landing craft to broach. Broaching is dangerous in the presence of heavy surf and may lead to swamping. The unloading of vehicles, heavy equipment, and supplies is especially difficult under these conditions, because the craft cannot maintain a position perpendicular to the beach while discharging cargo. Offshore currents are found seaward of the surf and especially around the entrances to bays, in sounds, and in channels between islands and the mainland. They sometimes reach velocities of several knots. Inshore currents are found relatively close to the shore.

h. The influence the bottom has on an amphibious operation varies with the beach gradient. The less the slope, the greater the effect of unfavorable bottom material. The most desirable beach has a firm sandy bottom. Mud and soft sand are hazards to landing craft. Landing vehicles, belly up, lose all traction. Wheeled vehicles have a tendency to dig into the mud and sand and become immobilized. Rough coral heads and boulders may damage landing craft and vehicles.

37. Meteorological Factors

Before operational planning begins, long-range meteorological forecasts are obtained. Plans are based on predicted weather en route to and in the landing area. The chief weather factors to be considered are wind, visibility, and temperature and their related effects on both air and water movement.

a. The most detrimental factor is the wind. A violent storm can prevent the arrival of an amphibious task force at its destination. Ships may be forced to slow down when moving through high waves, causing convoys to be scattered. Booms, topside gear, and deck-loaded aircraft, other vehicles and cargo on ships may be lost or damaged. Ship-to-shore movement may be limited or made impossible as a result of damage to craft during the voyage. Troops suffer severely from seasickness. An extremely high wind disrupts landing schedules and formations by restricting the

speed and maneuverability of the landing craft and may prevent helicopter flights. Normal problems of control and coordination become even more complex.

b. The atmospheric conditions that influence visibility are fog, rain, snow, clouds, and haze. Visibility at all altitudes is important. Cloud cover at low altitudes interferes with vertical visibility of tactical air. If naval and air support depends on clear observation of the beach and coastline from the ships and the objectives from the air, reduced visibility lessens the effectiveness of this support. Poor visibility may so seriously disorganize the assembly of landing craft or helicopters for the ship-to-shore movement that the execution of planned landing formations becomes impossible.

c. Temperature extremes can seriously affect a landing. Severe heat or cold influence the capabilities of personnel and materiel. The detrimental effect of extreme temperatures can be minimized by prior training of all personnel in typical environment and by using the proper equipment and supplies.

Section V. THE BEACHHEAD

38. General Considerations

a. Tactical plans must provide for the rapid extension of the beachhead far enough inland to insure uninterrupted landing of troops, equipment, and supplies, and to secure terrain features and maneuver space for subsequent operations. When the enemy has a CBR capability, adequate space for a rapid through-the-beach assault, maneuver, and dispersion is extremely important.

b. Selection of a BGLT beachhead area includes consideration of the tactical aspects of the terrain, engineer effort required, and flank protection needed for expansion. Other considerations include—

(1) The suitability of the shoreline, anchorages and landing zones for the ships and ship-to-shore movement means to be used.

(2) The availability of personnel and materiel required for development and operation of a beach support area.

(3) The capacity for handling equipment and personnel.

c. The establishment of a beachhead is initially an offensive operation, followed by expansion and development of a beach support area. The beachhead will be continuously expanded until the amphibious task force objective is seized. Therefore, efforts are

aimed at the early seizure of terrain and shore features to include ports, airfield sites, and airfields, that will assist the advance and build-up for subsequent operations.

39. Phasing the Operation

The division is seldom able to seize, in a single sustained attack, its entire beachhead. The division commander, therefore, must phase the seizure in his concept of operations. Plans must provide that each BGLT has the capability for success without depending on other initial assault units. Plans also must provide for increased mutual assistance between units as the offensive progresses. For a detailed discussion of the extent of the beachhead area, beachhead lines, and organization of the beachhead area, see FM 31–12.

Section VI. TACTICAL PLANS

40. General

Once the landing area has been selected and missions have been assigned, the principal features of the concept of operation are decided. The concept of operation consists of the scheme of maneuver ashore, the landing plan(s), and the plan of supporting fires. These plans are interdependent and require simultaneous consideration and preparation. The operation plan for the landing and the seizure of the beachhead is prepared as early as possible. The concept of operation is the basis for much detailed planning, particularly supply, communication, and air support.

41. Guidance From Higher Authority

a. One of the peculiarities in the preparation of the operation plan is the BGLT's dependence on higher headquarters for information and intelligence. Plans of the next senior command echelon must, in addition, make detailed provision for the landing of subordinate units in order to coordinate the assignment and use of landing craft and vehicles. Plans must also insure effective integration of air and naval gunfire support. To this end, initial and subsequent planning guidance to the BGLT normally prescribes the BGLT tasks and—

(1) Date and hour of landing, using only the terms "D-day" and "H-hour," and plus or minus as required.

(2) Potential landing beach and/or landing zone.

(3) Time each scheduled wave is to land. (Usually based on coordinated recommendations of the BGLT.)

(4) Transport area, rendezvous area, line of departure, and the boat lane to beach. (Routes of approach and retirement for helicopters.)

(5) Zone of action ashore and BGLT objective(s).

(6) Tentative allocation of assault craft or aircraft for ship-to-shore movement.

(7) Naval gunfire support means.

(8) Air support means.

(9) Air defense artillery support.

(10) CBR support means and probability of friendly employment.

(11) Composition of the BGLT to include its shore party.

(12) Linkup plans for the airlanded or airdropped forces, if appropriate.

(13) Logistical aspects.

(14) Alternate planning requirements.

b. The formation for landing and the composition of waves are normally determined by the BGLT commander, however, they may be directed by higher authority to insure coordination and economy of effort. Usually, the recommendations of the BGLT commander are considered before final preparation of the division landing plan. Also, see paragraph 46*b*.

42. BGLT Mission

a. The mission assigned to an assault BGLT usually includes the prompt seizure of close terrain objectives. In addition, the BGLT protects the landing of subsequent echelons by destroying enemy weapons that could effectively fire on the beach. The extreme vulnerability of troops embarked in unarmored landing craft, during their approach to the landing zone, and subsequent debarkation dictates this type of mission. It may be necessary for the BGLT commander to assign intermediate objectives, but these should be kept to a minimum. The BGLT, as a unit, normally does not by-pass resistance. This, however, must be clarified in orders.

b. The added requirements for a BGLT to advance rapidly to the division objective may make it necessary to provide LVTP or other highly mobile armored vehicles to a portion or all of the assault BGLT. These mechanized elements may have to by-pass some enemy resistance for mop-up by slower moving elements of the BGLT.

43. Terrain Analysis of Beach Area

a. The BGLT commander must thoroughly study the planning aids made available to him to determine the general topography of the area and the military aspects of the terrain, to include—

(1) Obstacles such as rocks and shoals in the boat lane, small islands or promontories, artificial obstacles, and mines.

(2) Landing beach exits.

(3) Concealment and cover for the enemy and for his own troops on landing.

(4) Fields of fire for the enemy and for his own troops on landing with particular emphasis on the fields of fire that command the boat lane and the assigned landing beach.

(5) Avenue of approach into enemy positions.

(6) Obstacles to the advance inland.

(7) Enemy routes of communication into the BGLT beach area.

(8) Defiladed areas in the BGLT zone of action from which enemy indirect fire can be brought to bear on the beach.

(9) Information as to the type of beach, including slope, type of sand, and the tide.

b. From this terrain analysis the BGLT commander selects the key terrain feature(s) which the BGLT must seize or neutralize to insure success of the landing, the seizure of objectives, and control of the enemy's routes of communication into the assigned beach area.

c. Straight shorelines are rarely encountered and almost every beach will form a reentrant into the enemy's defenses. Positions from which the enemy can deliver flanking and enfilading fire will often be found. Such positions range from small sand spits projecting only a short distance into the water to large, rocky promontories jutting out several hundred yards. Only by a careful terrain analysis can all these features be located and their probable effect on the landing be assessed. For a more detailed discussion of terrain, see paragraph 35.

44. Enemy Situation

a. In conjunction with the terrain analysis of the beach area, the BGLT commander should seek to determine the following points:

(1) The enemy's dispositions in the landing area.

(2) The enemy's defensive fire plan.

(3) Strong and weak points in the enemy's defense plan.

(4) Routes into the landing area that the enemy might use for reinforcing troops and weapons.

b. Study of planning aids, particularly aerial photos, make it possible to learn much about the enemy's defensive organization. It is improbable that everything about his defense can be determined or that the enemy will not make changes before D-day; therefore, continuous effort must be given to developing this intelligence and to planning for meeting a change in the enemy situation.

45. Scheme of Maneuver

a. The BGLT commander bases his estimate of the situation on the factors of METT (mission, enemy, terrain and troops available). From his estimate he develops a scheme of maneuver ashore, together with a plan of supporting fires, to seize his assigned objectives. He develops a formation for landing (par. 46) to support the scheme of maneuver. If the considerations of timing, dispersion, control, and the availability of landing craft and amphibious vehicles will not allow the desired landing formation, he must of necessity modify his scheme of maneuver ashore.

b. The BGLT commander's proposed formation for landing goes to higher authority for approval. The BGLT commander has considerably more latitude in planning his scheme of maneuver ashore, although this, too, is subject to the division commander's final approval.

c. The general principles of land warfare apply, but certain considerations require emphasis in an amphibious attack.

(1) First, it is vital for the scheme of maneuver to provide for the immediate seizure of key terrain commanding the landing beach and the boat lane. The BGLT commander assigns the key terrain in his zone of action as objectives to his subordinate units. Key terrain outside his zone of action, but which commands his landing beach and boat lane, must be coordinated with the commanders of adjacent BGLT's or their common superior to insure each has been assigned as an objective of some unit. The seizure of key terrain may be accomplished by—

(*a*) Attack from the flank or rear after landing. During the landing and until the attack can be launched, the

objectives must be neutralized by air, naval gunfire, or other available supporting fires.

(*b*) Initial assault landings over a landing beach or in a landing zone on/or near the objective.

(*c*) Attack by an adjacent BGLT. Coordination by higher authority is always desirable, but if the two BGLT's are in different areas during the planning phase, it is mandatory. Whenever possible, the two BGLT commanders coordinate personally during the planning phase.

(2) The second consideration is the immediate seizure of terrain which will insure the advance inland and subsequent seizure of the initial BGLT objective. Subordinate units should not merely be ordered to proceed directly inland to the BGLT objective, ignoring key terrain or terrain features whose seizure will permit the fullest use of fire and movement in the advance. Where the terrain permits, planning must provide for mutual support, whereby one company seizes a terrain feature from which it can assist the adjacent company in its advance to a farther objective.

(3) The third consideration is the BGLT commander's more restricted use of his reserve in comparison with other type operations. He must remember that it is difficult to alter the landing time of an afloat reserve or land it on other than a preassigned landing beach. Difficulties of regaining control after landing may make it impossible to coordinate initially with an adjacent unit on maneuvering his reserve through that unit's zone of action. The preplanned employment of helicopters to land the reserve will increase his flexibility as to how, when and where he can commit it.

(4) The fourth consideration is that one of the distinguishing characteristics of a waterborne landing is the initial lack of depth of the attack. The necessity of first seizing a beachhead large enough to permit the development of depth in subsequent attacks and to provide dispersion of CBR defense often makes it impracticable to provide for a main effort to be made immediately on landing. As soon as possible, however, support weapons and the reserve must be so employed that an attack can be made in depth with a main effort. This must be remembered during planning, and such provisions as are feasible

should be included in the scheme of maneuver. The employment of helicopters in the initial assault may provide depth at the outset, depending on the location of the objectives and size of the airmobile forces.

(5) The scheme of maneuver must provide for the securing of key terrain features, even though air and naval gunfire support, including nuclear and/or chemical munitions, may be delivered on these prior to the landing. Although this fire support may neutralize these areas for a time and often destroy portions of them, they must still be assigned as a responsibility of specific tactical units to clear and occupy or control. The BGLT commander must retain complete flexibility of mind and be prepared to have his plan upset in many ways on the day of the landing. New objectives, new enemy dispositions, undiscovered terrain features and obstacles, unexpected resistance, failures, and mistakes may all be expected to appear on D-day.

(6) Leading assault elements must attack through the beach rapidly, even in the face of increasing fire, to exploit the initial shock of air, naval gunfire, and nuclear preparations. This prevents succeeding elements from becoming intermingled, congested, or pinned down, thus presenting targets for enemy nuclear and nonnuclear munitions. Only by moving forward rapidly, aggressively seeking out the enemy positions, attacking and then dispersing, can the commander maintain the momentum of the attack and gain depth in which to maneuver his troops and minimize casualties.

46. Formation for Landing

a. In determining the formation for landing, the commander first considers the scheme of maneuver ashore (par. 45). In addition, he must consider—

(1) *Beach terrain.* A beach with narrow frontage may force the BGLT into a column formation, even though the scheme of maneuver ashore will later necessitate an attack on a broad front. A beach of this type may be assigned because the difficulty of landing or other considerations have induced the enemy to weaken his defense in this area. A similar situation may arise where, although the beach itself is suitable for landing, it is backed by a cliff offering only a limited number of beach exists through which the landing team must pass prior

to the attack inland. In this case, the formation adopted must provide for the immediate seizure of these beach exits. Special scaling devices may be needed. The formation for landing must be one which will permit the seizure of beach terrain features as planned.

(2) *The enemy situation.*

(*a*) Strong enemy defense of the beach will force the adoption of a formation permitting immediate attack at the water's edge. Such a formation requires—

1. Sufficient mass striking the beach at H-hour to seize it by assault tactics in a minimum of time.

2. An adequate reserve to maintain the momentum of the attack and to exploit success.

3. Ability of each unit in the initial assault to fight independently.

4. Full deployment of the troops landing at H-hour so that they can develop maximum firepower in a minimum of time, deny the enemy a concentrated target, and clear the maximum beach frontage. They must neutralize, or destroy all enemy as quickly as possible. It is not normally sound to bypass enemy beach positions because they cannot be isolated and contained from the water side. Succeeding units rarely can avoid the fires from bypassed positions. Those beach defenses that are not immediately reduced by the first wave may have to be assigned to troops arriving in the second wave, in order that the attack does not lose its momentum.

(*b*) Since it is improbable that all enemy dispositions can be determined prior to landing, the indication of a light enemy defense should not lead to adopting a formation without reserves. In any such case, when it is necessary to commit all BG units, the BGLT commander should requst the attachment of an additional infantry unit to use as his reserve.

(*c*) The enemy's disposition is the primary consideration in choosing the composition and timing of waves. Organic and attached supporting weapons (LVTH) must accompany the assaulting troops. On a strongly defended beach, more time must be allowed between scheduled waves to prevent congestion. When defenses are very strong, it may be desirable for the BGLT commander to recommend that he be allowed to land the

reserve on call. When information on the enemy is lacking, suitable assumptions must be made as to enemy dispositions and the organization for the assault must provide additional security and flexibility.

(3) *Supporting fires.* Air and naval gunfire bombardment, including the delivery of nuclear and/or chemical munitions immediately preceding the landing is so intense that a considerable lull in enemy activity may occur immediately following the shifting of fires inland. This lull is a period of opportunity for the landing of as many troops as possible with minimum casualties. The formation used should take advantage of this condition.

(4) *Plans of higher commanders.* Higher commanders may desire that certain beaches be organized quickly for the landing of artillery, tanks, and other nonscheduled units. Such plans must not restrict the formations of the BGLT's landing on those beaches. Using BGLT column formations, or holding the BGLT reserves on call, may undesirably increase the time that the assault BGLT's use the landing beach.

b. After considering all factors, with particular emphasis on the desired scheme of maneuver ashore, the BGLT commander makes his decision as to the desired landing formation of his unit and the timing of his scheduled waves. Unless unusual conditions prevail, the division commander delegates authority to determine the detailed composition of the BGLT waves and boat teams to the BGLT commander. The decision is reached within the broad framework of the formation for landing as planned and approved by higher echelon. Recommendations of the BGLT are coordinated to insure compatibility with adjacent and higher echelon landing team plans and supporting naval capabilities.

c. Landing beach frontage and interval between BGLT beaches will vary based on the situation, particularly with respect to the probability of mass destructive weapons employed. Under nuclear conditions and when the beach configuration and hydrographic conditions permit, a BGLT should desirably have a landing beach frontage of approximately 2,000 meters and an interval of approximately 4,000 meters from the adjacent BGLT(s) beach. BGLT landing beach frontage under nonnuclear conditions preferably should be selected to provide approximately 1,200 meters frontage with sufficient interval between BGLT beaches to permit required maneuver space ashore and to avoid conflict in the ship-to-shore movements.

47. Plan for Supporting Fires

a. Amphibious Task Force Plan. The amphibious task force operations plan includes coordinated naval gunfire and air plans. They are based on the overall plan and recommendations of subordinate units. These plans are carefully studied by the BGLT commander and necessary modifications are requested. Fire support plans are made to support the Army landing forces as a whole. They also must provide the maximum coverage of each BGLT beach just prior to the landing; in addition, they may provide for pre-D-Day bombardment against every target that can be found on aerial photographs of each BGLT zone of action. Therefore, modifications, other than minor ones, are rare. See section VI through VIII, chapter 5, FM 31–12.

b. Mortar and Artillery.

(1) The BGLT commander normally plans for initial employment of the Heavy Mortar Platoon and attached artillery or other fire support in a centralized general support role.

(2) Forward observers from the heavy mortar platoon and artillery units land with leading assault elements. Liaison, reconnaissance, and/or survey personnel land early to verify the adequacy of mortar and artillery positions. The weapons are landed and placed in position as soon as position areas are uncovered by the leading assault elements. They should not be landed so early as to subject the personnel to needless risk and should be spaced in the waves to avoid excessive loss from single nuclear weapons or sinking of landing craft. Mortars will normally be landed early while artillery may be placed in a nonscheduled status and landed on-call.

c. Davy Crockett. Normally these elements will be landed as soon as feasible in a general support role to provide the BGLT with an immediate nuclear delivery means.

d. Assault Weapons and Radar Platoon Elements. To the extent practicable these elements will be decentralized for the initial landings dependent on the enemy situation and degree of effectiveness that can be expected to initially prevail ashore.

e. Flamethrowers and Demolitions. These are usually required to assault beach defenses. The equipment must be obtained early and integrated in the unit training for tactical employment as outlined in FM 20–33. If terrain and landing facilities permit mechanized flamethrowers may also be employed. Demolitions should be landed with each boat team.

f. Company Supporting Weapons. In making out the landing craft and amphibious vehicle assignment table, the BGLT commander considers the recommendations of his company commanders as to the employment of the supporting weapons of the companies.

g. Supporting Arms. Plans are made for the use of supporting arms which arrive later and support the BGLT to insure their smooth integration with supporting fires already being delivered. Among these arms may be tanks, antitank weapons, and other division or corps artillery. They are usually attached, but may be in support of the BGLT if higher headquarters has gained control. Liaison and reconnaissance detachments from these units go ashore with the first boats of the BGLT, find position areas for their weapons, and arrange for their employment so as to best support the advance of the landing teams. Planning must provide for proper boating and communications to enable these detachments to perform their roles. While procedures for coordinating supporting arms at BGLT level are essentially the same as those employed in normal land operations, there is a requirement for emphasis on naval gunfire and tactical air support until artillery is ashore.

Section VII. AIR AND NAVAL GUNFIRE LIAISON COMPANY (ANGLICO)

48. General

ANGLICO is a Fleet Marine Force unit organized, trained, and equipped to provide qualified personnel and communication for the control of naval gunfire and close air support for an Army or Allied division engaged in an amphibious operation. In addition, this unit may serve as a pool of trained naval gunfire and air support teams to be employed as necessary to meet the demands of units other than infantry which require naval gunfire or air support. The unit is capable of third echelon maintenance in electronics and second echelon maintenance for other supply classifications. It is also capable of self-administration.

49. Composition and Functions

ANGLICO (fig. 6) contains a company headquarters, a division naval gunfire liaison team, a division tactical air control party, and five battle group air-naval gunfire platoons. These platoons are composed of a battle group shore fire control party and a battle group tactical air control party.

a. Division Naval Gunfire Liaison Team. This team is attached to division headquarters to function in the division FSCC. It performs naval gunfire staff functions, exercises control over fires of ships engaged in general support of the division, and provides and operates radar beacons as required. The division naval gunfire team is composed of a naval gunfire officer and the necessary communication personnel to establish communication with the:

(1) Landing force naval gunfire officer.

(2) Battle group shore fire control parties.

(3) Division general support ship(s) and air spotter.

(4) Adjacent division naval gunfire officers.

(5) Other Navy and Army unit commanders as required.

b. Tactical Air Control Party (TACP). A TACP is attached to division headquarters and to each battle group. Each TACP is composed of the necessary aviation and communication personnel and equipment to carry out control and liaison functions at the level assigned.

(1) The division TACP contains a Marine Corps aviator with

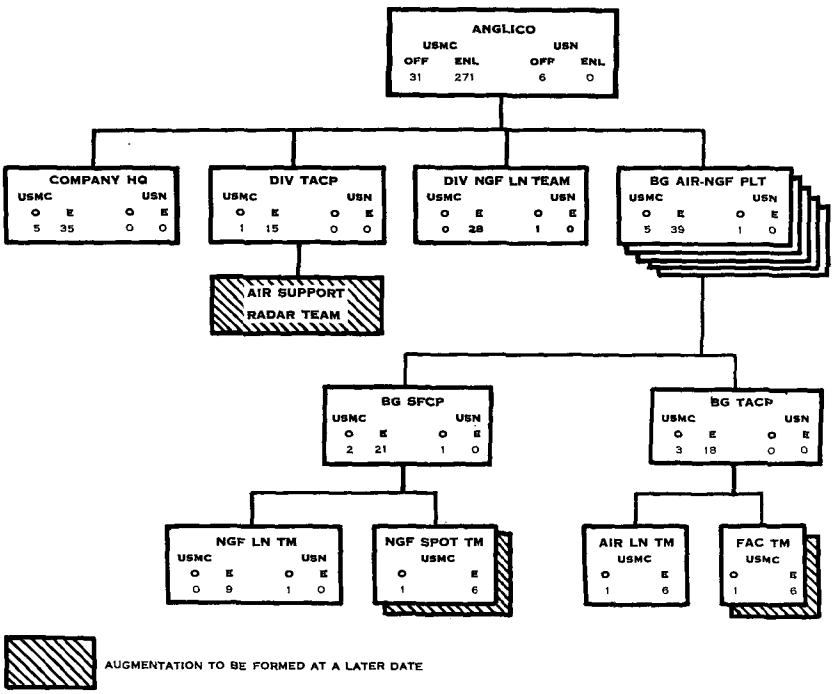


Figure 6. Air naval gunfire liaison team (ANGLICO).

enlisted communication assistants and equipment. The principal duties of the division TACP are to—

(*a*) Supervise the BGLT TACP's in the execution of their duties.

(*b*) Monitor the tactical air request net and the tactical air direction net.

(*c*) Advise the division commander on the employment of air support.

(*d*) Assist in coordinating air support with naval gunfire and artillery.

(2) The BGLT TACP is composed of two aviators (increased to three aviators when two FAC teams are formed) and communication personnel and equipment. The two officers serve alternately as FAC's and AIRLO's. Their duties are as follows:

(*a*) The FAC lands in one of the first waves and operates with forward units of the BGLT, controlling the aircraft that execute missions in close support of the BGLT.

(*b*) The AIRLO remains with the BGLT command group and acts as adviser to the commander on air support operations. He monitors the tactical air request net, tactical air direction net, and tactical air observation net.

(3) See paragraphs 56 through 61 for further discussion.

c. Shore Fire Control Party (SFCP). An SFCP is attached to each battle group. Its mission is to obtain and control naval gunfire support. The SFCP is organized into two teams—a naval gunfire liaison team and a naval gunfire spotting team. A second spotting team may be formed at a later date (fig. 6).

(1) The naval gunfire liaison team consists of one officer and nine enlisted marines with duties and ranks as follows:

Lt (USN) Naval gunfire liaison officer, SFCP commander: Provides liaison and special staff advice regarding naval gunfire matters to the supported unit's commander; maintains communication with assigned fire support ship(s), with the naval gunfire spotter, and with the air spotter (if employed); is prepared to conduct fire in the event of spot team casualties.

1 Sgt, Naval gunfire chief: assists the liaison officer as required.

1 Sgt, Radio supervisor: performs duties as team communications chief.

1 Cpl, Field radio operator: operates on voice radio net.

1 Cpl, Radio-telegraph operator: operates on voice or CW radio net.

3 Pvt, Field radio operators: operate on voice radio net; act as messengers.

1 Pvt, Radio-telegraph operator, driver: drives vehicle (truck, ¼-ton, 4x4) mounting a radio; operates on voice or CW radio net.

1 Pvt, Driver.

(2) The naval gunfire spotting team consists of one officer and six enlisted marines, with duties and ranks as follows:

Lt (USMC) Naval gunfire spotter: controls and adjusts fires of assigned battle group support ship(s) on targets of opportunity or as otherwise directed; maintains communication with fire support ship(s), with the naval gunfire liaison officer, and with the air spotter (if employed).

1 S/Sgt, Naval gunfire chief: assist the spotter in observation and conduct of fire; is prepared to continue conduct of fire if the spotter becomes a casualty; usually supervises local security of the observation post.

1 Sgt, Radio supervisor: performs duties as team communications chief.

1 Cpl, Field radio operator: operates on voice radio net.

1 Cpl, Radio-telegraph operator: operates on voice or CW radio net.

1 Pvt, Field radio operator: operates on voice radio net; acts as driver.

1 Pvt, Radio-telegraph operator: operates on voice or CW radio net; acts as messenger.

d. Control Procedure.

(1) The spotting officer designates the target by a target designation system superimposed on a map, by coordinates, or by reference to a point known to the ship. He is in communication with the direct support ship and calls his fire mission directly to it.

(2) The naval gunfire liaison officers at battle group and division monitor the spotting net and, by their silence, indicate consent to the requested mission. Either liaison

officer can enter the spotting net and transmit information to modify or cancel a mission, as appropriate, for reasons of safety or to avoid conflict with other missions or arms.

Section VIII. NAVAL GUNFIRE SUPPORT

50. General

Naval gunfire supports the attack by destroying or neutralizing shore installations that oppose the approach of ship or aircraft, the landing of troops, and the operations of troops ashore. Due to the initial absence of shore based artillery, it is to a great extent the major fire support means which the BGLT commander relies upon until division and corps units are landed.

51. Capabilities and Limitations

Naval guns have a wide variety of calibers and types of projectiles with various charges and fuses; a high rate of fire at a high initial velocity; a flat trajectory; and a narrow deflection pattern. The mobility of the ship, its fire control equipment, and its inherent on-station ammunition replacement capability are advantages. The flat trajectory of naval gunfire limits its capability to attack defiladed targets. The changing position of the ship and the difficulty of accurately fixing the ship's position also represent disadvantages. Other limiting factors are the effect of hydrography on the availability of firing positions, the effect of weather and visibility on observation of fire, the long range pattern, the fixed magazine capacity, and the effect of enemy air and naval attack of fire support ships. For additional information, see FM 31–12.

52. Assignment and Relief of Fire Support Ships

a. The amphibious task force commander assigns direct fire support ships and their reliefs to support a BGLT on request from the landing force commander. These initial assignments are published in the naval and the BGLT operation orders. If the BGLT needs additional support during the course of the operation, the BGLT naval gunfire liaison officer (NGLO) forwards a request for it to the division naval gunfire officer (NGO). With the approval of the division commander, the NGO may temporarily assign the division support ship to a mission in support of a BGLT.

b. When a fire support ship has to retire to replenish its ammunition supply, or for any other reason, an assigned relief ship moves in to take its place.

53. Conduct of Fire Missions

A direct fire support ship delivers fires at the request of the supported BGLT. The shore fire control party (SFCP) attached to the supported BGLT, or an air spotter, adjusts the fires. When the ship is not fully engaged in its direct support mission, it responds to fire requests from the division. In an emergency, a direct support mission may be interrupted and the fires of the ship diverted to another mission on the authority of the division commander. When a ship is providing general support to a division, it delivers fires at the request of the supported unit, or against targets of opportunity by prearranged procedures. See also FM 31–12.

54. Support for Helicopter Movement

Naval gunfire for an airmobile assault is similar in principle to that used in support of the beach assault elements. The major differences stem from the fact that the landing zone or drop zone may be some distance inland, which requires the employment of ships with heavier caliber guns, or may be so close to the beach assault elements as to present acute problems in fire support coordination. The techniques for controlling these fires must be thoroughly established in the fire support plans prepared by the amphibious task force commander.

55. Communication

a. Communication is vital to the control and execution of naval gunfire support.

b. Alternate channels and agencies of communication available to the SFCP include alternate naval gunfire frequencies, the resources of other supporting arms, and the resources within the landing force organization.

Section IX. AIR SUPPORT

56. General

The Navy-Marine Corps air support system is normally used in amphibious operations, regardless of the service furnishing the close support aircraft, until such time as required command, control agencies, and facilities are established ashore and assume control. If air bases are within range of the objective area, Air Force elements may provide air support, but it is usually provided initially by carrier based aircraft. When the landing force ashore is supported by the Air Force, control of air operations is exercised

through the tactical air control system of the supporting Tactical Air Force (TAF). For a discussion of the types of air support available, see FM 31–12.

57. Mission and Planning for Air Support

a. The mission of supporting air in support of an amphibious operation is the same as in normal land operations: to gain and maintain air superiority, to isolate the battlefield and to provide close air support for ground operations.

b. The BGLT commander may request preplanned air support missions. The request is coordinated and consolidated by higher commands and is included in the overall air support plan for projected operations. He may also request close air support missions on an on-call basis. During operations, the control agency handles his requests for on-call support as rapidly as possible, ordering their immediate execution by aircraft on station over the objective area or on deck alert aboard an aircraft carrier.

c. Overall planning and consideration given to air support follows the sequence given in FM 31–12.

58. Organization for Tactical Air Control and Liaison

The amphibious task force commander is responsible for all air operations of the amphibious task force. The following air control agencies assist him in the most effective application of air power:

a. Tactical Air Control Center (TACC). The TACC is the command post of the tactical air commander and is the principal air operation facility from which all aircraft and air control functions are coordinated in the objective area. While afloat, the TACC is located aboard the flagship of the amphibious task force commander.

b. Tactical Air Direction Center (TADC). A TADC is an air operation facility subordinate to the TACC. Whenever it becomes impracticable to direct all air operations from a single TACC, TADC's are established to direct aircraft and air warning operations within designated sectors of responsibility.

c. Tactical Air Coordinator (Airborne) (TAC (A)). A TAC(A) is an officer stationed in an aircraft during flight who coordinates the actions of aicraft engaged in close air support.

d. Tactical Air Control Party (TACP). See ANGLICO, paragraph 49*b*.

59. Air Operations During Landings

During the ship-to-shore movement, preplanned air strikes assist in achieving a maximum shock effect. They cover the period in which fire support ships are maneuvering for position. During the critical period when landing craft, LVT's, and helicopters are making the final run to the beach or landing zone, aircraft assist in neutralizing the beach, landing zone, the approach route, and adjacent key terrain features by concentrated strafing, bombing, rocket, and incendiary attacks. They continue these attacks until the assault troops are so close to the shoreline or landing zone as to be endangered. The attacking aircarft are then shifted to other target areas a few at a time to maintain neutralization. Supporting aircraft can lay smoke on call.

60. Employment of Air Support

a. The FAC directs and controls the air attack of frontline targets. If he is unable to observe a target, it may be possible for the TAC(A) to direct the air strike. The pilots must always know the location of the friendly forces before they deliver a close air support strike. These positions may be indicated by distance and direction with reference to the target or by coordinates, or they may be marked by panels, pyrotechnics, or electronic devices. Targets may be designated by coordinates. When possible, naval guns and mortar or artillery smoke shells should be used to assist in pinpointing their location.

b. Immediately after landing, the FAC sets up his portable radio equipment at a vantage point from which he can observe as much of the BGLT area as possible. He may operate from an LVT or other vehicle. When he receives a request for close air support from an infantry commander, he immediately transmits it over the tactical air request (TAR) net to the agency that has control of aircraft in the area (TACC or TADC). His request contains the following elements:

(1) Priority of mission.
(2) Description and nature of the target.
(3) Location of the target.
(4) Ability to mark the target.
(5) Type and direction of attack.
(6) Altitude and direction of pullout.
(7) Time and/or time limits for the attack.
(8) Location of frontlines.

(9) Observation and control.

(10) Restrictive fire plan.

c. The TACP's of higher echelons monitor the TAR net and consent to the request by remaining silent. If the request would jeopardize the safety of other units or conflict with other fire support means, a higher echelon commander can modify or cancel it. If no one cancels the request, the control center assigns aircraft to the mission. When the aircraft are in the general area of the target, pilots report to the FAC on the tactical air direction net. The FAC then orients the pilots and controls the strike. If required, the TAC(A) may assist in identifying the target by making passes at it or by otherwise coordinating with the FAC on the ground. After completing the mission, the pilots report to the TACC or TADC for further orders. The AIRLO at BGLT headquarters submits a report of assessed damage and ordnance expended to the TACC or TADC, as appropriate.

61. Air Control Team of Artillery Battalion

When air support is furnished by the naval forces, there is no immediate requirement for the air control team that is designed for use when the Air Force tactical air support system is used. It normally lands with battalion headquarters personnel. The determination of exactly when it will land is based on—

a. Availability of shipping space.

b. When the change to the Air Force tactical air support system will occur.

c. Compatibility of communication equipment with the command and control system.

CHAPTER 4
TACTICAL AND TACTICAL SUPPORT UNITS

62. Engineer Units—Mission

a. General. The primary mission of engineer units in an amphibious operation is to facilitate the offensive effort of the tactical units. The BGLT normally has divisional engineer units and elements of the engineer amphibious support command attached. Elements of the engineer amphibious support command are used to develop the beach support area and to provide tactical and administrative support.

b. Division Engineers. During and after the landing phase, the primary mission of the division engineers is to support the attack of tactical units. When the appropriate objectives are seized, the BGLT's reorganize and division engineer units revert to normal support of the infantry's attack inland. Each attacking BGLT usually has an engineer company of the division battalion attached. These units support the BGLT as follows:

(1) *Assault landings.* During landings division engineers may be used as demolition teams. Platoons operate as a unit under their leaders in the removal of major obstacles. This method is particularly suitable for destroying obstacles, breaching sea walls, and providing vehicular gaps through extensive minefields. All breaching efforts should be part of an overall plan. See appendix II for example of how the engineers are integrated in the BGLT task organization.

(2) *Operations ashore.* After the landing, division engineers continue to assist the forward movement of attacking units. They may provide demolition teams and demolition charges for infantry assault units, if needed. They provide engineer equipment, supplies, and personnel to help remove barbed wire, and breach minefields. In addition they build routes through and beyond the beach support area. Other tasks include repairing, marking, and maintaining roads, and constructing and repairing bridges.

c. Engineer Amphibious Support Command (EASC). (See chapter 6.) The EASC TOE and doctrine for employment are currently under preparation and will be published later. See paragraph 88 FM 31–12, for a general guide as to the units employment in amphibious assault.

d. Engineer Amphibian Equipment Battalion. (TOE 5–617D.) This is the unit of the EASC that provides the landing vehicles, tracked (LVTP) for tactical mobility essential to executing a rapid advance through the beach to initial objectives. The battalion contains a headquarters and headquarters company, and three engineer amphibian equipment companies. Each amphibian equipment company operates 60 LVTP's for lifting elements of the one BGLT. Elements of the battalion will normally be attached to the BGLT for the ship-to-shore movement and retention until at least the initial objective have been secured.

63. Armored Units—Tank Units

The division tank battalion may be kept under division control, or some of its units may be included in the BGLT's. The landing sequence of tanks within the landing force depends on the mission, the terrain, the enemy defenses, the beach obstacles, and the availability of special flotation devices or landing craft. Terrain and obstacles permitting, tanks are landed early, particularly if the enemy is known to have tanks in position or prepared to take part in a counterattack. In any case, tanks move with or closely follow the infantry. Before the tanks land, paths are cleared through obstacles such as retaining walls, specially constructed masonary and steel obstacles on the beach or in the shore waters, and underwater and land mines. After landing, tanks are employed as in normal land operations. Some armored vehicles specially equipped, such as tanks or armored personnel carriers with flame weapons, dozer blades, mine clearing devices, and rocket weapons may be made available. See FM's 7–40, 17–1, 17–33, and 17–34 for the principles of employing armor with infantry and FM 20–33 for ground flame warfare.

64. Field Artillery—Employment

During planning, the direct support artillery battalion commander works closely with the BGLT commander and his staff. The following are important in considering the employment of field artillery in an amphibious operation:

a. During the planning phase, ground reconnaissance for position areas is impractical. Therefore, tentative artillery position

areas, within the zone of action of the supported unit, must be selected from maps and aerial photographs.

b. During the initial stages of the landing, naval gunfire, and air support substitute for normal field artillery support. The artillery battalion commander, the BGLT commander, the NGLO, and the FAC assist in the planning of fires to be executed before the artillery can be expected to land. When artillery can be landed on small islands just off the beaches before D-day, it may take part in the preparation fires.

c. The forward observers and liaison officer to the BGLT join their units before embarkation. Boat spaces for the personnel and equipment are provided by the assault BGLT's.

d. A reconnaissance party usually larger than that employed in a normal land operation goes ashore before the firing element lands. Its personnel and equipment are dispersed during landing to minimize loss because of enemy action. The commander determines how his party and its equipment will be divided and coordinates to insure that they are properly distributed for the ship-to-shore movement. On arrival ashore, the reconnaissance party—

(1) Determines the suitability of the position area.
(2) Selects and marks suitable landing points and routes to the position area.
(3) Makes sure that the position area is free of the enemy.
(4) Clears or marks mines, boobytraps, and duds in the firing positions.
(5) Clears fields of fire.
(6) Installs communications.
(7) Initiates survey.
(8) Installs the FDC.
(9) Guides the artillery to the position area when it lands.
(10) Conducts radiological monitoring and survey tasks as required.

e. Artillery may land with reduced personnel strength and with less transportation and ammunition than is normally required for operation. Since such a situation may affect the BGLT commander's scheme of maneuver, closely coordinated planning with naval gunfire support units must be carried out to offset this deficiency during the early stages of the operation.

f. Artillery units may be landed in accordance with a time schedule in the landing plan or on call, but since initial position areas must be reconnoitered and cleared of small-arms fire, it is normal for them to land on call.

g. The remaining artillery units generally land as soon as the tactical situation permits. On landing, they assume their normal tactical mission. Nuclear delivery units should be landed as soon as feasible. An 8-inch self-propelled howitzer element may be attached to the BGLT and landed in craft that have a beaching capability.

65. Field Artillery—Control

Planning for use of artillery in an amphibious operation is coordinated at division artillery headquarters. The division artillery commander also supervises specialized training for the operation. As soon as possible after coming ashore, the division artillery commander establishes centralized fire direction for all artillery units of the division landing team. As a rule this is done as soon as adequate communications are established between division artillery and its battalions.

66. CBR Support

a. The Chemical Corps provides technical assistance, troop units, and supplies for defensive and offensive chemical, biological, and/or radiological warfare in support of the overall amphibious operation. Chemical Corps units may be attached to the attacking elements during the initial assault.

b. The potential of chemical and biological agents and the radiation resulting from nuclear and/or radiological weapons require command consideration in all the phases of planning and execution. The probable and/or certain use of chemical agents, to include toxic chemicals, flame, and smoke; biological agents and chemical defoliants; and nuclear radiation resulting from the use of nuclear weapons and/or radiological agents, must be considered from both defensive and offensive aspects.

67. Enemy CBR Capabilities

a. The enemy may deliver toxic chemical and biological agents against the amphibious task force while it is still at sea, by air spray or bomb attack or from generating equipment aboard enemy surface vessels or submarines.

b. During the landing and initial attack, units are particularly vulnerable to nuclear and chemical weapons. Personnel and supplies tend to mass because the initial maneuver room is generally limited. Active and passive defensive measures must be observed to the greatest practicable extent to reduce the effects of these weapons. The enemy may attempt to restrict or deny

likely landing beaches, beach exits, and drop or landing zones by maintaining heavy concentrations of persistent toxic chemical agents for casualty effect. If the landing is successful, he may attempt to restrict the advance by using quick-acting toxic chemical agents in conjunction with the persistent agents to cause casualties, hamper operations, and lower morale. He may install extensive chemical minefields and detonate them when a landing appears imminent. He may attack personnel in the process of landing and those in the beachhead area with toxic chemical agents sprayed from low-flying aircraft or with ground and other air weapons. Similarly, he may employ biological agents effectively during later phases of the operation.

c. The enemy may use underwater or subsurface nuclear weapon bursts and/or radiological weapons to create a residual radiation hazard to personnel aboard ship or on land.

d. Intelligence agencies conducting reconnaissance of the proposed landing area should seek to determine enemy capabilities to deliver CBR attack and the presence of CBR hazard in the projected area of operations.

68. Defensive Aspects of CBR Warfare

a. In planning for an amphibious assault, it is assumed that the enemy may use CBR agents. Provisions for employing appropriate defensive actions are integrated into plans and preliminary training to insure the ability of the individual and unit to carry out assigned missions under such conditions. The CBR annex to the unit SOP outlines the normal defensive actions to be taken.

b. The protective mask, self-aid devices, protective clothing, detection device, and decontamination equipment are included in the combat load. Field army and corps chemical support units such as chemical combat support companies, decontamination units, technical intelligence teams, and maintenance and supply support are integrated into the landing force for early commitment to meet the CBR threat. Decontamination and protection procedures against CBR attack are described in FM 21–41, FM 21–40, and TM 3–220.

69. Offensive Aspects of CBR Warfare

a. The possible offensive use of CBR agents in support of an amphibious operation is preplanned and developed concurrently with the overall fire support plan. The decision as to whether or

not these weapons, other than such things as smoke and flame, will be used is rigidly controlled at higher echelon.

b. These agents can be used in the objective area prior to the assault to cause casualties among the enemy and to lower his efficiency and morale. Chemical defoliants can be used to destroy vegetation that offers the enemy concealment and camouflage. Preparation fires may include toxic chemicals, smoke, and air-delivered fire bombs. Nonpersistent and persistent agents can be delivered by air and naval weapons prior to arrival of assault troops on the beach to weaken the enemy's will to resist. Nonpersistent agents can be used in conjunction with high explosives against occupied defensive positions.

c. Fire bombs may be delivered in close support of assault troops and portable and mechanized flamethrowers can be used to help clear the beachhead and overcome resistance from strong points that cannot be reduced by other weapons.

d. Amphibious operations integrate extensive and varied use of screening smoke. Properly used, smoke denies the enemy observation and reduces the accuracy of his fire on the landing force during the movement and assembly of ships, debarkation, the ship-to-shore movement, and the initial occupation and organization of the beach. Area screens used offshore in the form of smoke hazes or blankets may cover the transport assembly area. When combined with neutralizing supporting fires, smoke helps provide the attacking elements with security during critical phases of the operation. Smoke screens may be placed ashore to conceal the landing force during the seizure and development of the beachhead. Other screens may be laid directly on hostile positions or between them and the landing force either frontally or to the flanks. They prevent effective aimed small-arms fire and neutralize enemy artillery, mortar, or rocket observation posts. Smoke blankets protect against visually aimed air attack. Dummy screens can be used to deceive the enemy as to location of the main landing area. Colored smokes are used for signaling and for marking targets.

e. The tactics of CBR warfare are described in FM 3–5.

70. Signal Units

For discussion of communications, see chapter 10.

CHAPTER 5
ADMINISTRATIVE SUPPORT PLANNING

Section I. INTRODUCTION

71. General

a. Administrative support planning for an amphibious operation at BGLT level involves the same particular consideration as given to other joint operations. It is chiefly characterized by the specialized type of transport, movement control and initial semi-independent type tactical formations adopted to seize a lodgement in enemy territory. See FM 31–12 and appropriate Joint publications for doctrine relative to command, control, and coordination procedures.

b. After normal division support is established ashore, BGLT administrative activities are planned to function in the same manner as employed for normal land operations.

c. Administrative and tactical plans are interdependent and must be thoroughly coordinated at all levels. Administrative planning must strive for simplicity and flexibility but cannot avoid the minute details inherent in specialized operations. The administrative plan supports the tactical plan. If administrative support resources, such as desired assault craft, are not adequate to support the preferred tactical plan, the latter will be modified only after efforts to obtain additional support are exhausted.

72. Logistical Considerations

a. Administrative planning is initiated based on certain fundamental guidance provided by the division commander. Guidance will be in limited detail initially, and later become more specific as planning progresses. Information that is of particular interest in BGLT administrative planning will include:

(1) Objective area ashore and overall concept of the operation.

(2) Division scheme of maneuver ashore.

(3) Designation of the division beachhead line, landing area, and potential BGLT landing sites.

(4) Designation of landing on drop zones for airlanded or airdropped units, and resupply, as appropriate.

(5) The forces involved, including other services and allies for which the BGLT may have administrative support responsibility.

(6) Intelligence on the objective area relative to logistical matters.

(7) Features of base development plans of higher commanders which must be reflected in BGLT plans for beach support area development.

(8) The logistical situation, including the organization and equipment of the forces; the basic planning factors and higher level experience data; the availability of shipping, materiel, and service support; and the concept for disposition of logistical facilities prior to landing and as planned ashore.

(9) Time and space factors, including ship turn-around, order of movement, shipping time and time of landing.

(10) Time and space factors for resupply aircraft turnaround.

(11) Employment, allocation, and/or prescribed loads of nuclear, biological, and chemical weapons.

(12) Attachments, with effective time.

(13) Tentative allocations of shipping and ship-to-shore means.

(14) The expected time of relief from administrative support responsibilities that are not normally assigned to the battle group.

b. The administrative support planner must keep abreast of all changes in the tactical plan that might necessitate changes in the support requirements, particularly for special items of equipment and items in short supply. Personnel and logistical estimates must be initiated early in the planning and kept current as conditions change. Alternate plans for providing administrative support of the operation must be developed. Contingency measures are frequently adopted during conduct of an amphibious operation due to the normal fluid conditions that prevail during the assault.

73. Logistical Planning

a. The BGLT logistical plans are based on the plans and directives developed in greater than normal detail by the higher

headquarters participating in or directing the operation. Hence, during the planning of the operation, the prerogatives of the BGLT commander are restricted as compared to the freedom of action he has once the assault is begun. Availability of detailed plans from higher echelons does not relieve the BGLT commanders of the responsibility for making complete plans.

b. Logistical planning begins as soon as the unit receives an indication that it is to participate in an amphibious operation. The planners, in addition to the support required for the operation, are also concerned with preoperational preparation. This will include:

(1) Marshalling of the BGLT in or near the embarkation area.

(2) Procurement of equipment and supplies for all phases of the operation, and support of the preparatory training prior to embarkation.

(3) Preparation of equipment and supplies for embarkation; i.e., waterproofing, modification and issue of additional or substitute class IV items as appropriate.

(4) Security measures to be followed in preventing logistical activity disclosing, to enemy agents or the public, the nature of forthcoming operations.

c. Logistical planning for the BGLT is developed in a similar manner to that followed in a joint or unilateral airborne operation. This is done by determining the support required in the objective area first and continuing the planning in reverse sequence to the marshalling area. Major elements of the plans will be:

(1) A preliminary estimate of the logistical situation based on available information and decisions of the division commander.

(2) A general plan for the supply of the BGLT ashore until division or higher headquarters assumes responsibility for operations and control of supply facilities ashore.

(3) A general priority for the loading of supplies and equipment.

(4) A computation of the weight and cubic displacement of equipment and supplies.

(5) Detailed loading plans.

(6) The billeting plans for the embarkation teams.

(7) Movement to the embarkation area(s).

(8) Supply during movement to the objective area.

(9) Medical service before and after debarkation.
(10) Landing of supplies and service elements.
(11) Composition of the BGLT tac-log group.
(12) Plans for the follow-up echelon of the BGLT.

74. Load Planning

The manner in which cargo is loaded aboard a vessel determines the order in which the equipment and supplies can be unloaded. Landing teams are not always alike. Equipment and supplies will differ and the priority in which material is required on the beach will vary with the assigned mission. These factors necessitate study and intricate planning to determine the type of loading appropriate to the situation. The primary method of loading for the assault echelon in assault shipping is called combat loading (par. 140).

75. Ship-To-Shore Movement Categories

For convenience in planning the BGLT logistical support, it is necessary to understand the ship-to-shore movement categories for units and materiel. These are scheduled, on-call, and nonscheduled movements. These categories apply only for the assault or initial unloading period of the ship-to-shore movement. See detailed discussion in section XII, chapter 5, and section IV, chapter 7, FM 31–112.

76. Initial Unloading

a. The successful execution of the tactical plan depends on the delivery ashore of tactical units, administrative support units, and supplies in the proper sequence and balance to maintain the momentum of the assault. The initial landing of assault echelon and landing force reserve supplies parallels the landing of nonscheduled units. Close coordination is required between the staffs of the assault division and the Navy transport group so that landing means are available for the movement of both units and supplies as required by the commander ashore. Prior to general unloading, the landing of supplies is initiated by requests from the commander ashore to the appropriate control officer via the tac-log group. If floating dumps are available, the control officer dispatches the required supplies to the beach. Otherwise, he requests the appropriate transport echelon commander to land the supplies.

b. Assault units carry with them in unit vehicles the supplies needed to initiate the assault and a small reserve (individual

reserves) if prescribed; but since these amounts are necessarily limited, provision must be made for early resupply. This is accomplished by the loading of emergency supplies in floating dumps and packaged supplies held on designated ships for helicopter delivery to using units upon request. Assault echelon reserve supplies and landing force reserves are unloaded on a selected item basis and placed at supply points. When the situation permits, general unloading begins, and the remainder of the assault echelon and landing force reserve supplies are landed to provide balanced stocks in installations ashore.

c. Initial (assault) unloading is accomplished prior to general unloading to establish planned levels of supplies ashore. The amount of each class landed is based on estimates of supplies required ashore until supplies landed during general unloading are available for distribution ashore. Logistics planners must constantly keep these requisites in mind while making the logistical estimate and plan.

77. Shipping Requirements

a. Shipping requirements are based on the overall capacity required to carry the BGLT's personnel, equipment, and supplies. After shipping requirements have been determined, adjustments in the forces to participate may be necessary due to the amount and type of shipping available. If the reduction is too drastic, the tactical plan will have to be modified to be administratively feasible.

b. Trained embarkation officers may be attached to the landing team to assist in loading, planning, and embarkation, or the battle group may be required to designate staff officers for special instruction to qualify them as Embarkation Officers. See chapters 7 and 13.

Section II. SUPPLY

78. General

Higher commanders usually specify the basis for BGLT requirements, planning for individual reserve supplies to be loaded with BGLT units. The division logistics plan may prescribe percentages of various types of supply by weight to be provided in the floating dumps as emergency supplies, and may direct BGLT commanders to prescribe the detailed loads. See paragraph 126–130.

79. Supply of the Battle Group Landing Team

a. Supplies Embarked With the BGLT. These are provided in a manner to make each echelon of the landing team self-sufficient until it can be resupplied from the sea or beach support area.

b. Emergency Delivery. Provision will be made by higher commanders for emergency delivery of supplies into the objective area until such time as the build-up ashore is adequate for all contingencies.

c. Flexibility of Supply. Initial operations ashore demand mobility and flexibility of supply. These are achieved through careful planning and concerted effort at all levels.

(1) Floating dumps are established to provide items of supply for which an early need can be foreseen during the planning phase. These floating dumps are usually established in amphibious vehicles capable of moving inland to the requesting unit.

(2) Packaged supplies of all types are made available on on-call status aboard suitable shipping for helicopter transport to any location as required.

(3) Other supplies are mobile loaded in vehicles aboard landing ships. When conditions permit, these landing ships are beached and the vehicles are dispatched as required.

80. Class I Supplies

Assault-type rations are usually carried by individuals in the scheduled waves and may also be carried by troops in on-call waves. Consideration must be given to prescribing the number of food packets carried by individuals. Combat-type rations, as individual reserve supplies, will be loaded in unit vehicles and floating dumps.

81. Class II Supplies

Higher commanders prescribe the individual clothing and equipment to be carried by all personnel. Provision for clothing and equipment for 5 to 10 percent of the personnel in the BGLT should be made in BGLT or division logistic plans. Clothing is bundled by sizes; individual weapons and equipment by type. Equipment lost due to enemy action or landing accidents is replaced by the items landed in the on-call category.

82. Class III Supplies

a. All vehicles are embarked with gasoline tanks filled to 75 percent capacity (to reduce spillage), and filled crankcases. In addition, extra 5-gallon cans of gasoline and extra oil and lubricants in issue containers accompany each vehicle.

b. Tank trucks are processed to prevent spillage and are filled to 90 percent capacity.

c. Class III supplies are made available for on-call delivery in floating dumps.

83. Class IV Supplies

a. This class of supply will be mostly chemical, engineer, and medical items. Those not integrated in the basic load are made available on-call in the floating dumps.

b. Items and quantities of class IV supplies are prescribed in BGLT administrative order.

84. Class V Supplies

a. Usually the class V items to be carried by individual troops in the initial assault are kept under centralized control aboard ship until just prior to debarkation.

b. Ammunition for unit vehicles and that part of the unit basic load normally carried in trains of the battle group is loaded on the vehicles prior to movement so as to avoid repeated handlings. The principle of maintaining diversified loads on ammunition vehicles is followed unless directed otherwise by the BGLT or higher commander when establishing prescribed loads for the operation. Some specialized vehicular loading may be required to avoid mixing sensitive items such as pyrotechnics or demolitions with other munitions. This criteria is determined normally by naval safety regulations.

c. Floating dumps should contain diversified loads of ammunition for all weapons and "straight" loads of one or more types of ammunition for certain weapons, such as the Davy Crockett, mortars, and antitank weapons if the anticipated situation ashore indicates the need for same. Floating dumps of ammunition are stationed near the line of departure for dispatch to the beach to meet on-call requests without delay. Special plans should be made for resupply of nuclear munitions.

85. Water

a. The Navy is responsible for supplying water to the BGLT en route to the objective area. Normally, each individual in the assault lands with two filled canteens. Filled 5-gallon water containers may be used to meet water requirements until other resupply can be landed. If water sources are not available ashore, empty water containers may be either returned to a ship for refilling or are refilled from bulk containers installed in landing craft. Water purification tablets are issued to all personnel.

b. Coordination with the Navy must be made to determine whether the water trailers and 5-gallon water cans will be embarked filled or initially empty and filled later from the ship's supply on board. Due to normal limitations of supply on most transports, all containers should be filled at embarkation points.

86. Special Items

Such items as salt tablets, water purification tablets, disease suppression tablets, insect repellents, and seasick tablets are issued or administered as directed in the BGLT orders or at the direction of the surgeon en route to the objective area.

Section III. TRANSPORTATION IN THE BGLT

87. General

Amphibious operations often require that normal battle group transportation techniques and equipment be modified. A detailed analysis is made of the available shipping space for vehicles, the terrain of the objective area, and the extent of operations inland. This analysis often requires the substitution for, or the reduction of, the usual ground transport employed in surface attacks. For example, LVTP's may be substituted for APC's and/or wheeled vehicles in the early assault waves.

88. Phasing of Motor Transport

The decision as to what type and quantity of transport accompanies the assault echelon is based on the available ships, cargo space, the terrain, the tactical plan, and the logistical requirements to support it. Priorities are normally placed on combat vehicles, command vehicles, and logistical vehicles in this order. However, commanders may prescribe the phasing in of all three types of vehicles in each wave of assault troops, and also vary the priority in each case. Heavy cargo and shore party

engineer vehicles are in echelons successive to the assault waves unless their immediate need ashore is mandatory.

89. Traffic Control (Ground and Water)

a. The amphibious task force commander is responsible for control of all water movement means during the ship-to-shore movement. Control is exercised by designated naval control officers as outlined in chapter 8. Army assault craft are operated by their regularly assigned crews who are responsive to instructions from the naval control officers. Also, see paragraphs 136 and 137, FM 31–12.

b. Ashore in the landing area, the commander of the Navy beach party, a part of the shore party will maintain communications with the Navy forces afloat. When established ashore he directs all boat traffic approaching the beach.

c. When the logistical vehicles of the BGLT have been landed, the commander of the shore party initially exercises ground control of their traffic. This is consistent with the traffic control and circulation plan made during the planning phase as changed to meet the actual situation ashore.

d. The BGLT motor officer or the assistant S4 (supply and maintenance platoon leader) should land with vehicles of the battle group trains that are a part of the assault echelon. Immediately upon landing, he coordinates with the shore party commander to assume the control of the trains or other vehicles that landed earlier. He must become familiar with the situation ashore and initiate normal trains support as soon as possible after arriving ashore. Vehicles of assault units that arrive after the unit is landed should be escorted to the unit as soon as practicable.

Section IV. MAINTENANCE

90. General

All equipment employed in an amphibious operation must be brought to the highest state of repair possible prior to landing. Planning provides for continuous maintenance in great detail during the marshalling and preparation phases before embarkation. Minor maintenance is continued during movement, however, care must be exercised to be certain all equipment is loaded in an efficient operating state. Plans provide for assault units to provide their own maintenance prior to the landing of normal service elements.

91. Maintenance Personnel

a. BGLT maintenance personnel and the ordnance direct support field maintenance element should arrive ashore with the appropriate trains element(s) at the same time as or just after the landing of the organic vehicles of the battle group. They assist in establishing the supply and maintenance support as far forward as is feasible. The BGLT maintenance element will carry its prescribed load (PLL) of repair parts and the ordnance DS section will carry a limited supply of 3d echelon repair parts in order to provide emergency repairs for the assault elements.

b. Maintenance personnel establish dewaterproofing areas ashore for processing organic and attached vehicles. Drivers should receive training in waterproofing and dewaterproofing and assist in these processes. Shore party maintenance personnel supervise and furnish technical assistance in the operation of the dewaterproofing.

Section V. MEDICAL SERVICE

92. General

a. Medical support of amphibious operations is characterized by the initial decentralized, independent type support of the attack gradually progressing through various consolidation phases to the normal land operation system as the attack moves inland. Initial augmentation of organic medical facilities at each echelon, from those of the next higher echelon, and early availability of medical support by the shore party make this system effective. See chapter 6 for organization of the shore party and FM 31–12 for higher echelon plans and system.

b. Medical support during preparation for and embarkation is provided through the normal land support facilities located in or adjacent to mounting areas.

93. Planning Considerations

a. The BGLT surgeon is responsible for the preparation of the BGLT medical plan, including the BGLT scheme of evacuation and the detailed plans for the embarkation, landing, and employment of the battle group medical platoon and attached medical elements.

b. The surgeon, in addition to those applicable considerations outlined in section VII, chapter 7, FM 31–12, is concerned with obtaining reinforcements and coordinating his plan with the medical plans of the shore party and the division medical battalion.

The water and air evacuation support plan is of particular importance due to the decentralized nature of initial action. Helicopter evacuation direct to the beach or ships must be utilized extensively in the early stages of the attack.

94. Medical Reinforcements

a. The medical platoon is augmented by division medical battalion elements and field army medical elements to provide adequately for collecting and clearing casualties. This augmentation is the equivalent of the usual requirement for the support of a battle group operating independently.

b. Since adequate vehicles are usually not available for evacuating casualties during the initial assault, the litter bearer elements of the evacuation section of the medical platoon must be augmented. This augmentation is provided on a preplanned basis as described in *g* below. These reinforcements are attached to the battle group medical platoon and operate under the control of the BGLT surgeon.

c. The medical detachments of units of a BGLT are left intact to supply medical support of their parent units. They normally evacuate their casualties through battle group channels in a manner similar to that prescribed for the organic battle group units. Units that do not have organic medical support are provided aidmen before joining the BGLT. These units are rarely reinforced from resources of the battle group medical platoon. Casualties from such units are first cared for by their own aidmen and then evacuated by medical personnel of the BGLT.

d. The division medical battalion provides a liaison agent to be with the BGLT aid station or with the medical platoon headquarters. This agent will land with the BGLT medical platoon and accompany it on shore. He will return to the beach after the BGLT aid station is established and when division ambulances are due to land. If the BGLT aid station displaces while he is absent, a man from the battle group evacuation section remains at the old site to guide the liaison agent and ambulances to the new aid station location.

e. Division ambulances may be landed before the division clearing stations are established to evacuate casualties from the aid station to the beach evacuation stations. It is the duty of the liaison agent to know the phases of evacuation by division units and to keep the BGLT surgeon informed. The destination of casualties evacuated from the BGLT aid station by division does not concern

the BGLT evacuation system directly, but the presence of a division clearing station on the beach is important in medical supply. The ability of the clearing station to displace inland affects the speed of evacuation and may influence the ability of an aid station to advance with the attack.

f. The division medical battalion commander designates an appropriate number of ambulances from the division medical battalion ambulance company to be phased into the beachhead. This is in order to support each BGLT at the time the BGLT aid stations are displaced.

g. Since neither the ambulance company nor the clearing company is organized to provide litter bearers for the BGLT platoons, additional litter bearers are usually provided to the division from elements of medical units of the field army. The division surgeon further attaches the supporting medical elements to the BGLT's for the operation.

95. Medical Operations During Embarkation and Movement

a. The medical platoon supports its parent battle group during all phases of training and preparation for the operation. Supplies that are drawn and packaged for the operation are segregated and not used before embarkation. Medical supplies needed during training and preparation are drawn separately by dispensaries and aid stations. Upon departure for embarkation, these supplies are usually closed out and turned in. However, if the unit provides its own medical support in the embarkation area, they are kept for use and the surplus is turned in just prior to embarkation. After vehicles of the medical support elements are waterproofed, and during embarkation, the BGLT surgeon seeks other ambulance service for the evacuation of the sick and injured from the embarkation area. Usually the mounting area surgeon has ambulances and limited dispensary service available for support during embarkation.

b. All supplies are rechecked in the embarkation area and their distribution verified. Equipment is checked for breakage and any broken apparatus is replaced. Final briefing is made, instructions reviewed, and personnel landing separately join their embarkation teams. Arrangements normally are made for distribution aboard ship after sailing, of any maps essential to vehicles, drivers, and other personnel.

c. The medical platoons (reinforced) close out their aid stations and go aboard ship with their respective BGLT's. The division

evacuation section's litter bearers and ambulances, as allocated, load with the embarkation teams to which they are attached. To cover last-minute administrative emergencies as a result of embarkation and loading accidents, the medical platoon headquarters remains operative until the last possible moment.

d. In the loading of special medical supplies, the embarkation officer coordinates with the BGLT surgeon. These supplies consist of items such as primaquine or chloroquine, water purification tablets, motion sickness preventives, and insect repellent. The location and purpose of these supplies aboard ship is made known to troop commanders and instructions are given for their distribution and use.

e. Integration of medical equipment and personnel in the BGLT loading plans are based on the landing plan and scheme of maneuver ashore. Personnel move with the unit they support and the medical platoon is embarked and landed in a manner to preclude loss of the entire unit by a single ship or craft being sunk. See appendix II for an example of task organization.

f. Medical care of troops aboard ship is a naval responsibility. Troop medical personnel assist naval medical personnel when so requested, but normally do not expend any of their own supplies for this purpose. Admission to the ship's sick bay, treatment, and return to duty is controlled by the naval surgeon. Personnel injured from accidents or wounds on debarking remain with the sick aboard ship and are evacuated by the Navy.

96. Medical Support of the Attack

a. It is necessary to plan practically identical medical support for all BGLT's. The medical support of a BGLT in reserve remains with the BGLT, regardless of how late it may be landed or committed. It is impracticable to transfer attachments to the battle group medical platoon while it is still afloat, and unwise to send hastily briefed reinforcements out to search for a battle group medical platoon ashore.

b. In general, medical support accompanies the troop units it supports, landing with and immediately after them. The company aidmen land with the combat platoons to which they are attached; battle group medical platoons land with their respective BGLT's. To provide the required number of company aidmen for the attack, it may be necessary to dismount the senior member of aidmen team and attach him in support of a platoon. Detailed planning for the ship-to-shore movement includes the echelonment of medical personnel and equipment to best support the BGLT evacuation plan.

c. Ambulances and drivers arrive in later waves. Ambulances are normally scheduled to arrive at approximately the same time as the aid station begins to function. This is coordinated with the division shore party support so that division ambulances are phased to arrive by the time the troops have advanced far enough inland to require forward displacement of the BGLT aid station.

d. Support of the attacking companies begins with attachment of the company aidmen to each combat platoon. The aidmen accompany their platoon ashore, treat casualties where they occur, and move with their platoons. They do not usually treat the casualties that occur on the landing craft except for emergency first aid that can be given before the craft arrives at the beach. These casualties are returned to ships without being unloaded and are treated by naval personnel. Casualties occurring in the LVT's during the run to the beach may be treated and evacuated as if the casualty had occurred ashore. Casualties are removed from the LVT as soon as practicable without interfering with the tactical action.

e. The company aidmen are followed closely by walking litter bearers of the BGLT medical platoon. These initial litter squads, preceding the BGLT aid station (fig. 7), begin collecting casualties as soon as the beach or landing zone is clear of aimed small-arms fire. Casualties of units in contact are evacuated to the beach or to a collecting point in the landing zone until the BGLT aid station is ashore. Frontline ambulances of the battle group evacuation section are phased in with the treatment section. They augment the litter bearers in the evacuation of casualties to the evacuation station operated by the shore party (chapter 6).

97. Shore-To-Ship Evacuation

a. Shore-to-ship evacuation is a planned, orderly, and progressive sequence of events. With or without specially constructed hospital ships, certain vessels in each naval transport group are designated as hospital ships. These ships are assigned the necessary naval medical personnel to care for the casualties each vessel is expected to receive. Transports selected as hospital ships are usually arranged so deck space easily lends itself to the handling of litter patients, hoisting and unloading of casualties, and installation of operating rooms, wards, and other facilities. Certain other transports and landing ships may be designated to receive casualties for the period of the initial assault.

b. Casualty evacuation control is important in effecting medical service afloat. During the landing, assault craft bringing casualties from the beach report to the casualty evacuation control officer (a

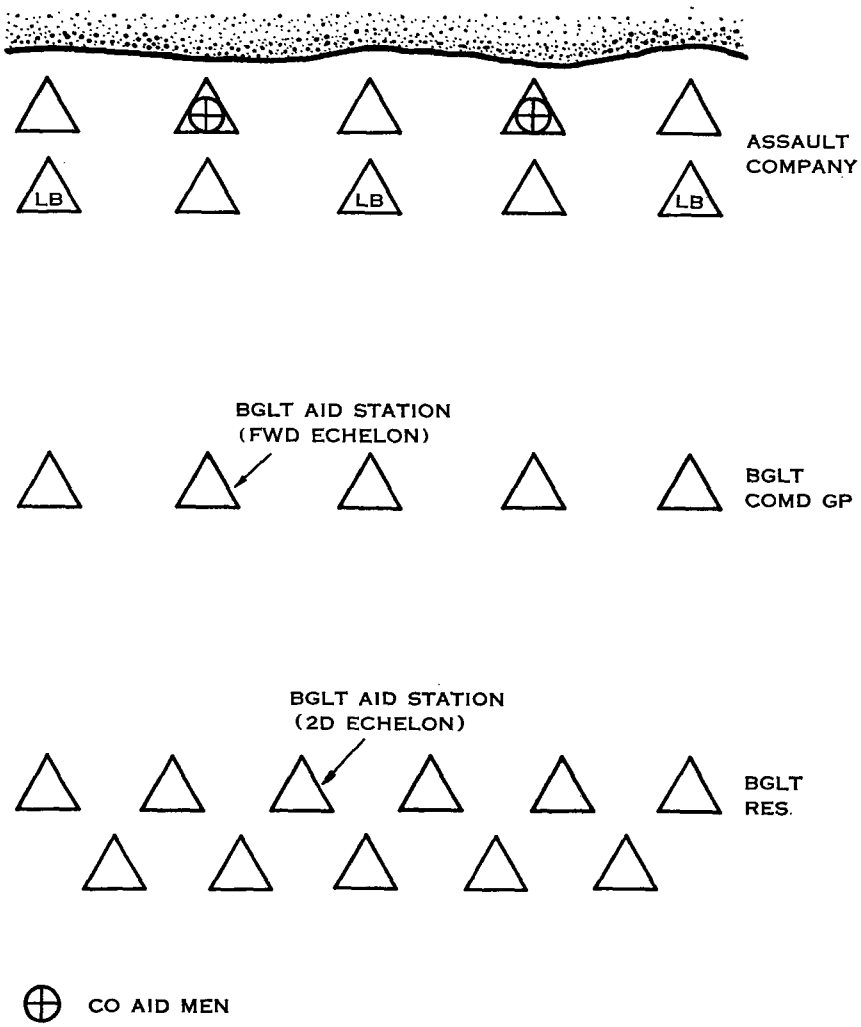


Figure 7. Ship-to-shore movement of medical support in the initial assault.

medical officer) embarked aboard the primary control ship (fig. 8). The evacuation control officer advises the primary control officer on the distribution of casualties to appropriate ships. He maintains accurate records of casualties cleared through the control ship. When the LSTH takes station (fig. 9), the evacuation control officer transfers to it. Patients who would be jeopardized by further transportation seaward are taken aboard for immediate treatment

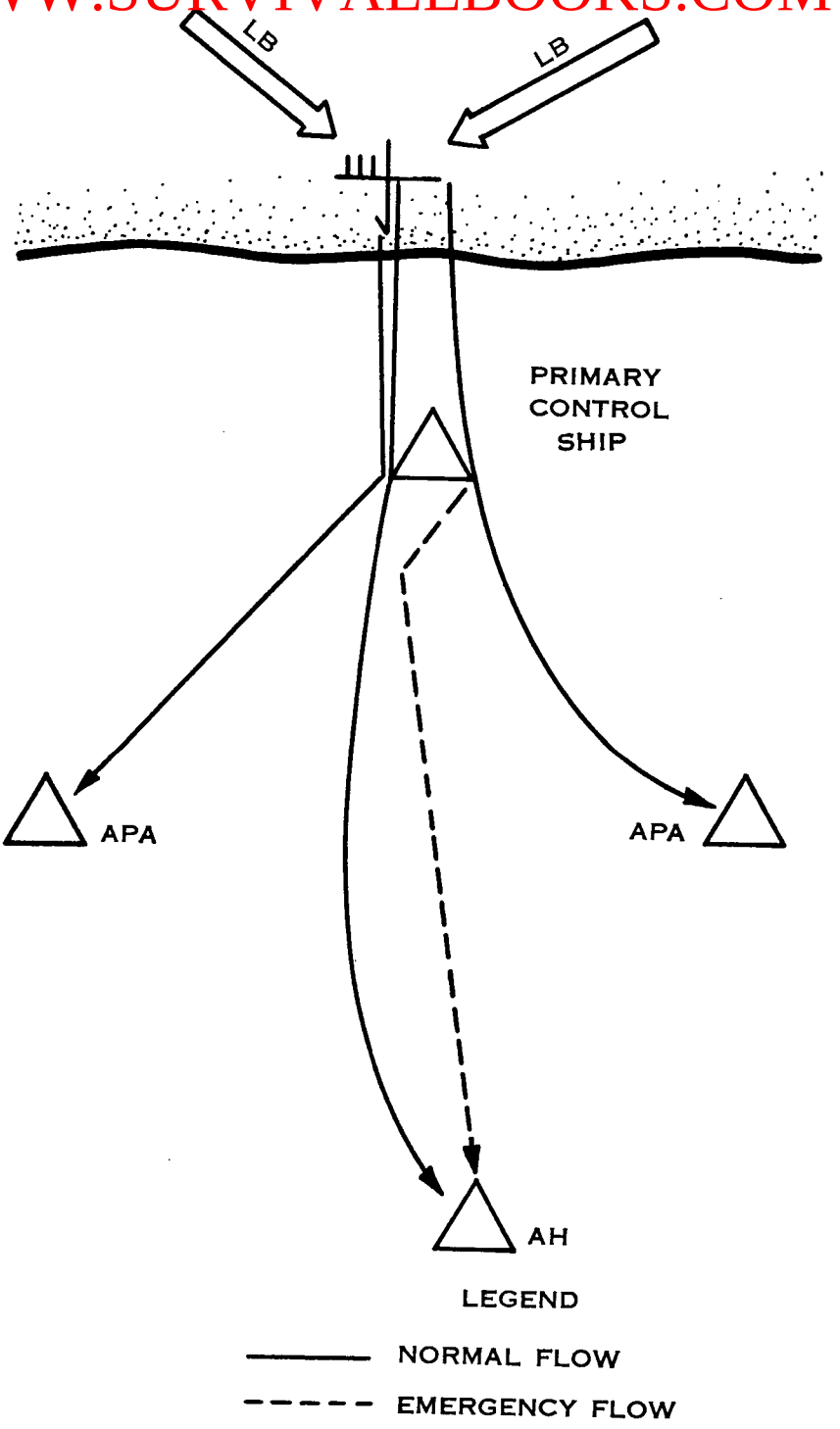


Figure 8. Flow of BGLT casualties during the initial assault.

and surgery when indicated. Others are transported to various casualty receiving ships (fig. 9).

c. Landing craft returning from the beach with casualties aboard display an appropriate signal flag; the primary control ship directs them where to take the casualties. This may be either the

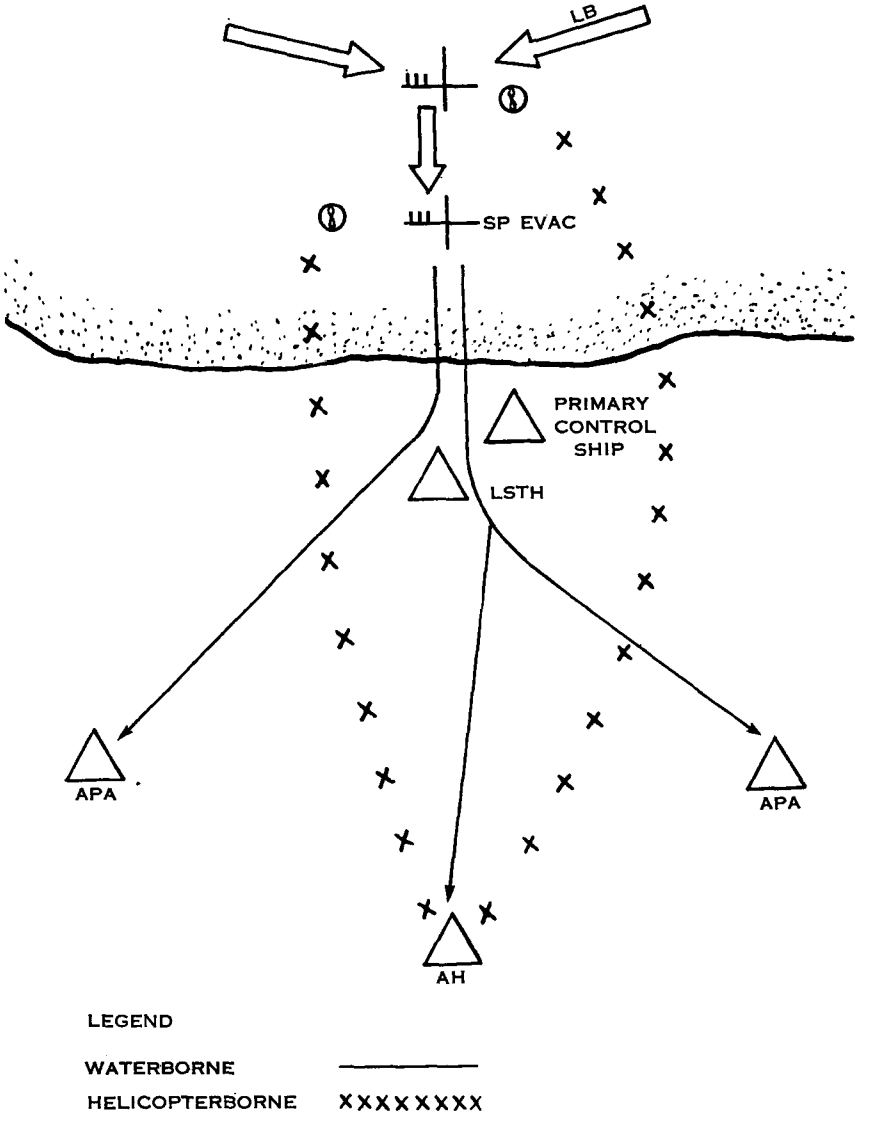


Figure 9. Flow of casualties when shore party evacuation station is operational and LSTH is on station.

ship of origin or another ship. It is usually undesirable to load casualties into a ship while troops are debarking.

d. Ships prepared to receive casualties display signals announcing their readiness. During this phase, the assault craft pick up casualties and transport them in the same manner as ambulances in a land operation. Designated hospital ships are comparable in every way to a division clearing station. The ships receive all types of casualties initially; classification and segregation by type does not begin until a convoy is almost ready to return to base.

e. The first casualties returned to the ships are those occurring in the assault craft. After a short interval, there will be a period during which casualties are delivered to the beach by the litter bearers attached to the BGLT. Following this phase, casualties will be delivered to landing craft from the beach evacuation station established by elements of the battle group shore party.

f. After the BGLT aid station is consolidated and has displaced forward of the beach area, its operations follow the normal pattern for ground combat. Litter bearers and frontline ambulances for the BGLT evacuation section continue to evacuate casualties to the beach evacuation station until the division clearing station is established and elements of the division ambulance company are ashore (fig. 10). When the medical battalion ambulances are landed, the entire evacuation system begins to resemble that of a normal land operation. As soon as possible, the division medical battalion units and Army hospital units land. When the medical battalion clearing station opens, evacuation from the BGLT aid stations becomes the responsibility of the medical battalion. Helicopters evacuate wounded directly from landing zones to medical facilities afloat. Helicopter evacuation may be inserted in any link in the evacuation chain.

98. Air Evacuation

a. Air evacuation is an important part of the evacuation system and must be integrated in the early planning phases. Helicopters can land on most types of ships. Direct helicopter evacuation from the beach medical facilities and, later, from established BGLT aid stations can be instituted early in the assault phase. Initially, helicopter evacuation is reserved for personnel requiring emergency surgery. Later, however, resupply and assault helicopters, in addition to helicopter ambulances, are used to the maximum to augment other means of evacuation. They pick up casualties in their landing

zones and evacuate them directly to carriers or other designated ships.

b. Liaison type aircraft can be adapted for carrying litter patients, but the operational requirements placed on them often preclude their use in medical evacuation.

c. Air evacuation of a large number of casualties by transport planes can be organized after the beachhead is firmly established and airfields are available. As far as the collection of casualties is

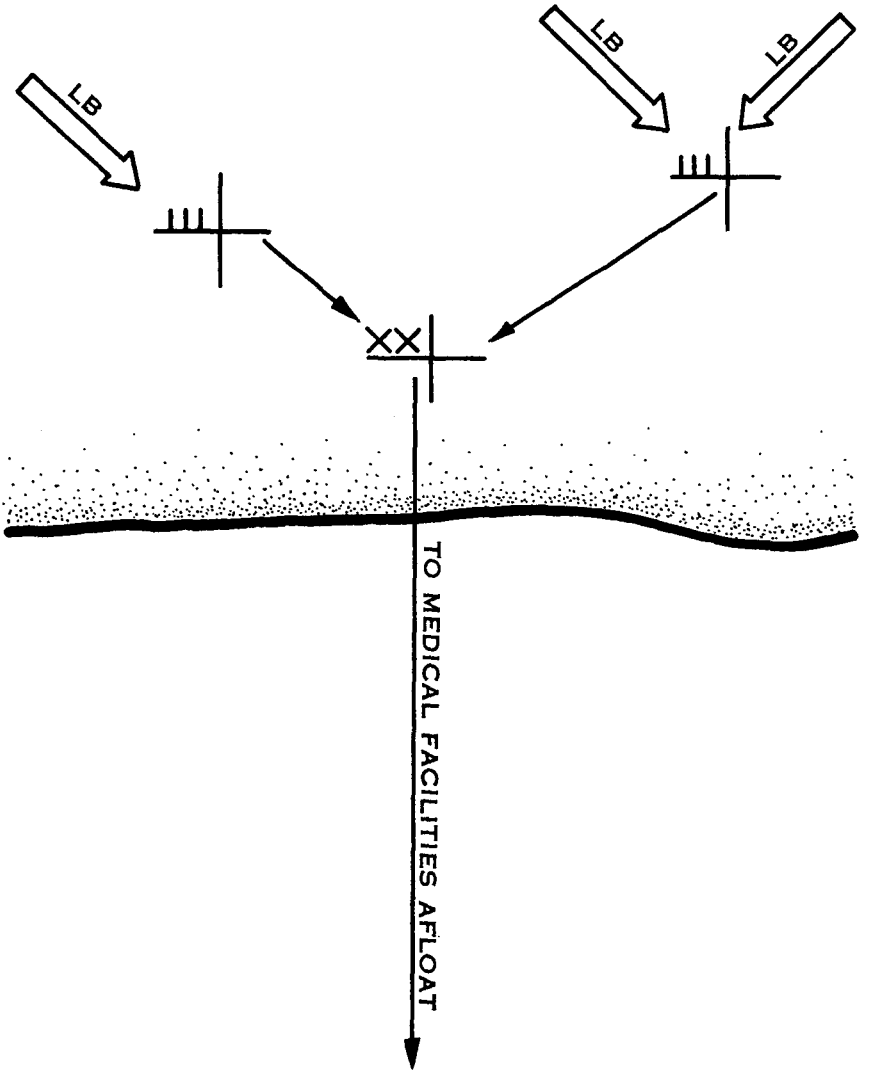


Figure 10. Division clearing station in operation.

concerned, the organization for this function is the same as for any other operation. There is an additional requirement for a holding unit to care for casualties awaiting evacuation at the airhead and for personnel to load the aircraft. These factors are taken into consideration in planning this phase of an operation.

99. Holding Areas

a. Many delays in evacuation can occur during the initial assault. Direct fire on the landing craft, the need for a fast turn-around, the inability of boats to beach, and offshore obstructions all are factors that may prevent early evacuation of casualties by water. Litter squads may require more time to deliver casualties to the beach than is required for the first boat waves to make their scheduled turn-arounds. If casualties accumulate on the beach, holding areas are provided and operated by the shore party. These areas should offer some protection for the wounded and be far enough inland to be clear of beach operations, but close enough to landing sites for casualties to be loaded quickly. Medical personnel ashore are detailed to care for the waiting casualties. Aid stations act as small holding stations for a short time while evacuation is being consolidated.

b. Ordinarily, the space allotted for a beach evacuation station is ample to include a holding area. Medical facilities on beaches as elsewhere, are not located near class III or V supply points. Space is made available to handle a sudden large influx of casualties that may result from the bombing of ships unloading on the beach. In this case, the evacuation station or aid station section also acts as a sorting station. Personnel with relatively minor injuries are collected, examined, treated, and returned to their respective units.

c. BGLT's rarely need holding areas after they are relieved of responsibilities for beach support area activities. As soon as the litter bearers from the BGLT medical platoon have made contact with the evacuation section, this section has them evacuate casualties from the aid stations to the beach before the stations displace forward. One man at each aid station usually waits with the casualties and reports to the BGLT surgeon when the litter bearers have picked up the last casualty. He also guides the litter bearers to the new aid station site. This procedure is followed until division medical elements are established ashore.

100. Division Medical Service

a. When the division clearing station is established ashore, its activities are the same as for any other land operation: casualties

are sorted and classified by types and severity of wounds; medical cases (diseases) are separated from injuries. This sorting allows the hospital ships to set up for one type of patient only. The hospital ships then act in the capacity of evacuation hospitals in support of the division. Ships not suitable for litter cases may be used for walking wounded or medical patients.

b. After the division receives the direct support of a surgical hospital and one or more evacuation hospitals, sorting is more complete and evacuation to ships proceeds only on call for certain types of patients to fill certain spaces.

101. Support of Small Isolated Operations

The medical support of small, isolated operations is tailored for each operation. In general, medical troops organic to the unit being used in the operation are adequate for most of the unit's needs, providing casualties are normal and evacuation is not difficult.

a. A BGLT operating as a separate task force should double its number of litter bearers if opposition is expected. If casualties are to be held for a predetermined time or if a linkup with a larger force is planned, aid station personnel are reinforced by technicians. The technicians are attached to the battle group medical platoon supporting the BGLT and come under the BGLT surgeon's control. This reinforcement must be provided from Army medical elements on a predetermined basis.

b. BGLT's operating separately need additional manpower for evacuation and reinforcements in specialized fields—dental teams, malaria control teams, or additional medical officers and technicians. If the BGLT expects a great number of casualties, adequate ambulance and clearing station support from the division medical battalion is attached. The medical battalion clearing station is reinforced with professional teams from corps or army. These teams, like surgical teams, operate better with the clearing station than when attached directly to the BGLT.

Section VI. OTHER SERVICES

102. Graves Registration

The BGLT contains its normal attachment of at least one collection and evacuation section from the division quartermaster company graves registration platoon. This function is performed at BGLT level substantially the same as in ordinary land operations. Extended delay in landing of the division graves registration support may require temporary holding of the dead at the BGLT level.

103. Evacuation of Material

Within the BGLT, the evacuation of material is similar to that in usual land operations. Items of equipment that cannot be repaired within the capabilities of the BGLT and its attached maintenance elements are collected or retained on position until the landing of normal maintenance support.

104. Salvage and Enemy Material

Captured or abandoned enemy materiel may be used to supplement landed supplies and equipment. The importance of salvaged and captured materiel and supplies increases with the distance of the objective area from the base of supply. Items that cannot be used are collected and held until higher commanders assume control. The repair and use of captured or abandoned enemy motor transport is especially important. The staff should plan for special training in collection, repair, and use of supplies and equipment.

Section VII. PERSONNEL AND CIVIL AFFAIRS

105. General

a. On receipt of the directive for an amphibious operation, the BGLT S1 starts planning the personnel activities. After studying the situation and consulting with other staff officers, he estimates the overall personnel requirements and prepares a detailed personnel plan for the operation.

b. The BGLT planning and participation in an amphibious operation involves all the personnel activities normal to ground combat, whether the unit is operating independently or as a part of a larger force. More emphasis is on anticipating casualty rates, etc., due to the lack of normal replacement and other personnel support resources. Greater emphasis is placed on detailed planning. See FM 7–40 for further discussion of battle group personnel functions. Special considerations for amphibious operations are discussed in the following paragraphs.

106. Strength

An attempt is made to obtain an overstrength during training, especially for the assault units. The size of this overstrength depends on the specific operation, the availability of manpower, and the ability of the BGLT to administer and train it. The overstrength is desirable to make sure all units embark at or above authorized TOE strength and to provide a trained, previously

oriented pool of replacements during the initial assault. These personnel may also be required to perform as ships platoon during embarkation and debarkation.

107. Law and Order

The S1 prepares a plan for a straggler control in the BGLT zone. During the initial stages of the landing, MP's in the shore party are used to return stragglers to their organizations through a straggler collection point(s) established on or near the beach. On the arrival ashore of the division military police, a straggler line or straggler patrols are established behind the attacking elements.

108. Prisoners of War

The S1 makes plans for the collection, safeguarding, processing and evacuation of prisoners of war. This requires coordination with the other staff officers to estimate the expected number of prisoners of war and to determine the source of troops needed for guard duties. Provision is made for rations, medical care, and transportation. Evacuation presents the greatest problem and initially is by foot. If the BGLT is operating alone, prisoners are evacuated to a BGLT collecting point, thence to a shore party PW cage, and finally to a vessel designated and equipped for that purpose. The S1 coordinates with the S2 on the practicability of interrogation before evacuation. Plans are made for the feeding, medical care, and evacuation (as necessary) of our own or allied prisoners who may be recovered in the BGLT area.

109. Morale

a. All morale activities are planned in detail. Maximum facilities are made available to the troops for rest, recreation, and religious services before embarkation. Enough post exchange supplies are procured to supply all needs. Available personnel are recalled from leave, detached service, and temporary duty in time to permit thorough training. Arrangements are made for disposition of unit funds. Adequate facilities are made available for the disposition of personal funds through postal money orders, allotments, soldiers' deposits, or personal transfer accounts. Arrangements are made through the division finance officer to exchange currency if a local type currency is required in the objective area. For security reasons, this currency exchange takes place while en route to the objective area.

b. For security reasons, it may be necessary to suspend outgoing mail several days before the sailing date. This need not be pub-

licized, and the mail can be held at the Army post office. Maximum effort is made to continue incoming mail service until embarkation and to reestablish it as soon after landing as transportation facilities permit. Provisions are made to provide recreation and religious services aboard ship en route to the objective area. All the normal morale supporting activities, particularly mail, post exchange, awards and decorations, and religious services, are reestablished in the objective area. The fact that the operation is successful may be exploited to build morale.

110. Headquarters Management

The S1, with other staff officers, arranges for a quartering party for the embarkation area. He supervises establishment of a command post to control preparation as well as the actual embarkation. Command and control facilities are specially tailored for the landing and initial attack. The command group, or groups, where the Deputy Commanding Officer is so used, land with the initial waves. The main CP element comes ashore later and when practicable begins to function as normally prescribed.

111. Civil Affairs

a. The type of government existing in the objective area, national policy, international agreements, the attitude and health of the civilian population, and the general economy are factors influencing the civil affairs policies applicable to the landing force. Information on the conditions is obtained from the G5 at division level and detailed civil affairs plans are developed.

b. Planning for control of refugees is of particular importance. Higher commanders publish instructions regarding the control of any civilians encountered in the landing area. These instructions are disseminated to all personnel. Civil affairs personnel normally land with or immediately behind the attacking elements. They advise on the control of civilians in the landing area and reestablish law and order as soon as possible. Evacuation of civilians from the beachhead is frequently impracticable. Therefore, to prevent their interference with military operations in the initial assault, civilians are held in place by military police, local police, or tactical troops under supervision of civil affairs personnel when ashore. As the attack advances a plan for their evacuation and control by higher echelon is implemented. This plan includes provisions for shelter, rationing, and medical care. If civil affairs personnel are not provided, the S3 arranges to have these functions performed by other means of the BGLT.

CHAPTER 6
THE SHORE PARTY

Section I. INTRODUCTION

112. General

a. A shore party is a special task organization of the landing force. It is formed to facilitate the landing and movement off the beaches of troops, equipment, and supplies, and the evacuation from the beaches of casualties and prisoners of war. Its organization and command are functions of the landing force. See paragraph 92, FM 31–12.

b. Shore parties are organized at corps, division, brigade, combat command, battle group and battalion (or equivalent) landing team level. The engineer amphibious support command provides command elements and specialized units as a nuclei for Army shore parties. See appendix III, FM 31–12, for example of division shore party. Figure 11 indicates the type of units to be considered in forming a BGLT shore party. Composition is tailored for accomplishment of the shore party tasks of a specific BGLT. See appendix II for a task organization example.

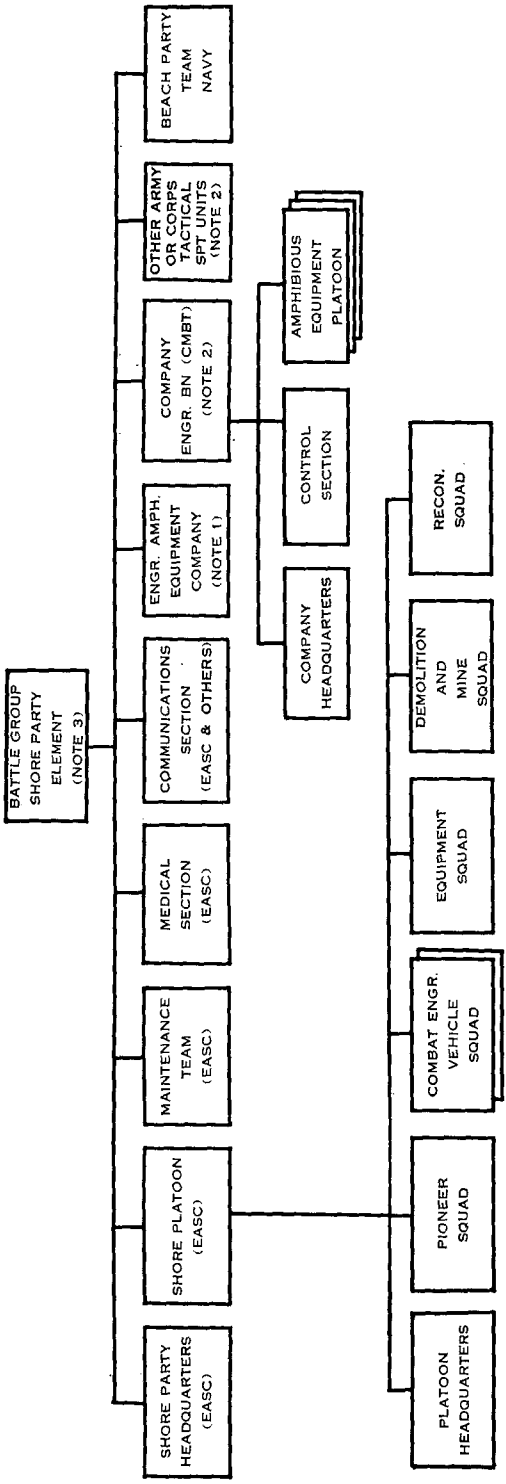
c. A naval beach group provides a beach party as the Navy component of a shore party. Functions of the beach party include providing: close offshore control to facilitate beaching of landing craft, landing ships, and amphibious vehicles; assistance in the retraction and salvage of craft and landing ships; and communication with naval forces afloat. It is commanded by a naval officer.

113. Shore Party Tasks

Shore party tasks constitute the basis for the organizational structure of a specific shore party as well as a guide for its training. See paragraph 92, FM 31–12 for details.

114. Responsibility for Shore Party Operations

a. The commander of the highest echelon of the landing force ashore is responsible for the control and operation of the beach support area. Actual operation is accomplished by the respective shore party of each echelon. See also paragraphs 125 through 130.

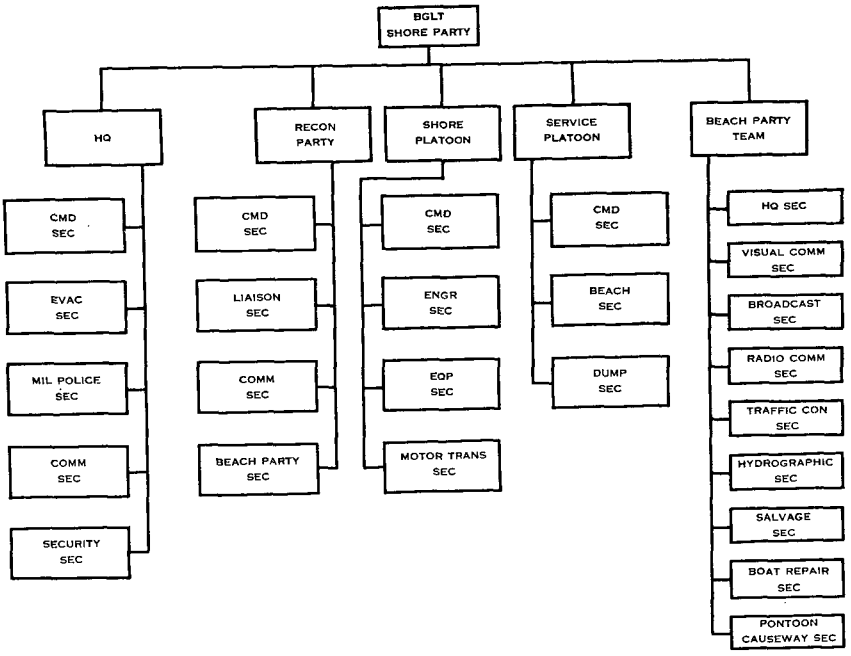


NOTES:

1. INITIALLY LANDS AND OPERATES SEPARATE FROM SHORE PARTY UNTIL THE LANDING TEAM COMMANDER RETURNS CONTROL TO THE BEACH.
2. NOT PART OF ENGINEER AMPHIBIOUS SUPPORT COMMAND (EASC) NUCLEUS OR THE INFANTRY DIVISION.
3. SEE: APPENDIX II FOR EXAMPLE TASK ORGANIZATIONS; AND FIG II (2) FOR A USMC LANDING FORCE TRAINING UNIT EXAMPLE SHORE PARTY. ORGANIZED ON A FUNCTIONAL BASIS WHEREIN THE UNITS LOSE INDIVIDUAL IDENTITY.

1 Type of units considered in forming a BGLT shore party

Figure 11. BGLT shore party.



2 Functionalized shore party organization (USMC–LFTU concept)

Figure 11—Continued.

b. The unloading and disposition of supplies is controlled and coordinated by a central authority that focuses in progressively higher shore party echelons as rapidly as the tactical situation permits.

Section II. ORGANIZATION AND PLANS

115. General

The BGLT will initiate development of a beach support area contiguous to the landing beach used for its assault landing. Normally in a relatively short time, the division command echelon, to include the division shore party commander, will land and relieve the BGLT commander of responsibility for operation of the beach support area. To facilitate coordinated development of beach support area installations and facilities, the division commander will provide appropriate planning guidance for BGLT shore party planning. Plans and responsibilities for development of the beach support area should not restrict the BGLT commander in executing his primary tactical mission and advance inland to assigned objectives.

116. Intelligence Requirements

a. Planning for effective shore party operation requires accurate intelligence of the enemy, weather, terrain, and obstacles. The plan includes the details of the tasks to be accomplished and the sequence and timing for landing personnel and equipment.

b. When complete and accurate intelligence is not available, the shore party plan is made flexible to cover any unforeseen tasks. Based on this plan, all shore party elements land with specific instructions as to primary and secondary tasks.

117. Equipment Requirements

After tasks for the shore party have been established, the equipment, supplies, and accessories the shore party will need are determined. The situation determines what special equipment is needed. The shore party plan is completed and approved in time to allow for the delivery of equipment and supplies prior to embarkation.

118. Personnel Requirements

The equipment to be used, and the mission, weather, terrain, enemy situation, and availability of shipping are considered in determining personnel requirements. The BGLT shore party commander submits his shore party's requirements to the BGLT commander. Based on these requirements, as submitted by the BGLT commander, and the scope of the mission as affected by followup units and resupply tonnage rates, the division commander requests the attachment of certain corps or army troops to the division shore party for further attachment to lower units.

119. D-Day Dispositions of Shore Party Personnel Afloat

a. Elements of the BGLT shore party are included in BGLT landing plans. They embark in appropriate ships that permit their landing at the time required. Shore party elements are assigned to waves in such a manner as to insure their landing on the sections of the beach and in the sequence required by their tasks. Elements of a division shore party may be attached to a BGLT for the movement and landing. They perform tasks assigned by the division shore party commander and revert to his control when he arrives ashore.

b. Elements of the BGLT shore party that land with scheduled waves are normally: the liaison party that accompanies the BGLT commander and maintains continuous contact with the

shore party CP at the beach; shore party reconnaissance parties; and those personnel necessary to carry out obstacle clearance, demolitions, and other special engineer functions.

120. D-Day Landing and Employment of Shore Party Personnel

a. The assault BGLT's must determine what shore party elements are required ashore early on the day of the landing and the sequence in which they are needed. The elements usually needed are listed below in the general sequence of their arrival. Also, see appendix II, example task organization.

(1) Reconnaissance and command parties with plans for development of the beach, beach markers, operators with portable radios, and messengers land with the lead elements. They check the practicability of shore party plans, change them as required, and establish communications. Medical reconnaissance personnel may be included to check sites for establishing medical facilities.

(2) Gap assault teams, when required, land with the leading platoons, clear lanes through beach obstacles and perform other specialized tasks in support of the landing.

(3) Beach party elements direct boat traffic in the beach area, establish communication with ships, and transfer casualties to water craft.

(4) Medical aidmen from medical detachments give first aid in the beach support area and establish beach evacuation stations for collecting and evacuating the wounded.

(5) Engineer elements construct roads, clear areas, build unloading causeways for landing ships, and tow stalled vehicles across the beach. See paragraph 62.

b. In some instances, it may be impracticable to start operations for a beach support area until the enemy has been cleared from his shore positions. This is especially true when the objective is a small, heavily defended island where neither the enemy nor the attacking troops have adequate maneuver room. In such a situation, only specifically requested emergency supplies are brought ashore.

c. Additional shore party elements are landed on call as the progress of the attack permits them to exercise their normal functions.

121. Beach Development

a. It is important to prepare a plan for the development of the BGLT beach support area. Ordinarily, the locations of facilities

and the other information shown by overlay, map, or sketch include—

(1) Landing points for craft of all types.

(2) BGLT short party command post.

(3) Positions for each security element.

(4) Roads and beach exits to be constructed.

(5) Dump sites.

(6) Dewaterproofing stations.

(7) Prisoner of war stockade or collecting points.

(8) Beach evacuation stations.

(9) Information centers.

(10) Traffic circulation plan.

(11) Personnel and vehicle assembly areas.

(12) Communication facilities.

(13) Waterpoints.

(14) Vehicle park.

b. The beach development plan is prepared after a study of all available maps, terrain studies, aerial photographs, and other information about the beach, weather, water, and adjacent land areas. The BGLT shore party commander prepares this plan for the BGLT commander. During its preparation, the BGLT shore party commander maintains constant liaison with the BGLT staff and appropriate unit commanders of the BGLT task organization. The division shore party commander coordinates all BGLT beach development plans.

Section III. TRAINING

122. General

The BGLT shore party must be constituted early and train with other elements of the BGLT. The shore party and other BGLT elements require extensive areas for training such as ranges for field firing of organic weapons, and natural or simulated obstacles for demolition practice; a portion of a shore line is required for practice in mine removal, assault landing practice (if feasible), beach development, and communication training. Accordingly, a thoroughly integrated plan for training will economize in use of facilities and assist materially in developing the high degree of teamwork required by all elements of the BGLT.

123. Equipment and Materiel

Nonorganic resources needed for training include—

a. Landing craft, amphibious vehicles, and aircraft for training in loading, debarkation, and resupply.

b. Beach roadway construction materials.

c. Realistic mockups of expected obstacles.

d. Demolition equipment, explosives, and other accessories for demolition training.

e. An adequate simulated tonnage of supplies of all types and a complement of special cargo-handling gear for operational training.

f. Ramp, causeway, pier, and wharf construction materials.

g. Special communication equipment.

124. Basic Training

Personnel receive basic or refresher training in individual and crew-served weapons; installation, operation, and maintenance of communication facilities, including current signal operating instructions; techniques of mine detection and disposal and obstacle reduction and removal; craft loading and debarkation; cargo identification and tonnage estimation; and beach exit roadway construction and maintenance. Training also includes subjects common to the BGLT as a whole; for example, air, radiological, biological, and chemical defense.

125. Advance Training

a. The shore party receives effective combined training in exercises with other elements of the BGLT. Emphasis is placed on reconnaissance for beach obstacles, organization for clearing work, layout of beach support area, communication, dispersion, resupply procedures, evacuation, control, and security in all phases of the beach development during and after the initial assault landing. The objective of combined training is to produce an effective shore party thoroughly integrated into the BGLT organization. This is accomplished by positive control, communication, SOP's, direct supervision by the BGLT commander and mutual understanding.

b. Additional advanced unit training includes those activities and functions occurring after the command of the battle group shore party reverts to division. Particular emphasis is placed on communication, area organization, traffic control, and the

integrated employment of two or more BGLT shore parties. Usually, this type training will be accomplished under direct supervision of division.

Section IV. OPERATIONS

126. Embarkation

Before embarkation, the shore party collects and waterproofs its equipment. The BGLT commander, in the absence of other support, may use shore party personnel and equipment to assist in embarkation planning and loading. However, if this is done, plans must insure that this equipment and personnel are embarked in the proper shipping and sequence to permit them to be landed when required ashore.

127. Debarkation and Landing

a. The Navy exercises general control of ship unloading operations, but the BGLT commander requests changes required in the debarkation schedules to insure that equipment and supplies are landed in consonance with the situation ashore. Accompanying supplies are combat loaded on vehicles. When the BGLT is transported on vessels such as APA's, rather than landing ships, unloading of equipment is more difficult. BGLT vehicles must be lifted from hatches by ship's gear, loaded on LCM's or other craft, for transport to the beach. The ship's platoon aboard each ship used by the BGLT normally operates under supervision of the respective embarkation team, embarkation officer who makes sure that unloading is accomplished according to the BGLT landing schedule. Naval crews assist in the unloading. The ship's platoon is usually made up from the shore party Transportation Terminal Service unit, which also transloads cargo from landing craft to trucks at the beach.

b. Supplies landed with the attacking units are usually restricted to those loaded on vehicles and critical items hand-carried ashore by individuals. Bulky and heavy items are landed and unloaded when the shore party has the necessary materiels handling equipment or labor means ashore. Early resupply of forward units is delivered through the beach by amphibious vehicles or by air.

c. See chapter 8 for details of the ship-to-shore movement. The reconnaissance and command elements of the shore party will land first, examine the area selected for development as the beach support, and make adjustments to previous plans as neces-

sary. They supervise the landing, assembly, and initiation of work by all shore party elements. The width of this area approximates the BGLT frontage. It includes the water approaches to the beach and extends far enough inland to provide a suitable defense line and an adequate area for dispersal of supplies. If possible, it includes lateral beach roads.

d. The depth and scope of development of the beach support area depend largely on whether or not other units are to follow the assault units over the same beach.

(1) When other units are not landed on the same beach or when the beach is not to be used for resupply, a small, hastily organized beach support area is adequate. In this case, communication, security, and evacuation are the primary considerations. Security is provided by shore party personnel using organic weapons and by appropriate dispersion of the facilities.

(2) Even though other BGLT's may land over the same beach, the shore party of the assault BGLT initiates the full development of the beach support area. Elements of the division shore party may land later to augment the BGLT shore party effort and supervise the further development of the beach support area under division control.

128. Operation of the Beach Support Area

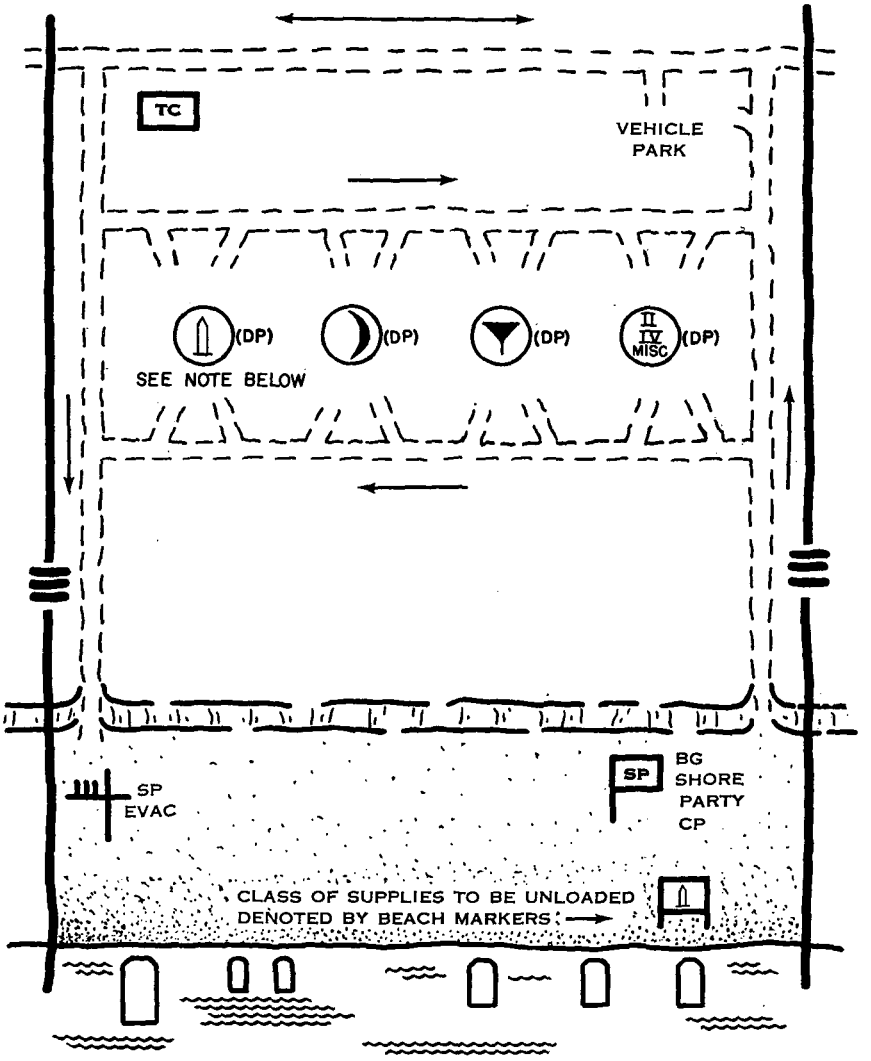
Once the support area is organized, its operation is relatively simple. If movement by vehicle from the waterline is practicable, supplies are either kept mobile in vehicles or moved inland to dumps. Hand-carry methods are employed if necessary. Supplies are not allowed to accumulate on the beach. Accurate records are kept to show supplies by type unloaded, on hand in dumps, and issued. Normally a BGLT beach support area is operated under BGLT control for only a relatively short period, after which it reverts to control of division or other appropriate higher echelon (see fig. 12).

129. Nuclear Considerations

a. Congestion on the beach resulting from its use as a terminal for transferring supplies from water to land is kept to a minimum under any circumstances. In an active nuclear situation, however, supplies must be moved across the beach without transfer or temporary holding and inland to dispersed locations. This is accomplished by using amphibious vehicles for movement

directly from ships, by off-shore transfer from landing craft to amphibious vehicles, and the use of mobile loaded landing ships and maximum automation of supply handling. Helicopters can be used to deliver critical items from ships directly to using units.

b. Supply and service facilities are separated to satisfy the



NOTE:

1. DUMPS MAY BE ESTABLISHED AS MIXED CLASSES IF NUCLEAR OR OTHER CONDITIONS INDICATE SUCH TECHNIQUE SHOULD BE ADOPTED. (PAR. 6.17 - 6.18.)

Figure 12. BGLT beach support area.

applicable dispersion criteria. So far as is practicable BGLT supply points will contain small balanced stocks of supplies. Multiple supply points may be required when emergency supplies cannot be rapidly landed on call. Maximum use is made of available protective shelter for logistical operations and additional protective shelter is constructed as required.

c. Planning for the dispersion of logistical facilities, the reduction of congestion on the beach, and the provision of engineer means to construct protective shelter is coordinated at division and higher level. Division beach support area damage control plans provide for maximum self-help within beach support areas and mutual assistance between units in separate beach support areas. Each BGLT shore party by SOP organizes a damage control and assessment team(s) which can be ordered into adjacent areas hit by nuclear attack.

130. Security

The BGLT beach support area is subject to ground, air, and sea attack. The BGLT shore party disposes its crew-served weapons to cover all probable approaches. It locates outposts and defensive positions to be occupied on order in defense against enemy elements that may infiltrate or penetrate the BGLT area. All troops dig individual shelters as soon as practicable. The command post, message center, information center, and other key facilities are dug in and provided with overhead cover. Air guards and gas sentries are posted. The shore party is included in the BGLT and Navy warning nets and must be kept informed of the situation as it develops. Tactical units may be included in the shore party for security purposes.

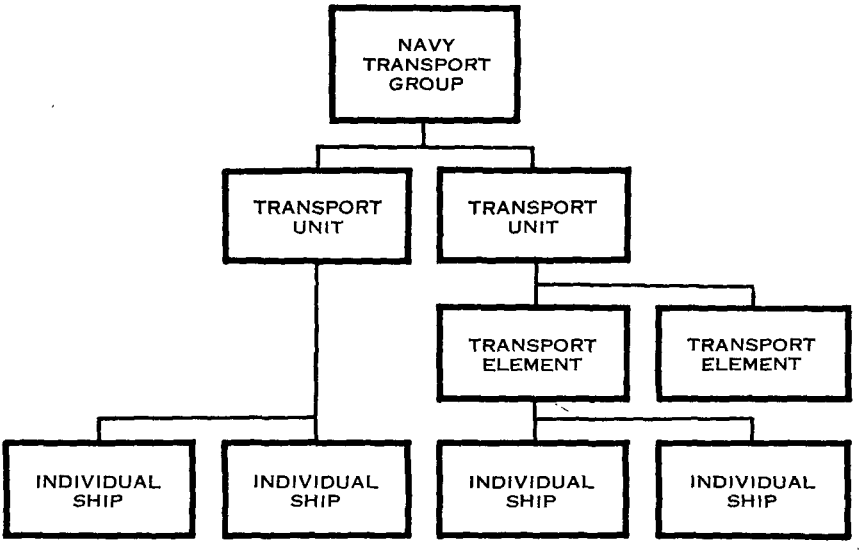
CHAPTER 7

EMBARKATION AND MOVEMENT

Section I. INTRODUCTION

131. General

The complex planning and execution of the embarkation in naval shipping is an extraordinary requirement of the amphibious operations. Troops, supplies, and equipment to be embarked in each ship must be planned in minute detail to insure that they can be debarked in the landing area in conformance with requirements of the tactical plan. Loading plans must provide for adequate logistical support and be compatible with naval requirements for safety and stability. This section primarily contains discussion of combat loading (par. 140) of a BGLT.



NOTE: THE TRANSPORT ELEMENT ECHELON OF COMMAND IS NOT ALWAYS PRESENT IN THE TRANSPORT GROUP ORGANIZATION.

Figure 13. Navy transport group.

132. Organization for Embarkation

a. The landing force organization for embarkation is a temporary administrative organization designed to simplify embarkation and debarkation. It consists of embarkation teams, elements, units, and groups.

b. A Navy transport group is a major subdivision of an amphibious task force, composed primarily of transports which provide for the embarkation, movement to the objective, landing and logistic support of the landing force. Its task organization for embarkation is the same as its organization for the ship-to-shore movement, so far as conditions permit (fig. 13).

c. The Navy transport group and the assault division organizations for embarkation include corresponding parallel command echelons.

d. For more detail and definitions, see section II, chapter 8, FM 31–12.

Section II. EMBARKATION, LOADING PLANS AND ORDERS

133. Embarkation Officers

The preparation of loading plans is the responsibility of commanders down to and including the embarkation team. Each of these commanders designates an embarkation officer to handle the planning details and to supervise the loading. Duty titles for these officers are established by prefixing the basic title with the designation of the specific embarkation organization echelon; e.g., embarkation unit embarkation officer, embarkation team embarkation officer. In the Navy transport group, the corresponding officers are called combat cargo officers (*c* below). The embarkation officers and combat cargo officers maintain required liaison at all echelons during the planning and execution phases of the operation.

a. Embarkation Team Embarkation Officer. An embarkation team embarkation officer is detailed from the major unit in the embarkation team. His principal duties include—

(1) Acting as direct representative of the commanding officer of the embarkation team in all matters pertaining to embarkation.

(2) Preparing detailed embarkation plans for loading the ship to which the embarkation team is assigned.

(3) Providing liaison between the commanding officer of

the ship (through the combat cargo officer) and the embarkation team commander.

(4) Coordinating and supervising the execution of the embarkation plan.

(5) Assisting in the execution of the debarkation (unloading) plan.

b. Embarkation Element, Unit, and Group Embarkation Officers.

(1) They—

(*a*) Make recommendations for allocating shipping within their respective echelons.

(*b*) Coordinate all loading activities within their embarkation elements and units.

(*c*) Assist in the preparation of embarkation plans for all vessels assigned to lift their respective echelons.

(2) At division level the staff embarkation officer is referred to as the *embarkation group embarkation officer.*

c. Combat Cargo Officer. The combat cargo officer is a Marine Corps or Army officer assigned permanently to the staff of the commander of an assault ship. In conjunction with the ship's first lieutenant, he acts as liaison officer between the embarkation officer and the commander of the ship in all administrative matters.

d. Embarkation and combat cargo officers must be familiar with the following subjects in order to efficiently carry out their respective duties:

(1) Navy customs and terminology.

(2) Standard ship organization.

(3) Applicable tables of organization, allowances and equipment.

(4) Amphibious task force organization.

(5) Landing force organization.

(6) Classification of supplies and equipment.

(7) Standing operating procedures for preparing supplies and equipment for loading, including packing, crating, marking, and waterproofing.

(8) Characteristics of nuclear weapons for loading purposes, including packaging, handling, stowage, and security requirements.

(9) Preparation and use of ship's loading characteristics pamphlet.

(10) Loading and unloading time factors.

(11) Characteristics of amphibious ships, landing craft, amphibian vehicles, and helicopters.

134. Plans and Orders From Higher Commanders

The BGLT embarks according to details based on plans and orders received from the division commander. Division will specify the—

a. Composition of the BGLT embarkation unit.

b. Assault shipping assigned to embark the BGLT.

c. Types and amounts of supplies to be embarked.

d. Special equipment needed for the mission.

e. Embarkation area.

f. Schedule for movement to the embarkation area.

g. Uniform and individual equipment.

135. Sequence of Embarkation Planning

The sequence of planning for the embarkation of the BGLT is—

a. Detailed organization of embarkation teams.

b. Assignment of troops and materiel to each vessel.

c. Preparation of detailed loading plans for each ship.

136. Embarkation Plan

The BGLT embarkation plan is the basis for the embarkation order. The following are included in the plan:

a. Organization for embarkation.

b. Assignment of embarkation teams to assigned assault shipping.

c. Allocation of supplies and equipment to individual ships.

d. Instructions for preparing supplies and equipment for embarkation, including palletization and waterproofing.

e. Communication for embarkation.

f. Traffic circulation and control system for embarkation.

g. Designation and allocation of cargo assembly areas and vehicle staging areas.

h. Movement of supplies and equipment to embarkation areas or points, including the method of transportation, schedule of movement, and control measures.

i. Composition and movement of advance parties to embarkation areas or points, including the method of transportation and schedule of movement.

j. Establishment of an embarkation control office, including the time it is to be established, its location, and its functions.

k. Establishment of security in the embarkation area.

l. Assignment of tasks relative to movement and loading of supplies and equipment.

m. Availability and assignment of mechanical loading aids.

n. Instructions for loading.

o. Movement of personnel to embarkation areas or points, including the method of transportation and schedule of movement.

137. BGLT Embarkation Order

The BGLT commander's embarkation plan when directed to become an order will be refined to specify dates, times, routes, and movements for the embarkation of personnel, supplies, and equipment. The embarkation (plan) order has no prescribed form; generally, it follows the form given in FM 101–5 for the operation order. The embarkation order is supplemented by memoranda, SOP's, and verbal instructions. It may be issued separately or as an annex to the operation order.

138. Annexes to the Embarkation Order

If the procedures or instructions for embarkation are detailed or technical, or if maps, sketches, or overlays are needed, this supporting detail is prepared as annexes to the embarkation order. When the embarkation order becomes an annex to the operation order, these annexes take the form of appendixes. The annexes or appendixes may include—

(1) Organization for embarkation.
(2) Intelligence.
(3) Embarkation schedule.
(4) Embarkation area overlay.
(5) Administrative instructions.
(6) Calendar of events.
(7) March order.
(8) Allocation of supplies and equipment.
(9) Berthing and loading schedule.

139. Loading Plans and Forms

a. Each team embarkation officer prepares a detailed ship loading plan as directed by the embarkation team commander. It is reviewed and approved by the commanding officer of the ship from the viewpoint of his ability to support the plan within the capabilities of the ship and safety rules. A complete loading plan, utilized to carry out embarkation orders, includes the following assembled in corresponding order:

(1) Consolidated embarkation and tonnage table.
(2) Consolidated unit personnel and tonnage table (table I).
(3) Consolidated vehicle summary and priority table.
(4) Consolidated cargo and loading analysis.
(5) Stowage diagrams.
(6) Profile loading diagram (not included for landing ships).
(7) Consolidated vehicle table.

b. For description of these forms, and the unit forms used in preparing the consolidated forms, see chapter 8, FM 31–12. Table I herein is a unit personnel and tonnage table (UP and TT).

Section III. LOADING EQUIPMENT AND SUPPLIES

140. Types of Loading

a. The principal types of loading are:

(1) Administrative loading.
(2) Combat loading with three variations.
  (*a*) Combat unit loading.
  (*b*) Combat organizational loading.
  (*c*) Combat spread loading.
(3) Commodity loading.
(4) Selective loading.

b. Definitions of the above types of loading and discussion of horizontal, vertical, and balanced stowage methods are outlined in section IV, chapter 8, FM 31–12.

141. General Principles of Transport Loading

a. Troops, equipment, and supplies are loaded to permit debarkation in the order required by tactical plans and to meet naval requirements for safety and stability.

b. Commanders are responsible for the proper preparation, marking, and protection of supplies and equipment so that they

Table I. Unit Personnel and Tonnage Table (UP&TT)

UNIT PERSONNEL & TONNAGE TABLE (UP&TT)													
OFFICER	GEN	COL	LTCOL	MAJ	CAPT	LT	WO	TOTAL O					
ENLISTED	NCO			OTHER ENLISTED				TOTAL EM					
TOTAL PERSONNEL													
	UP&TT LINE NR		LINE TOTAL		MOBILE LOADED		CARGO SPACE REQMT		
			CU FT	WT (LB)	CU FT	WT (LB)	SQ FT	CU FT	WT (LB)
TROOP SPACE CARGO	1	Baggage							
	2	Combat Equipment							
	3	Office Equipment							
	4	TOTALS							
RATIONS	5	Rations							
	6	Water							
	7	TOTALS							
AMMO	8	Small Arms							
	9	High Explosives							
	10	Pyrotechnics							
	11	Other (Special)							
	12	TOTALS							
POL	13	Gasoline							
	14	Diesel							
	15	Lubricants							
	16	Aircraft Fuels							
	17	TOTALS							
OTHER CLASS II & CLASS IV	18	Chemical							
	19	Engineer							
	20	Medical							
	21	Ordnance							
	22	Signal (Electronics)							
	23	Transportation							
	24	Quartermaster							
	25	Motor Transport							
	26	TOTALS							
VEHICLES	27	Wheeled							
	28	Tracked							
	29	Trailers							
	30	Other							
	31	TOTALS							
	32	TOTAL CARGO							
	33	TOTAL MOBILE LOADED CARGO							
	34	TOTAL CARGO SPACE REQUIREMENT							
EMB ORG:			DATE:				M/T		S/T
Signature, Embarkation Officer			Approved: Signature, Embarkation Org Comdr						

Table I. Unit Personnel and Tonnage Table (UP&TT)—Continued

INSTRUCTIONS FOR THE USE OF UNIT PERSONNEL AND TONNAGE TABLE

1. Enter total cubic feet and weight in pounds for each line item under column "line total."

2. Enter cubic feet and weight of all cargo mobile loaded:

   a. Equipment and supplies carried aboard ship by individual soldiers and in their possession during the voyage.

   b. Supplies and equipment preloaded in embarkation organization's organic vehicles.

   c. Vehicles "piggyback" loaded in larger vehicles.

   d. Vehicles and supplies preloaded in landing craft or amphibian vehicles which are to be delivered to the objective area by LSD type shipping.

3. Deduct cube and weight of mobile loaded cargo from "line total." The resultant will be the volume and weight of cargo requiring stowage space. Deck space (square feet) is taken from the "Cargo and Loading Analysis Table (C&LA)" and the "Vehicle Summary and Priority Table."

4. Vehicles are measured and weight computed *after they are loaded.* All entries made on this form pertaining to vehicles *must* indicate gross volume and weight.

5. To obtain totals of lines 33, 34, and 35; lines 4, 7, 12, 17, 22 and 32 are totaled under their appropriate columns.

6. Measurement tons are computed as 40 cubic feet per M/T. Short tons are computed as 2,000 lbs. per S/T.

may withstand damage from handling and be easily identified during loading, movement to the objective, unloading, and other handling. The details of marking and preparing supplies and equipment are accomplished under the supervision of commanders of each echelon. For instructions on marking and preparing supplies, see FM 31–30.

c. Organic light weapons and equipment to be taken ashore by assault units are stowed where they are available for servicing during movement and for immediate debarkation.

d. Stowage begins in the wings and is completed near the hatches based on the order reflected in the stowage diagram. Material and supplies are normally stowed as follows:

(1) Highest priority under the hatches and in the space immediately accessible to them; lower priorities, outward from the hatches.
(2) By layers with first priority on top.
(3) In groups separated by vertical partitions radiating from the hatches.
(4) In any combination of the above methods.

e. Vehicles are loaded with a reserve of fuel and lubricants and emergency rations for the drivers. Drivers are embarked on the same ships as their assigned vehicles. Vehicles are stowed in a fore-and-aft direction to prevent the rolling of the ship from loosening the lashings. Batteries are disconnected. Vehicles are grounded to prevent sparking caused by static electricity. They are blocked, chocked, and lashed to prevent shifting during transit. Prime movers and their trailers are stowed together. If practicable, they are landed in the same landing craft. To make best use of stowage space, vehicles are sometimes stowed over bulk cargo. This is described as understowing, and is used extensively to economize on cargo space. Generally, for combat loading, only very low priority equipment should be stowed in the lower hold.

142. Naval Considerations in Loading

The distribution of loads between vessels is an important consideration during planning and loading. When convoy methods of ship movement are utilized, transport group, unit, and element commanders will desire that their ships complete unloading at about the same time so that the ships of the command may leave the objective area together. For further discussion of naval considerations in loading, see FM 31–12.

143. Marshalling Prior to Embarkation

Depending on the characteristics of the mounting area, pre-

liminary preparation of supplies and equipment may be accomplished in a marshalling area. Movement to the embarkation area occurs just prior to loading and is based on planned schedules. The area where the troops, supplies, and equipment are loaded is called the embarkation area. Within the embarkation area there are embarkation points (wharves, piers, or beaches) where the ships are loaded. An embarkation area and its facilities should include:

a. Billeting, messing, and medical facilities as required.

b. Control points to control the flow of units, supplies, and equipment to the embarkation points.

c. Assembly areas for temporary storage of equipment and supplies to be loaded on ships.

d. Transportation to haul supplies and equipment from ship assembly areas to the ships.

e. Areas where final waterproofing of vehicles can be completed.

f. Refueling points for vehicles.

g. Facilities to prepare cargo not already processed for loading.

144. Loading of Transports

a. Loading starts when the commanding officer of the ship announces that it is ready to receive cargo. At embarkation points where pier facilities are available, combat loading of an APA can be completed within 24 hours and of an AKA within 72 hours.

b. Transportation corps personnel usually supervise and coordinate the loading and provide stevedores either from terminal service companies or civilian sources to load the ship. Members of the ship's platoon observe and may assist in the loading to familiarize themselves with cargo stowage since they will normally unload the ship in the objective area. The ship's platoon is that part of the embarkation team employed on the vessel for loading and unloading. Details from transportation terminal service companies may accompany troop ships (becoming the ship's platoon) or they may board the ships in the objective area to discharge the cargo. BGLT's may have to train their own personnel to carry out these duties.

c. When loading at points other than ports of embarkation, the ship's platoon loads the cargo. The embarkation team embarkation officer controls the loading through the ship's platoon leader. The ship's platoon leader controls the loading of each hatch

through a noncommissioned officer who is provided with a copy of the stowage diagram and a cargo manifest for that hold section. Cargo is placed in cargo compartments as specified by the stowage diagram. The completeness of the cargo is determined by checking all items loaded against the cargo manifest.

d. Ship's platoons vary in size with the type of ship to be loaded. For handling ammunition, the estimated maximum is ten men per hatch per shift. Additional personnel other than the ship's platoon are required on the beach or pier during loading. Such personnel may be stevedores used by the port authorities, shore party personnel, or troops of the embarkation team trained to assist in loading.

e. Labor-saving devices and loading aids are used for handling cargo. The port authority provides forklift trucks. At least three are usually assigned to the dockside of each transport. Because of limited overhead clearance, forklift trucks are of small value within the cargo compartment of the ship; however, hydraulic jacks are provided, and snatch blocks are rigged by the ship's personnel when necessary for handling vehicles and heavy lifts.

f. Bulk cargo is stowed by type in vertical sections radiating from the center of the hatch. Priority items of supply like ammunition, water, and medical supplies are distributed among several holds to permit rapid discharge. To be immediately available, initial combat supplies and equipment are stowed horizontally at the highest practical level.

g. Safety precautions are observed during loading to make sure that—

(1) Loads do not exceed the rated capacity of the boom to be used in unloading.

(2) Vehicles are slung at points that best support the vehicle and prevent undue strain on its frame.

(3) High-explosive ammunition and inflammables are handled with extreme care both on the pier and aboard ship. Leaking cans or drums of gasoline are immediately removed from the ship and the pier area. Smoking is prohibited while loading or moving petroleum products and explosives.

h. Loading a transport in the stream takes more time than dockside loading. Cargo is brought to the ship in lighters supplied by the Navy or the transportation corps. With good weather and a calm sea, an APA can be combat loaded in the stream in 36 hours and an AKA in 96 hours.

i. Landing craft used for loading are provided with cargo nets. These nets are spread within the landing craft and supplies and equipment are loaded directly into them. If enough cargo nets are available, they may be preloaded and lifted into the landing craft by cranes. Sections of roller-conveyers may also be used in moving supplies from beach dumps to the water's edge. Palletized supplies are handled by cranes or forklifts. Organization of the ship's platoon for beach loading is similar to that for loading at a dock. The platoon may be supplemented by shore party personnel because of the increased difficulty of transferring supplies and equipment from lighters.

CHAPTER 8
SHIP-TO-SHORE MOVEMENT

Section I. INTRODUCTION

145. General

The modern concept of amphibious operations provides for integrated and coordinated movement between naval ships and the shore. This is accomplished by use of assault craft (landing craft and amphibious vehicles) and helicopters or other assault aircraft operating from navy ships. The equipment used in the ship-to-shore movement may be comprised of consolidated resources from each of the three services and manned and operated respectively by the parent service personnel. For example, Army, Navy, and Air Force aircraft and Army and Navy landing craft and amphibious vehicles may be pooled to provide the movement means. Regardless of the resources used, movement to the objective area in ships and from ship-to-shore by either water or air movement methods, is under control of the amphibious task force commander. See section XII, chapter 5; section III, chapter 11; and sections I through III, chapter 12, FM 31–12, for related doctrine at higher echelon.

146. Scope

This chapter contains a discussion of the plans and techniques for debarkation, movement from ship-to-shore, and assault landing of BGLT's by water or air movement. The doctrine in this field manual recognizes that water and air movement are normal mobility means of modern amphibious operations. Accordingly, they are referenced both in general application throughout the manual and in separate sections of this chapter for ease of reading and identifying the different techniques employed respectively in use of landing craft, amphibious (amphibian) vehicles, and helicopters that can operate from ship-to-shore.

Section II. ORGANIZATION AND PLANS FOR WATER MOVEMENT FROM SHIP-TO-SHORE

147. General

This section specifically outlines the doctrine and technique of

organizing resources and preparing plans for water movement from ship-to-shore. The discussion is applicable regardless of which Service provides the assault craft and operating personnel involved.

148. Organization of the BGLT Boat Teams

The BGLT as referenced in chapter 2 is a tactical task organization and should not be confused with the embarkation team, which is an administrative organization. In order to maintain its tactical integrity, land in successive increments, and provide depth for the attack, the BGLT is subdivided into boat teams. The boats are then grouped into waves. Troops boated in an individual landing craft or amphibious vehicle are defined as a boat team which is commanded by the senior army unit officer or noncommissioned officer of the boat team. The troop elements of each wave are commanded by the senior army unit commander in the wave.

149. Organization of the Boat Group

a. Landing craft or amphibious vehicles assigned to transport the BGLT from ship-to-shore are selected and organized, in so far as practicable, to fit the tactical organization of the troops. A boat group is described as those craft and amphibious vehicles assigned to transport an assault landing team (BGLT, BLT or equivalent) that make the first trip ashore. The boat group may occupy an area of some 1,000 by 4,500 meters. The assault craft of a boat group are formed into boat waves in order to facilitate control during movement.

b. A boat wave consists of the landing craft or amphibious vehicles within a boat group which carry troops that are to be landed simultaneously. The boat group commander (Navy) exercises command through boat wave commanders (Navy). During the ship-to-shore movement, a boat wave operates as a unit and is maneuvered by the boat wave commander. Individual waves within the boat group are numbered successively from front to rear as first wave, second wave, etc. The term "first wave" is used to identify and designate the wave of any formation of landing craft or amphibious vehicles which actually leads that formation in its approach to the beach.

c. Navy personnel required to command and operate a boat group are as follows:

(1) Boat group commander.

(2) Assistant boat group commander.

(3) Wave commander for each boat wave made up of landing craft (and possibly an assistant wave commander for each wave).

(4) Wave guide and an assistant wave guide for each boat wave made up of amphibious vehicles.

(5) Crew for each Navy landing craft (Army personnel operate army craft).

(6) Communication personnel.

150. Control

a. The control group is a naval unit organized to supervise, direct, and control the ship-to-shore movement from the rendezvous area to the landing beach. Its organization is based on the landing plan and usually parallels the transport organization. Control officers and control ships are customarily provided as outlined in paragraph 136, FM 31–12.

b. The control group performs the following tasks:

(1) Controls the movement of all landing craft between the rendezvous area and the beach.

(2) Controls the movement of all amphibious vehicles while afloat.

(3) Marks control points necessary for regulating the movement from ship-to-shore and other points designated by the amphibious tasks force commander.

(4) Keeps the amphibious task force commander and other designated commanders informed of the progress of the movement from ship-to-shore, the landing of various waves, and the visible progress of operations on shore.

c. The boat group commander receives movement control instructions from the appropriate Navy control officer during debarkation and formation for movement to the line of departure. After reporting to the primary control officer, the boat group commander operates under his direction until all waves of the boat group have landed. The boat group commander is assisted by the personnel listed in paragraph 149.

d. (1) Each boat and amphibious vehicle carries a lightweight, portable sign (also called "boat paddle") that shows the boat's wave number and position in the wave. The troops of the landing force furnish the signs. They can make satisfactory signs by nailing together three 14 x 10-inch boards to form a 3-faced head and attach-

ing it to a wooden staff at least five feet long. The three faces should be painted white and the wave and position numbers should be painted or otherwise applied to each face in black numerals 7 inches high. The first number indicates the boat wave. It is followed by a hyphen, the number of the boat's position in the wave. For example, 1–1 indicates the first boat in the first wave. The numbers are obtained from the landing craft and amphibious vehicle assignment table (table II).

(2) A member of each boat team is designated to carry his boat sign. He keeps it prominently displayed at all times until his boat crosses the line of departure. Upon landing he carries the boat sign ashore and discards it on the beach where it is used by shore party personnel as a check in identifying and recording serial or troop unit landings.

151. Tactical-Logistical (Tac-Log) Groups

a. Assault landing team commanders designate staff representatives plus required communication personnel as tac-log groups and station them aboard control ships to assist Navy control officers in the ship-to-shore movement of troops, equipment, and supplies. Although the tac-log groups at each level of coordination assist and advise the parallel control officers, they are not considered to be a part of the Navy movement control organization.

b. Tac-log groups normally include the unit embarkation officer, and representatives of the S3, S4, and shore party. They may also include representatives of artillery, amphibious vehicle, tank, and other units. Representatives of division and higher units may be included when these units are to land on beaches operated by the battle group landing team.

c. Officers assigned to tac-log groups must have an intimate knowledge of the tactical plan, the loading of the ships that embark, their respective BGLT elements, and the plan of logistic support. Copies of the operation and administrative orders, including the serial assignment tables, must be available to the tac-log groups, as well as the landing sequence tables, assault schedules, and loading plans of the various transports and landing ships.

d. With their intimate knowledge of the BGLT plans and requirements, tac-log groups, acting in accordance with orders and requests from their commander ashore, can influence the ship-to-

shore movement by prompt action. This assists the naval control group to identify and dispatch troops, supplies, and equipment to the beach. See paragraph 137, FM 31–12, for additional detail.

152. Landing the Assault Rifle Platoon

a. The assault rifle platoon is generally landed in a single echelon because its immediate mission upon landing is to attack the beach defense.

b. A rifle platoon can normally be boated in two landing craft or LVTP's. The assault craft of the scheduled waves usually make the run from the line of departure to the beach in the line abreast formation. This formation lands all elements of each wave at approximately the same time and prevents enfilade fire being delivered from the beach until just prior to the landing. This formation is also easier to control. The open VEE formation, which is used sometimes, has the resultant disadvantage that all craft of the wave do not arrive on the beach at the same time. Whatever the formation used, all assault craft must be able to move to the beach in an individual zigzag course, when required, while still maintaining their same relative positions in the wave formation.

c. On landing, a rifle platoon is ordinarily assigned a 100- to 200-meter frontage. In order to cover the entire frontage with fire and insure that all enemy weapons and emplacements on the beach will be engaged immediately upon landing, the assault craft of the scheduled wave normally are uniformly distributed over the assigned front. This means that the lateral distance between assault craft in each wave must be from 40 to 70 meters. This spacing also gives the assault craft enough room to turn and move again to sea without unduly interferring with succeeding boat waves coming in to land. It may be necessary to reduce this distance when visibility is low or when the beach is narrow, but it should not be reduced to the extent that the troops cannot be fully deployed without congestion or intermingling of units on the beach.

153. Landing the Assault Rifle Company

a. A rifle company may land in any of the following formations:

(1) Two platoons in attack and one in reserve.
(2) Column of platoons.
(3) One platoon in attack and two in reserve.
(4) Three platoons abreast.

b. With two platoons in attack and one in reserve, the two leading platoons, usually accompanied by some supporting weapons,

constitute the leading company wave. The reserve platoon, company headquarters, weapons platoon, and attached or supporting units normally constitute the next wave. This formation facilitates immediate attack of obvious beach defenses and provides a maneuver element that the company commander can employ to overcome unexpected opposition that may be uncovered by the leading platoons. It provides some depth to the company's attack. The landing of the reserve (second company wave) is scheduled. Generally, it lands from 3 to 12 minutes after the first wave. This gives the assault platoons time to clear the immediate beach of enemy and to advance inland so that the reserve can land without intermingling with them.

c. A rifle company can land in a column of platoons on a frontage of less than 100 meters. This formation may be used to reduce congestion when landing on an extremely narrow beach, but it poses a risk of defeat in detail. The interval between waves must be timed so that one can advance far enough from the water's edge to allow the succeeding wave to land without treading on its heels. If the company is to be a covering force for landing a battle group, the time interval between landings of each platoon should be reduced to a minimum.

d. When the rifle company desires to employ a covering force for its landing, it may employ one platoon in attack and two initially in reserve. With this formation, the leading platoon acts as the covering force while the two platoons initially in reserve land abreast in the second company wave. The covering platoon is assigned a limited objective; it may be assigned the mission of clearing the immediate beach of enemy resistance and securing enough ground to protect the beach from close observation and direct fire. The reserve platoons may then land and pass through or around the covering platoon to continue the attack. In this instance, the reserve platoons do not wait for the covering platoon to advance inland, but land immediately to exploit initial success and provide support of the lead platoon.

e. An attacking company will seldom land with all platoons abreast, but this formation may be used when enemy resistance is light or when the company is assigned the mission of acting as a covering force for a battle group. This landing formation does not give the company much opportunity to maneuver; it can do little more than deliver an attack on the enemy defenses close to the beach. For this reason the company should be assigned a limited objective. When this formation is used with LVTP's, a

more suitable formation should be adopted as soon as initial objectives are seized.

154. Landing the Assault Battle Group

a. The battle group may land in any one of the following formations:

(1) Three companies attacking and two in reserve.
(2) Two companies attacking and three following.
(3) One company attacking and four initially in reserve.
(4) Column of companies.
(5) Four companies attacking and one in reserve.
(6) Five companies abreast.

b. Three companies attacking and two in reserve is particularly applicable when the beach is regular and open terrain extends inland for a considerable distance. Under these conditions, it is desirable that the first troops to land have sufficient power to drive quickly toward the battle group objective. This formation permits the BGLT to land with a reserve available to either extend the front or to exploit successes as the situation develops. Within this formation, the companies can land in any of the formations described in paragraph 153.

c. The landing of two companies in the attack and three following has a number of variations depending on the width of the beach and the enemy situation. The three reserve companies may land behind both of the two attacking companies. This formation adds depth and flexibility to the battle group, but requires more time to land the bulk of the battle group as compared to three companies in attack. If enemy dispositions require maneuver to a flank, the three reserve companies may land in column behind either one of the attack companies. This permits the first reserve company to maneuver, covered by one of the initial attacking companies. The fourth and fifth companies would land later as battle group reserve.

d. One company in the attack and four initially in reserve provides the battle group with a covering force of one company. If the attacking company lands with two platoons in attack and one in reserve, this formation offers an advantage. This is: having one company commander in charge of the first attack on the beach with a reserve platoon to influence the action. The four remaining companies landing abreast are then in formation to pass through the covering company to continue the attack and extend the front. In this formation all of the battle group is usually committed soon after landing the reserve companies; the absence of a reserve com-

pany to commit in any direction (until the lead company is reorganized) may become a distinct disadvantage. This problem can be solved by having three of the reserve companies land abreast and pass through or around the lead company, with the fifth company landing later as the reserve. When LVTP's are employed, the lead company requires less time for reorganization, thus reducing the major disadvantage of this formation.

e. Column of companies may be desirable if the battle group lands under conditions of reduced visibility, when the attack is on a narrow front, or to prevent congestion on a very restricted beach. The disadvantage of this formation is that it may result in the battle group being committed in a peacemeal fashion and preclude early success; or in its being unable to rapidly exploit initial gains.

f. Four companies in the attack and one in reserve may be used when the initial resistance is very light and it is desired to land the battle group quickly or to deliver a powerful frontal assault to seize an important objective at or near the water's edge.

g. Five companies abreast is rarely used because it does not provide depth required to maintain the momentum of the attack.

h. The desirable place for landing the battle group reserve can seldom be determined before the lead companies land. Therefore, its arrival at the beach must be timed to insure that it can be landed behind the attacking company that has been most successful in clearing its assigned section of the beach. On the other hand, the reserve should not arrive too late. In most situations, it can follow the attacking companies at a 5 to 15 minute interval. The battle group commander determines the time and place for landing the reserve company. It is normally boated in two or more waves to conform to the formation of the attacking companies.

i. Battle group headquarters company and elements of the combat support company not attached to rifle companies are generally distributed in waves carrying the battle group reserve. They may, however, be landed in separate waves. Attached and supporting units may be included in the same echelon as the battle group headquarters or in separate waves.

155. The Landing Plan

a. The landing plan is issued as an annex to the operation plan or order. The supporting documents and forms used for planning how the troops will land at the proper place and time and in the proper formation accompany the landing plan as appendixes. The plan provides the details of the ship-to-shore movement for troop

and naval units. Landing plans for airmobile landing teams are discussed in section V below.

b. In waterborne landings the battle group landing team normally is directly concerned with the preparation of some or all of the following forms and documents. Forms used should be annotated to relate them to type of movement involved—water or air movement. (For forms prepared at division level, see appendix IV, FM 31–12.)

(1) Landing Craft and Amphibious Vehicle Assignment Table (table II). See paragraph 156.
(2) Landing Diagram for Water Movement (table III). See paragraph 157.
(3) Approach Schedule for Water Movement (table IV). (Prepared by Commanding Officer naval transport organization, assisted by BGLT.) See paragraph 158.
(4) Combined Landing and Approach Plan (prepared jointly at the BGLT-naval transport organization level in lieu of using a separate landing diagram and approach schedule).
(5) Debarkation Schedule for Water Movement (table V). (Prepared jointly.) See paragraph 159.
(6) BGLT Serial Assignment Table for Water Movement (table VI). See paragraph 160.

Table II. Landing Craft and Amphibious Vehicle Assignment Table (Extract)

Craft No.	Personnel and material	Boat spaces	Formation
LCVP 2–1	Plat Ldr, 1st Plat, Co A	1	
	1st Sqd, 1st Plat, Co A	11	Column
	2d Sqd, 1st Plat, Co A	11	2–1
	MG Team, Wpns Sqd, 1st Plat, Co A	3	2–2
	1st AT Sqd, Wpns Plat, Co A	4	
		30	2–3
LCVP 2–2	Plat Sgt, 1st Plat, Co A	1	2–4
	3d Sqd, 1st Plat, Co A	11	2–5
	Wpns Sqd (—), 1st Plat, Co A	6	2–6
	FO Sec, Wpns Plat, Co A	2	2–7
	1st Sqd, Engr Plat, Hq & Hq Co (Less Driver)	9	Vee
	Aidman Team, Med Plat, Hq & Hq Co	2	
		31	2–1 2–2 2–3 2–4 2–5 2–6 2–7

Table III. Landing Diagram for Water Movement (Extract).
(Located in back of manual)

Table IV. Approach Schedule for Water Movement (Extract)

Wave	Leave rendezvous area	Leave line of departure	Land
1	H–40 (Landing Ship Area)	H–30	H-hour
2	H–92	H–18	H+2
3	H–87	H–13	H+7
4	H–80	H–6	H+14
5	H–74	H-hour	H+20
6	H–64	H+10	H+30
7	H–54	H+20	H+40

Course from marker vessel to line of departure 040° T, 035° Magnetic; course from line of departure to beach 355° T, 350° Magnetic.

Boat group commander: Lt Gowe, USN.

Assistant boat group commander: Lt (jg.) Hatch, USN.

Primary control officer: LCdr Beam, USN; embarked in PCC 531.

Note. (1) Distance used for computing the times listed:

(*a*) Rendezvous area to LD	9,150 meters.
(*b*) LD to beach	3,650 meters
(*c*) Amphibious vehicle launching area to LD	915 meters.

(2) Speeds used for computing the times listed:

(*a*) LCVP speed from rendezvous area to LD	4 knots.
(*b*) LCVP speed from LD to beach	6 knots.
(*c*) LVT speed from LST to LD	3 knots.
(*d*) LVT speed from LD to beach	4 knots.

Table V. Debarkation Schedule for Water Movement (Extract)

BOAT	RED 1	WHITE 3	BLUE 5	YELLOW 7	GREEN 9
1st	LCVP 2–3 BT 2–3	LCVP 2–5 BT 2–5	LCVP 2–7 BT 2–7	LCVP 2–1 BT 2–1	LCVP 2–9 BT 2–9
2d	LCVP 2–2 BT 2–2	LCVP 2–4 BT 2–4	LCVP 2–6 BT 2–6	LCVP 00–1 BT 00–1	LCVP 2–8 BT 2–8
3d	LCVP 3–3 BT 3–3	LCVP 3–5 BT 3–5	LCVP 3–7 BT 3–7	LCVP 3–1 BT 3–1	LCVP 3–9 BT 3–9
4th	LCVP 3–2 BT 3–2	LCVP 3–4 BT 3–4	LCVP 3–6 BT 3–6	LCVP 4–2 BT 4–2	LCVP 3–8 BT 3–8
5th	LCVP 4–1 BT 4–1	LCVP 4–3 BT 4–3	LCVP 4–5 BT 4–5	LCVP 4–4 BT 4–4	LCVP 5–1 BT 5–1

Table V. Debarkation Schedule for Water Movement (Extract)—Continued

BOAT	RED 1	WHITE 3	BLUE 5	YELLOW 7	GREEN 9
6th	LCVP 5–2 BT 5–2	LCVP 5–3 BT 5–3	LCVP 5–4 BT 5–4	LCVP 5–5 BT 5–5	LCVP 6–2 BT 6–2
7th	LCVP 6–1 BT 6–1	LCVP 6–3 BT 6–3	LCVP 6–5 BT 6–5	LCVP 6–4 BT 6–4	LCVP 6–6 BT 6–6
8th	LCVP 7–3 BT 7–3	LCVP 7–2 BT 7–2	LCVP 7–1 BT 7–1	LCVP 7–5 BT 7–5	LCVP 7–4 BT 7–4
9th		LCVP 00–2 BT 00–2	LCVP 7–6 BT 7–6		

RAIL LOAD

WHITE 3 DAVIT	WHITE 4 DAVIT	BLUE 5 DAVIT	BLUE 6 DAVIT
LCVP 2–10 BT 2–10	LCVP 2–11 BT 2–11	LCVP 2–12 BT 2–12	LCVP 2–13 BT 2–13

156. Landing Craft and Amphibious Vehicle Assignment Table

a. General.

(1) *Unit table.* Each unit prepares a landing craft and amphibious vehicle assignment table. It is an appendix to the landing plan annex to the unit's operation order. The table reflects how the troop units are organized into boat teams and the boat teams into waves. The BGLT's landing craft and amphibious vehicle assignment table and the landing diagram (table III) contain the information necessary to deploy the BGLT for the landing attack. When more than one ship is used to embark a BGLT the embarkation plan is designed to maintain tactical integrity of the scheduled landing waves so far as possible. Therefore, the unit landing craft and amphibious vehicle assignment table will be prepared as a unit table but may be a consolidation of elements debarking from two or more ships. See *b* (2) below. The landing craft and amphibious vehicle assignment table is prepared and promulgated with the following points in mind:

(*a*) The battle group commander and deputy commanding officer, each with a part of the command group, are assigned a "free" boat. They use these boats to move

Table VI. Serial Assignment Table for Water Movement (Extract).

SERIAL ASSIGNMENT TABLE FOR WATER MOVEMENT						
SERIAL NO.	UNIT	PERS	MATERIAL, EQUIPMENT, VEHICLES	CRAFT NO/TYPE	SHIP	REMARKS
211	COMD GP BGLT	54	2 AN/VRQ–3 1 AN/VRC–18 3 ¼–T 4 x 4 3 ¼–T TLR	6 LCVP	APA 210	
215	Co A (—) & Co B (—)	300	Normal Combat	9 LCVP	APA 210	
216	ASLT PLAT Co A & Co B	290	Normal Combat	9 LCVP	APA 210	
227	ASLT PLAT Co C & Co D	298	Normal Combat	12 LVTP	LST 1153	

freely throughout the battle group's boat formation and check on the progress of the operation, and to place themselves at the best vantage point for observing the landing. Free boats are not placed in any wave, but cruise independently as directed by the landing team officer (Army) concerned. They are numbered 00–1, 00–2, etc.

(*b*) The boats used by boat group commanders and their assistants, and other boats required as wave guide boats, salvage boats, etc., are not available for landing troops.

(*c*) The assault craft in each wave should have approximately the same water speed. The type and size of the assault craft used should enable the troops to be boated and landed in small, integral, tactical units capable of entering into immediate offensive action upon landing. Tactical unity as required by the tactical plan normally is maintained, and units are in their proper tactical formations.

(*d*) The risk of heavy losses in any one element is reduced by distributing portions of each among two or more assault craft. For example, all of a communication platoon should not be landed in one landing craft.

(2) *Consolidated table.* As a rule, the commanding officer of troops to be embarked on each ship prepares a consolidated landing craft and amphibious vehicle assignment table for all of the troops embarked on the ship, according to the recommendations of the appropriate unit commander. The consolidated landing craft and amphibious vehicle assignment table, together with the debarkation schedule (table IV), furnishes the ship's captain with the necessary information for debarking the troops.

b. Data Shown for Each Landing Craft/Amphibious Vehicle. This table shows the craft (boat team) number, the number of boat space(s) allotted to each individual and each item of equipment, the total number of boat spaces allotted, and the relative position of the craft in the various formations employed in the ship-to-shore movement.

c. Factors Considered in Preparing Table (General).

(1) The table is distributed to all personnel responsible for boating the assigned boat teams and their equipment (*a* above).

(2) When the waves are composed of landing craft, the order of the craft in column normally is assigned to facilitate deployment in a VEE formation; when the waves are composed of amphibious vehicles, the order of vehicles in column usually is such as to facilitate forming into a wave abreast formation.

(3) The landing craft and amphibious vehicles of each wave, together with the troops and the equipment they carry, are listed in the table in the order they appear in the column formation.

(4) The craft or vehicle number corresponds to the number of the assigned boat team.

(5) Materiel which requires extra boat spaces — mortars, guns, ammunition, etc.—normally is shown in the table. Consideration is given to the type of clothing worn by the troops; e.g., the bulkiness of cold weather clothing will restrict the number of personnel that ordinarily can be embarked.

(6) Alternate landing craft and amphibious vehicle assignment tables are prepared for use in case rough weather prevents the landing craft/vehicles from carrying their normal rated capacity. This alternate table is reflected in the landing craft and amphibious vehicle employment plan prepared by higher authority.

d. Factors Considered in Preparing BGLT Table.

(1) Landing craft or amphibious vehicles are assigned first to the attacking platoons of the rifle units, then to the reserve echelons. This is the basis for the organization of the waves.

(2) Headquarters units and any attached or supporting troops are assigned to the assault craft carrying the rifle units to which they are attached or will directly support. If such units are assigned separate craft/vehicles, these craft are assigned positions in waves best suited to facilitate the employment of the units on landing. A separate wave may be organized for headquarters and headquarters company and combat support company units. The battle group commander and his tailored command group are embarked in one free boat, and the deputy commanding officer and a tailored command element are embarked in another.

e. Preparation Procedure. A suggested procedure for making up a landing craft and amphibious vehicle assignment table follows:

(1) Deduct from each unit of the BGLT those personnel on the ship who will not debark until after the initial attack; these may be cooks, mechanics and vehicle drivers, among others.

(2) Determine the number of personnel to be boated with each attacking rifle company.

(3) Decide what units must be boated in the first wave in accordance with the tactical plan.

(4) Assign to boat teams the personnel of the units to be boated in the first wave, preserving tactical unity, but still maintaining dispersion of appropriate elements between two or more boats in order to avoid loss; for example, of all command, mortar or radar, from the loss of one craft. In a similar manner, assign personnel of the second wave to boat teams, then assign the other company(ies). Normally, attacking companies are boated almost identically.

(5) Boat the reserve company(ies) in one or two waves as the situation demands. Two waves provide flexibility and allow the reserve company(ies) to be committed as a replacement of a company in the original attacking formation(s). This is desirable if the beach defense is strong. One wave permits ease of control of the reserve as a unit.

(6) Boat the BGLT command element(s) in free boats.

(7) Deduct from the BGLT headaquarters those personnel already assigned and commit the remainder to boat teams of subsequent waves.

(8) Form boat teams in a similar manner for other units to be landed in the first trip.

(9) Assign boat teams to boats, and give them numbers (par. 150*d*). Assign all remaining personnel of the BGLT to boat teams and give them a priority for landing.

157. Landing Diagram (For Water Movement)

a. The landing diagram is the graphic means of illustrating the plan for ship-to-shore movement of a BGLT or similar unit. It is of particular value in informing the ship commander, boat group commander, boat personnel, control personnel, and subordinate units of the troop commander's plan for the tactical deployment of the unit in the assault landing. Normally, the landing formation and the type of assault craft composing the waves are determined by the landing team commander, based on the naval capabilities for

supporting the plan. The landing diagram shows the formation of the boat group. A separate diagram is shown for each formation to be employed in alternate plans.

b. The landing diagram is prepared by the BGLT or similar unit commander as an appendix to the landing plan annex to his operation plan. It is normally prepared and promulgated at the same time as the landing craft and amphibious vehicle assignment table. It is distributed to all personnel responsible for controlling the formation of the boat group and its waves during the ship-to-shore movement.

c. In preparing a landing diagram:

(1) The waves are numbered from front to rear.

(2) The time for the landing of each scheduled wave is indicated on the diagram. (Use only the term "H-hour" and plus or minus so many minutes. The actual time of H-hour is never shown on this diagram or on the approach schedule (par. 158)).

(3) Each assault craft is assigned a boat number corresponding to the number of the embarked boat team.

(4) Amphibious vehicles are numbered from left to right in each wave within the boat group; e.g., in a BGLT landing with a front of eight amphibious vehicles, the first vehicle on the extreme left is number one, the vehicle on the right is number eight. Each vehicle is identified by two numbers (par. 150*d*).

(5) The diagram should show the type of craft, the beach on which the unit is to land, the number of waves to be used to land the unit, and the formation of the waves for landing.

158. Approach Schedule (For Water Movement)

a. The approach schedule shows the time each scheduled wave is to leave the rendezvous area (or ship, if landing craft are dispatched directly to the line of departure), the time it is to cross the line of departure and other control points; and the time it is to arrive at the beach. It reflects boat movement times expressed as H-hour minus or plus so many minutes; the wave numbers; courses the landing craft will follow; names of the boat group commander, assistant boat group commander, and primary control officer; the number of the vessel in which the control officer is embarked; and any other necessary information. The schedule is so arranged that the assault waves arrive at the beach at the prescribed time.

b. The approach schedule is prepared by the commanding officer of a naval transport organization embarking an assault BGLT. He is assisted by the BGLT commander. All approach schedules are submitted to higher headquarters for coordination and approval. The amphibious task force commander, in coordination with the army landing force commander, makes any necessary modifications to coordinate the overall ship-to-shore movement.

159. Debarkation Schedule (For Water Movement)

a. Troops and material should be debarked rapidly from ships to reduce their vulnerability to enemy air and submarine attacks while stationary and to permit maintaining adequate dispersion of ships and landing craft or vehicles. Planning must also strive for reduction of the time that personnel remain afloat in the landing craft and amphibious vehicles. Based on these considerations, the debarkation schedule is prepared for each ship. The schedule—

(1) Specifies the debarkation stations and designates the boat teams to be debarked from them.

(2) Prescribes a sequence for landing craft, by type, to come alongside the debarkation stations.

b. The debarkation schedule is prepared jointly by the ship's commanding officer and the embarkation team commander as an appendix to the landing plan annex of the operation order. It is distributed to all personnel responsible for controlling the debarkation of the boat teams. Debarkation schedules are not usually prepared for units landing in amphibious vehicles from landing ships.

c. In preparing a debarkation schedule consider that—

(1) The first column lists the sequence of the arrival of boats alongside the debarkation stations. Succeeding columns list the numbers of the individual boats and boat teams that will load from each debarkation station. These numbers must correspond to those entered on the landing craft and amphibious vehicle assignment table. A space is provided on the form to enter a pencil notation of the time consumed, during training and rehearsal, to debark each boat team.

(2) When rail loading technique is employed, this schedule also includes a list of boat teams loading from the rail and the davits at which they will load.

(3) A landing craft is not identified by the boat number that corresponds to the number of its embarked boat team until after it has come alongside the debarkation station

and embarked the boat team which brings the boat sign aboard.

(4) The instructions in the debarkation schedule may be supplemented and clarified by a ship's diagram. The diagram is normally attached as a tab to the debarkation appendix of the landing plan annex. It consists of an outline sketch of the ship reflecting location of all debarkation stations and the numbers of the boat teams scheduled to load at each station.

160. Serial Assignment Table

a. For general definition of a serial, see AR 320–5.

b. In amphibious operations a serialized element is a group of individuals, a unit or a part of a unit with accompanying materiel which moves as an entity to a landing area, for landing at approximately the same time and place. Each subordinate unit commander is assigned a block of serial numbers for his unit. He assigns a serial number to each serialized unit. The members are arbitrary and are used as a convenience for reference. They do not prescribe a priority of landing.

c. The serial assignment table reflects the serial number, title of the unit, the approximate number of personnel, material, vehicles, or equipment in the serial; the number and type of assault craft or helicopters required to land the serial; and the ship in which the serial is embarked. The amount of detail included in the serial assignment table depends on the degree of detail required in the plans for the ship-to-shore movement. For example, if it is planned that a company is the smallest unit of the battle group that will be landed on one beach or in one landing zone at a specific time, then that company should be a serial. However, if it is planned that one platoon of a company may be landed on a different beach or at a different time, then that platoon should be one serial and the remainder of the company another serial. A fixed rule cannot be laid down as to the size of a serial. Eeach element of the landing force must be considered separately on its own merits.

d. The lists of serials are drawn up by the subordinate units of the division and consolidated and coordinated at the division level. Methods of assigning blocks of serial numbers will differ in various units. The method used must be uniform and understood by all elements of the command. A consolidated serial assignment table is prepared and promulgated at division level after appropriate decisions have been made concerning make-up of the serialized elements.

e. When plans for embarkation must be expeditiously prepared, the anticipated sequence of the landing of a serial should be established and used in preparation of the loading plans. Care is necessary to insure that units and equipment, scheduled for early landing, are loaded so that they can be debarked rapidly in the order and at the time requested. When adequate time for planning is available, embarkation plans are based on the completed landing plans.

Section III. DEBARKATION AND MOVEMENT IN ASSAULT CRAFT

161. General

Debarkation from assault transports involves transferring troops and their equipment from ships to landing craft and amphibious vehicles in accordance with the landing craft and amphibious vehicle assignment table and the debarkation schedule. It is executed according to the debarkation plan. The BGLT commander is responsible for insuring that his unit is thoroughly trained in debarkation procedures (ch. 12).

162. Preparation for Debarkation

a. Navy Functions Aboard Transports. As the assault transport nears the assigned station for debarkation, "Condition One Alfa"—a condition of readiness with battle stations and debarkation stations fully manned—is announced. Debarkation stations are usually designated by number and color. They are numbered from forward aft, with the odd numbers to starboard, even numbers to port:

	Debarkation Station	
Color	*Starboard*	*Port*
Red	No. 1	No. 2
White	No. 3	No. 4
Blue	No. 5	No. 6
Yellow	No. 7	No. 8
Green	No. 9	No. 10

(1) Sailors are in readiness to lower rail-loaded troops; other ship personnel sling debarkation nets over the side at all debarkation stations.

(2) A Navy officer or petty officer is normally stationed at each debarkation station. He supervises debarkation at that station as the transport commander's representative.

(3) A Navy officer trained as a transport debarkation officer is normally stationed on the bridge. He is responsible to the

transport commander and is in general charge of debarkation. His primary task is to see that the debarkation stations are ready for debarkation operations as prescribed in the debarkation schedule.

b. Actions of the Embarkation Team.

(1) The embarkation team commander is responsible for the expeditious debarkation of landing force elements aboard the transport.

(2) Each boat team commander performs the following duties:

(*a*) Reconnoiters the route from his assigned troop assembly area to his debarkation station.

(*b*) Musters his boat team in the assigned area prior to debarkation.

(*c*) Inspects each member of his team for proper uniform and equipment while in the assembly area.

(*d*) Stations a member of his boat team near the debarkation station to notify him when the debarkation station officer is ready for the team. This supplements the ship's loudspeaker system in calling for boat teams.

(*e*) Forms his boat team at its station in debarkation order.

(*f*) Supervises the debarkation of his team and its equipment and keeps the debarkation net full after debarkation starts.

(*g*) Insures that lowering lines are present for each piece of equipment that must be lowered into the landing craft, and that the lines are properly secured to the equipment.

(3) An embarkation team officer should be stationed on the bridge to work with the ship's debarkation officer. His primary task is to control the movement of the boat teams so that they arrive at their debarkation stations at the proper time. He uses the ship's public address system to give his orders.

(4) Preparations for debarkation include the assembly below decks of all boat teams scheduled to go ashore on the first trip made by landing craft. The boat teams assemble in complete uniform and with all personal equipment. All other troops are ordered to their compartments. All boat teams that debark at the same station are formed in a single file. They are positioned in the order of debarkation with the team that is to debark first at the head of

the column. The head of the column is at the hatch nearest the assigned debarkation station with the formation extending onto the ladders leading to the hatch. The senior man of each boat team is first in the team column and the next senior man brings up the team rear.

163. Debarkation

a. Navy Functions.

(1) The transport commander is responsible for preparing the ship for debarkation, lowering boats, forming the boats in assembly areas astern of the ship, bringing the proper boats (landing craft) alongside the debarkation stations at the proper time, and clearing them for movement from the ship's side to the rendezvous area.

(2) When preparations for debarkation are complete and the embarked units have been ordered to land, the Navy officers at each debarkation station report to the transport debarkation officer on the bridge, who then orders a boat of the proper type to come alongside each debarkation station. Members of the boat crew adjust the lower end of the debarkation net in the boat and hold it taut and clear of the boat's side until the first two members of the boat team debark and assume that task.

(3) As soon as the boat team and its equipment have been debarked, the Navy officer at the debarkation station orders the boat coxswain (sailor in command of the boat) to proceed to the rendezvous area and report to the wave commander.

(4) Boats arriving in the rendezvous area are organized into waves under the control of the respective wave commanders.

b. Actions of the Embarkation Team.

(1) The embarkation officer calls the individual boat teams to their respective debarkation stations in time for them to start debarking as soon as their boat arrives alongside. Waiting time at the debarkation station should be held to a minimum.

(2) The troops wear their personal equipment in such a way that they can quickly free themselves if they fall into the water. See chapter 13 for detailed instructions.

(3) Light equipment that cannot be carried into the boat by individuals is lowered on lines by designated members of

the boat team. Since this operation is accomplished simultaneously with debarkation of the team, the equipment handlers stand either forward or aft of the debarkation net. Consult chapter 13 for detailed instructions on lashing and lowering equipment.

(4) After the first two members of the boat team enter the boat, the others debark four abreast, keeping the net full until the entire boat team has debarked. As soon as they enter the boat, they unsling weapons and stow them so they will not be a hazard to anyone who falls.

(5) Vehicles are loaded into landing craft so they can be unloaded conveniently at the beach in the desired priority. They are always stowed with the front end toward the ramp end (bow) of the landing craft. They are placed as far aft as possible and centered in the boat so the bow will ride high thereby assisting in grounding the boat closer to the beach. The crew of a vehicle, less the driver, boards the landing craft immediately before the vehicle is loaded to assist in its proper stowage. The driver remains with the vehicle in the hold of the ship until it is moved under the hatch for hoisting. He then boards the landing craft at the designated debarkation station. So far as practicable, a vehicle and its prime mover are always loaded in the same boat.

(6) After heavy equipment is loaded, the remainder of the boat team, including the boat team commander as the last member, embarks at the designated debarkation station.

(7) Rail loading, in which boats are lowered from davits to the level of the rail and loaded before they are launched, is carried out in a similar manner, except that a debarkation net is not used by the troops, and equipment is manhandled over the rail and into the boats. Rail loading is usually possible for only about 50 percent of the ship's complement of landing craft and should be used, where possible, for units carrying heavy equipment. The embarkation team commander checks with the proper ship's officer as to the safety limits of each boat's lowering gear and conforms to them. While rail loaded boats are being lowered, the members of the boat team counterbalance their weight in the boat by supporting themselves on the grablines rigged for this purpose.

(8) Landing force elements that go ashore during the second trip of the boats form into boat teams as prescribed in the landing craft and amphibious vehicle assignment table. They debark in the assigned priority as the boats come alongside after returning from the first trip. The boats are not normally formed into waves for the second trip; each precedes to the beach individually as soon as it is loaded.

(9) Normally, the BGLT commander embarks in his free boat when the debarkation of BGLT elements is about half completed. He officially notifies the ship's captain just before he leaves and confirms the name of the officer designated to remain aboard in command of troops. The BGLT deputy commander may debark at the same time, earlier or as directed depending on his assigned responsibilities.

164. Movement From Ship to Line of Departure

a. The rendezvous area is usually 500 to 1,000 meters from the transport in the direction of the approach lane marker ship. A rendezvous area may not be necessary if visibility is good and other factors are favorable. In this case, the waves form as the landing craft draw away from the ship and proceed directly along their prescribed routes.

b. As the landing craft clear the transport, they proceed directly and independently to the rendezvous area where they assemble under the direction of their respective wave commanders. During the process of assembly, the craft in each wave circle slowly in a designated area until assembly is complete. The boat group commander assigns a circling area for each wave, in sequence. Odd numbered waves circle in a clockwise direction; even numbered waves in the opposite direction. The waves leave the rendezvous area for the line of departure on orders of the boat group commander in accordance with the approach schedule. Normally, the entire boat group moves as a unit with a short interval between waves. Waves usually proceed in a closed vee formation. In rain, fog, smoke or darkness, they may proceed in a column formation. The distance between boats in a wave varies with the visibility. Individual boats and boat waves should keep closed up to insure contact. During the approach to the line of departure, the speed of the boats is so regulated that the boat group arrives at the line of departure at the proper time.

c. If the boat group is not to cross the line of departure immediately and move to the beach, it circles by waves in an area clear of the line of departure, under the direction of the boat group commander. If the boat group is to land shortly, the boat group commander assigns a circling area near the line of departure. If it appears that some time will elapse before the boat group is to land, he selects an area well away from the line of departure so that his boat group will not interfere with other boats arriving at the line of departure.

d. Each boat team commander checks to see that the members of his team are properly positioned and that the boat sign is correctly displayed. He then places himself where he can talk to the boat commander. All unit commanders insure that they have control of their units. Even though the ship-to-shore movement is controlled by the Navy, the landing team commanders have a primary interest in seeing that landing plans are carried out as planned and approved for execution. While they do not have authority over boat or boat group commanders they can make recommendations or contact higher echelon for command assistance as needed. See paragraph 167. If radio silence has been lifted, as it usually is upon arrival in the transport or sea echelon area, the tactical commanders test all communication insuring contact with subordinate units and with higher echelon.

165. Movement From Line of Departure to Beach

a. When the first wave arrives at the line of departure, the BGLT commander contacts the primary control ship to receive last minute information. He determines the time that assault waves cross the line of departure. Following normal boat assignment practice, the first two waves usually contain the assault rifle companies. After the first two waves have crossed the line of departure, the BGLT commander may start to the beach, land, and establish his command post. Once ashore and depending on the situation, he may request through his Tac-Log group that subsequent waves land on the left or right half of the landing beach. Only in the gravest emergency may he alter the place or time of landing of a scheduled wave.

b. Each boat wave commander controls his wave's formation and its maneuvers between the line of departure and the beach. He is responsible for executing the formation prescribed in the landing diagram. Immediately after crossing the line of departure, he insures that the boat sign is withdrawn from display. During the run to the beach, he keeps oriented on the enemy installations,

terrain, and objectives ashore. During the last 1,000 meters of the approach, boats proceed at their maximum speed, maintaining the interval required by the landing diagram. As each landing craft beaches, the coxswain or a designated member of the crew lowers the ramp. The team commander discharges cargo and personnel rapidly, the coxswain raises the ramp, and the boat commander pulls his craft away from the beach, and clears to a designated flank of the boat lane.

c. During movement to the beach, troops in each landing craft stay low in the craft for protection from hostile fire and do not fire their weapons until debarked.

d. The assisant boat team commander normally is the last man to debark.

166. Communications

a. During the ship-to-shore movement, the BGLT commander must be able to communicate with—

(1) Subordinate units of the BGLT including the deputy commander who may initially be responsible for command of a portion of the BGLT upon landing.

(2) The division commander.

(3) Supporting air, naval gunfire, and logistic agencies.

(4) The BGLT Tac-Log group.

b. Voice radio is the primary means of communication. Visual signals are used to some extent to supplement it. The signal annex of the operation order designates the time for activating the radio nets. See chapter 10 for more detail.

167. Tactical Control

During the ship-to-shore movement, the landing plans, as approved by the amphibious task force commander, are implemented by the Navy movement control officers unless modified or canceled by competent authority to include:

a. The amphibious task force commander.

b. The landing force echelon commander who originated the plan or order concerned. In this connection, the highest commander that approves an assault schedule must be considered as the originator of the plan designating the times for landing of scheduled waves. The fact that the BGLT commander may have originated the recommendation and may have a landing diagram appended to his plan, does not make him the originator. In this sense, he cannot

modify that plan except by recourse to higher authority. Change to meet a grave emergency must be coordinated with the appropriate Navy movement control officer.

c. A landing force echelon commander, senior in the regular chain of command to the originator of the plan or order concerned.

d. The senior troop commander in the landing element concerned, subject to the general rule that once the ship-to-shore movement begins the commander of any troop unit is the final authority as to where and when his unit shall land. This is construed to mean that the BGLT or other subordinate commander can change the promulgated plan only in a grave emergency. However, plans must specify clearly how the chain of command will work if normal communications fail.

Section IV. DEBARKATION AND MOVEMENT IN AMPHIBIAN VEHICLES (LVT's)

168. Preparation for Debarkation From Landing Ships in LVT's

a. The entire BGLT may be transported in an APA to a staging area and all or a portion then transferred to LST's or other landing ships. If the water movement is short, the assault elements may make the entire voyage in LST's. The transfer is a time consuming ferrying operation which must be executed as expeditiously as possible. In some cases the transfer may be made in the transport area or some distance at sea when the sea echelon plan is used.

b. (1) When troops are transferred from transports to landing ships, they are normally delivered to the landing ships in LCVP's or similar craft and they board the larger vessels by climbing up the sides on debarkation nets. Once aboard, they assemble by boat teams in accordance with the landing craft and amphibious vehicle assignment table. They are then guided to their assigned amphibious vehicles by the crews that habitually travel with their vehicles. The troops stow all their heavy gear aboard the vehicles. They should be thoroughly rehearsed in moving to their assigned vehicles in a minimum of time.

(2) The troops are assigned quarters, if they are to remain aboard long enough to require quartering.

c. Loads for the initial trip to the beach are planned in accordance with the needs of the operation and are stowed and secured in the designated vehicles prior to arrival at the objective area. They should be stowed in such a manner as to enable the troops to

take advantage of the maximum amount of cover afforded by the vehicles. Supplies and equipment are secured in such a way that they can be unloaded quickly.

d. The loading of teams into the amphibitan vehicles can be greatly facilitated by laying 2 x 12-inch planks across the tops of the vehicles for the troops to walk on. This—

(1) Eliminates troop congestion on the deck in the spaces between vehicles.

(2) Makes it easier to load equipment and supplies in the vehicles.

(3) Eliminates the necessity of climbing the sides of the vehicles.

(4) Makes it easier for the troops to abandon ship quickly in case of emergency.

e. One man in each team is responsible for carrying the identifying sign (par. 150*d*) and seeing that it is properly displayed.

169. Execution of Debarkation From Landing Ships

a. These principles are primarily applicable to launching LVT's from LST's, however, they generally apply also to launching from other types of landing ships, such as the LSD or LSM and to other amphibious landing vehicles that have the capability to negotiate landing in surf conditions.

b. The LVT's are launched from the LST in time to arrive at the line of departure on schedule. The embarkation team commander aboard each LST insures that the teams are loaded in accordance with the landing craft and amphibious vehicle assignment table, and that the vehicles are properly manned in time to move off on order of the ship's debarkation officer.

c. The following debarkation procedure may be used on LST's:

(1) The word to man vehicles is passed and the tank deck alarm sounded 40 minutes prior to the time set for debarkation.

(2) When the tank deck alarm is sounded, the teams move to their assigned vehicles according to previously rehearsed plans.

(3) Due to the noise of the running vehicle engines, teams must be able to load with a minimum of verbal orders.

(4) If planks have been placed across the tops of the vehicles, they should not be cast off until all vehicles are loaded.

(5) When each LVT is loaded, the team commander makes a

final check to see that all personnel are present and properly situated, that all equipment is properly stowed, and that the boat sign is properly displayed.

d. LVT's are loaded into LST's in the inverse order of launching. They are parked on the tank deck in two parallel rows, front end toward the ship's bow. They are launched one at a time through the bow of the LST. The launching is so coordinated that the LVT's emerge from the ships in a sequence that will enable them to assemble quickly by waves in the proper formation for their movement to the beach.

170. Forming LVT's Into Waves

a. Immediately after they are launched, amphibian vehicles form on their respective guide boats and proceed in column to a designated area parallel to and seaward of the line of departure. There they are formed into waves, in line abreast, and remain until dispatched to the beach by the control vessel stationed at the line of departure.

b. The numeral flag (or flags) corresponding to the wave number is flown from the command vehicle of each wave. Vehicle team commanders insure that their respective boat signs are properly displayed.

171. Maneuvering LVT's Near Line of Departure

a. Due to the mechanical method of steering the LVT, it is not desirable to maneuver LVT waves by circling. If, for any reason, it becomes necessary for them to maneuver in the area seaward of the line of departure, the following method is used:

(1) Each wave forms in column. It is assigned a maneuver area as long as the width of the boat lane and about 25 meters deep. The long axis of the maneuver area is thus parallel to the line of departure. The maneuver area of the first wave is 25 to 50 meters from the line of departure; the second, from 70 to 100 meters; the third, from 125 to 150 meters; etc.

(2) The vehicles in the wave column slowly move the entire length of the maneuver area. As each vehicle reaches the extreme end of the area, it makes a U-turn and moves the entire length in the opposite direction. This maneuver is continued until the wave is ordered to cross the line of departure.

(3) The control ship may give the signal to cross the line of

departure at any stage of the maneuvering. The waves then need only to execute a right or left flank movement to form in line abreast for the run to the beach.

b. While maneuvering, unit commanders check on the positioning of their units within the waves. When the signal is given to cross the line of departure, all boat team commanders check to insure that their vehicle signs are withdrawn from display.

172. Initial Employment of LVT's

LVT's remain under control of the assault BGLT commander as long as required or until detached for higher priority missions. As a minimum, terrain permitting, they are retained by the BGLT assault units until initial objectives are seized. Upon completion of the initial assault mission, they may take part in the ship-to-shore movement under control of the shore party commander or carry out other missions for which they are peculiarly suited. LVT's can move rapidly inland to exploit nuclear fire support.

173. Transferring Troops From Landing Craft to LVT's

In preparation of BGLT landing plans the requirement for embarking troops in landing craft, then transferring them directly to LVT's is avoided. An exception might occur when a contingency requires reserve elements, originally scheduled to land in landing craft, to land under conditions dictating use of LVT's. When any operation requires such a transfer, the orders of higher commanders include full details of the procedure for carrying it out. For this reason, only a brief description of the procedure is given in *a*–*d* below.

a. Designated control vessels move to a position just seaward of the beach obstruction and out of effective small-arms range, thus marking the transfer line. These vessels control the transfer operation.

b. The LVT's move to the flank of the boat lane and proceed to the transfer line. Wave guides pick them up as they reach the beach obstruction and control their movement into position just seaward of the transfer line.

c. The landing craft move to the position of the LVT's. Each landing craft takes station alongside one of the LVT's and its troops make the transfer. The control officers then dispatch the LVT's to the beach. It is desirable that only one LVT load is embarked in any one landing craft.

d. Specific provisions must be made for replacing casualties among LVT crews which have made a first trip to the landing beach. Usually this is done by cannabalizing members of the LVT crews of succeeding scheduled waves. This allows each wave to be complete as it is dispatched, but may cause some delay in dispatching it.

174. Communication and Tactical Control

See chapter 10.

Section V. DEBARKATION AND MOVEMENT IN HELICOPTERS

175. General

a. Helicopters are the primary type aircraft used for ship-to-shore air movement in amphibious operations. Some fixed-wing aircraft can efficiently operate from certain type ships, however, the major transport capability is in use of rotary type aircraft. The helicopter unit and airmobile landing elements are normally transported to the objective area in specially designed amphibious assault ships (LPH) or amphibious transport dock ships (LPD), hereafter also referenced as helicopter transports. If existing conditions so dictate, landing team elements can be transferred from other ships in the objective area to helicopter transports for ship-to-shore air movement.

b. Plans for ship-to-shore movement by air are designed to provide for the landing of troops in tactically advantageous formations in landing zones that will facilitate executing the scheme of maneuver immediately upon landing. Airmobile assault using helicopters may be employed before, after, or concurrent with assault by water movement. Such landings may be employed for the purpose of seizing objectives inland and launching a major ground attack or assisting in securing the beachhead for further build-up by water movement. They also may be staged in areas separated from water landings as a diversionary, screening, or raid type mission. The principles of concurrent, coordinate, and detailed planning apply the same as in water movement.

c. Once assault aircraft of the Army are based ashore, doctrine in FM 57–35 applies with appropriate consideration to applicable air control measures in effect in the objective area. See paragraph 222 for night helicopter operations.

176. Organization and Command

a. An airmobile BGLT is a task organization tailored for accom-

plishment of assigned tasks, and with consideration to the number and type of aircraft to be employed. Airmobile teams, smaller or larger than battle group size, may be formed. When necessary two or more airmobile landing teams may be employed under brigade or other appropriate task force headquarters control.

b. Army transport aircraft units to be employed in the ship-to-shore movement will be attached to the assault division. The landing force commander will prescribe the degree of command authority to be exercised by airmobile landing team commanders over the transport aircraft element(s). Command relations must satisfy the requirements for unity of command and effort during the critical initial assault stage of the landing. In particular, the helicopter and/or fixed-wing elements required for formation of airmobile support parties (par. 178) should be part of the airmobile landing team. The transport aircraft units normally are a part of the embarkation team aboard a particular ship and are subject to the command authority of the respective embarkation team commander designated within the landing force embarkation organization. In use of helicopters nonorganic to a division this command control can be accomplished in several ways:

(1) The helicopter unit can be placed in direct support of the airmobile unit.

(2) The helicopter unit can be placed under operational control of the airmobile unit commander.

(3) The helicopter unit can be attached to the airmobile unit commander.

(4) The helicopter unit can be attached, for example, to a division and then placed in direct support or operational control of the BGLT (DS or OP-CON). Unless the operations of two or more airmobile forces require extensive higher echelon coordination, or the size of the forces involved dictates otherwise, DS or OP-CON by the BGLT should normally be utilized to achieve unity of effort, insure effective movement control and avoid assigning excessive administrative support tasks of the helicopter unit to the airmobile landing team commander.

177. Control

a. Tactical Air Agencies.

(1) *General.* Control of aircraft in the objective area is the responsibility of the amphibious task force commander. He exercises this responsibility through his tactical air

commander (TAC). The control agency of the TAC is the tactical air control center (TACC) affoat. The TACC controls and coordinates the operations of all aircraft in the objective area. When employed, a tactical air direction center (TADC) is a control agency subordinate to the TACC. Each TADC controls aircraft in a designated section within the objective area. Initially, the TADC controls the helicopters during the ship-to-shore movement through a helicopter direction center (HDC) and coordinates it with all other aircraft movements in the objective area. Actual directive control of helicopter movements in accordance with the approved operation order normally is delegated to the HDC aboard the LPH. This unit functions in the combat information center (CIC) of the ship and is subordinate to the TACC and the designated TADC if employed, controlling the area within which the helicopters are operating. Subordinate to the HDC is the primary flight control (PriFly) located in the CIC's of each individual LPH. The PriFly has the mission of controlling local helicopter traffic in the immediate vicinity of its ship. For further information on control agencies, see chapter 3, section IX, and FM 31–12. Doctrine for control of Army air traffic, after the landing force is established ashore, is contained in FM 1–60.

(2) *Flight and serial leaders.* Certain control responsibilities are delegated to flight and serial leaders. They include—

(*a*) Commanding all helicopters in a flight or serial.

(*b*) Performing duties similar to those associated with flight and serial leaders of fixed-wing aircraft formations in other types of operations.

(*c*) Making radio calls and reports to control agencies at rendezvous, departure, and initial points.

(*d*) Briefing pilots and crewmen participating in their flights.

(3) *Airborne early warning (AEW) aircraft.* AEW aircraft may be used to assist in controlling helicopters. Primarily they provide information beyond the capabilities of shipboard electronic equipment, thus extending the effective range of HDC control.

b. Airmobile Support Party. See paragraph 178.

c. Supporting Arms Coordination Center (SACC). The SACC, which is the Navy equivalent of the FSCC, coordinates all fire

support. The TACC keeps the SACC informed concerning the movements of helicopters and other aircraft. One or more airborne tactical air coordinators (TAC(A)) may function as representatives of the TAC en route to and in the objective area. The coordinators provide on-the-scene direction of close support aircraft. Tactical Air Force aircraft may be used to augment the naval close air support efforts.

d. Tac-Log Group. Each airmobile troop unit of BGLT size and larger establishes a tac-log group. The group is located in the Navy control agency that controls the movement of the transport aircraft in which the landing team is landed. Its functions are similar to those of a tac-log group in a ship-to-shore water movement. Orders prescribe the initial supplies to be landed in each landing zone. All supplies are palletized or loaded in nets for easy handling, serialized for selective unloading, and landed in a predetermined priority unless modified by the commander concerned. Upon receiving an emergency request for supplies that cannot be met from supplies ashore, the airmobile support party (par. 178) commander notifies its respective airmobile landing team tac-log group. This group arranges for the necessary supplies to be landed, or asks a higher echelon to furnish them if they are not available in local stocks. The airmobile support party commander is notified when requested supplies are dispatched, and arranges for expeditious delivery to the requesting unit ashore.

e. Radio Nets. Radio nets employed in the air movement are similar to those employed in beach landings, except for helicopter direction nets and airmobile support party logistical nets. Helicopter direction nets are used by air control agencies for communication with airborne helicopters. The logistical nets correspond to shore party nets.

f. Transfer of Helicopter Movement Control Ashore. The transfer of helicopter movement control ashore is related to the transfer of control of direct air support ashore. If required, partial or complete command control of helicopters locally engaged in supporting units ashore is given to the landing force commander, who may further delegate operational control, before overall direct air support control is passed ashore. The operation order includes provisions for passing control of direct air support operations, including transport aircraft operations, to the Army landing force commander when he is ashore and his communications and other facilities permit. Control that is retained by an agency of the amphibious task force commander is for movement control purposes and is not to be interpreted as command. The latter always being exercised within the landing force chain of command.

178. Airmobile Support Party

a. An airmobile support party is a special task organization formed and equipped to facilitate operations in a landing zone. Its composition, organization, and equipment are governed by the scope of the operation in the landing zone. An airmobile support party normally consists of an air traffic control element (similar to a landing zone control party), reconnaissance and security element, and necessary logistical support personnel. The components of a typical airmobile support party and their functions are discussed as follows in their general landing sequence:

(1) Initially, an air traffic control element—consisting of Army pathfinders and other control personnel with communications equipment—lands. Necessary security and guide personnel will also land with the first element. The pathfinders with their equipment and accompanying reconnaissance and security personnel drop by parachute or land in aircraft before the first assault serial lands and—

(*a*) Report on the feasibility of landing transport aircraft, based on terrain conditions and the enemy situation.

(*b*) Conduct CBR survey.

(*c*) Reconnoiter, prepare, mark, and maintain landing sites.

(*d*) Establish and operate electronic and visual navigation aids to provide navigational assistance and terminal guidance for the helicopters.

(*e*) Establish and maintain the communications necessary to perform the foregoing functions.

(*f*) Provide local security for landing sites.

(2) Additional reconnaissance and security personnel and the advance echelon of the logistical element composed of minimum command, labor, and equipment elements, land with early serials and—

(*a*) Reconnoiter for supply dump sites near landing sites and rapidly establish the dump sites so that incoming supplies may be processed immediately upon arrival.

(*b*) Select and prepare sites for other logistical installations, the airmobile support party command post, casualty evacuation stations, prisoner of war holding points, and local defense positions.

(*c*) Unload and load helicopters.

(*d*) Provide local security at supply dumps.

(3) The balance of the airmobile support party, consisting of the headquarters, engineers, evacuation, military police, security, signal, medical, and liaison sections, plus labor personnel, land with later serials. The headquarters assume command of the units and the continuing activities described in (1) and (2) above, and expand the activities and command functions to include—

(*a*) Directing and controlling helicopter operations within the landing zone.

(*b*) Maintaining records of supplies received, issued, and available.

(*c*) Issuing supplies.

(*d*) Loading cargo nets and pallets for return trips.

(*e*) Treating casualties at aid stations and evacuating them.

(*f*) Evacuating prisoners of war.

(*g*) Providing traffic control when required.

(*h*) Providing emergency helicopter repair and maintenance.

b. The helicopter transport ship's platoon's functions must be closely coordinated with the logistical operations ashore in the landing zone. After the platoon completes its unloading and other duties aboard ship, it may then be used to augment the airmobile support party ashore or tactical elements of the BGLT.

179. Planning Considerations

a. Planning by an airmobile landing team is comparable to planning for a normal unilateral airmobile operation with the added considerations inherent in an amphibious attack environment. The characteristics of amphibious planning are applicable and the division commander insures that the airmobile portions are integrated with the overall division plan. Detailed plans, including alternate plans, are prepared in the same manner as for assault landings by water movement.

b. Certain conditions that are inherent in all amphibious operations must be taken into consideration. These are as follows:

(1) Aircraft transport shipping is usually limited. As a result, the number and type of transport aircraft desired and the amount and type of troops and equipment to be airmobile may have to be reduced to fit the available shipping. This restriction may be overcome in part by planning for the delivery of reinforcement troops and emergency supplies to the objective area using fixed-wing

aircraft if the objective area is within shore-to-shore operational radius. Assault type fixed-wing aircraft may be used for air landings if the terrain permits landings.

(2) The number of troops which can be lifted simultaneously from one helicopter transport (LPH or LPD) is relatively small. Therefore, plans should provide for sufficient helicopter transports to permit minimum necessary one-trip lift of troops for seizing and controlling the assigned objective. A BGLT may have to be supported with more than one helicopter transport.

(3) A helicopter transport can carry more helicopters than it can launch simultaneously. After launching the first flight, helicopters stowed below deck are brought up to the flight deck and prepared for launching. If the first flight must rendezvous while waiting for the second flight to be launched too much time may be consumed and the radius of action of the helicopters might be reduced below acceptable standards. Therefore, the deck launch capacity of a helicopter transport is an important planning consideration.

(4) Because of the hydrographic conditions and the requirement for ship dispersion at sea as a passive defense measure, the helicopter transport station area (sea area where ships are stationed) is usually located 10–25 nautical miles at sea. This distance has a major affect on the overall efficiency of helicopters and must be carefully considered when planning the landings. See figure 25, FM 31–12.

180. Plan of Attack

a. The plan of attack for airmobile landing team operations consists of the scheme of maneuver, the plan of supporting fires, and the landing plan the same as for landings by water on the beaches. The selection of objectives and landing zones, time of landing, landing zone security, seizure and organization of the objective, selection of approach and return routes, all involve generally the same considerations discussed in FM 57–35 for normal unilateral airmobile operations.

b. Fire support planning must be closely coordinated to minimize interference. The landing team commander plans for preparatory fires and for suppressive fires of aerial weapon systems mounted on helicopters, naval gunfire and tactical aircraft. He must coordinate his fire support plans with those of units over

which or near which his unit may pass to insure that fires on approach and return routes will not restrict or conflict with plans of these units.

181. Landing Documents

a. To provide optimum distribution of assigned helicopters and to insure that troops and equipment can be landed in accordance with requirements, several different landing plan documents are prepared for the helicopter landing. After each form is completed and approved, copies are provided to appropriate Army and Navy commanders for information and inclusion in orders. The following documents are normally prepared:

(1) Helicopter availability table (fig. 20, FM 31–12).

(2) Helicopter employment and assault landing table (fig. 26, FM 31–12).

(3) Helicopter landing diagram (fig. 25, FM 31–12).

(4) Heliteam wave and serial assignment table (fig. 29, FM 31–12).

b. A description of the form and content of these documents is in FM 31–12.

c. All of the documents may not be required for a given operation. Conversely, additional documents may be prepared as required.

182. Debarkation Procedure

a. Debarkation Control. Debarkation control refers to the planning for and supervision of all activities involved in moving helicopters, troops, and equipment from assigned locations in the ship to the flight deck; and in seeing that the helicopters are loaded in an orderly manner, that they take off on schedule, and that they are received systematically on deck when they return to repeat the procedure. The purpose of debarkation control is to position personnel, equipment, and supplies at the right place and time to insure rapid and orderly movement off the ship.

b. Debarkation Control Personnel.

(1) The air officer (Navy) is responsible for the handling, takeoff, and return landing of helicopters and for overall control of activities on the flight deck.

(2) The air operations officer (Navy) is responsible for the coordination of helicopter flight operations from a ship.

(3) The debarkation officer (Navy) is responsible for the

movement of personnel and equipment to the proper helicopters, and for the coordination of debarkation activities.

(4) Troop units assign debarkation directors, controllers (including hangar deck control officer), and loading supervisors to the ship's debarkation officer to assist in debarkation operations.

c. Debarkation of Personnel.

(1) Troop units are assembled on the hangar deck.

(2) The hangar deck control officer stations himself at the debarkation control point, on the hangar deck, with a copy of the helicopter employment and assault landing table. One flight serial of heliteams is kept in readiness to move to the elevator immediately on call from the debarkation officer.

(3) The debarkation officer stationed on the flight deck telephones his requirements to the control officer on the hangar deck. He coordinates the movement of heliteams, via the elevators, with the flight deck officer. One load of heliteams is held in readiness in the staging area on the flight deck.

(4) A guide is assigned for each helicopter takeoff/landing point. He takes charge of a heliteam as it reaches the flight deck and guides it to its staging area. When a helicopter arrives at his takeoff/landing point he is directed to lead the heliteam to it. He helps the team enplane.

d. Debarkation of Cargo.

(1) Debarkation of cargo is a separate operation from the personnel lift and the cargo debarkation control system is separate.

(2) The hangar deck cargo control officer is responsible for keeping a steady flow of cargo moving up the elevator in the amount and sequence shown on the helicopter employment and assault landing table prepared for discharging cargo other than personnel, or as directed by the cargo control officer on the flight deck. Both officers must have a hangar deck stowage diagram showing the location of cargo serials.

(3) The flight deck cargo officer coordinates the flow of cargo from the hangar deck to the flight deck and supervises the placement of cargo on the flight deck for lift by helicopter.

183. Conduct of the Landing

a. While the helicopters are being prepared, launched, and assembled into formation, naval gunfire and air support elements conduct prearranged destruction and neutralization missions in preparation for the landing. The helicopter unit and airmobile unit commanders are informed of the results of this fire support and are given any other information which pertains to the tasks assigned.

b. A special TAC(A) is responsible for detailed coordination in the employment of the helicopters and support aircraft involved in the ship-to-shore movement, including the efforts of support aircraft assigned to destroy enemy forces that have the capability of interfering with the movement.

c. Preparation for loading and launching is timed to insure landing at the time and in the dispositions desired. Helicopters are made ready for flight and spotted at prescribed flight deck stations. Helicopter teams move to the flight deck and load aboard the helicopters as prescribed in paragraph 182.

d. Under the direction of the amphibious task force commander, flights are launched from the ships at the times and in the order prescribed in the helicopter employment and assault landing table. Each ship controls its own launchings and assists its helicopters in proceeding to their assigned rendezvous points as shown on the helicopter landing diagram.

e. Helicopters carrying pathfinder elements of the airmobile support party are the first to be launched. Pathfinders are normally the first element to make contact with the enemy. They promptly report enemy activity or other unfavorable conditions so that following helicopter crews will be alert and can execute an alternate plan if necessary.

f. As soon as the landing team helicopters become airborne, they form into serials (flights) according to plan and proceed to the departure point. When the serial (flight) is over the departure point, the serial (flight) leader reports the status and position of his serial (flight) to the HDC.

g. The serial (flight) leader reports again to the HDC when he arrives at the initial point. He also reports to the tactical aircraft assigned to support the serial (flight) during its approach to the landing zone.

h. Upon leaving the initial point, the first serial (flight) deploys into landing formations, guides on check points and guidance devices, and proceeds to the designated landing zone.

i. During the flight to the landing zone, developments in the situation may require the adoption of an alternate plan. The authority to direct the execution of an alternate plan is clearly prescribed in operation orders. When the alternate plan is so radically different from the original plan as to require coordination with supporting arms, the decision to execute it is made by higher authority and the TACC and SACC are informed in time to carry out the necessary coordination.

j. Immediately prior to landing, the pilot tells the heliteam commander in what direction his helicopter will be heading when it touches down. The heliteam commander in turn, tells all team members so that they will be correctly oriented on the ground.

k. When the serial (flight) takes off from the landing zone, it proceeds along a predesignated return route to the ship, reporting to the HDC when necessary.

184. Helicopter Unit Displacement Ashore

a. The procedure for displacing the helicopter unit ashore is specified in the operation order.

b. The ship is the base of operations of the helicopter unit during the initial stages of the attack and remains so until operations can be displaced to adequate facilities ashore. The helicopters employed to support the troop units ashore may need a skeleton operating base relatively close to the supported ground elements soon after the attack begins. In this case, the helicopter unit operates in two echelons: a flight echelon and a rear echelon. The flight echelon, which is set up ashore as early as possible, consists of helicopter crews, a small number of maintenance personnel, temporary refueling facilities, and communication facilities. The rear echelon, composed of the unit headquarters, heavy maintenance equipment, and a majority of the maintenance personnel, may remain afloat until it can displace to a location at an airfield or other facility to the rear of the attacking forces.

c. When a flight echelon base of operations is to be established ashore, specific and detailed plans must be made to insure effective support being achieved.

CHAPTER 9
CONDUCT OF THE ASSAULT

185. General

a. The ground attack, during conduct of an amphibious assault, is characterized at BGLT level by a landing(s) using both water and air ship-to-shore movement means and a rapid advance: first to platoon and company objectives, that when seized will eliminate enemy flat trajectory fire on the beaches; then to a prescribed BGLT beachhead line, that when seized or controlled will prevent the enemy placing ground observed indirect fire on the landing beach and landing zone(s). Required reorganization and coordination must be accomplished as the advance is aggressively continued inland to a prescribed division beachhead line. The control of this line facilitates further buildup of the division landing team and higher echelon forces ashore for continued expansion of the lodgement area.

b. Command and control of attacking ground units is initially decentralized to the smaller elements as they land, and then progresses, in turn, to higher echelon as each command element lands and becomes effective ashore. The transition in regaining normal forms of ground control are gradual and carefully executed to avoid causing any slow down in the momentum of the attack. For aspects of joint command and control and termination of amphibious task force organization, see section II, chapter 2, FM 31–12.

c. The mission demands aggressive effort to overcome such inherent disadvantages as—

(1) Lack of prior ground reconnaissance.
(2) Initial difficulty of control.
(3) Decentralization of command.
(4) Lack of normal supporting weapons.
(5) Initial dependence upon radio for communication.

d. For general principles of the conduct of a normal ground and airmobile attack by a reinforced battle group or its rifle companies, see FM 7–40, FM 7–10 and FM 57–35. The following is a discussion of those techniques peculiar to amphibious assault over the beach at BGLT level.

186. Technique of Assault Landings Over Beaches

a. Troops in amphibious vehicles may be discharged on the beach or be transported across the beach to an inland objective, according to the planned scheme of maneuver or nature of enemy resistance on the beach. As soon as a landing craft grounds on the beach, the coxswain lowers the ramp and the boat team unloads, and deploys.

b. As troop units debark from landing craft, their boat team organization dissolves and they revert to their normal tactical groupings as squads, platoons, etc. The attack is initiated by the smaller elements of the BGLT, fighting independently at the water's edge. For this reason, during the initial assault success depends entirely upon the capacity of the small unit and the individual for executing independent and aggressive action.

c. The momentum of the attack must not be lost. Whether attacking a beach objective or pressing inland, the actions of the squads and platoons must be rapid, decisive, and aggressive. Delays for decisions, reorganization, finding the platoon leader or company commander, or assembling supporting weapons are avoided or cut to the absolute minimum. Exploitation of the preparatory fires before the enemy recovers from the shock will yield the greatest results. Failure to rapidly exploit may unnecessarily extend the attack into several day's duration or cause early defeat. Aggressive use of company reserve(s), normally the first echelon where a reserve is initially constituted, is planned and executed as outlined in paragraphs 187 and 188.

d. The fundamental rule is this: attack, as in all small unit offensive tactics, is the appropriate application of fire and maneuver. All enemy on the beach who can materially interfere with the landing must be destroyed so as to free the beach and boat lanes of small-arms fire. If a squad has been assigned an objective on the beach, it immediately attacks it. If it has been assigned an objective inland, it destroys any enemy on the beach in the immediate vicinity of the landing point before proceeding. As a general rule, units successfully advancing do not divert or wait for neighboring units to complete clearance of their sectors of the beach. Rather, they exploit weak spots in the enemy's defenses to deepen the area controlled ashore.

187. The Assault Rifle Company

a. The executive officer usually lands with the first wave. The company commander, with the forward observer team, naval gunfire spotter, and forward air controller usually lands in the second wave. The mortar section, AT squads (if not attached to pla-

toons), and attached or supporting engineers usually land in the second wave with the reserve platoon.

b. The rifle platoons of the company are usually reinforced with recoilless rifles and flamethrowers as required. A reinforced platoon is divided into two boat teams, the platoon leader with one, the platoon sergeant with the other. Both of the boats land at the same time; thus the platoon has no reserve element initially.

c. The primary concern of the company commander is to rapidly gain control of all his company units, without stopping the aggressive forward momentum of the platoon(s) attack, and to launch a coordinated attack against the company objective. This is facilitated by—

(1) Sending the company executive officer, with necessary runners, to the beach in the first wave so he can assist in coordinating the actions of the lead platoons at the earliest possible time. If the executive officer has to leave the beach before the company commander arrives, he leaves a runner with instructions for thoroughly informing the commander on the situation.

(2) Boating a reserve platoon leader with the company commander to insure prompt employment of the reserve.

d. Upon landing, the company commander must decide how he can best employ the reserve and supporting weapons under his control. Even at this early stage, he may have to radically change the prearranged plan, but will act aggressively. He keeps his commander informed by radio.

e. The company commander employs supporting fires as prescribed in (1)–(3) below.

(1) When the assault is made by landing craft, the BGLT naval gunfire spotter occupies a vantage point somewhere within the BGLT forward zone of action. The naval gunfire liaison officer normally is in the vicinity of, or in direct contact with, the BGLT command post(s). The company commander, employing the battle group command radio net, can thus request naval gunfire support through the BGLT commander. When the attack is made in LVTP's, the BGLT naval gunfire spotter is mounted in a designated LVTP and proceeds to the best position(s) where he can support the attacking units. In a helicopter supported assault, the spotter may be mounted in a jeep or other appropriate vehicle or may be moved to suitable positions by helicopter.

(2) The company commander sees that the 81-mm mortar section moves up immediately upon landing and supports the attack.

(3) He positions the AT squads, when not attached to the platoons, to provide antitank protection. If the enemy tank threat is minor, he may employ the AT squads on offensive missions. A certain percentage of their ammunition, however, must be retained in reserve for use against enemy armor.

f. The company commander employs the company reserve as follows:

(1) Enemy troops on the beach to the front of the company and those remaining in rear of the company's forward elements must be destroyed. The company is responsible for the destruction of all enemy in its area, as well as for the seizure of the company objective. One of the most important uses of the reserve, therefore, is the reduction of enemy groups which the lead rifle platoons have been unable to destroy.

(2) If these enemy groups are already engaged by enough troops from the lead rifle platoons to insure their reduction, the reserve platoon may be employed to attack through or around the penetration made by the leading troops. It will then continue the attack to seize the company objective, widen the breach of the penetration, or protect the flanks of the company as the company advances ahead of adjacent units.

(3) Certain beach terrain features (such as rocky promontories unsuitable for landing) may be located on boundaries between companies or BGLT's and cause a separation of the waves as they land. This has the effect of making a company a flank unit, even though it will become an interior unit after the attack progresses inland. Also, a company may be designated a flank unit throughout the attack. In these cases the reserve may be used to protect the exposed flank by seizing a terrain feature that will cover the flank, by seizing the terrain feature separating the company from the adjacent unit, or by attacking laterally on the beach to secure the flank. If there is no immediate threat on the flank, the reserve may be held in readiness in a position from which it can move rapidly to the flank or be employed on other missions.

188. BGLT Command Control

a. The primary concern of the BGLT commander is to end the phase of independent company action by establishing centralized control, and to coordinate the attack of his entire command, to seize the BGLT objective and to destroy all enemy in the BGLT zone of action. He can use his reserve elements (par. 189) and supporting fires to relieve pressure temporarily on independently-acting companies in order to assist in this transition of control.

b. The following arrangements for communications are pre-planned and executed to assist the commander in regaining and maintaining control.

(1) A wire team is provided for each attack company and is boated with the company commander. When the company commander moves inland from the beach, he leaves one man on the beach in charge of one end of the wire while the wire team with the reel moves with the company command post. Enough slack is left at the beach end of the wire so that it can be extended a reasonable distance to reach the BGLT switchboard when it is landed. When the BGLT commander lands, his wire team picks up the ends of the wire lines left on the beach by the lead companies and ties them into a temporary switchboard located in the vicinity of the beach. A line is then established from this switchboard to the initial BGLT command post.

(2) The company command post(s) displaces with the advance and is required to contact the BGLT command post by phone at intervals of 15 to 30 minutes. If wire fails radio will be used.

(3) Proper care and preparation of radio equipment for the landing and through prior training, will enable the BGLT commander to communicate with the company commanders throughout the ship-to-shore movement and landing. Personnel must be capable of rapidly employing countermeasures to enemy jamming and other interference.

189. The BGLT Reserve

a. A rifle company(ies) in reserve should be boated in two waves with each boat or LVTP team tactically constituted so as to be ready for combat. It should be organized in the same formation as the attacking companies so it can asume an attack mission prior to the landing if necessary. Upon landing, the re-

serve company commander(s) reports to the BGLT commander for latest information on the situation and for orders. He then carries out the normal duties of a reserve commander, seeking to anticipate and prepare for the employment of the company. Since the assembly area is selected prior to the landing, from a limited study of maps and photos, it may prove to be unsuitable when inspected on the ground, or it may be denied by enemy fire. In either case, the company commander must promptly select another position (if the BGLT commander has not already done so), move his company to it and report the change to the BGLT.

b. A reserve company commander attempts to avoid decisive action while landing his company if fighting is still in progress on the beach. He does not commit any part of the reserve company to this action without the BGLT commander's approval unless he is unable to communicate with the BGLT commander. In this event, he must us his own judgment. Above all, he will take such action as is necessary to provide for his unit's security.

c. The boat lane, beach, and zone of action leading to the initial battle group objective are usually restricted in width. The BGLT commander normally cannot on his own authority, move the reserve out of his assigned boat lane and land it on other than his assigned beach. If the beach is extremely congested or a critical situation makes it desirable to delay the time of landing the reserve, the BGLT commander may request permission to do so. The BGLT cannot maneuver his reserve in the zone of an adjacent unit without permission. He is not likely to obtain this permission during the early stages of the advance inland because sufficient control required at division level to coordinate such a movement may not have been achieved. From these considerations, it can be seen that the employment of a reserve company is more restricted initially than in normal land operations. Subject to these limitations, the BGLT commander should employ the reserve in accordance with the following considerations:

(1) Upon landing, he determines whether any change is required in the location of the assembly area or in the order already given to the reserve. If not, the reserve lands according to schedule, moves to the previously assigned assembly area, and awaits orders. The BGLT commander requires the reserve commander(s) to report to him as soon as possible after landing.

(2) If the situation indicates a change is necessary, he sends orders to the reserve by radio and dispatches a staff officer to the beach to meet the reserve commander(s),

confirm the orders, and lead the unit(s) to its designated point of employment.

(3) He may employ the reserve as in normal land operations to continue the momentum of the attack by passing through that lead company which has had the most success; to protect the flanks of a company which has made a penetration; to protect the flanks of the BGLT; or to await orders in a central location from which it can readily move to accomplish any of the above missions.

(4) He may employ the reserve, or portions of it, to destroy enemy remaining within the BGLT zone of action behind the friendly front lines, with priority given to those remaining on the beach or in positions which command the beach. Occasionally, an objective suitable for attack by an entire company will still be in possession of the enemy behind the forward attacking units. Such an objective is usually located on the flank of the BGLT where, by reason of its size and formidable defenses, it will have caused coxswains to swerve to either side to avoid its fire or other obstacles to landing. In other instances, such an objective may remain in enemy hands in other locations on or near the BGLT beach because they are too strong for the lead units to capture. Such situations can be expected to frequently develop in an amphibious attack. This is the main reason why all commanders must make a continuing estimate of the situation and modify their plans accordingly, always remembering that the momentum of the initial attack must be maintained at all cost.

190. BGLT Fire Support

a. The BGLT commander exerts influence on the action by the use of supporting fires available in the BGLT. Shortly after his arrival ashore, he can gain control of the fires of the mortars, and coordinate them for the most efficient use and greatest effect. The BGLT commander employs supporting arms and units generally in accordance with FMs 7–19, 7–40, 31–12, and the following methods:

(1) An advance reconnaissance element from the mortar platoon, boated in the second wave, determines the suitability of planned positions and locates better ones if necessary. The final choice of firing positions is made and the reconnaissance element guide(s) meets the mor-

tar platoon as it lands and leads it into position. Forward observes are boated with the lead companies.

(2) The DAVY CROCKETT element is employed in amphibious attack the same as outlined in FM 7–19 and FM 7–40 for normal ground attack.

(3) The air and naval gunfire liaison officers, the forward air controller, and the naval gunfire spotter rapidly establish the communications required to request and control fires, and employ these fires in support of the BGLT. See chapter 3 for detail.

(4) The BGLT fire support coordinator (FSC) is employed to coordinate all supporting fires and insure their most effective use.

d. During the initial phase of the landing and before artillery is ashore, the following procedure is used to obtain supporting fires from weapons not organic to the BGLT:

(1) Communication must be speedily established, either through the liaison officers or through BGLT command channels. This is more difficult than in land operations.

(2) For conduct and adjustment of fire, the naval gunfire spotter, forward observers, and infantry personnel who are able to communicate with those directing the fire, must have good observation. If observation is lacking, spotters and observers use the less accurate method of estimating the grid square in which the target is located.

(3) The BGLT commander, normally through his FSC, receives target information from frontline infantry, forward observers, naval gunfire spotter, forward air controller, tactical air observers, the battle group observation post, and personal observation. Action is then taken to bring fire on the recommended targets. In deciding how to engage a target the commander and the FSC consider the following facts in consultation with the air and naval gunfire liaison officers.

(*a*) Naval gunfire most closely approaches artillery in effectiveness as a close supporting means. Observation must be obtained by naval gunfire spotter, forward observers, air spotter from the firing ship, or by other suitable techniques. Smoke and air bursts are available in addition to other types of fire. A destroyer or light cruiser is normally placed in direct support of a BGLT, from which fires may be requested and delivered rapidly.

(*b*) Close support aircraft can often locate and attack targets concealed from other observation. They can provide bomb, rocket, napalm, and strafing. Frontline personnel must be easily indentified for them and accurate and complete control is essential. Aircraft can often reach and destroy targets that are inaccessible to naval gunfire or which require air-delivered flame weapons for their destruction. The simultaneous use of naval gunfire and aircraft against the same target may endanger the aircraft; however, accurate timing will permit effective use of both.

(4) After deciding which weapon to use, the BGLT commander instructs the FSC or liaison officer concerned to have the appropriate supporting arm deliver the fire. If the FSC cannot establish communication with the supporting arm through his normal channels, he tries to do so through the communications equipment. If this is not possible, the BGLT request must be relayed to division headquarters over a command channel for retransmission to the supporting arm.

191. Reconnaissance Platoon

The reconnaissance platoon may be placed in an on-call status and land it in whole or in part as it is needed. If the situation permits, he may employ it in any of its usual roles (FM 7–40 and FM 7–19), or he may employ it on a flank for special missions. If available intelligence indicates there are extensive minefields on the beach or other obstacles to use of vehicles, the platoon will plan to operate dismounted until lanes have been cleared. In such a case, a portion of the platoon can be landed dismounted to provide some fire and man observation posts, and the vehicles will be landed when the situation permits. LVTP's and/or other amphibious tracked vehicles can be employed to assist in early availability of flexible mortar support.

192. Assault Weapon Platoon

The commander may place that portion of the assault weapon platoon that is not attached to the attacking companies in an on-call status and land it as needed. This enables him to reserve a portion of his antitank weapons under BGLT control to meet mechanized attacks that develop from enemy reinforcements. If other antitank means are attached, or if the enemy tank threat is minor, the commander can employ this platoon's weapons in

an offensive fire support role, particularly to assist in reducing fortified positions.

193. Coordination

After the BGLT commander establishes control and coordinates the efforts of all units of the BGLT, he informs division headquarters of the situation and dispatches a liaison officer with full information to division headquarters, if it is already established ashore, or to the beach to meet the division commander or representative as he lands. Contact is made with adjacent units and the transition to normal ground tactics and control progresses.

194. Operations of a Flank BGLT

a. A BGLT landing on an open flank will initially be assigned responsibility for the flank protection of the respective landing force. Whenever possible, a cavalry reconnaissance unit is attached to the BGLT commander for flank protection as the attack advances and for security operations in the intervals between units. When no cavalry unit is available, the BGLT may assign the task to his reserve company(ies). The responsibility for protecting a landing force flank should not be delegated to a unit smaller than a BGLT or equivalent because that is normally the smallest unit containing sufficient troops, weapons, and control means of supporting arms adequate to accomplish the mission.

b. A sound method of providing flank protection is the planned successive commitment of the flank attacking company and the BGLT reserve to specific objectives on the flank within the capabilities of the respective unit; each unit supported by planned and on-call fires from all available weapons. Divergence of effort and change of direction while in contact with the enemy are avoided when possible. Planned defensive fires, rather than resorting to critical massing of troops, should be used in covering the flank.

c. As the attack progresses, a higher commander may either relieve the BGLT of its responsibilities for protecting the flank and allow it to continue the attack inland, or order it to halt its attack inland and assume full and continuing responsibility for the flank. In the latter case, the BGLT usually has to reorganize and occupy defensive positions.

d. A large enemy pocket on the flank of any BGLT has the same effect on the BGLT's operations as though it were a flank unit.

In this case, however, the BGLT commander must take immediate action to counter the situation, basing his decision on an accurate estimate of the situation and keeping his primary mission foremost in mind.

CHAPTER 10
SIGNAL COMMUNICATIONS

Section I. INTRODUCTION

195. General

a. The fundamental principles governing signal communications in amphibious operations include those followed in both other joint operations and normal Army land operations. The requirements for communications in amphibious operations are characterized by: the complexity of integrating all participating Services into a single system by establishing lateral connections and employment of common procedures; need for extensive joint planning and training; and the additional equipment, above normal TOE authorization, that is essential in the early stages of the landing and attack.

b. Internal communications for each Service are operated according to the regulations and procedures of that Service. Such operations are subject to—

(1) Modification by mutual agreement with other Services.

(2) Restrictions imposed by the local tactical commander for technical or security reasons.

(3) Procedures prescribed by higher authority.

c. This chapter primarily considers communications at the BGLT level. In order to develop full knowledge of the area it is essential that the reader be thoroughly familiar with the doctrine and technique employed at higher echelon, as discussed in chapter 6, FM 31–12.

196. Personnel and Equipment

a. The TOE of the infantry division battle group and supporting division signal battalion provides for the installation of a highly flexible communications system in normal land operations. The communications requirements in an amphibious operation, however, will usually exceed the capabilities of the authorized TOE personnel and equipment. An early study of communications requirements for a specific operation determines what assistance is required from higher echelon. The BGLT communications

officer informs the BGLT commander of the additional communications personnel and equipment needed. See FM 7–24 for a more detailed discussion of communications personnel and technical information on communications equipment.

b. Before embarkation, communications officers thoroughly test and calibrate all equipment and insure that the equipment is prepared to resist the affects of water and salt spray. They arrange to obtain and install any additional equipment required aboard ship. The use of the organic equipment for this purpose is held to a minimum.

Section II. PLANNING, EMBARKATION, AND REHEARSAL

197. Information to be Exchanged

As soon as a BGLT is assigned shipping, the following information is exchanged between ship and troop unit communications and signal officers:

a. Suitable diagrams showing the location of the ships communications office and space aboard ship to be used for BGLT communications personnel and equipment.

b. Rosters showing official duties of key naval, landing force, and Air Force officers.

c. Suitable distribution lists to insure that all interested officers receive needed information.

d. A list of the ship's communications equipment that is reserved for the use of troop commanders.

e. A list of radio circuits, frequencies, and crystals that units require.

f. Lists of call signs, cryptographic systems, or other information pertinent to communications.

198. Advance Parties

The BGLT communications officer arranges for communication with his counterpart on the ship before his unit embarks. The arrangements include—

a. Assignment of adequate space for the troop message center near the ship's communication office.

b. Assignment of messengers to the ship's communications office, radio room, and signal bridge for handling messages between those agencies and the troop message center.

c. Assignment of troop radio and visual communications per-

sonnel to duties under the supervision of the ship's communications officer to—

(1) Permit the ship to guard additional circuits.

(2) Maintain a high state of training.

d. Preparation of a directive prescribing shipboard communication procedure while embarked.

e. Stowage of signal equipment so it is available for frequent inspections during the voyage.

f. The sealing of all organizational and personal recreational radio receivers.

199. Loading Plans

Troop communications officers arrange with embarkation officers and ship's communications officers for the embarkation of communications equipment. They make sure that this equipment is readily accessible and is stowed to allow the proper sequence in unloading. Equipment for use in the assault landing is stowed in message centers, auxiliary radio rooms, spare parts storage, or other spaces under the control of the ship's communications officer. Here it can be serviced and is readily available for use en route, if needed. Spare parts and accessories for equipment to be landed are stowed with their associated equipment. Waterproof covers or bags are used for equipment not inherently watertight or otherwise waterproof. Vehicular radio equipment and their vehicles are waterproofed to the maximum extent. Boxes too flimsy to withstand handling in cargo nets are reinforced before loading. Pyrotechnics are stowed in the ship's pyrotechnics locker or in such other space as the ship's captain designates.

200. Embarkation Area Communications Facilities

a. Communications facilities used by the BGLT within the embarkation area are normally provided by higher echelon in order to avoid wear and tear on the BGLT's organic equipment. Wire and messenger service provide the principal means of communication. The use of radio is restricted for security reasons.

b. The communications facilities enable the embarkation officer to control the flow of supplies, equipment, and personnel from the dumps or storage areas and bivouacs to the loading sites.

Section III. MOVEMENT (VOYAGE) TO THE OBJECTIVE AREA

201. External and Intership Communications

a. Radio silence is maintained during the movement to the

objective area and is not lifted until so ordered by the task force commander. This normally takes place upon arrival in the ocean part of the objective area. During the voyage, the Navy provides all ship-to-ship and external communications. Tactical traffic essential to the maneuvering of the convoy has priority. It is often necessary to stop or delay troop message traffic for this reason. This possibility is kept in mind by all troop commanders before originating traffic, and time must be allowed for the delay.

b. During the voyage, all outgoing troop communications are routed through the naval communication office. The following procedure is suggested for transmitting troop messages during the movement.

(1) *Outgoing.* Outgoing messages originate with the commanding officer of troops or an authorized staff officer. They are processed by the troop message center and delivered to the ship's communications office.

(2) *Incoming.* A troop messenger in the ship's communications office receipts for the message and delivers it to the troop message center. The troop message center handles distribution.

202. Written Communications

During long sea voyages, dispatch vessels, liaison planes, or helicopters are made available to provide intership written message communications. Schedules for this service are normally established in joint movement and signal plans.

203. Training and Maintenance

a. Training is conducted during the movement to maintain proficiency of communications specialists. Naval communication facilities are used for training whenever practicable. This generally means that troop radio operators may be used at times to operate or monitor naval circuits. Communications personnel make a detailed study of operation and signal plans for the attack during movement.

b. When nearing the objective area, communications equipment is checked and prepared for landing. Particular attention is given to the condition of batteries and waterproofing. Radio equipment is examined to see that dials are set and locked on the proper calibration for the frequency to be used, and that proper crystals are installed.

204. Naval Gunfire Control Communications

Specially trained teams accompany the attacking elements ashore to control naval gunfire. The principal means of communication for controlling this support is radio. See chapter 3.

205. Air Support Control Communications

Tactical air control parties accompany the landing elements ashore with the required communications equipment to control air support. See chapter 3.

Section IV. LANDING

206. Communications During Ship-to-Shore Movement

a. Radio silence is normally lifted several hours before the landing is scheduled, so that communications means may be tested in advance. Strict net discipline is maintained to prevent compromise of the scheme of maneuver and to insure an orderly flow of traffic. The need for relying on radio as the primary means of communication during the attack must be considered in planning the circuits needed and in assigning available frequencies.

b. During the ship-to-shore movement, BGLT elements make maximum use of radio equipment on naval vessels, amphibious vehicles, and helicopters for control. The use of BGLT radio equipment is held to a minimum because of the salt water hazard. For interim operation and to insure continuous and uninterrupted communications with the BGLT during the attack, communications facilities installed in the ships are used by division elements still aboard. The BGLT commander, during the ship-to-shore movement will monitor the nets of his scheduled waves in order to keep abreast of the situation and provide assistance where possible.

c. The rifle company tactical nets normally are on listening silence until just prior to the attacking elements reaching the beach. If they must be used during the ship-to-shore movement, specific limitations are outlined in the order.

d. One or more BGLT tactical nets are opened for use by the commander when radio silence is lifted. These nets are usually scheduled to begin operation before the line of departure is reached. While afloat, BGLT's should not be required to operate too many nets because of the hazard to equipment and limited operating space in the assault craft. Portable pack sets that have been procured are used in lieu of or in addition to the vehicular sets.

e. Messenger service is established ashore as soon after the landing as practicable. Visual means such as flashing light, semaphore, pyrotechnics, panels, and flag hoist will also be used whenever conditions are favorable. Whistles, sirens, bells, and similar devices may be used to transmit short messages according to a prearranged code.

207. Control Communications

The control organization for a ship-to-shore movement reflects the requirements of all the landing force elements (Army, Navy, and Air Force). Representatives of the appropriate tactical echelons of the landing force are embarked in control vessels of the corresponding naval echelons. Adequate communications personnel are embarked with these representatives to operate radio nets assigned in the joint signal plan. See Tac-Log Group, FM 31–12.

208. Formation of Communication Teams

The personnel and equipment of the BGLT communications platoon and supporting units are divided into two or more self-sufficient teams for the landing. They are organized and trained during the training phase so that each team is capable of furnishing all types of required communications on a limited scale, in the event a part of them do not reach shore. The teams go ashore in separate craft and consolidate after landing. See section V, chapter 8, for airmobile landing team communications.

209. Landing of Heavy Equipment

Heavy or bulky communications equipment normally is not landed with the initial waves. Plans are made to unload it when justified by the tactical situation and when it can be landed with reasonable safety. Key items, however, may be brought ashore by helicopter and/or amphibious vehicles.

Section V. COMMUNICATIONS ASHORE

210. General

a. Communications facilities are established ashore to provide for the tactical requirements of the attacking units. The normal battle group communications system is developed as part of the system of the next higher command. The systems of the supporting elements are integrated into the BGLT system. Shore party or airmobile support party communications facilities are devel-

oped to provide control of the administrative support for the landing.

b. The communications system available to the BGLT commander provides the means by which he can—

(1) Control the movement of all troops under his command.

(2) Control or request the fire support of all weapons, including artillery, air support, and naval gunfire support.

(3) Control the logistical support of all units under his command.

(4) Receive and transmit orders, information, and intelligence to lower, higher, and adjacent units.

211. Tactical Facilities

a. Message centers are established ashore at the earliest practicable time. They will have the means for contacting the units moving inland and those still embarked through the facilities of the radio and visual sections. The message centers of the tactical units are netted by wire and messenger with the shore party message center. Each communication center afloat continues to operate until all troops have left the ship.

b. Radio nets are initially operated during the ship-to-shore movement by using naval equipment. Organic radio equipment replaces naval equipment after landing and necessary dewaterproofing.

c. Wire lines are laid on the beach by the attacking elements to support tactical communications requirement. When possible, the wire and radio systems parallel each other. Each BGLT headquarters drops a line at the beach and posts a wireman with the line. When the BGLT shore party switchboard is installed, this line is connected. See chapter 6.

212. BGLT Shore Party

The BGLT shore party communications section establishes communications facilities for the party.

a. A message center is established to handle the shore party traffic.

b. The wire section installs the shore party switchboard and connects the BGLT wire. Lateral wire communications between shore parties is established, maintained, and continually improved. Wire connections are made as required to the beachmaster, and beach support area installations (fig. 14).

c. The radio section enters the established nets. Local nets are opened as required. The shore party may provide an alternate channel of communication with the BGLT by establishing a station in the BGLT command or administrative net (fig. 15).

d. The communications team with the beachmaster maintains seaward communication as prescribed in the Signal annex.

213. Division Shore Party

a. The communication personnel with the division shore party headquarters establish wire communication with BGLT shore parties. The lateral lines between BGLT shore parties can be used as alternate means of communication. Division shore party communications personnel establish wire communication with division headquarters as directed.

b. Alternate means of communication seaward are kept in operation by the various beachmasters. The division beachmaster establishes his headquarters with the division shore party headquarters so that all facilities may be used jointly.

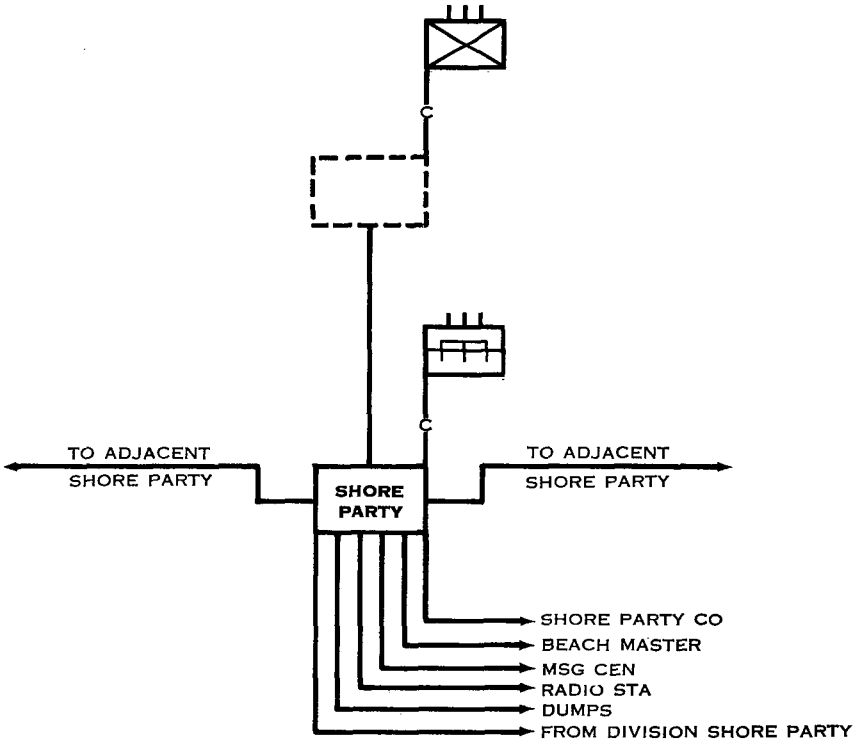


Figure 14. Shore party wire communications.

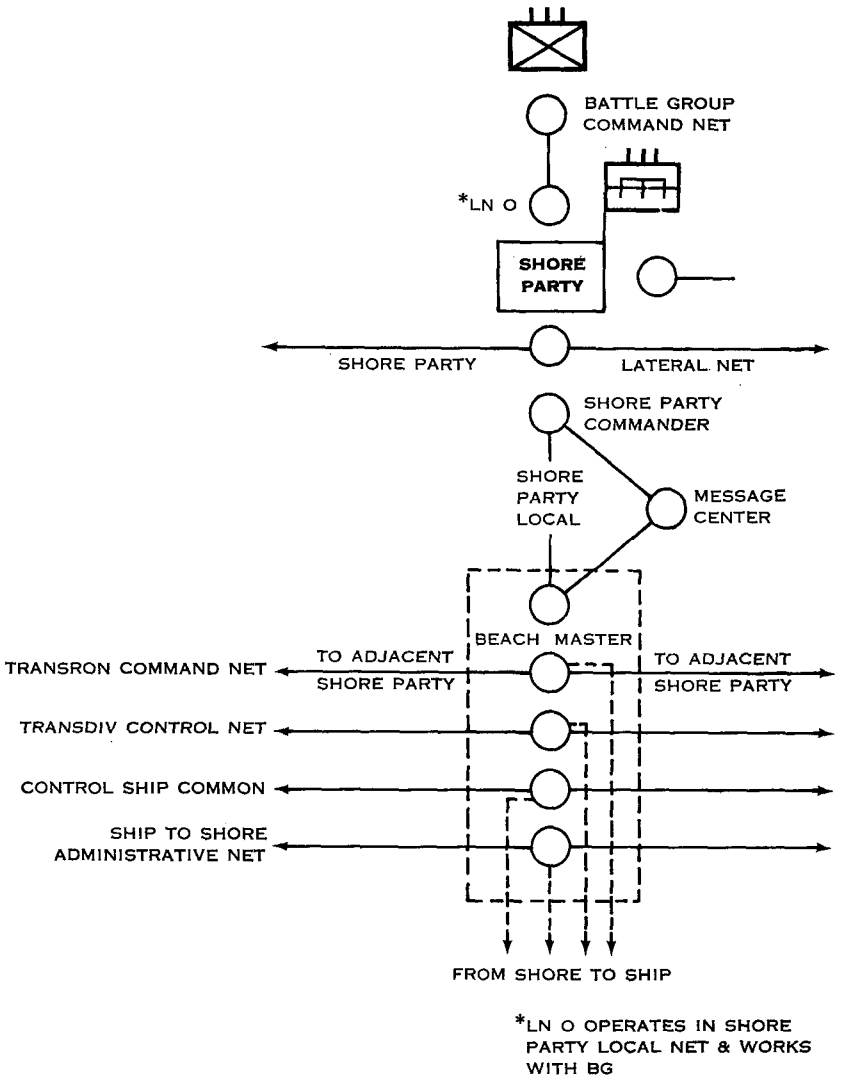


Figure 15. Shore party radio communications.

Section VI. COMMUNICATIONS AND SPECIALIZED TRAINING

214. Training

Schools are established in the mounting area for training personnel in the operation of the communications system. The scope of training, within the limits of security, includes—

a. Waterproofing and dewaterproofing communications equipment

b. Loading and unloading communications equipment, including the use of cargo nets.

c. Learning the operation plans with particular emphasis on signal annexes, SOI's, and radio nets.

d. Familiarization with the territory involved in the operation, including the spelling and pronunciation of geographical names and peculiarities of the terrain that affect communications.

e. Studying the task organization and learning the identity of units, commanders, codes, etc., to be used in the operation.

f. Practice in handling the cryptographic systems to be used.

g. Practice in operating the Army, Navy, and Air Force communications equipment that is to be used by Army personnel. Special equipment must be obtained in time for the operating personnel to become familiar with its operation before embarking.

h. Extensive practice in communications procedures with emphasis on circuit discipline, authentication, and special procedures for overcoming jamming and other enemy counteraction.

215. Equipment Checks

Inspection teams of technically qualified personnel are formed to inspect all BGLT communications means. They make complete signal equipment checks during training in the mounting area. The inspections are continual and are designed to bring communications to a high standard of efficiency.

Section VII. SIGNAL PLANS

216. General

a. The importance of communications planning cannot be overemphasized. Communications representatives of each service are fully informed as to the details of operational planning. They work in close collaboration with each other and with the communications staff of the higher commander until the final signal plans are completed. The final plan is made by consolidating the communications requirements of each of the Services involved and then determining the joint requirements necessary to insure an efficient overall system. See FM 31–12 for higher echelon plans, doctrine, and procedures.

b. Since the regulations and procedures for operating communications systems vary somewhat in each Service, the communications and signal officers of all Services at respective echelons meet, discuss, and resolve any differences affecting the oper-

ation of the joint plan. To correct any conflicts or deficiencies, these conferences are held before and during planning and after rehearsals.

217. Development of BGLT Signal Plan

a. The signal plan is developed concurrently with general planning. The BGLT plan is developed by the battle group communications officer. He obtains necessary technical and administrative instructions from higher commanders and reconciles them with the tactical requirements of his own commander.

b. Within security limitations, the communications officer obtains all available information pertaining to the overall operation such as the task organization, mission, date of operation, plan of operation, available shipping, date that attached units join the BGLT, availability of a training area, transportation, terrain, and supply and resupply of communications equipment.

c. The BGLT communications officer coordinates with the communications representatives of all elements of the BGLT to appropriately integrate their communications equipment and personnel into the BGLT system.

d. The following is a checklist of those matters considered in formulating the BGLT Signal plan:

(1) Orientation of communication personnel.

(2) Training.
  (*a*) General.
  (*b*) Specialized.
  (*c*) Rehearsals.

(3) Inspections.
  (*a*) Personnel.
  (*b*) Equipment.

(4) Distribution list.

(5) Traffic routing.

(6) Communications documents.
  (*a*) Preparation.
  (*b*) Distribution.

(7) Supply.
  (*a*) Initial or assault.
  (*b*) Resupply within BGLT.
  (*c*) Special.

(8) Marking of equipment.

(9) Security.

(10) Loading tables.
- (*a*) Personnel.
- (*b*) Equipment.
- (*c*) Supplies.

(11) Communications facilities.

(12) Training area.
- (*a*) Wire.
- (*b*) Radio.
- (*c*) Messenger.
- (*d*) Sound.
- (*e*) Visual.

(13) Embarkation area.
- (*a*) Wire.
- (*b*) Radio.
- (*c*) Messenger.
- (*d*) Sound.
- (*e*) Visual.

(14) Aboard ship.
- (*a*) Diagram of location of communications office and spaces.
- (*b*) Roster of naval, landing force, and Air Force officers, showing official capacity.
- (*c*) Distribution list.
- (*d*) List of fixed radio equipment.
- (*e*) List of radio circuits.
- (*f*) Message center.
- (*g*) Radio personnel.

(15) Debarkation.
- (*a*) Ship public address system.
- (*b*) Communication between ships.
- (*c*) Unloading communications equipment.

(16) Landing.
- (*a*) Small boat control communication.
- (*b*) Tactical net operation.
- (*c*) Use of naval equipment.

(17) Battle group communications ashore.
- (*a*) Wire.
- (*b*) Radio.
- (*c*) Messenger.
- (*d*) Sound.
- (e) Visual.

(18) Shore party communications, including beachmaster.
  (*a*) Wire.
  (*b*) Radio.
  (*c*) Messenger.
  (*d*) Sound.
  (*e*) Visual.
(19) Naval gunfire control communications.
(20) Air support control communications.
(21) Airmobile support party communications.

218. Communications Instructions

a. Battle group SOP prescribes routine methods for installing, operating, and maintaining communication equipment in normal land combat. The SOP is reviewed and modified, if necessary, to meet the conditions imposed by each successive phase of the amphibious operation.

b. Signal operation instructions for an amphibious operation are prepared by the amphibious task force. The division signal officer prepares the division SOI, using information in the joint publication and corps plans when applicable. The division SOI is distributed only to units down to and including battle groups and battalions. The BGLT communications officer prepares extracts of the SOI when necessary. Normally, SOI's are not prepared by units below division level unless the units are operating on independent missions.

c. Paragraph 5 of the operation order contains signal instructions in the same general format as utilized for other operations. The BGLT communications officer prepares the signal annex to the operation order and insures it is distributed to all units that will receive the operation order and other elements that require it. Signal instructions for amphibious operations are necessarily more detailed than under normal conditions.

CHAPTER 11
LANDINGS UNDER LOW VISIBILITY CONDITIONS

219. General

a. The principles and techniques applicable to night landings apply to other conditions of reduced visibility such as experienced in fog, rain, snow and smoke. Under favorable circumstances, these landings are undertaken if they substantially increase the attacker's chances of success and/or provide for utilizing greater economy of force measures in seizing the objective. Enemy electronic detection devices may reduce the possibility of obtaining complete tactical surprise. Therefore, a thorough estimate of the enemy's electronics capabilities must be made to determine the desirability of conducting an amphibious attack under these conditions.

b. Night landings are undertaken to—

(1) *Decrease effectiveness of hostile fires.* At night the effectiveness of enemy direct and indirect fires is restricted because of limited observation. The effectiveness of enemy aircraft operations also is curtailed.

(2) *Achieve tactical surprise.* If there is a choice of objectives or landing beaches open to the attacker, darkness may assist in achieving tactical surprise.

(3) *Create enemy uncertainty.* Limited observation increases opportunities for deceiving and confusing the enemy.

(4) *Use favorable hydrographic conditions.* A hydrographic condition favorable to a landing may occur only during darkness.

c. See chapter 10, FM 31–12, for additional dicussion of landings under low visibility and cold weather conditions. The following discussion in this section is devoted to a general outline of techniques employed at BGLT level.

220. Intelligence and Rehearsal

Daylight reconnaissance of the objective area by ground commanders, normally a prerequisite in a night ground attack, is usually impossible for an amphibious attack. Therefore, it is

necessary that commanders obtain maximum intelligence information including minute detail of the terrain, enemy and other pertinent conditions existing ashore where they will attack. The commander and staff of a unit making a night landing formulate their plans from maps and photograph studies and reports of reconnaissance units of higher echelons. All personnel of the BGLT are thoroughly briefed, using reduced scale terrain models. The lack of personal reconnaissance can be partially overcome by selecting a rehearsal area whose terrain closely resembles the terrain in the objective area.

221. Execution

a. Ship-to-Shore Movement. The techniques for executing a night ship-to-shore movement are the same as for a daylight operation except for certain modifications that are required to maintain control and direction. The ship-to-shore movement is described here only as it differs from a daylight movement. The techniques apply generally to amphibious vehicles as well as to landing craft.

(1) *Debarkation.* Night debarkation requires more time than one conducted in daylight. Extensive night training, however, can reduce the time to a minimum. Special devices such as hooded guide lights, chalklines, and fluorescent deck buttons are used to guide troops quickly and quietly to their debarkation stations. Boat team commanders should reconnoiter the route from troop assembly areas to debarkation stations in daylight and darkness. Boats are rail-loaded whenever possible, especially those carrying machineguns, mortars, or other heavy equipment. Transports that need additional boats for transporting scheduled waves receive them from adjacent ships. The landing craft employment table is the basis for allocation.

(2) *Transport area to line of departure.* Before boat waves leave the transport area, control ships anchor at the line of departure. Boats carrying boat group commanders and wave commanders have radio communication equipment and should have infrared signaling equipment. Approach lane marker ships are placed along the route from the landing craft rendezvous area to the line of departure. Parent ships, approach lane marker ships, and control ships track the progress of the waves by radar and when necessary, they vector them by voice radio. Guide boats may be used to lead waves from the

transport area to the line of departure and then to the beach. Wave commander boats should be equipped with radar and other navigational aids to help them maintain alinement and direction. Radar beacons or radar reflectors may also be placed in command, or flank boats of a wave to receive vectoring signals. It must be remembered that radar signals are susceptible to enemy radar countermeasures.

(3) *Line of departure to beach.* The line of departure may be closer to shore than for a day landing. The interval between boats is usually smaller than during daylight, but the distance between waves may be increased so that boats can retract and clear the beach before the following wave arrives. Usually, a wave commander cannot keep the preceding wave in view, therefore, each wave must be guided separately. The first wave may also lay dimly lit colored buoys corresponding to the beach color designation to guide following waves, or special electronic means can be used. The formation for movement from the line of departure to the beach depends on the nature and extent of the beach, obstacles, enemy active measures, the tactical formation to be employed ashore, and the extent of visibility. Generally, a Vee-formation is used for the approach and then changed to a line formation just prior to the landing. Speeds are slower than for a day landing.

(4) *Beach identification.* Whenever possible, beaches are marked by personnel sent ashore ahead of the attack waves. Patrols, partisans, or underwater demolition units may be used for this mission. Beaches are marked with lights visible to seaward, with infrared devices, or with radio or radar beacons. Similar guiding markers in the boat lanes are helpful. Scout boats may go close inshore to reconnoiter beaches from seaward during early hours of darkness and later act as guides for leading waves. Silhouettes of terrain inland and on beach flanks may serve as guide points. Each of these methods should be used in conjunction with electronic guidance provided by control ships and wave guide ships.

b. Operations Ashore. Each unit is assigned a definite objective. Additional measures are taken to establish and maintain control of attacking units, including the use of infrared equipment, prearranged signals, check points, intermediate objectives, and phase lines. Nevertheless, it is necessary to rely to a great

extent on independent action by smaller units. If possible, the attack inland should avoid changes in direction. Little assistance can be expected from the direct fire, flat trajectory weapons of adjacent units.

c. Supporting Troops and Weapons and Supplies. The characteristics of night attack materially restrict the use of supporting troops and weapons. However, they should be landed immediately after assault troops as in a day landing. Night presents an opportunity to land and get these troops and weapons into position unobserved. Guides must be furnished and routes marked to move them expeditiously to their initial positions. The amount of heavy materiel that can be landed before daylight depends on the extent to which lights can be used aboard ship and on the beach. Extensive unloading cannot be accomplished without illumination. Troops normally will not require a great amount of direct logistical support before daylight. Nevertheless, a build-up in preparation for daylight operations is required and representatives of logistical elements should land shortly after assault troops to reconnoiter for dump locations, routes of supply, and usuable existing facilities. Floating dumps are provided for emergency supply items that may be needed before dawn.

222. Night Airmobile Operations

Helicopters may be employed in support of all tactical operations conducted at night or during periods of reduced visibility. It may often be advantageous to use the concealment of darkness for an airmobile attack. However, the necessity for positive control, visual identification, and caution on the part of both pilots and troops slows down execution of such a landing. The helicopter serials must be smaller and the time interval between them greater because the time required for loading, rendezvous, approach to landing sites, and unloading will be increased.

a. Considerations which determine the method of employment of helicopters at night include—

(1) The nature of the terrain. Terrain with prominent landmarks easily recognized under conditions of limited visibility may permit helicopter operations, which would otherwise be impracticable due to reduced control and navigational problems.

(2) The degree of visibility existing at the crucial period of the operation. The greater the visibility, the fewer are the restrictions on helicopter employment. Consideration must be given to timing the initial approach and landing for periods of maximum visibility. Once the

initial landing zone has been secured, additional navigational aids can be installed to facilitate continued operations.

(3) The capability to emplace and utilize electronic and/or visual aids to navigation. This capability assumes special importance when the operation must be executed over terrain which is unfamiliar or has few prominent landmarks.

b. The pathfinder mission assumes greater significance in a night operation due to the need for relying on electronic and other navigational aids. Consideration should be given to dropping pathfinders in by parachute. They can be transported either by long range aircraft or aircraft launched from the amphibious task force helicopter transports. Pathfinders operating at night need more time in the landing area, prior to the landing of assault forces, than is required for a daytime operation.

c. The coordination of an airmobile attack with a waterborne attack is more difficult for a night operation. Helicopter approach and retirement routes and landing zones must be well separated from the operating areas employed in the water movement to avoid conflict with supporting fires. It may be necessary to stage the operations so that either the helicopter or water movement precedes the other by sufficient time to preclude this conflict.

d. The following is a resume of the considerations for employing helicopters at night:

(1) Smaller aircraft serials are utilized with a greater interval between serials because the time required for loading, rendezvous, approach to landing sites, and unloading will be increased, as will time for recovery and refueling.

(2) Control and navigational problems can be reduced by selecting and guiding on marks which are easily recognized at night.

(3) Helicopter routes are more direct and should involve as few directional changes as possible.

(4) More extensive use should be made of parachute delivered or helicopter-landed pathfinders in the airmobile support party.

(5) Movement of troops in the vicinity of helicopters must be more carefully controlled due to limited visibility.

(6) Guides must be provided to lead helicopterborne troops from the landing sites to attack positions or assembly areas.

(7) Baton-type flashlights, pyrotechnics, and other special lighting devices can be utilized to assist in controlling helicopter operations. When tactical conditions permit, high intensity lighting may be used in the landing zone. When used, care must be taken to direct the light so as not to blind pilots.

(8) Dump sites, egress routes, and assembly areas should be marked with fluorescent tape or markers.

(9) Flight routes should be selected for minimum interference with naval gunfire support and should follow well defined terrain features to assist in navigation. These routes are subject to final approval by the amphibious task force commander.

CHAPTER 12
SECONDARY TYPES OF AMPHIBIOUS OPERATIONS

Section I. AMPHIBIOUS WITHDRAWAL, DEMONSTRATION, AND RECONNAISSANCE

223. General

Withdrawals, demonstrations, reconnaissance, and raids are secondary types of amphibious operations in which an entire battle group or parts thereof may participate. These operations are characterized by the fact that they do not normally involve establishing a landing force on a hostile shore for indefinite duration. In view of the discussion provided of these operations in FM 31–12, further reference, herein, to the first three types is confined to the following descriptions and appropriate cross references. Amphibious raids are discussed in section II.

224. Amphibious Withdrawal

A withdrawal of forces from a hostile shore wherein the withdrawal force is embarked primarily on naval ships, landing craft, or aircraft. It is conducted for the purpose of evacuating forces to preclude loss of these forces or to retract the forces specifically for tactical redeployment in other areas. Except in the case of withdrawal associated with amphibious raids, planning processes will usually be abridged. The tactics and techniques common to normal ground retrograde operations, however, are applicable and will be utilized in the land movement phases to the extent practicable within the conditions existing at the time withdrawal is required. See section I, chapter 9, FM 31–12, for amphibious characteristics of withdrawal; and Retrograde Operations, as referenced in FM's 7–40 and 7–100.

225. Amphibious Demonstration

An operation conducted for the purpose of deceiving the enemy by a show of force with the expectation of causing the enemy to adopt a course of action unfavorable to himself. The demonstration differs from the raid in that the force, if landed, does not have a true tactical objective ashore. See chapter 9, FM 31–12.

226. Amphibious Reconnaissance

A landing conducted by small elements, involving stealth rather than force of arms and which normally includes a planned retraction of the landed elements. It is conducted primarily for the purpose of securing information (sec. II, ch. 4, FM 31–12). It is frequently employed during initial preparation prior to an amphibious attack or raid. It is also employed to establish or maintain coordination with or to effect support of unconventional warfare and intelligence activities. See techniques of preparation, training, and plans for raids as outlined in section II, which generally apply also to amphibious reconnaissance.

Section II. AMPHIBIOUS RAIDS

227. General

a. An amphibious raid is described as a landing from the sea on a hostile shore involving swift incursion into or a temporary occupancy of an objective, followed by a planned withdrawal. Raids are conducted for the purpose of inflicting loss or damage; tactical deception; securing information; capturing or evacuating individuals or materiel; or establishing, supporting or coordinating with unconventional warfare activities. See chapter 9, FM 31–12.

b. A raid may be classified as a supported raid against strongly defended objectives, an attack on a lightly held island, or a diversionary attack involving a display of force. It may support another landing or the operations of normal ground operations. It may be conducted for an independent purpose. In support of surface or air landed operations, a raid may be employed to obtain information, to destroy enemy communications, electronic agencies, harbor or air facilities; or to operate ashore as part of an amphibious demonstration.

228. Task Organization

a. The task organization for an amphibious raid is similar to the task organization of any land force organized to conduct an independent type assault mission. It includes naval, air, and landing force units tailored to carry out the assigned mission.

b. The high speed destroyer transport (APD) is the primary ship employed for executing amphibious raids across beaches. Seaplanes, landing ships and craft, submarines, helicopter transports, and PT boats may also be employed.

c. Rifle units of the battle group form the nucleus for the

raiding force. Reinforcements normally include medical personnel, combat engineers, and intelligence and communication personnel. The size of the force and its reinforcements depend on the mission.

229. Training

a. Individual Training. Before troops can participate in an amphibious raid, they must receive basic amphibious training. In addition, they need training in night operations and passage of obstacles. They must also have undergone a rigid physical hardening process which will enable them to accomplish missions calling for the utmost in physical stamina. Some types of raids may require that the raiders have special training in rubber boat handling, the employment of demolitions, use of enemy weapons, hand-to-hand combat, operation of special equipment, combat swimming, escape and evasion, and living off the land. Raiders should also be specially trained in observation and in obtaining intelligence data.

b. Unit Training. Unit training is of paramount importance for most raids. Small units may be employed independently: they may be organized under current TOE or designed to meet the needs of a special situation. Appropriate subjects for unit training include airlanded or airdropped techniques, boat handling, capture and handling of prisoners, and passage of obstacles such as barbed wire, minefields, cliffs, and streams.

230. Planning and Execution

a. The execution of an amphibious raid is accomplished in the following phases:

(1) Ship-to-shore movement.

(2) Operations ashore.

(*a*) Movement from the landing beach or landing zone to the objective.

(*b*) Attack of the objective.

(*c*) Withdrawal to the beach landing zone and reembarkation sites. These reembarkation sites may be the same or different than those used in landing.

(3) Reembarkation.

b. In executing a raid, these phases follow in sequence; but in planning, the attack of the objective is considered first. The attack of the objective is the crux of the raid. The remainder of the scheme of maneuver shore is aimed at getting units in position to

attack and then getting them out of the area. The ship-to-shore movement dovetails into the movement from the beach or landing zone to the objective; reembarkation is an extension of the withdrawal. Planning continues until a landing plan, a scheme of maneuver ashore, and a plan for reembarkation are perfected.

(1) The first step in planning a raid is to assemble all intelligence on terrain, enemy defenses, enemy strength, and the attitude of the civilian population. The next step is to plan the type and size of the raiding force that will be necessary to attack the objective and accomplish the mission. This force must be able to overcome opposition at the objective and destroy it, if required. Concurrent with planning the raiding force organization, the movement from the beach to the objective is planned. Here, the chief aim is to bring the force to the objective intact. To do this, a covering force element is designated to prevent any enemy action from interfering with the main body's movement to and attack of the objective. If use of supporting fires is feasible they are planned in great detail. Naval gunfire is used to the maximum. Since surprise may be lost as soon as the supporting fires begin, these fires will normally begin at the time the objective is attacked. Finally, the withdrawal to the beach is planned. Factors that are considered in planning the withdrawal are the time required to attack and reduce the objective, the expected enemy reaction, and the delay anticipated because of this reaction and friendly casualties.

(2) The ship-to-shore movement and reembarkation are closely synchronized with the attack and withdrawal to point(s) of reembarkation.

(3) The ship-to-shore movement begins on arrival of the transports off the beach. Once ashore, the covering force takes up its positions to protect the main body during its movement from the beach or landing zone to the objective. The raiding force attempts to arrive at the objective without having been engaged en route and begins its attack. At this point, prearranged and on-call supporting fires commence if used; the units assigned to cover the withdrawal prepare to carry out their assignments. After accomplishing its attack mission, the raiding force starts its withdrawal. Withdrawal and reembarkation proceed simulaneously until the last personnel reembark.

c. Numerous emergency and alternate plans to meet probable contingencies must be prepared for all phases of a raid.

231. Ship-to-Shore Movement

a. Daylight. In an amphibious raid, the technique used in the ship-to-shore movement is predicated on the mission of the raid. If advantage can be taken of enemy weakness, transporting ships move close inshore so landing craft, amphibious vehicles, and helicopters have a relatively short run to the beach. If supporting or preparatory fires are used, the ship-to-shore movement for a raid is similar to that for a major amphibious operation. The usual control ships and lines of departure off landing beaches are normally used only for large scale raids.

b. Reduced Visibility. Since one reason for landing at night or under other reduced visibility conditions is to gain surprise, preparatory fires will rarely be used. Other techniques which preserve surprise are emphasized. These include communication restrictions, late deployment of landing craft, and alternate plans for changing landing sites in the event of discovery. Consideration is also given to the possibility of landing either a pre-H-hour landing party or the first troop waves in rubber boats to seize immediate objectives and cover the remainder of troops landing in other types of craft.

232. Operations Ashore

a. Simplicity with Flexibility. As there is decentralization and frequent lack of overall control, the scheme of maneuver must be simple. The raiding force must be given a simple mission permitting establishment of a flexible time schedule. Assignment of alternate missions is undesirable unless the object is to create a diversion. In this case contingent missions may be assigned or permission given to engage targets of opportunity. Flexibility is gained by organizing the raiding force into subordinate groups, each with its own supporting mission. These mutually complement the overall plan, but permit independent action within their own framework. The raid commander operates a command post in which enemy information is evaluated, communication and supporting fires are controlled, the withdrawal is ordered and controlled, and decisions as to the execution of alternate plans or changes in the employment of subordinate units are made. If possible, the assignment of tasks to subordinate groups is such that failure of one will not cause the entire operation to fail.

b. Selection of the Landing Area. The landing beach or landing zone must conform to the scheme of maneuver. The point selected is usually one which permits easy access to the objective. If surprise is of paramount importance, a less suitable beach or landing

zone or one more distant from the objective may be chosen. Where there is no choice as to beach or zone, the scheme of maneuver ashore may be influenced by the type of beach or zone available.

c. Capabilities of the Raiding Force. Although plans are made to meet all possible contingencies, no raid should be undertaken if the enemy is likely to isolate the raiding force. The raiding force is entirely dependent on itself. An unsuccessful attack in a normal ground operation may entail no more than a planned withdrawal to extricate the attacking force; in an amphibious raid, it may mean the loss of the entire force.

d. Obstacles to Execution of the Mission. Factors other than enemy opposition may hamper the execution of the mission: among them are limitations of supply, inability of shipping to remain in the area, adverse weather conditions, and the problem of evacuating casualties.

e. Withdrawal. The withdrawal is part of and the final step in the scheme of maneuver. At this time the spirit of the offensive declines and enemy reaction may be more violent than during earlier phases of the raid. Consequently, if there is to be high morale among the troops, withdrawal must be swift and orderly. A reembarkation point(s) is selected while planning the scheme of maneuver. Once the operation begins, this point is not changed unless it becomes absolutely necessary, since a change at any time during the raid is confusing and may be disastrous. While a raiding force will usually reembark at the point at which it landed, circumstances may dictate that a different point or beach be designated. If the raiding force lands on a small island or narrow peninsula, consideration should always be given to reembarking on the oposite side. In many circumstances a delaying action becomes necessary. For example, if the mission of the raid-force is to attack a vigorously defended objective in hostile territory, some type of pursuit can be expected. A covering force may be used, preferably made up of units not employed in attacking the main objective. If a covering force is employed to get a task group to the objective without being committed en route, the same covering force may be employed in the withdrawal. It is important that uncommitted or disengaged forces be used as a covering force so they can develop their dispositions during the early part of the raid and establish perimeters if necessary.

Section III. SMALL ISLAND OR ATOLL OPERATIONS

233. Tactical Considerations

a. Landing on an atoll may be made from either the lagoon or

the sea side. Most large beaches are on the windward side of the atoll and the heavy surf usually prevents a landing in strength on this side. Lagoon landing beaches are usually distant from the lagoon entrance. However, surf conditions do not impede the use of landing craft in the lagoon.

b. Because of the limited size of most atolls, extremely heavy naval gunfire and air bombardment can be concentrated on them. Coral atolls with slight elevations provide little natural cover.

c. The small size of an atoll or island imposes distinct disadvantages on both the attacker and defender. The defender usually has small garrisons that are difficult to reinforce. He also has inadequate room to maneuver for counterattack. The attacker is forced to make direct frontal assaults on narrow fronts and is usually unable to maneuver to the flanks.

d. It may be necessary to capture more than one island in a group to secure fire support areas or to obtain channels through reefs for boat lanes that will give a main attack access to its more distant objective area. When obstacles such as reefs are present, landing vehicles are used in the assault waves until landing craft can be employed. Air movement may be used in the attack of islands in coordination with water movement.

234. Logistical Considerations

a. The amount of supplies landed in the attack is limited to the immediate requirements of the attacking elements. This is necessary because of the lack of dispersal areas and the slow delivery caused by the amphibious vehicles and boats having to move through narrow boat lanes. Supply dumps are established close to the landing beach and may remain there throughout the operation.

b. The flow of supply is carefully controlled by using a floating pool of boats and amphibious vehicles. Each boat and vehicle is loaded with a type load and the control boat calls it in as requested by the shore party commander. Helicopters can be employed to augment the water craft in delivering supplies.

CHAPTER 13
TRAINING

Section I. SCOPE AND PURPOSE

235. General

a. The discussion of amphibious training, as outlined in chapter 13, FM 31–12, provides BGLT personnel with general information necessary to develop training plans. In view of the above reference this chapter contains only selected items for general application at battle group level. Amphibious training, due to its specialized and joint nature must be planned in great detail and extensively supported by division and higher echelons.

b. Training is normally accomplished progressively in the following three major phases:

(1) Shore-based training.
(2) Elementary ship based training.
(3) Advanced ship based training.

236. Facilities and Support for Training

a. Amphibious training for Army units is normally supported by specified naval amphibious training units and facilities. If a unit to be trained has appropriate facilities nearby, it may be trained at its home station by a landing force training unit (LFTU). LFTU's are component parts of the Marine Corps and operate as part of amphibious training centers. Engineer amphibious support commands and selected transportation corps elements can assist in training landing teams.

b. The Navy operates shore bases to provide amphibious training facilities for selected units designated to participate in joint operations. These facilities include required schools. Army unit training at such bases or centers is under joint control the same as training under the direction of an LFTU conducted outside the Naval facilities.

c. Schools and/or special courses of instruction in the various aspects of amphibious operations are essential to effective training. They are prepared and conducted at the various echelons based on requirements and available facilities. Specific courses

or schools that may be provided either at division or joint level for BGLT personnel are:

(1) Indoctrination courses.
(2) BGLT staff planning courses.
(3) Embarkation officer enlisted training schools.
(4) Naval gunfire schools.
(5) Amphibious communications courses.
(6) Amphibious intelligence courses.
(7) Medical service courses.
(8) Equipment preparation courses (waterproofing, etc.).

237. Training Objectives

The BGLT's amphibious training mission is to prepare individuals, units, and the staff to perform their assigned functions in a co-ordinated assault landing. To accomplish this, individuals and units must attain proficiency in—

a. Embarkation of personnel, equipment, and supplies aboard ships.

b. Shipboard routine, including physical conditioning of the troops and maintenance of equipment.

c. Debarkation and ship-to-shore movement according to the landing plan which is based on the planned scheme of maneuver ashore.

d. Use of artillery, air, and naval gunfire support including nuclear and nonnuclear during all stages of the amphibious operation.

e. Initial logistical support of the attack, emphasizing the use and operations of the BGLT shore party and air resupply and evacuation.

f. Tactical operations to be conducted ashore.

238. Individual Training

a. The majority of individual amphibious training is completed during the shore-based training phase. Its scope includes the techniques of embarkation, requirements aboard ship, survival at sea, technique of debarkation, conduct during the ship-to-shore movement, and attack of the hostile beach.

b. Individual training may begin at the home station and be concluded at a designated training center. It generally includes initial indoctrination and orientation of each man in the characteristics of amphibious operations; and it includes specialist

schools for selected personnel. If possible, individual training is conducted concurrently with the various specialist schools so that all personnel will be available for unit training at the earliest possible time.

c. Training in the following subjects may be conducted at the home station:

(1) Naval customs and shipboard routine.
(2) Shipboard maintenance of individual and organizational equipment.
(3) Use of lowering lines (pars. 145 and 146).
(4) Use of cargo nets with shipside and landing craft mock-ups (pars. 145 and 146).
(5) Adjustment of individual equipment for debarkation (app. III).
(6) Net scaling (app. IV) and arrangement of personnel and equipment in landing craft, LVT's, and amphibious vehicles.
(7) Boat discipline.
(8) Swimming, special survival methods, use of life belts and rafts.
(9) Debarkation from landing craft, LVT's, and amphibious trucks. (Landing craft and vehicle mock-ups).
(10) Passage of obstacles on the beach.
(11) Characteristics of naval gunfire and close air support.
(12) Air-landed troop training if helicopters, seaplanes, or other air movement means are to be employed.

239. Unit Training

a. For effective execution, this training is decentralized to the BGLT. The purpose of unit training is to prepare the BGLT and subordinate elements to perform their unit functions in the ship-based training phase. It includes instruction and simulated practice in embarkation, shipboard routine, ship-to-shore movement, assault landing tactics and techniques, and communication exercises.

b. Unit training begins at the home station, but may be continued at an amphibious training center unless additional facilities, such as landing craft or vehicles and a beach area, are available in the vicinity of the home station. As each unit completes its shore-based training, it takes part in the unit training of the next higher echelon. Unit training of the boat team, platoon, company, and BGLT includes the conduct of exercises emphasizing—

(1) Debarkation according to prepared boat assignment tables and debarkation schedules.

(2) Conduct of the ship-to-shore movement according to prepared landing diagrams and approach schedules. When the training reaches the BGLT stage, the BGLT staff prepares complete plans for these problems as continuation of their staff training.

c. Unit training in the following subjects may be conducted initially at the home station and continued later near a landing beach where landing craft and vehicles are available.

(1) Organization of boat teams, boat waves, and the boat group.

(2) Formation and tactics of boat waves.

(3) Landing tactics and techniques.

(4) Preparation of boat assignment tables, debarkation and approach schedules, and landing diagrams.

(5) Waterproofing equipment.

(6) Activities of units while aboard ship.

d. Elements to be landed by helicopter conduct training at the same time as other landing team units. Individual training stresses the characteristics of helicopters to be used, organization of heliteams, techniques of loading and unloading, stowing and lashing equipment, troop life aboard transport carriers, and orientation upon landing. Unit training covers unit loading and unloading, operations with pathfinder teams, reorganization upon landing, and coordination of supporting arms.

240. Elementary Ship-Based Training

a. When the transports arrive in the objective training area, the training is decentralized to individual transports. Each transport and its embarked troops conduct the following training.

(1) Movement of boat teams to their assembly areas.

(2) Movement of boat teams to their assigned debarkation stations.

(3) Debarkation of boat teams.

(4) Formation of boat waves.

(5) Assembly at rendezvous area.

(6) Approach to line of departure.

(7) Crossing the line of departure.

(8) Transfer from landing craft to LVT's when necessary.

(9) Landing and debarkation at the beach.

(10) Reembarkation.

b. Units landed by helicopters conduct the following training:

(1) Assembly of heliteams.

(2) Movement to enplaning stations and enplaning.

(3) Loading of supplies and equipment.

(4) Ship-to-shore movement.

(5) Reorganization after landing.

(6) Rapid initation of ground operations.

(7) Logistical support procedures.

c. During BGLT landing exercises, all units of the embarkation group not included in the battle group participate in the landing exercises. The landing of these groups is coordinated by the division commander.

241. Advanced Ship-Based Training

a. Landing force advanced ship-based training is normally conducted immediately following elementary ship-based training. If practicable it is carried out using the same ships and facilities and may be conducted under supervision of the amphibious training command. It consists of—

(1) Assembly of forces at bases or marshalling areas.

(2) Embarkation according to a prearranged plan.

(3) Movement to the training area, exercise at sea, shipboard drills, and training.

(4) Preliminary bombardment of an objective by air and naval units.

(5) Ship-to-shore exercise followed by a critique.

(6) Landing and advance inland followed by a critique.

(7) Reembarkation and return to base.

(8) Critiques.

242. Rehearsals

An amphibious rehearsal is an exercise planned and conducted in a manner to simulate the conditions that will exist in the specific combat mission. Its purpose is to insure familiarity with and test the adequacy of communications and the details of the tactical and administrative plans; and also to correct errors and inadequacies before undertaking the assigned mission. While the rehearsal logically follows the completion of the third phase of amphibious training, it is not considered a fourth phase because a rehearsal is conducted only in preparation for a specific mission and preferably en route to the objective area designated in the mission.

243. Rehearsal Area

The area selected for a rehearsal resembles the objective area as closely as possible, particularly the landing beach or landing zone and terrain immediately adjacent. Any major obstacles to landing and unloading that are known to exist in the objective area are duplicated in the rehearsal area. Other considerations are the time available for rehearsal, security, the location of the rehearsal with respect to the objective and embarkation points, and hydrographic and climatic conditions. An area where live ammunition can be fired is highly desirable. Maneuver ashore, while important, is not normally the primary purpose of the rehearsal. The amphibious task force commander, in coordination with his service component the landing force commanders, makes the final selection of the rehearsal area.

244. Rehearsal Order

Because of the difference in terrain, hydrographic and weather conditions, and other factors, the operation plan may require some modification to meet the conditions in the rehearsal area. In that case, a separate rehearsal order is issued embodying the salient features of the actual operation order, but written to meet local conditions in the rehearsal area. If the rehearsal order tests the principal features of the actual operation realistically, it serves its primary purpose. Changes in the actual supporting plans and annexes are kept to a minimum in rehearsal.

Section II. LASHING AND LOWERING EQUIPMENT

245. General

a. Each boat team carries a certain amount of equipment ashore in its landing craft such as demolitions, communications equipment, and crew-served weapons and ammunition. This equipment must be lowered by hand from the ships debarkation station into the landing craft. For easy and speedy handling, the equipment is divided into easily manageable loads consisting of one or several items. Each load is placed in a separate net or equipment bag, when available, and the top of the net/equipment bag is closed and lashed with a lashing line. If nets and equipment bags are not available, each load is lashed separately with a lashing line so that a lowering line and a guide line can be attached to it. The equipment is divided into loads and lashed during the debarkation phase of the operation. This is accomplished in the troop assembly area before they move as boat teams to their debarkation stations.

b. The BGLT provides the lashing, lowering, and guide lines. (The Navy may provide lowering lines at each debarkation station.)

(1) A lashing line is half an inch in diameter, at least 8 feet long, and has an eye splice at each end.

(2) A lowering line is three-fourths of an inch in diameter and fifty feet long. It has a steel hook spliced onto one end with enough space between the barb and shank to take the half-inch lashing line.

(3) A guide line is fifty feet long and a quarter-inch in diameter. It, also, has a steel hook spliced onto one end with space to take the lashing line.

246. Lashing and Lowering Procedure

a. Each piece (or group) of equipment is bound with a lashing line by taking a clove hitch at the heavier end (if any) and continuing with a series of half-hitches to the other end. Both eyes of the lashing line are left free, one at each end of the equipment, to receive the hooks on the lowering and guide lines.

b. The equipment may be lowered into the landing craft while boat team members are descending the debarkation net. A loader stands at either side of the debarkation station. He hooks the lowering line to the lashing line eye at the lighter end of the equipment and the guide line to the lashing line eye at the heavier end. He casts the free end of the guide line to a receiver in the landing craft. He then lowers the equipment into the craft while the receiver guides its descent. Initially, the receivers may be members of the boat crew, but this job is taken over by the third and fourth members of the boat team who enter the craft. (The first and second boat team members become anchor men on the debarkation net.)

c. As soon as the equipment comes to rest in the boat, the receiver disengages the lowering and guide lines from the lashing line, and engages them with each other. The loader then pulls the joined lines up to the debarkation station and repeats the procedure with the next piece of equipment.

d. After all the boat team's equipment has been loaded, the loader stows the lowering and guide lines at the debarkation station for use by succeeding boat teams.

e. The assistant boat team commander supervises the stowing of equipment in the landing craft.

Section III. NET SCALING

247. General

The importance of net scaling practice cannot be overemphasized. The men are drilled and redrilled so that there is no hesitation during their movement from the debarkation station into landing craft. They start practice in daylight without individual equipment, and progress to practice in darkness with full equipment.

248. Technique

a. Each man goes over the rail of the ship with his left leg first. While descending, he uses his hands on the outside ropes of a set of

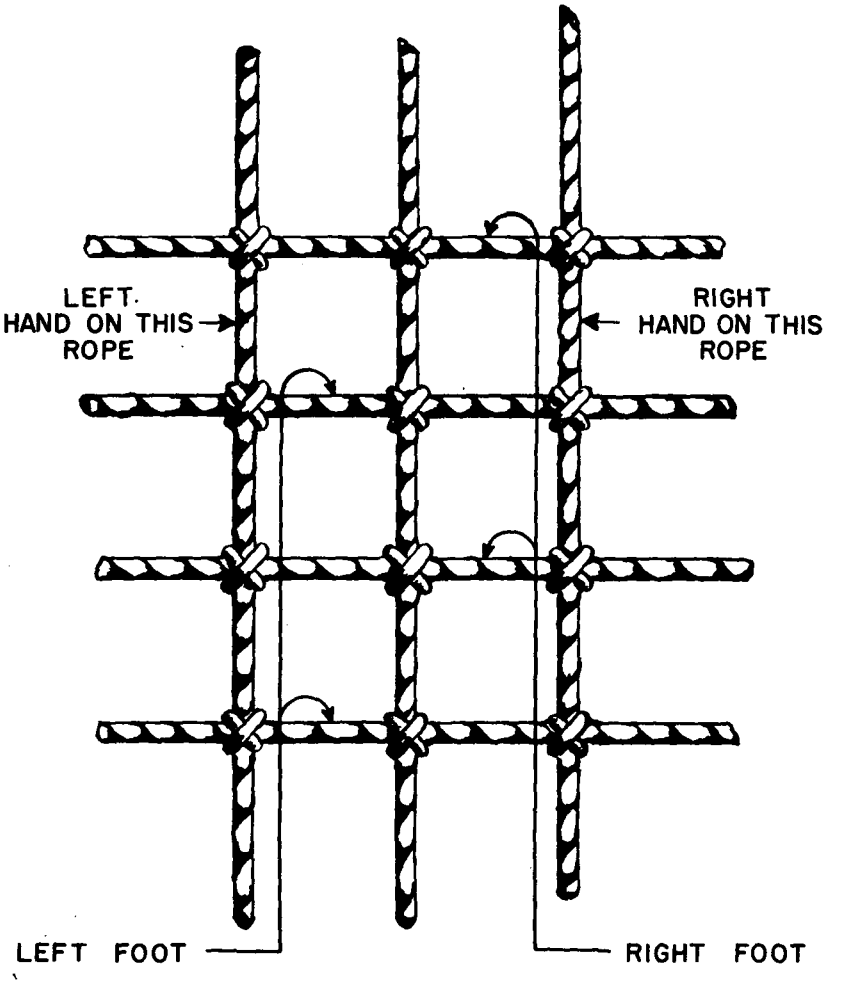


Figure 16. Net scaling technique.

three vertical ropes, and his feet on the strands adjacent to the center rope (fig. 16).

b. In descending the net, the feet are placed alternately on the next lower rung as shown in figure 16. To skip rungs slows the descent because it is difficult to extricate the upper foot from its rung when that leg is extremely flexed while the other leg is extended to its utmost as the foot reaches for a much lower rung.

c. During the descent the men look up, not down. They are never allowed to watch their feet while descending. As each man reaches the bottom of the net, he steps into the landing craft, facing its bow.

d. The climbing net is not a single file ladder; several men climb down at the same time. Usually the net is wide enough to accommodate 4 to 6 men at once.

Section IV. THE WEARING OF INDIVIDUAL EQUIPMENT

249. General

a. Clothing and equipment to be worn by the individual soldier during debarkation will vary considerably based on weather, individual duty assignments, and other local environment. This section provides general guidance with respect to appropriate methods of slinging the M14 rifle and position(s) of wearing other common items of the combat and full field loads. (See TB QM 21.)

b. To reduce hazards to personnel debarking over the side of a ship, particularly in the dark or in rough water, individual equipment is worn so that it permits free movement down the scaling nets and can be jettisoned if necessary.

250. Technique

a. When wearing the combat load, the rifle is slung vertically on the back left side, barrel up, parallel to the combat field pack and operating handle outboard to the rear. The web sling is looped over the web strap connecting the back suspender straps, between the pistol belt and combat field pack and between the attaching clips of the pack. The sling is tightened enough to hold the rifle in place. The magazine is removed from the rifle. (See figs. 17 through 20.)

b. When wearing the full field load the rifle is slung vertically on the back left side, barrel up, parallel to the combat field pack and operating handle outboard to the rear. The sling is looped over the top of the sleeping bag carrier straps, between the sleeping bag

and the body, around the sleeping bag, under the sleeping bag carrier straps and beneath the sleeping bag. The sling is tightened enough to hold the rifle in place and the magazine is removed from the rifle. (See figs. 21 through 24.)

c. The protective mask is worn on the left front, attached by the top D-ring on the mask carrier to the top snap on the left pouch supporting strap. The shoulder strap is passed upwards through the web keeper on the left suspender strap, over the left shoulder, down through the rear lower D-ring on the mask carrier under the left ammunition pouch and snapped to the front lower D-ring on the mask carrier. The shoulder strap is tightened to hold in place and the body strap is folded inside the carrier. (See figs. 17 through 25.)

d. A second canteen is normally worn by personnel debarking in an amphibious attack. When the entrenching tool/bayonet are worn on the left side, the second canteen is best worn on the right side of the field pack. (See fig. 24.)

e. Life preservers—

(1) The pneumatic life belt is worn under all other equipment and well up on the chest, buckle and capsules on the right.

(2) The standard Navy yoke type preserver is worn as pictured in figures 25 and 26. Straps are secured under other equipment insuring that if equipment has to be jettisoned it will not be bound to the body or preserver by the straps.

f. The pistol belt is unbuckled during descent of the scaling net and the helmet strap is buckled loosely (fig. 20).

Figure 17. Combat load (left rear view).

Figure 18. Combat load (rear view).

Figure 19. Combat load (front view).

Figure 20. Combat load (front view, pistol belt open).

Figure 21. Full field load (rear view).

Figure 22. Full field load (left rear view).

Figure 23. Full field load (left side view).

Figure 24. Full field load (right side view).

Figure 25. Yoke type preserver (front view).

Figure 26. Yoke type preserver (rear view).

APPENDIX I

REFERENCES

AR 220–60	Battalions, Battle Groups, Squadrons; General Provisions.
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 (CBR) Warfare.
FM 7–10	Rifle Company, Infantry and Airborne Division Battle Groups.
FM 7–19	Combat Support Company, Infantry Division Battle Group.
FM 7–21	Headquarters and Headquarters Company, Infantry Division Battle Group.
FM 7–24	Communication in Infantry and Airborne Divisions.
FM 7–40	Infantry and Airborne Division Battle Groups.
FM 7–100	Infantry Division.
FM 17–1	Armored Operations: Small Units.
FM 17–33	Tank Units: Platoon, Company, and Battalion.
FM 17–34	Amphibious Tank and Tractor Battalions.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
FM 21–10	Military Sanitation.
FM 21–30	Military Symbols.
FM 21–40	Small Unit Procedures in Nuclear, Biological, and Chemical Warfare.
FM 21–41	Soldier's Handbook for Nuclear, Biological, and Chemical Warfare.
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 31–12	Army Forces in Amphibious Operations (The Army Landing Force).
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	Airmobile Operations.
FM 60–30	Amphibious Operations; Embarkation and Ship Loading.
FM 100–1	Field Service Regulations; Doctrinal Guidance (U).
FM 100–10	Field Service Regulations: Administration.
FM 101–5	Staff Officers' Field Manual; Staff Organization and Procedure.
TB QM 21	Guide for Using Individual Load Carrying Equipment.
TM 3–220	Decontamination.
TM 5–240	A Guide to the Compilation and Revision of Maps.
DA Pam 108–1	Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings.
DA Pam 310–3	Index of Training Publications.
JCS Pub. 1	Dictionary of United States Military Terms for Joint Usage.
JCS Pub. 2	Unified Action Armed Forces (UNAAF).
JCS Pub. 3	Joint Logistics & Personnel Policy & Guidance (U).

NWP 22, Amphibious Operations (Change No. 5).

United States Marine Corps Landing Force Manuals and Bulletins.

United States Marine Corps Educational Center Tentative Instructional Precis (TIP).

APPENDIX II

BGLT TASK ORGANIZATION AND OPERATION PLAN

1. This appendix contains an abbreviated example of a BGLT Operations Plan and is supported only with those annexes that reflect the type task organization. The tactical situation is one wherein the BGLT becomes the nucleus of a landing group, organized in this specific manner due to the semi-independent nature of the initial landing plans as outlined in the OPPLAN. The organizational technique reflected herein provides the reader with a general understanding of the tailoring concepts involved in planning for employment of reinforced battle groups (or equivalent size units) in variable type amphibious operations using both water and air means of transport from ship-to-shore. When operating in the normal role as a part of a division landing team the same general technique will apply but the landing group connotation will be eliminated.

2. Several of the type TOE organizations referenced herein are currently in the process of reorganization. It is not intended that the task organization accurately reflect active units of the Services involved.

3. Specific contents of this appendix are:

Paragraphs 1–3	Explanation
Example 1	Operation Plan 50
Example 2	Annex "A" Task Organization
*Example 3	Shore Party and airmobile support party Task Organization (Appendix 1 to Annex J, OPPLAN 50)

* *Note.* The airmobile support party task organization is not a shore party as such even though functions and resources may be similar and be assembled in part from the same sources. It may be prepared and published as an appendix to the helicopter plan.

EXAMPLE 1

CLASSIFICATION

Copy No._____
Central Landing Group (TG 72.5)
BGLT 1/61
SUBIC BAY, P.I.
281700H Oct 19_____
055

Operation Plan 50

Reference (*a*) Maps (1) Japan (SOUTHERN) 1:1,000 AMS2 Sheet 3.

(2) Japan (KYUSHU) 1:1,000,000 AMS 1, Sheet 2.

(3) Japan (KYUSHU) 1:250,000 AMS L–506, Sheets NI–52–11, 13, 15, 16 and NH 52–3, 4.

(4) Japan (KYUSHU) 1:50,000 AMS L772, Sheets 4341, I, II, III, IV; 4140 I & IV; 4141 I, II, III; 4142 II, III; 4240 I, II, III, IV; 4241, I, II, III, IV; 4242 II, III, IV; 4342 II, III.

(5) Hydrographic Chart USM 2403 (ARIAKE WAN) (Modified).

(*b*) Intelligence Estimate, BGLT 1/61, dated 151200H Oct 19____.

Time Zone: India.

Task Organization: Annex A (Task Organization)

1. SITUATION

a. Enemy Forces

ANNEX B (Intelligence) and summaries as issued.

b. Friendly Forces

(1) Amphibious Task Force (TF 71) lands landing Force (TF 72) on Southern KYUSHU.

(2) Western Attack Group (TG 71.1) lands Western Landing Group (TG 72.1) vicinity KOMINATO—IKENHAI —AKASAKI on D-Day.

CLASSIFICATION

(3) Eastern Attack Group (TG 71.9) lands Eastern Landing Group (TG 72.9) vicinity MIYAZAKA—HORINOUCHI —MIMITSO on D-Day.

(4) Central Attack Group (TG 71.5) lands Central Landing Group (TG 72.5) on Q-Day and provides air (less helicopter and other Army Aviation), naval gunfire, and logistical support.

(5) Commander Amphibious Task Force (CTF 71) responsible for air defense and maintenance of air superiority in the objective area.

(6) CTG 71.5 responsible for control CAP over ARIAKE-WAN area (Appendix 1 (Air Spt) to Annex C (Fire Support)).

(7) Annex C (Fire Support).

c. *Attachments and Detachments:* Annex A (Task Organization).

Time effective to be announced.

d. *Assumptions:* That enemy situation in objective area will remain substantially unchanged until Q-Day.

2. MISSION: BLGT 1/61 lands by helicopter and assault craft in the ARIAKE-WAN area on Q-Day (D Plus 1), seizes and secures airfields at 7571 and 8376; prepares for further operations to assist in seizure KAGOSHIMA BAY on order; prepares for redeployment not later than Q-Day Plus 8 days.

3. EXECUTION

a. *Concept of Operation:*

(1) Phases:

(*a*) ALPHA—Assault landings and seizure of objectives.

(*b*) BRAVO—Consolidation and defense of airfields and Group Beachhead Area.

(2) Phase ALPHA:

(*a*) Maneuver: Prior to H-hour, airmobile landing team TF DASH seizes airfield at 7571 (Obj 1): at H-hour, two reinforced rifle companies land in LVTPs over Red Beach; Right company seizes airfield at 8376 (Obj 2); Left company seizes bridge over KUSHIRA GAWA at KUSHIRA reconnoiters on AXIS

BLUE and protects South Flank; BGLT reserve of reinforced rifle company lands in LVTPs and protects north flank: Reconnaissance troop (B/1/21) lands on order and screens north flank: Reconnaissance platoon (1/61) lands on order and reconnoiters AXIS GREEN: Guerrilla forces secure bridges at 915703 and 881705 at H-hour.

b. Fire Support:

(1) Maximum destruction of targets will be effected by USAF and CTF 71 prior to Q-Day.

(2) Air: On Q-Day prior to G-hour, air elements supporting Central Attack Group will:

(*a*) Complete destruction of enemy air defense installations in vicinity of Obj 1 and Obj 2.

(*b*) Destroy enemy armor in area.

(*c*) Support operations TF DASH.

(*d*) Support beach assault operations.

(*e*) Interdict enemy in objective area with priority to routes 1, 2, 3, and 4.

(*f*) Appendix 1, ANNEX C—FIRE SUPPORT.

(3) NGF: TU 71.5.2 with 1–CA, 1–CLG, and 3–DD supports Central Landing Group with priorities as follows:

(*a*) Fire flank suppression on Obj 1 and Obj 2.

(*b*) Call fires.

(*c*) Appendix 3 ANNEX C—FIRE SUPPORT.

(4) Artillery: Support as follows:

(*a*) One 105 How Btry attached to and lands with TF DASH.

(*b*) One D/S Bn (SP) (Reinf) lands over Beach Red.

(*c*) Appendix 2, ANNEX C—FIRE SUPPORT.

(5) Nuclear fires: Nuclear wpns fires will be planned. Employment only on order CTF 71.
Appendix 4, ANNEX C—FIRE SUPPORT.

(6) Phase BRAVO:

(*a*) Units continue security of primary objectives and assume responsibilities for assigned areas on order. ANNEX E—CONSOLIDATION.

(*b*) Priority for defensive fire support on avenues of approach from North. ANNEX C—FIRE SUPPORT.

b. TF DASH

(1) Land by helicopter beginning G-hour, Q-day in LZ AMBER.
(2) Seize and secure Obj 1.
(3) Block enemy approaches to north and west.
(4) Prepare for link up by _____.
(5) ANNEX—Helicopter Plan.

c. A/1/61

(1) Land in LVTPs over Red Beach beginning H-Hour, Q-day.
(2) Clear enemy from North portion Red Beach.
(3) Secure bridge at 859771.
(4) Seize and secure Obj 2.

d. B/1/61

(1) Land in LVTPs over Red Beach beginning H-Hour, Q-Day.
(2) Clear enemy from South portion Red Beach.
(3) Seize and secure Obj 3 (bridge over KUSHIRA GAWA at KUSHIRA).
(4) Reconnoiter AXIS BLUE to 810737.
(5) Prepare to assist in seizure Obj 2 by attacking from South, on order.
(6) Protect BGLT South flank.
(7) On order, linkup with TF DASH on AXIS GREEN or AXIS BLUE.

e. A/1/1 Armor (minus 3 plats)

(1) Land Red Beach beginning H + 30 min.
(2) On landing, insure joining of 1st, 2d and 3d tank platoons with companies A, B, and C.
(3) Maintain liaison with 1st, 2d, and 3d platoons and provide logistical support.
(4) Prepare to assume control of platoons and execute counterattack missions on order.

f. B/1/21st Cav

(1) Land Red Beach on order.
(2) Screen BGLT North flank with priority to Routes 2, 3, and 4. (ANNEX D—OPNS Overlay)

g. Recon Plat 1/61

(1) Land over South portion Red Beach on order.

(2) Reconnoiter AXIS GREEN.
(3) Maintain close liaison with B/1/61.
(4) On order, linkup with TF DASH on AXIS GREEN (ANNEX G—linkup Plan).

h. Ldg Gp Arty

(1) 4/45 Bn Group: Attchd BGLT 1/61
4/45 (105-155) (SP) (FO Sec, 1/45): Spt BGLT 1/61
A/1/45 (105) (twd): Initially atchd TF DASH; on order revert control 4/45 Bn Group.
Det/A/1/46 (8") (twd): Atchd 4/45
Det/7th Msl Bn (LAX)/153: Atchd 4/45
Det/1/45 (LNO Sec—2 FO Sec): Atchd A/1/45
(2) ANNEX C—FIRE SPT
(3) ANNEX K—SURFACE LANDING PLAN

i. DET MASS (Marine Air Spt Sq)

(1) Land on order.
(2) Establish ASRT vic Landing Group CP (849759).
(3) Appendix 1, ANNEX C—Fire Support.

j. C/20 Engr Bn

(1) ANNEX K—Surface Landing Plan.
(2) Provide Engr Spt—ANNEX I—Engr Plan.
(3) Prepare for employment as infantry on order.

k. A/560th Engr Amph. Equip Bn (Minus 3 plats).

(1) ANNEX K—Surface Landing Plan.
(2) Provide logistic spt to 1st, 2d, and 3d plats.
(3) Assume control of plats, on order.

l. Ldg Gp Shore Party

(1) ANNEX K—Surface Landing Plan.
(2) Spt BGLT 1/61 by:
(*a*) Development and operation of Red Beach—ANNEX J—Shore Party Plan.
(*b*) Defense of beach spt area—TAB A, Appendix 4, ANNEX J—Shore Party Plan.
(3) ANNEX L—CBR Measures.

m. Det 20th Avn Co

(1) Spt TF DASH with 2–H13 Helicopters.
(2) Spt BGLT 1/61 with additional 3–H13 Helicopters and 4–L19 Aircraft.

(3) On order operate from Airfield at 835765.
(4) Provide control agency and minimum maintenance for aircraft ashore.
(5) ANNEX F—Helicopter plan; Appendix 1, ANNEX C—Fire Support.

n. Cmbt Spt/1/61(—)

(1) ANNEX K—Surface Landing Plan.
(2) Provide logistic support for organic elements.

o. Det. 110th Trans Hcptr Bn

(1) Land and support TF DASH in LZ AMBER beginning G-Hour, Q-Day.
(2) As operations progress, support TF DASH in LZ PURPLE and LZ WHITE.
(3) Prepare for subsequent employment in support of BGLT 1/61 operations.
(4) On order, operate from air field at 835765 (Obj 2).
(5) ANNEX F—Helicopter Plan.

p. Ldg Gp Reserve
C/1/61

(1) Land in LVTPs over Red Beach beginning H plus 15 minutes.
(2) Move to and secure reserve positions (ANNEX D—Opns Overlay).
(3) Protect BGLT North Flank.
(4) Prepare to assist in Seizure Obj 2 on order.

q. Coordinating Instructions

(1) This plan effective for planning and training upon receipt and for execution on order. On execution this plan becomes Opn Order 50.
(2) EEI, passwords and countersigns (ANNEX B—Int).
(3) Q-Day, H-Hour to be announced.
(4) Shore Party responsible for beach support area defense.
(5) Serials landing subsequent to scheduled waves report arrival to Shore Party CP.
(6) Fire Support coordination (ANNEX C—Fire Support).
(7) Synchronize watches with ships time prior to debarkation.
(8) Troop safety measures for nuclear fires (App 4, to ANNEX C—Fire Support Plan).

4. ADMINISTRATION AND LOGISTICS. ADMIN PLAN 40.

5. COMMAND AND SIGNAL.

a. Annex M (Signal) to OPPLAN 50:

(1) Radio Silence lifted only on order Landing Group Commander (CTG 72.5).

(2) All headquarters guard assigned radio nets beginning G minus 4 hours on Q-Day.

b. Command Posts Afloat:

Central Attack Group (TG 71.5) (5th PhibRon)	APA 32
Central Landing Group (TG 72.5) (BGLT 1/61)	APA 32
Co A, BGLT 1/61	LST 1172
Co B, BGLT 1/61	LST 1170
Co C, BGLT 1/61	LST 1168
Helicopter Landed TF Force DASH	LPH 5
Trp B, 1st Sq, 21st CAV	LST 1171
Co A, 1st Tk Bn, 1st Armor	LSD 33
Landing Group Arty	APA 32
Co C 20th Engr Bn	LST 1173
Landing Group Shore Party	APA 32
Det, 110th Trans Helicopter Bn	LPH 5
Det, 20th Avn Co	LST 1173

c. Command Posts Ashore:

Central Landing Group vic 849759
TF DASH, vic 734741
Others report when established

Acknowledge Receipt.

MOBILE
Colonel

Annexes: A—Task Organization (Example 2)
B—Intelligence (Omitted)
C—Fire Support Plan (Omitted)
D—Operations Overlay (Omitted)
E—Consolidation Plan (Omitted)
F—Helicopter Plan (Omitted)
G—Linkup Plan (Omitted)
H—Anti-mechanized Plan (Omitted)
I—Engineer Plan (Omitted)

J —Surface Landing Plan (Omitted)
K—CBR Plan (Omitted)
L—Signal (Omitted)
M—Distribution (Omitted)

DISTRIBUTION: Annex N (Distribution)
OFFICIAL:

/s/Wheel
WHEEL
S3

EXAMPLE 2

Copy No_____
Central Landing Group (TG 72.5)
BGLT 1/61
SUBIC BAY, P.I.
281700H Oct 19____
055

ANNEX–A (TASK ORGANIZATION) to OPPLAN 50

CENTRAL LANDING GROUP (BGLT 1/61) *COL MOBILE*

a. Hq & Hq Co/1/61
Hq & Hq Co/1/61 Capt HEAD
Engr Plat 1/61 (–2 sqds attached A & B Co 1/61)
Ln Sec, Ldg Gp Arty
Air Ln Tm (ANGLICO)
NGF Ln Tm (ANGLICO)
2 ARST TMS (ANGLICO)
1st Plat, Amb Co, 20th Med Bn
1st Plat, Clr Co, 20th Med Bn
4th MI Det
Det, 5416th CAMG Co
Det, 20th Sig Bn
Det, 5261st Cmbt Area Sig Bn
D/s Sec, Fwd Spt Co, 20th Ord Bn

b. Task Force Dash LtCol DASH (Dep CO 1/61)

Hq, TF DASH
Comd Gp
Arty Ln Sec 1/45
Aid Sta (Trmt and Evac)

Pfdr Det
ARST TM (ANGLICO)
Det, 514th Sig Co
2 Air Observers, 1/45 Arty

D/1/61 — Capt DOG
FAC Tm (ANGLICO)
4th Aslt Wpns Sqd/1/61
Aid Men (4)
FO Tm, Hv Mort/1/61
FO Sec, 1/45 Arty
4th Tm, Short Range Radar/1/61

E/1/61 — Capt EEZ
NGF Spot Tm (ANGLICO)
5th Aslt Wpn Sqd/1/61
Aid Men (4)
FO Tm, Hv Mort/1/61
FO Sec, 1/45 Arty
5th Tm, Short Range Radar/1/61

Hv Mort Plat/1/61 — Capt SHOOT
A/1/45 Arty — Capt FIRE
Survey Party 1/45 Arty
Airmobile Support Party (See Appendix 1 Annex J for Task Org) — Capt LIFT

c. A/1/61 — Capt ABEL
1/A/560th Engr Equip Bn (LVTP 5)
1/A/1/1 Armor (90-mm)
NGF Spot Tm (ANGLICO)
FAC Tm (ANGLICO)
FO Sec, 4/45th Arty
1st Aslt Wpn Sqd/1/61
1st Tm, Short Range Radar/1/61
1st Sqd, Engr Plat/1/61
Aid Men (4)

d. B/1/61 — Capt BAKE
2/A/560th Engr Amph Equip Bn (LVTP 5)
2/A/1/1 Armor (90-mm)
NGF Spot Tm (ANGLICO)
FAC Tm (ANGLICO)

FO Sec, 4/45th Arty
2d Aslt Wpn Sqd/1/61
2d Tm, Short Range Radar/1/61
2d Sqd, Engr Plat 1/61 (– Driver)
Aid Men (4)

e. Landing Group Arty — LtCol BOOM (CO 4/45)

4/45 Bn Group
4/45 Arty (105-155) (SP)
(A/1/45 Arty (105) (Twd) + Survey Party 1/45 – initially atchd TF DASH)
Det, Hq 20th Div Arty
Det, Hq 2/45
Det, Hq 5/45
Det, Hq 1/46
Det/A/1/46 (8") (Twd)
Det/7th Msl Bn (LAX)/153
(Det/1/45 Arty (2-FO, Ln and 2-AO) — Atchd TF DASH)

f. B/1/21st Cavalry — Capt FIND
NGF Spot Tm (ANGLICO)
FAC Tm (ANGLICO)
FO Sec, 1/45th Arty
2 FO Sec, 4/45th Arty
Radar Sec/1/61 (minus short range teams)

g. Recon Plat/1/61 — Lt POKE

h. Det. 110th Trans Hcptr Bn — Maj LIFT
1101st Trans, Lt Hcptr Co (H-34) (Reinf) — Capt FLU
Det, 1106th Trans, Med Hcptr Co (H-37) — Lt FLEW
Det, 412th Trans, Army Acft Maint Co — Lt FLAW

i. Det, 20th Avn Co (5 – H13 Hcptr, 4-L19 acft and tailored control party) — Capt FLEE

j. A/1/1st Armor — Capt THIK
(1/A/1/1 atchd A/1/61)
(2/A/1/1 atchd B/1/61)
(3/A/1/1 atchd C/1/61)

k. C/20th Engr — Capt MAKE
1/1548 Engr Co (Fltg Bridge) — Lt FLOTE

l. Co A/560th Engr Amph Equip Bn — Capt JETSUM
(1/A/560 atchd A/1/61)
(2/A/560 atchd B/1/61)
(3/A/560 atchd C/1/61)

m. Ldg Gp Shore Party — Maj WORKOR
(APPENDIX 1, ANNEX J – SHORE PARTY)

n. Cmbt Spt/1/61 — Capt GALK
(Hv Mort/1/61/atchd TF DASH)
(Rad Sec atchd B/1/21 and A, B, C, D, E,/1/61)
(Aslt Wpn Sqds atchd A, B, C, D, E,/1/61)

o. Det, Marine Air Support Squadron, 1st MAW — Maj SWOOP

p. Ldg Gp Reserve — Capt CRU
C/1/61
3/A/560th Engr Amph Equip Bn (LVTP-5)
3/A1/1 Armor (90-mm)
NGF Spot Tm (ANGLICO)
FAC TM (ANGLICO)
FO Sec 4/45th Arty
3d Aslt Wpn Sqd/1/61
3d Tm, Short Range Radar/1/61
Aid Men (4)

MOBILE
Colonel

DISTRIBUTION: ANNEX N (Distribution)
OFFICIAL:

/s/Wheel
WHEEL
S3

EXAMPLE 3

Central Landing Group (TG 72.5)
(BGLT 1/61)
SUBIC BAY, P. I.
281700H Oct 19____
055

Appendix 1 (Task Organization) to Annex J (Shore Party and Airmobile Support Party Plan) to Admin Plan 50.

Time Zone: INDIA	*Off*	*EM*
Ldg Gp Shore Party		
Comdr – Maj Worker	39	991
1st Shore Con Sec (Reinf), Co A 793d Engr Amph Bn	3	5
1st Plat (–), Co A, 793d Engr Amph Bn	1	58
BGSP Comm Sec, 1st Gp Sig Spt Plat, Sig Co, 592d Svc Spt Bn	0	15
Maint Det, Comp Dir Spt Co, 592d Svc Spt Bn	2	20
Med Spt Sec, 2d Med Spt Plat, Med Co, 592d Svc Spt Bn	1	14
Co A, 560th Engr Amph Equip Bn	4	224
Co B, 35th Engr Bn (C) (A)	5	149
1st Plat, 557th Engr Co (LE)	1	30
697th Engr Co (Pipeline) (–)	2	93
Det, 561st Engr Co (Fld Maint)	0	8
Det, 511th Engr Co (Wtr Sup)	0	15
Det, 1st Plat, 39th Med Co (Clr) (Sep)	3	30
Det, 41st Ord Co (Ammo)	1	20
Det AA, 106th Exp Ord Det	0	6
651st QM Co (Svc) (–)	3	80
Det, 635th QM Co (Petrl Sup)	0	5
Det, 629th QM Co (Subs Sup)	1	15
Coll, Ident & Evac Det, 58th QM Co (GR) (Recvry & Disp)	0	6
370th Trans Co (Term Svc) (–)	2	170
1st Plat, 610th Trans Co (Lt Trk)	1	45
356th Trans Co (Amph Trk) (–)	3	123
2d Plat (–), Co A, 504th MP Bn	1	39
384th Trans Co (Comp Boat) (–)	3	80
Det, Naval Beach Gp ONE	2	56
Task Force DASH Airmobile Support Party (Cmdr-Capt Lift)	4	85
Det, Co A, 793d Engr Amph Bn	2	2
Pioneer Sqd (–), 1st Plat Co A, 793d Engr Aimph Bn	0	13
Det, BGSP Comm Sec, 1st Gp Sig Spt Plat, Sig Co, 592d Svc Spt Bn	0	3

	Off	EM
Det, Clr Co, 20th Med Bn	1	7
Det, 2d Plat, Co A, 504th MP Bn	0	5
Det, 370th Trans Co (Term Svc)	0	24
1-Sec, 4th Plat(Reinf), 651st QM Co (Svc)	0	18
Det, 41st Ord Co (Ammo)	0	6
Ldg Zone Con Tm, 1101st Trans Co (Lt Hcptr)	1	7

MOBILE
Col

DISTRIBUTION: Annex N (Distribution) to Opn Plan 50.
OFFICIAL:
/s/Wheel
WHEEL
S–3

GLOSSARY

1. Terms and abbreviations listed herein are selected for ready reference at BGLT level where other standard references may not be available. This listing should be used in conjunction with FM 31–12, AR 320–5, JCS Pub 1, and NWP 22.

2. Definitions

Abaft—In the direction of the ship's stern.

Aboard—In a ship or boat.

Aft—Near the stern of a vessel; towards the rear.

Amidships (*'midships*)—In the center of the vessel, either with reference to her length or her breadth.

Astern—Aft of or behind the rear of a vessel.

Awash—The deck when even with the surface of the water.

Ballast—Any weight carried to make a vessel more stable.

Beam—Extreme width of a vessel.

Bilge—The curved part of a ship's hull where the sides and the flat bottom meet.

Bitts—Vertical wooden or metal projections on the deck used for securing lines or gear.

Boat—Navy term used to describe any small craft capable of being carried aboard a ship.

Bow—Forward-most part of a vessel.

Bridge—The raised platform extending athwart a ship in the forward part of the ship and from which it is steered and navigated. Amidships and after bridges are sometimes so fitted.

Brig—The ship's prison.

Broached—A boat or craft washed by surf action up on the beach and unable to retract under its own power.

Bulkhead—Transverse or longitudinal partitions (walls) separating portions of the ship.

Cargo ships, attack—See AKA.

Cargo hatch—A hatch over a cargo hold.

Cleat—A fitting of wood or metal with projections, used for securing lines.

Companionway—The steps leading below from the upper deck.

Condition 1A—Condition "One ALFA," that condition of battle readiness on vessels carrying troops or material for an am-

phibious landing when all stations are fully manned for debarkation.

Control group—A naval task organization consisting of personnel, vessels, craft, boats, and the necessary communication facilities to control the ship-to-shore movement.

Control officer—A naval officer, designated by the naval force commander, charged with overall supervision of the ship-to-shore movement.

Control vessel—A vessel, craft, or boat designated to guide or control the movement of assault craft and landing ships to and from the beach. See primary control vessel, secondary control vessel, and special control vessel.

Davit—A curved metal spar fitting into a socket on the deck and projecting over the side for handling a boat.

Deck—The floor of all parts of the vessel which rest upon the beams.

Draft—The depth to which a vessel sinks in the water.

Dunnage—Any material, such as boards, mats, planks, blocks, bamboo, etc., which is used in transportation and storage of supplies to secure and protect them from damage, or for convenience in handling.

Fall—That part of tackle to which the power is applied in hoisting.

Fantail—The part of the stern of a vessel extending abaft the sternpost.

Fathom—Six feet.

Fender—Canvas, wood, or rope used over the side to protect a vessel from scraping when alongside another vessel or a dock.

Galley—The ship's kitchen.

Gangway—An opening in the bulwark or rail of a ship for exit or entrance, also an order meaning clear the way or step aside.

Gig—A ship's boat designated for the use of the ship's commanding officer or flag officer.

Gunwale (gunn'l)—The upper rail of a boat or vessel.

Hard—Portion of a beach especially prepared with a hard surfare extending into the water, employed for the purpose of loading or unloading vehicles and material directly into or from landing ships and craft.

Hawser—A large rope for towing, mooring, or heavy work.

Head—Latrine; washroom, and toilet facilities.

Hold—The cargo space below the deck of a vessel.

Hydrography—The science of determining the conditions of navigable waters. It includes a study of the contours of the bottom, depths, shoals, channels, tides, currents, obstructions, surf conditions, and other features.

Inboard—Toward the center line of the ship.

Jack—A flag similar to the union of the national flag, flown at the bow of a ship, when anchored or moored.

Jacob's ladder—A ladder of rope with wooden steps used over the side and aloft.

Keel—The timber or bar forming the backbone of the vessel and running from the stem to the stern post at the bottom of the ship.

Lanyard—A rope made fast (tied) to an article for securing it (for example, knife lanyard and bucket lanyard) or for setting up rigging.

Lee—The side opposite to that from which the wind blows.

LEX—Navy term for a practice landing exercise.

Life-line—A line secured around the side of the ship above the deck to prevent persons from falling overboard.

Lighter—A craft used in loading and unloading vessels.

List—The inclination or deviation of a vessel (not caused by wind or sea) from an upright position.

Magazine—The space provided for the stowage of explosives.

Mine group—Task unit of a joint attack force assigned the mission of laying and sweeping mines in the objective area. Elements of the mine group may be attached to the advance force.

Mooring—A term applied to the operation of securing a vessel to a wharf or dock.

Naval gunfire officer—An officer on the staff of division or higher landing force unit whose duties include the planning of naval gunfire support of amphibious operations.

Naval gunfire liaison officer—The naval officer in command of the shore fire control party.

Officer of the deck—The officer on watch in charge of the ship.

On-call waves—Formations of landing craft, amphibious vehicles, or landing ships or helicopters carrying those elements of the landing force for which an early need ashore is anticipated, but whose time and place of landing cannot be accurately predicted and, therefore, are not specified.

Outboard—Toward the sides of the vessel.

Painter—A small rope or line attached to the bow of a boat, used for making her fast.

Pontoon, N. L.—Navy, lightered pontoon; cube shaped, sheet steel, airtight cell from which pontoon barges and causeways are assembled.

Port—The left side of a vessel when facing the bow.

Primary control vessel—Vessel used by the senior naval officer in control of the ship-to-shore movement off a colored beach.

Primary control officer—An officer of the naval control group, embarked in a primary control vessel, who controls the movement of landing craft, amphibious vehicles, and landing ships to and from the BGLT beaches.

Prow—The part of a ship's bow that is above the water.

Quarter—That part of a vessel's sides near the stern.

Retract—To refloat a landing craft or ship by backing off the beach.

Screening group—A defensive unit of naval vessels employed to protect the attack force; it consists of antisubmarine vessels, picket boars, etc., seaward from the transport and fire support areas. Also, see paragraph 19, FM 31–12, and NWP 22.

Screw—The ship's propeller.

Scuppers—Holes cut in the waterways to drain water from the decks.

Secondary control vessels—Vessels used by naval boat group and wave commanders, and wave guide officers.

Sick bay—Ship's hospital.

Sling—To place in a rope or chain sling for hoisting or lowering.

Sounding—Measuring the depth of the water.

Stanchions—Upright posts of wood or iron, placed so as to support the beams of a vessel. Upright pieces placed at intervals along the sides of a vessel, to support the bulwarks and rail, and reaching down to the bands by the side of the pieces to which they are bolted; any fixed upright support.

Starboard—The right side of a vessel when facing the bow.

Stern—The rearmost part of a vessel.

Stevedore—One who works at, or is responsible for, the loading of a vessel in port.

Stores—In naval usage, this term is sometimes used instead of the term "supplies" to denote any article or commodity used by a naval ship or station; for example, equipage, consumable supplies, clothing, petroleum products, ammunition, and medical supplies.

Strongback—A spar used as a spreader between a pair of boat davits.

Support group—A task group of naval vessels and craft assigned to furnish naval gunfire support in an amphibious operation. There is usually one support group for each attack group. The support group may consist of two or more support units.

Surf—The swell of the sea breaking upon a shore.

Trough—The hollow between two waves.

Tonnage—An expression of cubature or weight used variously to indicate the aggregate of tons shipped, carried, handled, mined, etc.; also to indicate a ship's weight, size, and carrying capacity.

Ton—A unit of volume or weight. Volume: Measurement (ship) ton—40 cubic feet. Weight: Short ton—2,000 pounds; long ton (weight ton)—2,240 pounds; metric ton—2,205 pounds (1,000 kilograms).

Deadweight tonnage—The carrying capacity of a ship, expressed in long tons. It is the difference between displacement tonnage loaded and displacement tonnage light.

Deadweight cargo tonnage—The cargo carrying capacity, expressed in long tons. It is the part of the deadweight tonnage of the vessel which remains after deducting the weight of fuel, water, stores, dunnage, and other voyage items. Also known as cargo capacity tonnage.

Displacement tonnage—The weight of the ship expressed in long tons. Light—total weight of the ship excluding the weight of cargo, passengers, fuel, water, stores, dunnage, etc. Loaded—total weight, including all those items listed above.

Gross tonnage—Total internal cubic capacity of a ship expressed in tons of 100 cubic feet capacity.

Wake—The disturbed water left behind a moving vessel.

Wardroom—Commissioned officers' mess (Navy).

Winch—A powerful machine having one or more horizontal barrels or drums on which to coil a rope or chain, for hauling or hoisting by turning a wheel or crank at the end.

Windward—Toward the wind.

3. Abbreviations

AH—The navy symbol for a hospital ship.

AKA—The navy symbol for an attack cargo transport; a vessel capable of combat unit loading.

APA—The navy symbol for an attack personnel transport capable of combat unit loading and of transporting an assault battle group landing team.

APD—The navy symbol for a destroyer-type high-speed transport.

ANGLICO—Air and naval gunfire liaison company.

BB—The navy symbol for battleship.

BHL—Beachhead line.

CA—Navy symbol for heavy cruiser.

CL—Navy symbol for light cruiser.

COMNAVOR—Commander, naval force.
COMTRANSDIV—Commander, transport division.
COMTRANSGROUP—Commander, transport group.
COMTRANSRON—Commander, transport squadron.
CV—Navy classification symbol for aircraft carrier.
CVE—Navy classification symbol for escort aircraft carrier.
DD—Navy symbol for destroyer.
DE—Navy symbol for destroyer escort.
DUKW—A 2½-ton, 6x6 truck, capable of operating on both land and water.
EASC—Engineer amphibious support command.
FAC—Forward air controller.
LARC—Lighter, amphibious, resupply, cargo, 5-ton.
LC—Landing craft.
LCU—Landing craft, utility.
LPH—An amphibious assault ship capable of carrying and launching troops, equipment, and supplies in helicopters. (Also referenced herein as a helicopter carrier or helicopter transport.)
LPD—Amphibious Transport dock (ship).
LSD—Dock landing ship.
LST—Tank landing ship.
LSTH—Tank landing ship (casualty evacuation).
LSU—Utility landing ship.
LVTH—A full-track amphibian vehicle mounting a 105-mm howitzer.
LVTP—A full-track amphibian vehicle mounting machine guns and utilized to carry personnel or cargo ashore and to inland objectives.
MSL—Mean sea level.
NGLO—Naval gunfire liaison officer.
NGO—Naval gunfire officer.
TAC—Tactical air coordinator.
TAC(A)—Tactical air coordinator (airborne).
TAR—Tactical, air request (net).
TAC-LOG GROUP—Tactical-Logistical group.
TRANSDIV—Transport division.
TRANSRON—Transport squadron.

INDEX

BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army,
Chief of Staff.

Official:

R. V. LEE,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

DCSPER (2)
ACSI (2)
DCSOPS (10)
ACSRC (2)
CRD (1)
TIG (1)
TJAG (1)
TPMG (1)
Tech Stf, DA (5) except
TSG (1)
USCONARC (15)
ARADCOM (2)
Log Comd (5)
MDW (5)
Armies (25)
Corps (15)
Div (10)
Inf Bde (5) except
2d Inf Bde (15)
Armor Regt (5)
Arty Regt (5)
Comp Regt (5)
Inf Regt (5)
BG (5)
CC (5)
Inf Bn (5)
Armor Bn (5)
Arty Bn (5)
Inf Co (5)
Armor Btry (5)
Arty Btry (5)
Tng Comd (3)
USAIS (43)
USA Ord Sch (150)
US ARADSCH (15)
MFSS (12)
USATSCH (10)
USACMLCSCH (15)
USASCS (205)
USAARMS (500)
USAINTS (11)
USAES (310)
USACGSC (850)
USAAVNS (7)

NG: TOE 7-2 (4), 7-11 (3), 17-2 (4).

USAR: Same as Active Army except allowance is one copy to each unit.

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

☆ U. S. GOVERNMENT PRINTING OFFICE: 1961—610515

LANDING DIAGRAM FOR WATER MOVEMENT

Wave	Time	Units	Formation
1	H-hr	Co A (-), Boat Teams 2-1, 2, 3, 4, 5, 6, 7 Co B (-), Boat Teams 2-9, 10, 11, 12, 13, 14 Co C (-), Boat Teams 2-15, 16, 17, 18, 19, 20, 21	X 2-1 · X 2-2 · X 2-3 · X 2-4 · X 2-5 · X 2-6 · X 2-7 · X 2-8 · X 2-9 · X 2-10 · X 2-11 · X 2-12 · X 2-13 · X 2-14 · X 2-15 · X 2-16 · X 2-17 · X 2-18 · X 2-19 · X 2-20 · X 2-21
2	H+7	Res Plat and Wpn Plat (-) Co A, Boat Teams 3-1, 2, 3 Res Plat and Wpn Plat (-) Co B, Boat Teams 3-4, 5, 6 BGLT HQ, HQ Det, Hq & Hq Co, Boat Teams 3-7, 8, 9 Res Plat and Wpn Plat (-) Co C, Boat Teams 3-10, 11, 12	X 3-1 · X 3-2 · X 3-3 · X 3-4 · X 3-5 · X 3-6 · X 3-7 · X 3-8 · X 3-9 · X 3-10 · X 3-11 · X 3-12
3	H+14	BGLT shore party (-)	X 4-1 · X 4-2 · X 4-3 · X 4-4 · X 4-5 · X 4-6 · X 4-7 · X 4-8
4	H+20	Co D (-), Boat Teams 5-1, 2, 3, 4, 5, 6, 11, 12, 13, 14 Hv Mort Plat (-), Boat Teams 5-7, 8, 9, 10	X 5-1 · X 5-2 · X 5-3 · X 5-4 · X 5-5 · X 5-6 · X 5-7 · X 5-8 · X 5-9 · X 5-10 · X 5-11 · X 5-12 · X 5-13 · X 5-14
5	H+30	Co E (-) Boat Teams 6-1, 2, 3, 4, 5, 6, 7, 8, 9, 10	○ 6-10 · ○ 6-8 · ○ 6-6 · ○ 6-4 · ○ 6-2 · ○ 6-1 · ○ 6-3 · ○ 6-5 · ○ 6-7 · ○ 6-9
6	H+40	Det, BGLT shore party	Ⓧ 7-10 · Ⓧ 7-8 · Ⓧ 7-6 · Ⓧ 7-4 · ○ 7-2 · ○ 7-1 · Ⓧ 7-3 · Ⓧ 7-5 · Ⓧ 7-7 · Ⓧ 7-9 · Ⓧ 7-11
		Ⓧ BGLT CO and party X Shore party DOZER Free boats Arty Bn CO and party	Ⓧ DCO and party (to include Combat Support Co Hq)
	At LD H+40	BG Recon Plat, Boat Teams 8-1, 2, 3, 4, 6, 8, 10, 12, 14 BG Aslt Wpn Plat, Boat Teams 8-5, 7, 9, 11, 13	Ⓧ 8-14 · Ⓧ 8-12 · Ⓧ 8-10 · Ⓧ 8-8 · ○ 8-6 · ○ 8-4 · ○ 8-2 · ○ 8-1 · ○ 8-3 · ○ 8-5 · ○ 8-7 · ○ 8-9 · ○ 8-11 · ○ 8-13
BOATED ON CALL	Report prim con H+40	Co A (-), Med Tk Bn	⊖ 9-16 · ⊖ 9-14 · ⊖ 9-12 · ⊖ 9-10 · ⊖ 9-8 · ○ 9-6 · ○ 9-4 · ○ 9-2 · ○ 9-1 · ○ 9-3 · ○ 9-5 · ⊖ 9-7 · ⊖ 9-9 · ⊖ 9-11 · ⊖ 9-13 · ⊖ 9-15
	At LD H+50	Trp A (-), Recon Sq	○ 10-18 · ○ 10-16 · ○ 10-14 · Ⓧ 10-12 · Ⓧ 10-10 · Ⓧ 10-8 · Ⓧ 10-6 · Ⓧ 10-4 · Ⓧ 10-2 · ○ 10-1 · Ⓧ 10-3 · Ⓧ 10-5 · Ⓧ 10-7 · Ⓧ 10-9 · Ⓧ 10-11 · Ⓧ 10-13 · ○ 10-15 · ○ 10-17 · ○ 10-19
	At LD H+70	Battle Gp Area Spt Plat, Sig Bn Boat Teams 13-1, 2,3,4,5,6,7, 8, 9, and 11 Det Clr Co, Med Bn, Boat Teams 13-10 and 12	Ⓧ 13-12 · Ⓧ 13-10 · Ⓧ 13-8 · Ⓧ 13-6 · ○ 13-4 · ○ 13-2 · ○ 13-1 · Ⓧ 13-3 · Ⓧ 13-5 · Ⓧ 13-7 · Ⓧ 13-9 · Ⓧ 13-11
	At LD H+60	Co A (-), Engr Bn Btry A (-), How Bn (105mm)(SP)	3 LCU from LSD 3 4 LCU from LSD 4 and 5

LEGEND:

X = LVTP Ⓧ = LCM-6

○ = LCVP ⊖ = LCM-8

Table III. Landing Diagram for Water Movement (Extract).