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U.S. MARINE CORPS **MCWP 4-11.5**

SEABEE OPERATIONS IN THE MAGTF

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LETTER OF PROMULGATION

1. NWP 4-04.1/MCWP 4-11.5, SEABEE OPERATIONS IN THE MAGTF, is an Unclassified naval warfare publication. It shall be handled by Department of the Navy holders in accordance with the administrative procedures contained in NWP 1-01.

2. NWP 4-04.1/MCWP 4-11.5 is effective upon receipt and supersedes FMFM 13-4/NWP 22-9, NAVAL CONSTRUCTION FORCE SUPPORT OF MAGTF OPERATIONS, which shall be destroyed without report.

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NWP 4-04.1
MCWP 4-11.5
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PUBLICATION NOTICE ROUTING

1. NWP 4-04.1/MWCP 4-11.5, SEABEE OPERATIONS IN THE MAGTF, is available in the Naval Warfare Publications Library. It is effective upon receipt.

2. Summary:

   a. NWP 4-04.1/MWCP 4-11.5, SEABEE OPERATIONS IN THE MAGTF, promulgates a doctrinal basis of tactics, techniques, and procedures (TTP) for Seabee operations in support of Marine Air-Ground Task Forces. The intent is to improve both the MAGTF and Seabee commanders' understanding of the Seabee's mission when operating in a MAGTF. NWP 4-04.1/MWCP 4-11.5 documents new and revised doctrinal structures and procedures that have been adopted to enhance the interoperability between the U. S. Marine Corps and the Naval Construction Force. The missions, tasks, organization, and capabilities are described so as to effectively integrate Seabee units into MAGTF operations. This publication is targeted for all Seabee units of the Naval Construction Force and Marine Expeditionary Forces, including their major subordinate elements.

   b. Because of the magnitude and scope of these changes, users need to read and become familiar with the new NWP.

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Note to Naval Warfare Publications Custodian
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GLOSSARY

Note: Unless otherwise indicated, all definitions are extracted from JP 1-02, Department of Defense Dictionary of Military and Associated Terms.

A

administrative control (DOD). Direction or exercise of authority over subordinate or other organizations in respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations. Also called **ADCON**.

advanced base. A base located in or near a theater of operations whose primary mission is to support military operations.

advanced base functional component system. A grouping of personnel, equipment, material, and facilities designed to perform a specific function at an advanced base. Where components contain material only, the operating personnel are supplied by other components. Housing and messing facilities, medical facilities, defensive ordnance, communication equipment, and, in many cases, power plants and water supply are not supplied with each component and are themselves service components to be integrated into an overall base plan. The functional components are given names to indicate their functions and unclassified code numbers, consisting of letter and number combinations, for use in easy reference. (NWP 1-02)

amphibious assault. The principal type of amphibious operation that involves establishing a force on a hostile or potentially hostile shore. (JP 1-02)

amphibious assault bulk fuel system. The U.S. Navy system of flexible, buoyant hose used to effect ship-to-shore transfer of fuels. Five thousand feet of 6-inch hose connect amphibious shipping to shore-based fuel

storage systems located at the high-water mark. See also amphibious assault fuel system and offshore petroleum delivery system.

amphibious assault bulk water system. A bulk water delivery system capable of transferring 600,000 gallons per day from ship to shore. The hose reel assembly is comprised of 10,000 feet of 4-inch hose. The system is usually employed for short-term durations of 30 days or less, and can be deployed by MPF or amphibious assault shipping.

amphibious assault fuel system. A highly mobile, helicopter- or trailer-portable system of pumps, fuel lines, filter units, distribution points, and collapsible storage tanks of varying capacities, capable of being emplaced ashore during an amphibious operation and filled through floating or bottom-laid lines from ships at sea. The AAFS is composed of a number of components capable of receiving, transferring, and dispensing up to 600,000 gallons of MOGAS, diesel, or aviation fuels. The AAFS can be erected in a wide variety of configurations to meet varying operational requirements, and is the MAGTF's primary fuel storage system used to support amphibious operations. See also **amphibious assault bulk fuel system** and **offshore petroleum delivery system**.

amphibious assault support. Construction support includes the assembly, maintenance, and operation of various ship-to-shore equipment for transferring personnel, equipment, and supplies to and over the beach. Pontoon units or other components are assembled for causeway operations, lighter age and transfer barge operations, and warping tug operations. The support provided includes beach salvage, installation of buoyant and bottom-laid ship-to-shore bulk fuel systems, and limited construction on the beach. The construction ashore includes the preparation of beach exits, road grading, camp site improvement, CBR recovery operations, and temporary repairs to piers and other harbor or waterfront facilities. (NAVFAC P-315)

amphibious construction battalion. A permanently commissioned naval unit, subordinate to the commander, naval beach group, designed to provide an administrative unit from which personnel and equipment are formed in tactical elements and made available to appropriate commanders to operate pontoon causeways, transfer barges, warping tugs, and

assault bulk fuel systems, and to meet salvage requirements of the naval beach party.

amphibious lift. The total capacity of assault shipping utilized in an amphibious operation, expressed in terms of personnel, vehicles, and measurement or weight tons of supplies.

amphibious objective area. A geographical area, delineated in the initiating directive, for purposes of command and control within which is located the objective(s) to be secured by the amphibious task force. This area must be of sufficient size to ensure accomplishment of the amphibious task force's mission and must provide sufficient area for conducting necessary sea, air, and land operations.

amphibious operation (DOD). An attack launched from the sea by naval and landing forces, embarked in ships or craft involving a landing on a hostile or potentially hostile shore. As an entity, the amphibious operation includes the following phases:

1. **planning** — The period extending from issuance of the initiating directive to embarkation.

2. **embarkation** — The period during which the forces, with their equipment and supplies, are embarked in the assigned shipping.

3. **rehearsal —** The period during which the prospective operation is rehearsed for the purpose of 1) testing adequacy of plans, the timing of detailed operations, and the combat readiness of participating forces, 2) ensuring that all echelons are familiar with plans, and 3) testing communications.

4. **movement** — The period during which various components of the amphibious task force move from points of embarkation to the objective area.

5. **assault** — The period between the arrival of the major assault forces of the amphibious task force in the objective area and the accomplishment of the amphibious task force mission.

amphibious task force. The task organization formed for the purpose of conducting an amphibious operation. The amphibious task force always includes Navy forces and a landing force, with their organic aviation, and may include Military Sealift Command-provided ships and Air Force forces when appropriate. Also called ATF. (JP 1-02)

assault echelon. The element of a force that is scheduled for initial assault on the objective area. In an amphibious task force, it consists of Navy amphibious ships and the assault troops, vehicles, nonself-deployable aircraft, equipment, and supplies required to initiate the assault landing. (JP 1-02)

assault follow-on echelon. In amphibious operations, that echelon of the assault troops, vehicles, aircraft equipment, and supplies which, though not needed to initiate the assault, is required to support and sustain the assault. In order to accomplish its purpose, it is normally required in the objective area no later than 5 days after commencement of the assault landing. (JP 1-02)

assign:

1. To place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel.

2. To detail individuals to specific duties or functions where such duties or functions are primary and/or relatively permanent. See also **attach**.

attach:

1. The placement of units or personnel in an organization where such placement is relatively temporary.

2. The detailing of individuals to specific functions where such functions are secondary or relatively temporary, e.g., attached for quarters and rations; attached for flying duty. See also **assign**.

B

base:

1. A locality from which operations are projected or supported.

2. An area or locality containing installations that provide logistic or other support.

3. Home airfield or home carrier.

base development. The improvement or expansion of the resources and facilities of an area or a location to support military operations.

beachhead. A designated area on a hostile or potentially hostile shore that, when seized and held, ensures the continuous landing of troops and materiel, and provides maneuver space requisite for subsequent projected operations ashore.

C

capability (DOD). The ability to execute a specified course of action. (A capability may or may not be accompanied by an intention.)

chain of command. The succession of commanding officers from a superior to a subordinate through which command is exercised.

civil engineering support plan. The part of an operation plan that deals with the construction, improvement, or repair of resources and facilities in the area of operations. (JP 5-02.2)

closure. In transportation, the process of a unit arriving at a specified location. It begins when the first element arrives at a designated location, e.g., port of entry/port of departure, intermediate stops, or final destination, and ends when the last element does likewise. For the purposes of studies and command post exercises, a unit is considered essentially closed after 95 percent of its movement requirements for personnel and equipment are completed.

combat power. The total means of destructive and/or disruptive force that a military unit/formation can apply against the opponent at a given time.

combat service support. The essential capabilities, functions, activities, and tasks necessary to sustain all elements of operating forces in theater at all levels of war. Within the national and theater logistic systems, it includes but is not limited to that support rendered by service forces in ensuring the aspects of supply, maintenance, transportation, health services, and other services required by aviation and ground combat troops to permit those units to accomplish their missions in combat. Combat service support encompasses those activities at all levels of war that produce sustainment to all operating forces on the battlefield. (JP 1-02)

combat service support elements. Those elements whose primary missions are to provide service support to combat forces and that are a part, or prepared to become a part, of a theater, command, or task force formed for combat operations.

combat support. Fire support and operational assistance provided to combat elements.

combatant command (DOD). A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. See also **specified command; unified command**.

combatant command (command authority). Nontransferable command authority established by Title 10, United States Code, Section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations,

joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command (command authority). Also called COCOM. See also combatant command; combatant commander; operational control; tactical control.

combined. Between two or more forces or agencies of two or more allies. (When all allies or services are not involved, the participating nations and services shall be identified; e.g., Combined Navies.) See also **joint**.

command and control. The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

concept of operations (DOD). A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. Also called commander's concept.

concept plan (CONPLAN). An operation plan in concept format. See also **concept summary**; **operation plan**.

construction battalion maintenance unit (CBMU). An established naval unit organized, trained, and equipped to perform facilities maintenance of naval activities.

construction battalion unit. A naval construction force unit that may be established in the fleet or in the shore establishment. Fleet CBUs fulfill long-term facilities improvement requirements at specific locations. Shore CBUs are used for construction, alteration, repair, and nonrecurring maintenance. (NWP 1-02)

contingency (DOD). An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response, and special procedures to ensure the safety and readiness of personnel, installations, and equipment. See also **contingency contracting; contingency planning.**

control. Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations. (Part one of a four-part definition.)

countermobility. The construction of obstacles and emplacement of minefields to delay, disrupt, and destroy the enemy by reinforcement of the terrain. The primary purpose of countermobility operations is to slow or divert the enemy, to increase time for target acquisition, and to increase weapon effectiveness. (FMFRP 0-14)

crisis action planning (CAP). The joint operation planning and execution system process involving the time-sensitive development of joint operation plans and orders in response to an imminent crisis. Crisis action planning follows prescribed crisis action procedures to formulate and implement an effective response within the timeframe permitted by the crisis. See also **deliberate planning** and **joint operation planning and execution system**.

D

deliberate engineering. Deliberate engineering support is intensive effort by engineer units that involves high standards of design and construction as well as detailed planning and preparation. It is that wide range of tasks in rear areas that serves to sustain forward combat operations. (FMFRP 0-14)

deliberate planning (DOD):

1. The joint operation planning and execution system process involving the development of joint operation plans for contingencies identified in joint strategic planning documents. Conducted principally in peacetime, deliberate planning is accomplished in prescribed cycles that complement other Department of Defense planning cycles in accordance with the formally established joint strategic planning system.

2. A planning process for the deployment and employment of apportioned forces and resources that occurs in response to a hypothetical situation. Deliberate planners rely heavily on assumptions regarding the circumstances that will exist when the plan is executed. See also **joint operation planning and execution system**.

deployment:

1. In naval usage, the change from a cruising approach or contact disposition to a disposition for battle.

2. The movement of forces within areas of operation.

3. The positioning of forces into a formation for battle.

4. The relocation of forces and materiel to desired areas of operations. Deployment encompasses all activities from origin or home station through destination, specifically including intracontinental United States, intertheater, and intratheater movement legs, staging, and holding areas.

deployment cycle. The deployment cycle is that period of time from the commencement of one deployment to commencement of the next deployment. (NWP 1-02)

detachment:

1. A part of a unit separated from its main organization for duty elsewhere.

2. A temporary military or naval unit formed from other units or parts of units.

direct support (DOD). A mission requiring a force to support another specific force and authorizing it to answer directly the supported force's request for assistance. See also **support**.

doctrine. Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application.

E

employment (DOD). The strategic, operational, or tactical use of forces. See also **employment planning**.

F

facility (DOD). A real property entity consisting of one or more of the following: a building, a structure, a utility system, pavement, and underlying land. See also **base**.

follow-on echelon. In amphibious operations, that echelon of the assault troops, vehicles, aircraft equipment, and supplies which, though not needed to initiate the assault, is required to support and sustain the assault. See also **assault** and **assault follow-on echelon.**

force beddown. The provision of expedient facilities for troop support to provide a platform for the projection of force. These facilities may include modular or kit-type facility substitutes.

forward presence. Forward deployed forces or forces stationed overseas to demonstrate national resolve, strengthen alliances, dissuade potential adversaries, and enhance the ability to respond quickly to contingencies. (NWP 1-02)

functional component. A grouping of personnel, equipment, and material designed to perform one of the specific tasks of an advanced base. (NAVFAC P-315)

G

general engineering. General engineering is one of the six functions of combat service support. It is an intensive effort by engineer units that involves initial and temporary standards of design and construction as well as detailed planning and preparation. General engineering support normally serves the whole force. General engineering contributes to force sustainability by enhancing the throughput system within the area of responsibility. (FMFM 13)

general support. That support which is given to the supported force as a whole and not to any particular subdivision thereof.

H

horizontal construction:

1. General engineering projects normally involving time, manpower, material, and equipment-intensive tasks. These tasks usually relate to survivability and sustainability efforts. (FMFM 4-1)

2. Normally involving extensive earthwork, horizontal construction consists of such work as roads, airfields, berms/revetments, ditches, etc. (FMFM 13)

host nation (DOD/NATO). A nation which receives the forces and/or supplies of Allied nations and/or NATO organizations to be located on, or to operate in, or to transit through its territory.

host nation support (DOD). Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crisis or emergencies, or war based on agreements mutually concluded between nations.

I

initial standard of construction. Intended for immediate austere operational support of units upon arrival in theater. The initial standard has austere facilities that minimize engineer construction effort. Facility use

is for a limited duration ranging from 1 to 6 months. (JP 4-04) See also **temporary standard of construction**.

intermediate maintenance (field). That maintenance which is the responsibility of and performed by designated maintenance activities for direct support of using organizations. Its phases normally consist of:

1. Calibration, repair, or replacement of damaged or unserviceable parts, components, or assemblies;

2. The emergency manufacture of nonavailable parts; and

3. Providing technical assistance to using organizations.

interoperability:

1. The ability of systems, units, or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together.

2. (DOD) The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases.

J

joint (DOD). Connotes activities, operations, organizations, etc., in which elements of two or more military departments participate.

joint engineer planning and execution system. A planning tool used by CINC and Service component staffs to develop data in determining their civil engineering support requirements and documenting their civil engineering support plan. JEPES is a computer model used by CINC planners to estimate theater-level wartime requirements for facilities, construction material, and civil engineering capability in support of deployed U.S. forces.

joint operation planning and execution system (DOD). A continuously evolving system that is being developed through the integration and enhancement of earlier planning and execution systems: joint operation planning system and joint deployment system. It provides the foundation for conventional command and control by national- and theater-level commanders and their staffs. JOPES is designed to satisfy their information needs in the conduct of joint planning and operations. JOPES includes joint operation planning policies, procedures, and reporting structures supported by communications and automated data processing systems. JOPES is used to monitor, plan, and execute mobilization, deployment, employment, and sustainment activities associated with joint operations. Also called **JOPES**. See also **joint operation planning**.

joint publication (DOD). Publication of joint interest prepared under the cognizance of Joint Staff directorates and applicable to the military departments, combatant commands, and other authorized agencies. It is approved by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands, Services, and joint staff. Also called JP. See also **Chairman of the Joint Chiefs of Staff Instruction; guidance; joint administrative publication; joint doctrine; joint tactics, techniques, and procedures; joint test publication**.

joint strategic capabilities plan. Conveys strategic guidance, including apportionment of resources, to the CINCs and the Chiefs of the Services, to accomplish assigned strategic tasks based on military capabilities existing at the beginning of the planning period. The JSCP offers a coherent framework for capabilities-based military advice to the NCA. (AFSC Pub 1)

joint task force. A joint force that is constituted and so designated by the Secretary of Defense, a combatant commander, a subunified commander, or an existing joint task force commander. Also called **JTF**.

L

landing force. A task organization of troop units, aviation and ground, assigned to an amphibious assault. It is the highest troop echelon in the amphibious operation.

liaison (DOD). That contact or intercommunication maintained between elements of military forces or other agencies to ensure mutual understanding and unity of purpose and action.

lines of communications (DOD). All the routes, land, water, and air, which connect an operating military force with a base of operations and along which supplies and military forces move. Also called **LOC**.

logistic support. Logistic support encompasses the logistic services, materiel, and transportation required to support the continental United States-based and worldwide deployed forces.

logistics. The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations that deal with:

1. Design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel;

2. Movement, evacuation, and hospitalization of personnel;

3. Acquisition or construction, maintenance, operation, and disposition of facilities; and

4. Acquisition or furnishing of services.

logistics-over-the-shore operations. The loading and unloading of ships without the benefit of fixed-port facilities, in friendly or nondefended territory, and, in time of war, during phases of theater development in which there is no opposition by the enemy. Also called **LOTS**.

M

maintenance (materiel) (DOD):

1. All action taken to retain materiel in a serviceable condition or to restore it to serviceability. It includes inspection, testing, servicing, classification as to serviceability, repair, rebuilding, and reclamation.

2. All supply and repair action taken to keep a force in condition to carry out its mission.

3. The routine recurring work required to keep a facility (plant, building, structure, ground facility, utility system, or other real property) in such condition that it may be continuously used, at its original or designed capacity and efficiency, for its intended purpose.

maneuver warfare. A warfighting philosophy for action that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions that create a turbulent and rapidly deteriorating situation with which the enemy cannot cope. (MCRP 5-2C)

Marine air-ground task force. A task organization of Marine forces (division, aircraft wing, and service support groups) under a single command and structured to accomplish a specific mission. The MAGTF components will normally include command, aviation combat, ground combat, and combat service support elements (including Navy support elements). Three types of Marine air-ground task forces that can be task-organized are the special purpose Marine air-ground task force, Marine expeditionary unit (special operations capable), and Marine expeditionary force. The four elements of any Marine air-ground task force are:

1. **Command element** — The MAGTF headquarters. The CE is a permanent organization composed of the commander, general or executive and special staff sections, headquarters section, and requisite communications and service support facilities. The CE provides command, control, and coordination essential for effective planning and execution of operations by the other three elements of the MAGTF. There is only one CE in a MAGTF.

2. **Aviation combat element** — The MAGTF element that is task-organized to provide all or a portion of the functions of Marine Corps aviation in varying degrees based on the tactical situation and the MAGTF mission and size. These functions are air reconnaissance, antiair warfare, assault support, offensive air support, electronic warfare, and control of aircraft and missiles. The ACE is organized around an aviation headquarters and varies in size from a reinforced

helicopter squadron to one or more Marine aircraft wing(s). It includes those aviation command (including air control agencies), combat, combat support, and combat service support units required by the situation. Normally, there is only one ACE in a MAGTF.

3. **Ground combat element** — The MAGTF element that is task-organized to conduct ground operations. The GCE is constructed around an infantry unit and varies in size from a reinforced infantry battalion to one or more reinforced Marine division(s). The GCE also includes appropriate combat support and combat service support units. Normally, there is only one GCE in a MAGTF.

4. **Combat service support element** — The MAGTF element that is task-organized to provide the full range of combat service support necessary to accomplish the MAGTF mission. CSSE can provide supply, maintenance, transportation, deliberate engineer, health, postal, disbursing, enemy prisoner of war, automated information systems, exchange, utilities, legal, and graves registration services. The CSSE varies in size from a Marine expeditionary unit (MEU), Marine service support group (MSSG), to a force service support group (FSSG). Normally, there is only one combat service support element in a MAGTF. See also **combat service support elements**.

Marine air-ground task force (special purpose) (SPMAGTF). A nonstanding MAGTF temporarily formed to conduct a specific mission for which a standing MAGTF is either inappropriate or unavailable.

Marine expeditionary force. The Marine expeditionary force, the largest of the Marine air-ground task forces, is normally built around a division/wing team, but can include several divisions and aircraft wings, together with an appropriate combat service support organization. The Marine expeditionary force is capable of conducting a wide range of amphibious assault operations and sustained operations ashore. It can be tailored for a wide variety of combat missions in any geographic environment.

Marine expeditionary force (forward). The designated lead echelon of a Marine expeditionary force, task organized to meet the requirements of a specific situation. Also called a MEF (Fwd).

Marine expeditionary unit (special operations capable) (DOD). A forward-deployed, embarked U.S. Marine Corps unit with enhanced capability to conduct special operations. The Marine expeditionary unit (special operations capable) is oriented toward amphibious raids at night, under limited visibility, while employing emission control procedures. The Marine expeditionary unit (special operations capable) is not a Secretary of Defense-designated special operations force but, when directed by the National Command Authorities and/or the theater commander, may conduct hostage recovery or other special operations in extremis circumstances when designated special operations forces are not available. Also called MEU(SOC).

maritime pre-positioning force. A task organization of units under one commander formed for the purpose of introducing a MAGTF and its associated equipment and supplies into a secure area. The MPF is composed of a command element, a maritime pre-positioning ships squadron, a MAGTF, and a Navy support element.

maritime pre-positioning force operation. An MPF operation is a rapid deployment and assembly of a combat force in a secure area using a combination of strategic airlift and forward-deployed maritime pre-positioning ships.

materiel. All items (including ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without distinction as to its application for administrative or combat purposes.

mission (DOD):

1. The task, together with the purpose, that clearly indicates the action to be taken and the reason therefore.

2. In common usage, especially when applied to lower military units, a duty assigned to an individual or unit; a task.

3. The dispatching of one or more aircraft to accomplish one particular task.

mission (NATO):

1. A clear, concise statement of the task of the command and its purpose.

2. One or more aircraft ordered to accomplish one particular task.

mobility. A quality or capability of military forces that permits them to move from place to place while retaining the ability to fulfill their primary mission.

mobilization (DOD):

1. The act of assembling and organizing national resources to support national objectives in time of war or other emergencies. See also **industrial mobilization**.

2. The process by which the Armed Forces or part of them are brought to a state of readiness for war or other national emergency. This includes activating all or part of the reserve components as well as assembling and organizing personnel, supplies, and materiel. Mobilization of the Armed Forces includes but is not limited to the following categories:

   a. selective mobilization — Expansion of the active Armed Forces resulting from action by Congress and/or the President to mobilize Reserve component units, individual ready reservists, and the resources needed for their support to meet the requirements of a domestic emergency that is not the result of an enemy attack.

   b. partial mobilization — Expansion of the active Armed Forces resulting from action by Congress (up to full mobilization) or by the President (not more than 1,000,000) for not more than 24 consecutive months to mobilize Ready Reserve component units, individual reservists, and the resources needed for their support to meet the requirements of a war or other national emergency involving an external threat to the national security.

c. full mobilization — Expansion of the active Armed Forces resulting from action by Congress and the President to mobilize all Reserve component units in the existing approved force structure, all individual reservists, retired military personnel, and the resources needed for their support to meet the requirements of a war or other national emergency involving an external threat to the national security. Reserve personnel can be placed on active duty for the duration of the emergency plus 6 months.

d. total mobilization — Expansion of the active Armed Forces resulting from action by Congress and the President to organize and/or generate additional units or personnel, beyond the existing force structure, and the resources needed for their support, to meet the total requirements of a war or other national emergency involving an external threat to the national security.

N

National Command Authorities. The President and the Secretary of Defense or their duly deputized alternates or successors.

NATO Standardization Agreement. The record of an agreement among several or all the member nations to adopt like or similar military equipment, ammunition, supplies, and stores; and operational, logistic, and administrative procedures. National acceptance of a NATO Allied publication issued by the Military Agency for Standardization may be recorded as a standardization agreement.

naval advanced logistic support site. An overseas location used as the primary transshipment point in the theater of operations for logistic support. A naval advanced logistic support site possesses full capabilities for storage, consolidation, and transfer of supplies and for support of forward-deployed units (including replacement units) during major contingency and wartime periods. Naval advanced logistics support sites, with port and airfield facilities in close proximity, are located within the theater of operations but not near the main battle areas, and must possess the throughput capacity required to accommodate incoming and outgoing intertheater airlift and sealift. When fully activated, the naval advanced

logistics support site should consist of facilities and services provided by the host nation, augmented by support personnel located in the theater of operations, or both.

naval base. A naval base primarily for support of the forces afloat, contiguous to a port or anchorage, consisting of activities or facilities for which the Navy has operating responsibilities, together with interior lines of communication and the minimum surrounding area necessary for local security. (Normally, not greater than an area of 40 square miles.)

naval beach group. A permanently organized naval command within an amphibious force comprised of a commander and staff, a beachmaster unit, an amphibious construction battalion, and an assault craft unit, designed to provide an administrative group from which required naval tactical components may be made available to the attack force commander and to the amphibious landing force commander to support the landing of one division (reinforced).

naval campaign. An operation or a connected series of operations conducted essentially by naval forces including all surface, subsurface, air and amphibious troops, for the purpose of gaining, extending, or maintaining control of the sea.

naval component commander. The commander of a naval component that is assigned or attached to a joint force (unified command) constituted and so designated by the Joint Chiefs of Staff or by a commander of an existing unified command that was established by the Joint Chiefs of Staff. (NWP 1-02)

naval construction brigade (NCB). A unit established to provide command and operational control of naval construction force components.

naval construction force (NCF JP 1-02). The combined construction units of the Navy, including primarily the mobile construction battalions and the amphibious construction battalions. These units are part of the operating forces and represent the Navy's capability for advanced base construction.

naval construction force support unit (NCFSU). A deployable unit that provides logistic support to NCF units; obtains, manages, and issues construction materials; and provides technical expertise to maintain augment construction equipment, specifically: (Echelon 5) facilities support; (Echelon 6) cold weather augment; (Echelon 8) soil stabilization equipment; (Echelon 9) asphalt plant/paving equipment; (Echelon 10) concrete plant; (Echelon 11) bridge/waterfront construction equipment; (Echelon 13) earthmoving and compaction equipment; and (Echelon 14) quarry and rock crusher equipment.

naval construction regiment (NCR). A unit established to provide command, supervision, administration, and coordinated control of principal construction force components deployed in particular geographical areas or assigned to specific activities.

naval mobile construction battalion (NMCB). An established naval construction unit, trained and equipped for general construction of an advanced base, including buildings, airfields, roads, waterfront structures, utilities, fuel installations, and so forth. It is an integral unit in personnel, housing, subsistence, administration, and equipment and is infantry-equipped for defensive warfare. (NWP 1-02)

Navy support element (DOD). The maritime pre-positioning force element that is composed of naval beach group staff and subordinate unit personnel, a detachment of Navy cargo handling force personnel, and other Navy components, as required. It is tasked with conducting the off-load and ship-to-shore movement of maritime pre-positioned equipment supplies.

O

offshore petroleum discharge system (OPDS). A bulk fuel delivery system capable of transferring a single fuel product 4 miles from ship to shore (or two fuel products at a transfer distance of 2 miles) at a rate of 1.2 million gallons per 20-hour day. Navy installation responsibilities for the system end at the beach termination unit, at which point the receiving service (USMC, USA, or USAF) is responsible for inshore distribution and storage of the fuel product(s). See also **amphibious assault bulk fuel system** and **amphibious assault fuel system**.

operating forces. Those forces whose primary missions are to participate in combat and the integral supporting elements thereof.

operation order (DOD). A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. Also called **OPORD**.

operation plan (DOD). Any plan, except for the Single Integrated Operation Plan, for the conduct of military operations. Plans are prepared by combatant commanders in response to requirements established by the Chairman of the Joint Chiefs of Staff and by commanders of subordinate commands in response to requirements tasked by the establishing unified commander. Operation plans are prepared in either a complete format (OPLAN) or as a concept plan (CONPLAN). The CONPLAN can be published with or without a time-phased force and deployment data (TPFDD) file.

a. **OPLAN**. An operation plan for the conduct of joint operations that can be used as a basis for development of an operation order (OPORD). An OPLAN identifies the forces and supplies required to execute the CINC's Strategic Concept and a movement schedule of these resources to the theater of operations. The forces and supplies are identified in TPFDD files. OPLANs will include all phases of the tasked operation. The plan is prepared with the appropriate annexes, appendixes, and TPFDD files as described in the joint operation planning and execution system manuals containing planning policies, procedures, and formats. Also called **OPLAN.**

b. **CONPLAN**. An operation plan in an abbreviated format that would require considerable expansion or alteration to convert it into an OPLAN or OPORD. A CONPLAN contains the CINC's Strategic Concept and those annexes and appendixes deemed necessary by the combatant commander to complete planning. Generally, detailed support requirements are not calculated and TPFDD files are not prepared. Also called **CONPLAN.**

c. **CONPLAN with TPFDD**. A CONPLAN with TPFDD is the same as a CONPLAN except that it requires more detailed planning for

phased deployment of forces. See also **operation order time-phased force** and **deployment data**.

operational chain of command. The chain of command established for a particular operation or series of continuing operations. See also **chain of command**.

operational control (DOD). Transferable command authority that may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in combatant command (command authority). Operational control may be delegated and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations. Normally, this authority is exercised through subordinate joint force commanders and Service and/or functional component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called **OPCON**. See also **combatant command; combatant command (command authority); tactical control**.

operational control (NATO). The authority delegated to a commander to direct forces assigned so that the commander may accomplish specific missions or tasks that are usually limited by function, time, or location; to deploy units concerned; and to retain or assign tactical control of those units. it does not include authority to assign separate employment of components of the units concerned. Neither does it, of itself, include administrative or logistic control.

organic (DOD). Assigned to and forming an essential part of a military organization. Organic parts of a unit are those listed in its table of organization

for the Army, Air Force, and Marine Corps, and are assigned to the administrative organizations of the operating forces for the Navy.

organizational maintenance. That maintenance which is the responsibility of and performed by a using organization on its assigned equipment. Its phases normally consist of inspecting, servicing, lubricating, adjusting, and the replacing of parts, minor assemblies, and subassemblies.

P

port. A place at which ships may discharge or receive their cargoes. It includes any port accessible to ships on the seacoast, navigable rivers or inland waterways. The term "ports" should not be used in conjunction with air facilities that are designated as aerial ports, airports, etc.

Q

quadripartite standardization agreements. Standing agreements between the United States, United Kingdom, Canada, and Australia. New Zealand participates in an observer/signatory status as part of the Australian delegation.

R

rear area (DOD). For any particular command, the area extending forward from its rear boundary to the rear of the area assigned to the next lower level of command. This area is provided primarily for the performance of support functions. See also **Army service area**.

rear area security. The measures taken before, during, and/or after an enemy airborne attack, sabotage action, infiltration, guerrilla action, and/or initiation of psychological or propaganda warfare to minimize the effects thereof. (MRCP 5-2C)

redeployment. The transfer of a unit, an individual, or supplies deployed in one area to another area, or to another location within the area, or to the zone of interior for the purpose of further employment.

S

Selected Reserve (DOD). Those units and individuals within the Ready Reserve designated by their respective Services and approved by the Joint Chiefs of Staff as so essential to initial wartime missions that they have priority over all other Reserves. All Selected Reservists are in an active status. The Selected Reserve also includes persons performing initial active duty for training. See also **Ready Reserve**.

ship-to-shore movement. That portion of the assault phase of an amphibious operation that includes the deployment of the landing force from the assault shipping to designated landing areas.

subordinate command. A command consisting of the commander and all those individuals, units, detachments, organizations, or installations that have been placed under the command by the authority establishing the subordinate command.

support (DOD):

1. The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action.

2. A unit that helps another unit in battle. Aviation, artillery, or naval gunfire may be used as a support for infantry.

3. A part of any unit held back at the beginning of an attack as a reserve.

4. An element of a command that assists, protects, or supplies other forces in combat.

survivability. The degree to which a system is able to avoid or withstand a manmade hostile environment without suffering an abortive impairment of its ability to accomplish its designated mission. (MCRP 5-2C)

sustainability. The ability to maintain the necessary level and duration of operational activity to achieve military objectives. Sustainability is a function of providing for and maintaining those levels of ready forces, materiel, and consumables necessary to support military effort.

T

tactical airfield fuel dispensing system. An expeditionary system providing bulk fuel storage and dispensing facilities at airfields not having permanently installed fuel systems; also used to support fuel dispensing at established airfields. (FMFRP 0-14)

task organization:

1. In the Navy, an organization that assigns to responsible commanders the means with which to accomplish their assigned tasks in any planned action.

2. An organization table pertaining to a specific naval directive.

temporary standard of construction. Provides for sustained operations. The facilities provided are the minimum required to increase efficiency of operations for periods of time extending to 24 months. In some cases, it replaces the initial standard. Where mission requirements dictate, it can be used from the start of the operation. (JP 4-04) See also **initial standard of construction**.

throughput. The average quantity of cargo and passengers that can pass through a port on a daily basis, from arrival at the port to loading onto a ship or plane, or from the discharge from a ship or plane to the exit (clearance) from the port complex. Throughput is usually expressed in measurement tons, short tons, or passengers. Reception and storage limitations may affect final throughput. (JP 1-02)

time-phased force and deployment data (DOD). The joint operation planning and execution system data base portion of an operation plan; it contains time-phased force data, non-unit-related cargo and personnel data, and movement data for the operation plan, including:

1. In-place units.

2. Units to be deployed to support the operation plan with a priority indicating the desired sequence for their arrival at the port of deembarkation.

3. Routing of forces to be deployed.

4. Movement data associated with deploying forces.

5. Estimates of non-unit-related cargo and personnel movements to be conducted concurrently with the deployment of forces.

6. Estimate of transportation requirements that must be fulfilled by common-user lift resources as well as those requirements that can be fulfilled by assigned or attached transportation resources. Also called TPFDD. See also **time-phased force and deployment data maintenance; time-phased force and deployment data refinement; time-phased force and deployment list.**

type command. An administrative subdivision of a fleet or force into ships or units of the same type, as differentiated from a tactical subdivision. Any type command may have a flagship, tender, and aircraft assigned to it. (JP 1-02)

type unit characteristics file. A file that gives standard planning data and movement characteristics for personnel, cargo, and accompanying supplies associated with deployable type units of fixed composition. It contains the weight and volume of selected cargo categories, physical characteristics of the cargo, and the number of personnel requiring nonorganic transportation. (AFSC Pub 1)

U

underwater construction team. A unit of the naval construction force that provides underwater engineering, construction, and repair capability. (NWP 1-02)

unified command (DOD). A command with a broad continuing mission under a single commander and composed of significant assigned components of two or more military departments, and which is established and so designated by the President, through the Secretary of Defense, with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Also called unified combatant command. See also **combatant command; subordinate unified command.**

V

vertical construction. General engineering projects normally involving time, manpower, material, and equipment-intensive tasks. (FMFM 4-1) These tasks usually relate to survivability and sustainability efforts. Construction consisting of vertical structures (i.e., buildings) normally involving minimal earthwork. The majority of skills required involve carpentry, steelwork, electrical, and plumbing. (FMFM 13)

LIST OF ABBREVIATIONS AND ACRONYMS

A

AAA. Arrival and assembly area.
AABFS. Amphibious assault bulk fuel system.
AABWS. Amphibious assault bulk water system.
AACG. Arrival airfield control group.
AAFS. Amphibious assault fuel system.
AAOE. Arrival and assembly operations element.
AAOG. Arrival and assembly operations group.
ABCA. American, British, Canadian, Australian.
ABFC. Advanced base functional components.
ABIOL. Advanced base initial outfitting list.
A/C. Aircraft.
ACB. Amphibious construction battalion.
ACE. Aviation combat element (MAGTF).
ACF. Air contingency force.
ACU. Assault craft unit.
ADCON. Administrative control.
ADP. Automated data process(ing).
AE. Assault echelon.
AFOE. Assault follow-on echelon.
AFP. Armed forces publication.
AGS. Aviation ground support.
Air DET. Air detachment.
ALCE. Airlift control element.
ALSS. (Naval) advanced logistic support site.
AMC. Air Mobility Command.
AOA. Amphibious objective area.
AOR. Area of responsibility.
APOD. Aerial port of debarkation.

APOE. Aerial port of embarkation.
ASCC. Air Standardization Coordinating Committee.
ASP. Ammunition supply point.
ATF. Amphibious Task Force.
A/W. Air/ground.

B

BDR. Battle damage repair.
BLT. Battalion landing team.
BMU. Beachmaster unit.
BU. Builder.

C

C^3. Command, control, and communications.
C4I. Command, control, communications, computers, and intelligence.
cal. Caliber.
CATF. Commander, amphibious task force.
CBMU. Construction battalion maintenance unit.
CBR. Chemical, biological, and radiological.
CBU. Construction battalion unit.
CE. Construction engineer.
CEB. (Marine) combat engineer battalion.
CEC. Civil Engineer Corps (officer).
CESE. Civil engineer support equipment.
CESO. Civil Engineer Support Office.
CESP. Civil engineering support plan.
cfm. Cubic feet per minute.
CHB. Cargo handling battalion.
CJCS. Chairman of the Joint Chiefs of Staff.
CJTF. Commander, Joint Task Force.
CINC. Commander in Chief.
CINCLANTFLT. Commander in Chief, U.S. Atlantic Fleet.
CINCPACFLT. Commander in Chief, U.S. Pacific Fleet.

CIV. Civilian.
Class I. Subsistence.
Class II. Individual equipment.
Class III. Petroleum, oils, lubricants.
Class IV (A or B). Construction materials (construction or barrier).
Class V (A or W). Ordnance (air delivery or ground).
Class VI. Personal demand items.
Class VII. Major end items.
Class VIII. Medical supplies.
Class IX. Repair parts.
Class X. Humanitarian assistance support.
CLF. Commander, landing force.
CM. Construction mechanic.
COC. Combat operations center.
COMMARFORLANT. Commander, Marine Forces Atlantic.
COMMARFORPAC. Commander, Marine Forces Pacific.
COMSEC. Communications security.
COMSECONDNCB. Commander, SECOND Naval Construction Brigade.
COMTHIRDNCB. Commander, THIRD Naval Construction Brigade.
CONPLAN. Concept/contingency plan.
CONUS. Continental United States.
CRTS. Casualty receiving and treatment ship.
CS. Combat support.
CSS. Combat service support.
CSSE. Combat service support element (MAGTF).
cy. Cubic yard.

D

DMZ. Demilitarized zone.
DOD. Department of Defense.

E

EA. Engineering aide.
EAF. Expeditionary airfield.
EFD. Engineering field division.
ELCAS. Elevated causeway system.
ENL. Enlisted.
EO. Equipment operator.
EOD. Explosive ordnance disposal.
EPW. Enemy prisoner of war.
ESB. (Marine) Engineer support battalion.

F

FARP. Forward arming and refueling point.
FARRP. Forward arming, refueling, and resupply point.
FEBA. Forward edge of the battle area.
FIE. Fly-in echelon.
FLOT. Forward line of troops.
FLTCINC. Fleet Commander in Chief.
FM. Field Manual.
FMF. Fleet Marine Force.
FMFM. Fleet Marine Force Manual.
FMFRP. Fleet Marine Force Reference Publication.
FSSG. Force service support group (MAGTF).

G

ga. Gauge.
gal. Gallon.
GCE. Ground combat element (MAGTF).
gpm. Gallons per minute.
GPS. Global positioning system.
(G)S-2. (Marine) Intelligence staff officer.
(G)S-3. (Marine) Operations staff officer.

(G)S-4. (Marine) Logistics staff officer.

H

HAZMAT. Hazardous material.
HCA. Humanitarian and civic assistance.
HMM. Marine medium helicopter squadron.
HMMWV. High-mobility multipurpose wheeled vehicle.
HN(S). Host nation (support).
hp. Horsepower.
H&HS. Headquarters and headquarters squadron.
H&S. Headquarters and service (company).

I

ISB. Intermediate staging base.
ISO. International Organization for Standardization.
IWG. Interoperatbility working group.

J

JEPES. Joint Engineer Planning and Execution System.
JLOTS. Joint logistics over-the-shore.
JOPES. Joint Operation Planning and Execution System.
JP. Joint Publication.
JSCP. Joint strategic capabilities plan.
JTF. Joint Task Force.
JTFCEM. Joint Task Force contingency engineering manager.

K

Kw. Kilowatt.

L

LAN. Local area network.
lb. Pound.

LCAC. Landing craft air cushion.
LF. Landing force.
LFSP. Landing force support party.
LNO. Liaison officer.
LOC. Lines of communications.
LRC. Lesser regional contingency.
LSMP. Logistic support mobilization plan.
LWCMS. Lightweight company mortar system.

M

MACG. Marine air control group.
MAG. Marine aircraft group.
MAGTF. Marine air-ground task force.
MAW. Marine aircraft wing.
MCCDC. Marine Corps Combat Development Command.
MCDP. Marine Corps Doctrine Publication.
MCRP. Marine Corps Reference Publication.
MCWP. Marine Corps Warfighting Publication.
MEF(FWD). Marine expeditionary force (forward).
MEU(SOC). Marine expeditionary unit (special operations capable).
MGB. Medium girder bridge.
MHE. Materials handling equipment.
MLO. Material liaison office.
mm. Millimeter.
MOG. Maximum (aircraft) on ground.
MOOTW. Military operations other than war.
MOS. Military occupational specialty.
MPE/S. Maritime pre-positioned equipment and supplies.
MPS(s). Maritime pre-positioning ship(s).
MPF. Maritime pre-positioning force.
MPSRON. Maritime pre-positioning ships squadron.
MRC. Major regional contingency.
MRP. Maintenance of real property.

MSC. Military Sealift Command.
MSE. Major subordinate element.
MSR. Main supply route.
MSSG. Marine expeditionary unit service support group.
MWSG. Marine wing support group.
MWSS. Marine wing support squadron.

N

NALM. Norway airlanded MAGTF.
NAVFACENGCOM. Naval Facilities Engineering Command.
NATO. North Atlantic Treaty Organization.
NBG. Naval beach group.
NCA. National Command Authorities.
NCB. Naval construction brigade.
NCBC. Naval construction battalion center.
NCF. Naval construction force.
NCFSU. Naval construction force support unit.
NCR. Naval construction regiment.
NDC. Naval Doctrine Command.
NDP. Naval Doctrine Publication.
NEF. Naval expeditionary force.
NFESC. Naval Facilities Engineering Service Center.
NMCB. Naval mobile construction battalion.
NSE. Naval support element.
NSN. National Stock Number.
NWP. Naval Warfare Publication.

O

OCONUS. Outside the continental United States.
OF-13. (Navy) Occupational Field-13 (Seabee) ratings
OFF. Officer.
OH. Operational Handbook.
OPCON. Operational control.

OPDS. Offshore petroleum discharge system.
OPLAN. Operation plan.
OPORD. Operation order.
OPP. Offload preparation party.
OPSEC. Operations security.

P

P&E. Planning and estimating.
PHIBCB. Amphibious construction battalion.
POL. Petroleum, oils, and lubricants.
psi. Pounds per square inch.
PWRMS. Pre-positioned war reserve material stock.

Q

QSTAG. Quadripartite Standing Agreement.

R

RAS. Rear area security.
RCEM. Regional contingency engineering manager.
RDMF. Rapidly deployable medical facility.
RLT. Regimental landing team.
RO/RO. Roll-on/roll-off.
ROCICC. Resident officer in charge of construction.
ROWPU. Reverse osmosis water purification unit.
RRDF. Roll-on/roll-off (RO/RO) discharge facility.
RRR. Rapid runway repair.
RSO&I. Reception, staging, onward movement, and integration.
RWCM. Regional wartime construction manager.

S

Seabee. Navy construction force personnel.
SELRES. Selected reserve.

sf. Square feet.
SINCGARS. Single-Channel Ground and Airborne Radio System.
SORTS. Status of Resources and Training System.
SPMAGTF. Special purpose MAGTF.
SPOD. Seaport of debarkation.
SPOE. Seaport of embarkation.
ST. Short ton.
STANAG. Standardization Agreement (NATO).
SW. Steelworker.

T

T/A. Table of allowance.
T/E. Table of equipment.
T/O. Table of organization.
TAFDS. Tactical airfield fuel dispensing system.
TAMCN. Table of authorized material control number.
TCEM. Theater contingency engineering manager.
TM. Technical manual.
TOA. Table of allowance.
TOR. Terms of reference.
TPFDD. Time-phased force and deployment data.
TTP. Tactics, techniques, and procedures.
TUCHA. Type unit characteristics file.

U

UCT. Underwater construction team.
UJTL. Uniform joint task list.
USACOM. United States Atlantic Command.
USCENTCOM. United States Central Command.
USEUCOM. United States European Command.
USMC. United States Marine Corps.
USN. United States Navy.
USPACOM. United States Pacific Command.

USSOUTHCOM. United States Southern Command.
UT. Utilities man.

V

V/STOL. Vertical/short takeoff and landing aircraft.

W

WAN. Wide area network.
WDR. War damage repair.

PREFACE

NWP 4-04.1/MCWP 4-11.5, SEABEE OPERATIONS IN THE MAGTF, is to be used to enhance the understanding of both MAGTF and Seabee commanders when Seabee resources are employed in support of MAGTF operations. Seabee missions, organizations, and capabilities are described so that Seabee units can be effectively integrated, coordinated, and employed seamlessly into the MAGTF organization, thus providing a considerable combat service support force multiplier for the MAGTF commander.

Throughout this publication, references to other publications imply the effective edition.

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WARNINGS, CAUTIONS, AND NOTES

The following definitions apply to "WARNINGS," "CAUTIONS," and "Notes" found throughout the manual.

WARNING

An operating procedure, practice, or condition that may result in injury or death if not carefully observed or followed.

CAUTION

An operating procedure, practice, or condition that may result in damage to equipment if not carefully observed or followed.

Note

An operating procedure, practice, or condition that is essential to emphasize.

WORDING

The concept of word usage and intended meaning which has been adhered to in preparing this publication is as follows:

"Shall" has been used only when application of a procedure is mandatory.

"Should" has been used only when application of a procedure is recommended.

"May" and "need not" have been used only when application of a procedure is optional.

"Will" has been used only to indicate futurity, never to indicate any degree of requirement for application of a procedure.

CHAPTER 1

Nature of Engineer Operations in a Marine Air-Ground Task Force

"In my humble opinion the formation of the Seabees was one of the finest developments of this last war. The outstanding work of the Seabees and their magnificent courage in battle played a most important part in the successful prosecution of the war. It was not an unusual sight to witness the Seabees performing their duties under fire. It was an inspiring sight, for instance, to see them working on one end of the airfield while the Marines were fighting on the other end. The spirit of brotherhood existing between the Marines and the Seabees was forged in the holocaust of battle. Perhaps I can sum up this brief message in these few words, 'THE SEABEES NEVER LET US DOWN'."

Lt. Gen. Holland M. Smith, USMC

1.1 GENERAL

The objective of this publication is to enhance the understanding of both MAGTF and Seabee commanders when Seabee resources are employed in support of MAGTF operations. Seabee missions, organizations, and capabilities are described so that Seabee units can be effectively integrated, coordinated, and employed seamlessly into the MAGTF organization, thus providing a considerable combat service support force multiplier for the MAGTF commander.

1.1.1 Doctrinal Basis for Support. The basis for Seabee support to the Fleet Marine Forces is clearly underscored in JP 4-04, Joint Doctrine for Civil Engineering Support, which states that "In addition to, or coincident with, component missions specified by the Commander in Chief, the Navy provides general engineering support to MAGTFs. This support consists of NCF units under the operational control of a MAGTF. These NCF units are necessary to reinforce and augment the MAGTF's limited engineering capability. They are integral to the organization of the MAGTF and ensure immediate and effective delivery of CSS tasks."

This publication is the result of an evolving joint effort between doctrinal sponsors from the Marine Corps and Navy to clarify the Seabee role when operating in a MAGTF. The agreement governing the employment of Seabee units is known as the USMC/USN Terms of Reference. Although an informal and deeply rooted relationship between Marines and Seabees had existed since World War II, this relationship had no formal basis until 1 May 1987 when the Terms of Reference (TOR) were adopted by the Marine Corps and Navy. This action was also the basis for FMFM 13-4/NWP 22-9, Naval Construction Force Support of MAGTF Operations, the predecessor to this current publication.

For background on the scope and capabilities of naval civil engineering support provided to combined, unified, joint task force, Service component, and MAGTF commanders, refer to JP 4-04, Joint Doctrine for Civil Engineering Support; NWP 4-04, Naval Civil Engineering Operations; NWP 4-04.2, Navy Civil Engineer Operations for Component Commanders. For the organization and capabilities of MAGTFs, refer to FMFRP 1-11, Fleet Marine Force Organization; FMFRP 2-12, Marine Air-Ground Task Force: A Global Capability; and OH 2, Marine Air-Ground Task Force Operations. For background on MAGTF engineer capabilities and missions, refer to FMFM 13, MAGTF Engineer Operations. A list of reference publications is provided in Appendix A.

1.1.2 USMC/USN Terms of Reference. The overall objective of the TOR is to achieve a coordinated program ensuring the full and effective utilization of Seabee capabilities when employed in support of MAGTF operations. An evolving document, the TOR provides a means to address and resolve matters of mutual concern related to Seabee operations in the MAGTF.

1. Generally, the TOR addresses such fundamental issues as *Tradition* (the historical basis for the relationship between Marines and Seabees); *Capabilities* (describing the Seabees' organizational and functional capabilities, including those Seabee units that would not normally be under the Operational Control [OPCON] of a MAGTF); and *Doctrine* (establishing a doctrine of tactics, techniques, and procedures that strives to improve the interoperability between Marines and Seabees, thus guiding the employment of Seabees in a MAGTF).

2. Specifically, the TOR focuses on such issues as the OPCON of Seabee units by the MAGTF; Seabee sustainability; command relationships; Seabee employment; construction tasks; equipment compatibility; and training and exercise coordination.

1.1.3 Functional Areas of Engineering Support. The four acknowledged functional areas of engineer effort required by a MAGTF commander for mission success, *General Engineering, Mobility, Countermobility,* and *Survivability* are discussed below. The effort provided by Marine engineers across these functional areas is significantly enhanced and complemented when Seabees are employed.

1.1.3.1 General Engineering. General engineering is the primary CSS function performed by engineers to include both horizontal and vertical construction. It is characterized by well-developed design and deliberate construction, and includes detailed planning and preparation. In addition, engineers also provide utilities and bulk fuel operations support. The majority of general engineering tasks are performed in the rear area, where reliance on Seabee assets and capabilities is critical. General engineering contributes to force sustainment by enhancing the throughput system within the amphibious objective area.

1.1.3.2 Mobility. Mobility is the capability of military forces which permits them to move from one geographic location to another while retaining the ability to fulfill their primary mission. Mobility is enhanced through combinations of counterobstacle effort (including countermine), gap crossing, forward aviation engineering, constructing and maintaining combat roads and trails, and engineer reconnaissance.

1.1.3.3 Countermobility. Countermobility is the reinforcement of terrain through the construction of obstacles and emplacement of minefields to disrupt, fix, turn, or block the enemy. The primary purpose of countermobility operations is to slow or divert the enemy, increase time for target acquisition, and enhance weapon effectiveness without impairing the movement of friendly forces.

1.1.3.4 Survivability. Survivability is the degree to which a system can avoid or withstand a man-made hostile environment without losing its ability to accomplish its designated mission.

1.1.4 Functional Areas of Logistics. The most successful plans always take into consideration the six acknowledged functional areas of operational logistics and CSS: Supply, Maintenance, Transportation, General Engineering, Health Services, and *Other Services* as described below.

1.1.4.1 Supply. Supply is the receipt, storage, issue, and resupply of materiel for conducting operations. After depletion of Seabee-deployed stocks, the supported MAGTF shall provide resupply for Class I, III, IV, V, VI, VII, VIII, and IX (i.e., field radio batteries) supplies. The MAGTF shall also source the air or sealift required to move Class VII and IX supplies obtained through the NCBCs and CESO from the CONUS to the area of responsibility. The MAGTF commander shall source Class IV materials from either the supported CJTF or the unified CINC.

1.1.4.2 Maintenance. Maintenance consists of those actions necessary to preserve, repair, and ensure continued operation and effectiveness. Sufficient compatibility currently exists with a MAGTF to effect intermediate level maintenance for Seabee weapons, communications, and electronic assets.

1.1.4.3 Transportation. Transportation is the movement of units, personnel, equipment, and supplies from the point of origin to the final destination. Depending on the distances, Seabee units normally have sufficient organic transportation assets to move equipment and supplies intratheater. However, Seabee units may request augmenting transportation from the supported MAGTF for movement of Class IV materials to their project sites.

1.1.4.4 General Engineering. General engineering is deliberate in nature and oriented towards combat service support. It provides the construction, damage repair, and maintenance of facilities. Vertical and horizontal construction, damage repair, and maintenance of facilities are examples of the support generally provided by the Seabees. Combat engineering is not an established capability of the Seabees.

1.1.4.5 Health Services. The principal goal of health service is maintaining, preserving, and restoring the combat power of the force in both peace and war.

1. Medical treatment facilities organic to Seabee units are limited to a single aid station in each NMCB. These aid stations are small and have very limited patient treatment capabilities. While NMCB aid stations each have an assigned medical officer and up to seven hospital corpsmen, smaller detachments may depend strictly on corpsmen for organic medical care. Dental capabilities are also extremely limited. Each NMCB also has one dental officer and two dental technicians assigned.

2. Health service support to Seabee units under OPCON to a MAGTF will be provided in the same manner that medical care is provided to other MAGTF elements. Seabee casualties will normally be evacuated from organic aid stations to a MAGTF health service support facilities organization or, as the situation demands, to multipurpose amphibious assault ships designated as casualty receiving and treatment ships. The established chain for medical evacuation may also include Navy fleet hospitals, hospital ships, or medical treatment facilities directly in support of a MAGTF. Seabee casualties will enter the medical regulating system and be evacuated in the same manner as other MAGTF casualties.

1.1.4.6 Other Services. These services provide administrative and personnel support to keep combatant forces fully operational. While NMCBs are relatively self-sufficient upon deployment, the specific situation will dictate whether or not augmentation CSS from the supported MAGTF will be required in the following areas in accordance with FMFM 4-1, Combat Service Support

Operations, Disbursing (USN interface); Exchange Services; Legal Services; Mortuary Services; Postal Services; Security Support; and Civil Affairs Support.

1.2 INTRODUCTION TO THE SEABEES

1.2.1 General. The Seabees is a common term applied to that group of deployable naval organizational components that provide distinct naval civil engineering and construction capabilities in support of the Navy, Marine Corps, and, when directed, other agencies of the U.S. Government.

1.2.2 History of the Seabees

1.2.2.1 The Seabee/Marine Partnership. Seabees of the naval construction force have been working and fighting alongside Marines ever since the early days of World War II. The Seabee/Marine partnership that has been fostered over the years is based primarily on shared geographic locations and complementary missions. If Marine engineers are known as "Fighters Who Build," then Seabees can best be described as "Builders Who Fight." In nearly every major island assault in the Pacific theater, Marines were closely followed by Seabees to support and sustain the invasion. It is interesting to note that although their combat mission was strictly defensive, World War II Seabee battalions were more heavily armed than their Marine engineer counterparts. As soon as the amphibious operation's general unloading began, Seabee battalions came ashore to augment and expand upon the construction or repair work begun by Marine engineers. Until creation of the Marine engineer battalions (also known as aviation engineer battalions) later in World War II, it was the Seabees who provided nearly all construction support to Marine aviation.

Today, the Seabee/Marine partnership is underscored by the fact that Seabees train at Marine bases; have adopted Marine training tactics, techniques, and procedures; are fielding weapons and communications systems similar to those used by Marines; participate in exercises with Fleet Marine Forces; and provide mission-enhancing construction support aboard Marine installations.

1.2.2.2 World War II. Created by Admiral Ben Moreell in 1942, the Navy's Seabees were founded on the premise that experienced, armed construction

workers were critically needed in the combat areas of World War II. The construction accomplishments of the Seabees throughout the Pacific theater, in particular, are quite legendary. Using 20-ton bulldozers as wands, Seabees magically reshaped the coral-pocked face of many a Pacific island. Landing shortly after the assault waves, they blasted reefs to make channels for the fleet; leveled hills and laid down landing strips; lashed together pontoons to create artificial docks; and brought to many a remote Pacific island its first roads, storage facilities, and hospitals. On more than one occasion, the Seabees used their bulldozers to entomb nests of enemy snipers and machinegunners menacing Marine or Army forces.

During the war's Pacific island-hopping campaigns, over 10,000 Civil Engineer Corps officers and 240,000 enlisted men served in the Seabees, mostly in NCBs that were components of the five Marine engineer regiments employed from 1942 to 1944. From the construction and defense of Guadalcanal's Henderson Field to the Normandy invasion, Seabees participated in most of the major Navy, Marine, and Army assaults, fighting in more than 400 locations in all theaters by the end of the war.

As a prelude to Guadalcanal, Seabees on Espiritu Santo took only 20 days to carve a 6,000-foot airstrip from virgin jungle. Joining the 1st MarDiv in their assault on Cape Gloucester, Seabees bulldozed paths for attacking American tanks. In the Admiralties, Seabees transformed Manus and Los Negros into the largest advanced bases in the Southwest Pacific. At Rabaul, Seabees built a strategic, two-field air base, immense storage and fuel dumps, a floating dry-dock, miles of roads, and a fast torpedo boat base. On Leyte Island, it was the Seabees who installed and operated pontoon barges and causeways that brought General MacArthur and his forces ashore. At Tarawa, Seabees landed with the Marines and, in a mere 15 hours, returned a shell-pocked airfield to operational status. On Iwo Jima, Seabees landing with the Fifth Amphibious Corps built fighter airstrips as well as an emergency landing field critically needed by returning damaged bombers. Seabee- installed pontoons on Okinawa enabled the amphibious assault to move forward. Once ashore, 55,000 Seabees built port facilities, vast road networks, airfields, POL farms, storage dumps, hospitals, ship repair facilities, a seaplane base, and Quonset villages.

In the Pacific theater alone, the Seabees built 111 major airstrips, 700 square blocks of warehouses, hospitals for 70,000 patients, storage tanks for 100 million gallons of gasoline, and housing for 1.5 million servicemen. Although the Seabees were known as a Naval Reserve organization during the war, it became clear afterwards that the Seabees, having more than proved their worth, would be a valuable addition to the regular Navy.

1.2.2.3 Korea. By June of 1950, the Seabees all but disestablished as only 3,300 men remained on active duty. The Korean War, however, demanded the kind of civil engineering support that only Seabees could provide, and so they were mobilized and expanded to a force of 14,000 men. Seabees supported Marines in the famous Inchon and Wonsan amphibious assaults by constructing vital pontoon causeways within hours of the initial landings. As with their World War II predecessors, airfield construction was a specialty of the Seabees as they were soon found constructing, repairing, and maintaining the "K-fields" of the Marine Air Groups, such as K-3 at Pohang, K-18 at Kimpo (Seoul), and K-2 at Taegu. Seabee relations with Marines were further cemented by a group of nine Seabees who kept open a 21-mile stretch of road between an isolated Marine intercept squadron and its sole source of supplies. Working around the clock in below-zero temperatures, they kept their promise to rebuild any damaged bridge within 6 hours.

Also during the Korean War, Seabees constructed the Cubi Point Naval Air Station in the Philippines by cutting a mountain in half to make way for a nearly 2-mile-long runway, blasting coral to fill a section of Subic Bay, filling swampland, moving 150-foot trees, and relocating a native fishing village. Twenty million man-hours and 5 years went into what was then the largest and most impressive Seabee project.

1.2.2.4 Vietnam. During the Vietnam War, Seabees were employed extensively from the DMZ in the north to the Mekong Delta Region in the south, constructing Marine logistic complexes at Danang, Chu Lai, and Quang Tri to Special Forces camps and Army fire bases in the remote regions, as well as roads, bridges, airfields, warehouses, and hospitals elsewhere. At the initial Marine landings in Vietnam in 1965, there were nearly 10,000 active duty Seabees. At the War's peak, the Seabee strength grew to 26,000 men organized in twenty-one naval construction battalions, two naval construction regiments,

two amphibious construction battalions, two maintenance units, and many civic action teams.

At Chu Lai, the first Seabee battalion arrived in May 1965 to construct a Marine expeditionary airfield within 23 days. Shortly thereafter, it was expanded by adding a parallel taxiway, four cross taxiways, parking aprons, two cantonments, warehouses, hangars, and many other critical facilities. At Phu Bai, the Seabees created an advanced base from a low peninsula jutting 1,500 feet into the South China Sea by raising, widening, and surfacing it into a causeway for cargo-laden landing ships. During 1968's Tet Offensive, Seabees built and fought in direct support of Marine and Army forces by reconstructing two vitally needed concrete bridges. Seabee civic action projects paved roads that provided access between farms and markets; supplied fresh water through hundreds of Seabee-drilled wells; provided medical treatment to thousands of villagers; and constructed numerous schools, hospitals, utility systems, and other community facilities.

In June of 1965, two Seabees were killed when Viet Cong troops attacked and overran a Special Forces camp at Dong Xoai. One of the dead, Construction Mechanic Third Class Marvin G. Shields, was posthumously awarded the Congressional Medal of Honor for carrying a critically wounded man to safety and destroying an enemy machine gun emplacement at the cost of his life. CM3 Shields was the first and only Seabee ever awarded the nation's highest distinction for heroism.

1.2.2.5 Post-Vietnam. The Seabees distinguished themselves with the largest peacetime construction effort on the British Indian Ocean Territory of Diego Garcia. From 1971 to 1983, they built a remote forward logistic base and naval communications station thousands of miles from CONUS in support of U.S. military operations throughout the Southwest Asian theater. The mission of the initial contingent, consisting of NMCB and PHIBCB personnel, was to build a temporary Seabee camp; water and electrical distribution systems; messing, laundry, refrigeration, and storage facilities; and a 3,500-foot airstrip. By 1983, the Seabees had completed 220 projects with a construction value well in excess of 220 million dollars. The early, austere airstrip has been expanded three times to a final 12,000-foot length with expanded taxiways, parking aprons, and several new hangars. Immense POL storage facilities for both the Navy and Air Force were also constructed,

as were a fuel pier, general storage buildings, and expanded personnel support facilities. The need for pre-positioned materials to support a rapid deployment force and a more active U.S. presence in Southwest Asia spurred the growth of the forward logistic support site on the island. As a result, Diego Garcia today is home to one of the MPF's three MPSRONs.

1.2.2.6 Persian Gulf War. During Operations *Desert Shield* and *Desert Storm*, nearly 5,000 Seabees from 6 NMCBs were employed in-theater. The Seabees constructed troop beddown facilities for 42,000 personnel, vast storage areas, aircraft parking aprons comprising millions of square feet, ASPs covering hundreds of acres, EPW camps housing up to 40,000 men, many ISBs, and hundreds of miles of roads. Base camps were constructed for the 3rd MAW; MAGs 11, 13, 16, and 26; and the 1st and 2nd MarDivs. In Bahrain, troop beddown and storage facilities, a munitions transfer road, and a 60,000-square foot aircraft parking apron were built for the Marines, Army, and Air Force. Major Seabee taskings included a headquarters complex for I MEF and a 15,000-man troop beddown camp for II MEF. The latter project (the largest wartime, multibattalion Seabee project since Vietnam) consisted of six 2,500-man modules with each module providing berthing, showers, latrines, galley, office space, roads, and parking areas. PHIBCB personnel offloaded Marine Corps equipment and supplies from MPF shipping. CBU personnel erected and maintained a 500-bed Navy Fleet Hospital at Al Jubail. It was the Seabees who built and maintained the 200-mile, four-lane main supply route near the Kuwaiti border critical to launching and sustaining the famous "Hail Mary" ground attack plan into Iraq. Seabees supported I MEF in preparation for the assault into Kuwait by providing water and constructing roads and facilities for the Marine division assembly areas. Just before the assault, Seabees dug in the 1st MarDiv's command element as the division moved into attack positions. Once the assault began, Seabees moved into Kuwait and prepared positions for I MEF's CE. Before they were finished Seabee projects included tent camps for 42,000 personnel, three galleys, 10 aircraft parking aprons, 5 ASPs, two EAFs, two hangars, and several EPW camps.

Desert Shield/Desert Storm also saw the largest mobilization of selected Reserve Seabees since Vietnam as three Reserve NMCBs and a Reserve naval construction regiment CE served together with their active counterparts in theater and at other locations worldwide, thus exemplifying the "One Navy, Total Force" concept.

1.2.2.7 Military Operations Other Than War. Seabees are also known for their many humanitarian, civic action, and disaster relief efforts in support of a wide range of MOOTW missions. In recent years, Seabees have aided the victims of Hurricanes *Hugo* in 1989 and *Andrew* in 1992; the 1989 San Francisco earthquake, and Tunisian floods during Operation *Atlas Rail* in 1990. In 1991 they drilled wells, erected tents, and built roads to help Kurdish refugees in Iraq during Operation *Provide Comfort*, and assisted the Philippines in their recovery from the Mt. Pinatubo eruption by removing tons of volcanic ash and demolishing hundreds of buildings during Operation *Fiery Vigil*. Seabees have also served in a multitude of joint operations such as *Restore Hope* in Somalia from 1992 to 1994, *Restore Democracy* in Haiti from 1994; *Sea Signal* in Cuba from 1995 to 1996; and *Joint Endeavor* in Bosnia since 1995.

During Operation *Restore Hope* in Somalia, two NMCBs provided general engineering support initially to the Marines and ultimately to all elements of the unified task force. Support ranged from construction and improvement of base camps, MSRs, and airfields for U.S. and combined forces; water well drilling; and civic action projects. Using 240,000 square feet of AM-2 metal matting, they assisted MWSS 372 by establishing an expeditionary airfield for CH-53 and C-130 aircraft at Baledogle. Seabees also prepared a site for a 300-bed Army evacuation hospital; installed 90,000 square feet of AM-2 matting at Mogadishu's airport; and completed airfield repairs to allow for the rapid redeployment of combined forces to Kismayo. To enhance Mogadishu's throughput capabilities, PHIBCB personnel offloaded 5 MPF ships, restored port facilities, and provided ship-to-shore bulk fuel and water support.

In *Restore Democracy* in Haiti, two NMCB Air Detachments (Air DETs) supported the JTF with a variety of civic action projects. During *Sea Signal*, Seabees were the prime military construction force in support of a JTF whose mission was to construct tent camps and associated logistic support facilities to house 40,000 Haitian and Cuban migrants at Guantanamo Naval Base and Grand Turk Island. Seabee projects included initial surge berthing of over 1,300 strongback tents, 43 tension fabric structures, 11 K-span structures, 9 miles of chain link fence, 57 miles of underground primary electrical service, and 17 miles of underground utilities.

In Operation *Joint Endeavor*, a *reinforced* NMCB Air DET of 200 Seabees redeployed to Bosnia from their forward-deployment site in Rota, Spain to construct base camps and troop beddown facilities for nearly 6,200 soldiers. Construction included wooden strongback tents and tent decks, extensive electrical and lighting systems, galleys, latrines, timber towers, and miscellaneous countermobility projects. Support was also provided to the NATO Implementation Force headquarters, and many tactical Seabee convoys were conducted in Bosnia and Croatia. The first selective mobilization of SELRES Seabees since *Desert Shield* occurred when many personnel were activated to support both the NATO commander and the retrograde of NMCB civil engineer support equipment from Bosnia.

1.2.3 General Construction Missions of the Seabees. The construction support provided by Seabee organizations ranging from *Naval Mobile Construction Battalions*, *Naval Construction Force Support* Units, *Underwater Construction Teams*, *Amphibious Construction Battalions*, *Construction Battalion Units*, and *Construction Battalion Maintenance Units* to a MAGTF commander are extensive. These construction missions serve the MAGTF best when they are undertaken to accomplish specific and distinct construction and repair projects. Seabee organizations may be tasked by the MAGTF with the following.

1.2.3.1 Deliberate Construction. Provide responsive and deliberate naval civil engineering support to the Fleet Marine Force consisting of expeditionary, operational, logistic, underwater, ship-to-shore, shore, and deep ocean facilities engineering, construction, and maintenance.

1. Construction of beddown facilities for both personnel and weapons systems.

2. Construction of ASPs; ISBs; sites for expeditionary bulk fuel storage facilities; water production, storage, and distribution facilities; expeditionary shelters for operations, communications, maintenance, warehousing, and personnel support; defensive structures for throughput (air, rail, road, and water terminals) systems; and other support facilities as required.

3. Construction of EAFs, aviation support facilities, FARPs, and other forward operating bases in support of Marine aviation through the extensive use of EAF matting, preengineered and expeditionary shelters, and other construction support of an initial or temporary nature.

4. Hardening of POL and ASP facilities to improve survivability against both natural and enemy threats, increase capacity, and ensure availability for continued ground and air operations.

5. Site preparation for Navy fleet hospitals.

1.2.3.2 Assault Construction Support. Provide timely military and amphibious assault construction support to both MAGTF and NBG operations, including subsequent combat support and/or CSS ashore, RAS support, and defense against overt or clandestine enemy attack directed towards personnel, camps, and facilities under construction.

1. Construction, repair, improvement, and maintenance of lines of communication, including bridges and roadway systems, to ensure faster reinforcement and resupply of forward combat elements.

2. Runway and airfield facilities expansion following construction of a core EAF by MWSS engineers.

3. Port improvement or construction of temporary facilities in support of MPF operations.

4. Installation of standard (e.g., Bailey and Medium Girder Bridge (MGB)) bridges and/or nonstandard (e.g., timber, concrete, and/or steel) bridges to allow for reuse of tactical, fixed-panel bridging assets in the forward areas.

5. Construction of countermobility obstacles and field fortifications.

1.2.3.3 Disaster Control and Recovery. Disaster control and recovery enhance the MAGTF's capability to provide disaster relief, including the

furnishing of assistance to civilian agencies under conditions of emergency, disaster, or catastrophe caused by enemy action or natural causes.

1. Repair of war-damaged facilities in built-up areas and to rapidly reestablish operational capability.

2. Faster rapid runway repair operations on AM-2 matting-surfaced, asphalt, or concrete runway, taxiway, and aircraft parking facilities.

1.2.3.4 Civic Action. Civic action enhances the MAGTF's capability to provide forces for civic action employment that complement the military, social, and psychological programs of JTF and other U.S. Government agencies.

1.2.3.5 Specialized Construction. Specialized construction provides specialized engineering support to the MAGTF, including well-drilling and reverse osmosis water purification unit operations, road construction, asphalt paving, quarrying, and rock crushing.

1.3 ORGANIZATION OF THE SEABEES

1.3.1 General. Assets of Commander in Chief, U.S. Atlantic Fleet (CINCLANTFLT) and Commander in Chief, U.S. Pacific Fleet (CINCPACFLT), the Seabees are composed of both active and Reserve operational units. Most units are under the OPCON of either Commander, SECOND Naval Construction Brigade (COMSECONDNCB) or Commander, THIRD Naval Construction Brigade (COMTHIRDNCB), which are type commanders reporting directly to the two fleet CINCs. Although the backbone of the Seabees is the highly capable NMCB, there are many other types of Seabee organizations fulfilling varying roles and missions. Active NMCBs, deploying to four permanent, overseas deployment sites constitutes forward presence for the Seabees. Forward- deployed NMCBs are considered the "tip of the spear" for ready and responsive unified CINC, JTF, or MAGTF engineer support. An additional four NMCBs are in homeport status at any one time preparing for upcoming deployments. The bulk of the NCF is comprised of Reserve units that provide additional and specialized contingency engineering and construction capabilities.

Type of Seabee Organization	Total Number	Total Active	Total Reserve
Naval Construction Brigade	2	2	0
Naval Construction Regiment (Homeport)	2	2	0
Naval Construction Regiment (Line)	6	2	4
Naval Mobile Construction Battalion	20	8	12
Naval Construction Force Support Unit	2	0	2
Underwater Construction Team	2	2	0
Amphibious Construction Battalion	2	2	0
Construction Battalion Maintenance Unit	2	0	2
Construction Battalion Unit	19	19	0

Figure 1-1. Table of Organization for the Naval Construction Force

1.3.2 Organizational Structure. Figure 1-1 depicts the types and numbers of organizations manned by personnel from the active and Reserve components of the naval construction force.

Of the NCRs noted, two are nondeployable homeport training NCRs while six are deployable line (or operational) NCRs. The active NMCBs will be augmented to their wartime strength upon mobilization by detachments of SELRES. With the exception of the PHIBCBs and CBUs, all of these NCF organizations come under the direct OPCON of the two NCBs. Refer to Chapter Two for background on the missions, organization, concepts of employment, tasks, and capabilities of these Seabee organizations.

1.3.2.1 Reserve Naval Construction Force. More than 65 percent of the NCF resides in the Reserve component, consisting of SELRES personnel assigned to organizations that can be categorized as commissioned or augmenting units. Of the organizations depicted in Figure 1-1, NCFSUs and CBMUs are totally Reserve organizations. Once SELRES Seabees have been recalled to active duty and their units have been activated in accordance

with the degree of mobilization specified by the NCA, no distinction is made as to the origin of these types of units.

1.3.3 Basic Task Organization. For purposes of this publication, future references to a *naval construction regiment in support of a full Marine expeditionary force* will be understood to represent a task organization composed of an NCR command element, four NMCBs, and one NCFSU. In addition, and as the situation may dictate, a full UCT (or any number of its Air DETs) may be assigned in support of a MEF. The organization of a notional full NCR task organization employed in support of a MEF is depicted in Figure 1-2.

1.4 CONCEPTS OF THE NAVAL CONSTRUCTION FORCE

1.4.1 Command and Control. COMSECONDNCB and COMTHIRDNCB, as operational type commanders under CINCLANTFLT and CINCPACFLT, respectively, serve the fleet CINCs as the principal advisors for the direct utilization of the Seabee organizations and capabilities under their command. Headquarters for both NCBs (COMSECONDNCB is located in Norfolk, VA and COMTHIRDNCB is located in Pearl Harbor, HI) are situated close to the fleet CINCs.

These NCBs exercise operational and limited administrative control of their assigned Seabee units, both active and Reserve. They also provide directive policy guidance for subordinate units in such areas as leadership and discipline;

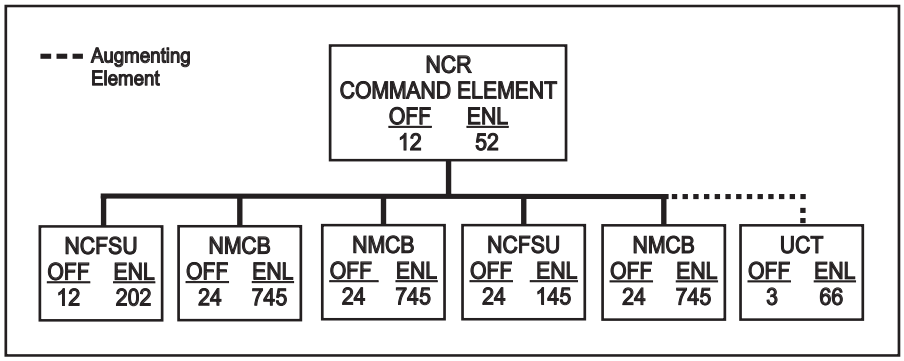

Figure 1-2. Notional Naval Construction Regiment Organization

administration; contingency planning and readiness; military and technical training; unit deployment, employment, and scheduling; operational effectiveness; development of operational doctrine, tasking and procedures; equipment management; and logistics support. When SECOND NCB and THIRD NCB units deploy, their OPCON may shift to the appropriate fleet, joint, or unified combatant commander. However, COMSECONDNCB and COMTHIRDNCB always maintain administrative control of their subordinate units. The two NCBs are configured as illustrated in Figures 1-3 and 1-4.

1.4.1.1 OPCON of NCF Units. The USMC/USN Terms of Reference state that OPCON is the only command and support relationship appropriate and authorized when Seabee units are employed within the MAGTF organization. ADCON usually remains with the Seabee unit's parent NCB. OPCON of Seabee units provides the MAGTF commander with authority to direct the forces assigned so that the commander may:

1. Accomplish specific missions or tasks that are usually limited by function, time, or location.

2. Deploy the Seabee units concerned as appropriate.

3. Retain or assign tactical control of those Seabee units.

OPCON does not include authority to assign separate employment of elements of the units concerned. Neither does it, by itself, include administrative or logistic control. OPCON of those Seabee organizations not governed by the TOR, but employed in theater, may also be exercised by commands other than those which have ADCON, such as the unified CINCs, CJTFs, or component commanders.

1.4.2 Command Relationships

1.4.2.1 NCB/MEF Alignments. The two NCBs and their subordinate units are aligned for operational and training purposes with the three standing MEFs as depicted in Figure 1-5.

Due mainly to geography, these alignments are also based on the requirements of the cognizant unified CINC's operation plans and/or concept plans.

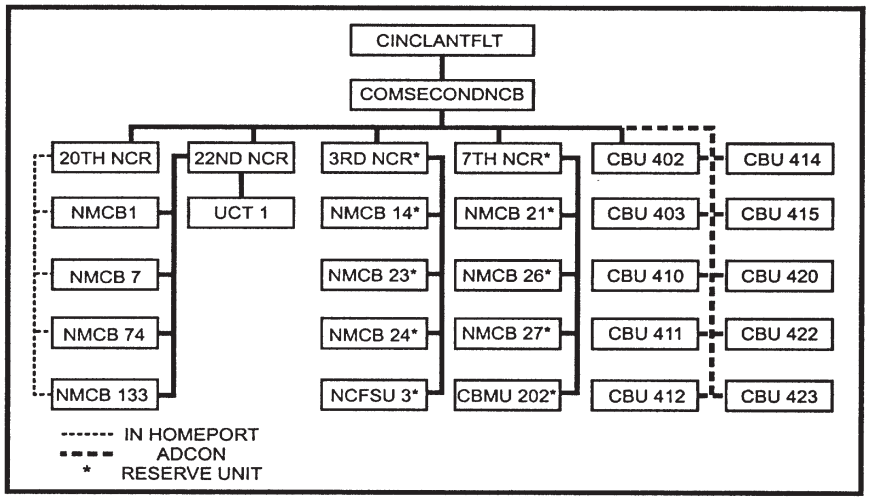

Figure 1-3. Table of Organization for COMSECONDNCB

Through peacetime training initiatives, the alignments are intended to enhance Marine and Seabee interoperability and develop a joint understanding of the range of naval civil engineering capabilities available to a MAGTF commander as provided by the NCBs and MEFs. SECOND NCB units may, at the discretion of I MEF, participate in joint training exercises, although such participation shall be coordinated with THIRD NCB. All requests for training and exercise participation shall be directed to the indicated NCB via either CINCLANTFLT, in the case of SECOND NCB organizations, or CINCPACFLT, in the case of THIRD NCB organizations.

1.4.2.2 NCB/Unified CINC Relationships. Command relationships between the two NCBs, the Navy and Marine component commanders, and the unified CINCs are depicted in Figures 1-6 and 1-7. These relationships are based on projected naval civil engineering and contingency construction support required by primarily the Marine component commander reporting to each of the unified CINCs and as stipulated in applicable OPLANs and CONPLANs. MAGTFs deploying to the unified CINCs' AORs requiring naval civil engineering shall request such support from the indicated NCB

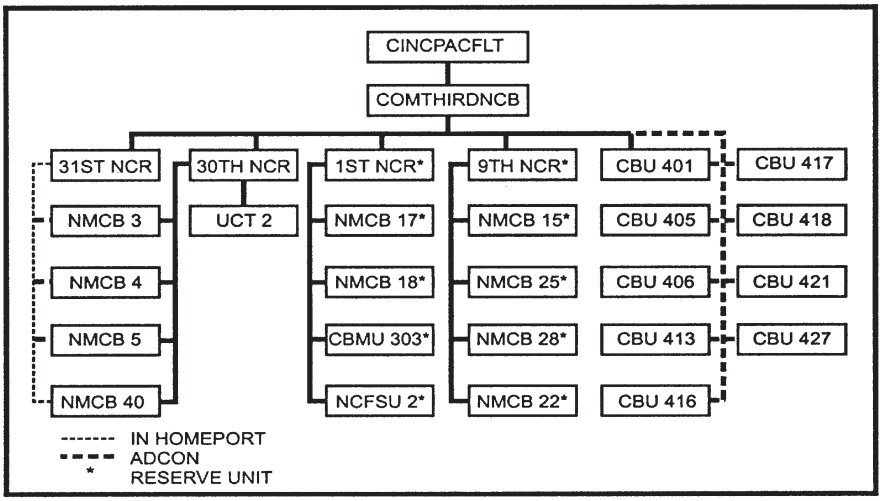

Figure 1-4. Table of Organization for COMTHIRDNCB

through the respective fleet CINC, or through the fleet CINC's chain of command in the case of PHIBCBs.

1.4.2.3 Seabee/MAGTF Relationships. The term *naval construction regiment*, as used in this publication unless noted otherwise, generally refers to those Seabee units configured in a specific task organization for placement under the OPCON of the MEF commander in accordance with the USMC/NCF Terms of Reference. The OPCON relationship is both mission- and situation-dependent, and should be determined through an appropriate engineer staff planning process. The normal employment of the NCF, as based on precedent-setting contingencies, is for the NCF element to be structured as a major subordinate element within the MAGTF organization as depicted in Figure 1-8.

1.4.3 Training. Training programs for Seabee units subordinate to COMSECONDNCB and COMTHIRDNCB are tailored to meet prescribed, mission-essential skill requirements. The training program for active NMCBs consists of a structured, 7-month homeport period conducted under the cognizance of

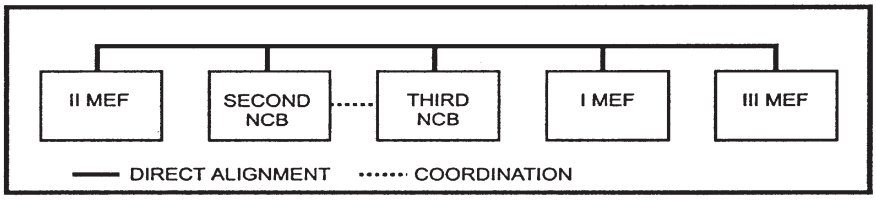

Figure 1-5. NCB/MEF Alignment Relationships

the nondeployable, training NCRs that prepare a unit for its upcoming operational deployment. Reserve units execute a multiyear training program under the indirect supervision of the training NCRs and are designed to ensure that their personnel have the technical, military, and leadership skills needed to accomplish the Seabee mission upon mobilization. As PHIBCBs are not in the chain of command of either of the two NCBs, separate (but similar) training programs are developed in response to the cognizant fleet CINC's requirements. Development of Marine/Seabee interoperability is strengthened by the development of *Close Command Relationships* and participation in *Exercises* as discussed below.

1.4.3.1 Close Command Relationships. In an ongoing peacetime effort to enhance deliberate planning, training, and the interoperability between MAGTF and Seabee engineers and their organizations, each of the standing MEFs has an NCB assigned to provide support and develop relationships. See Figure 1-5 for these specific NCB/MEF alignment relationships. Similarly, each of the unified combatant CINCs has an NCB assigned for planning purposes as depicted in Figures 1-6 and 1-7.

1.4.3.2 Exercises. Seabee units and personnel, both active and Reserve, often participate in JCS, unified CINC, and fleet-sponsored exercises. COMSECONDNCB and COMTHIRDNCB, as type commanders, coordinate integrated Marine/Seabee training for their respective subordinate units through the cognizant fleet CINCs (and COMMARFORLANT and COMMARFORPAC) with the corresponding MEF commanders.

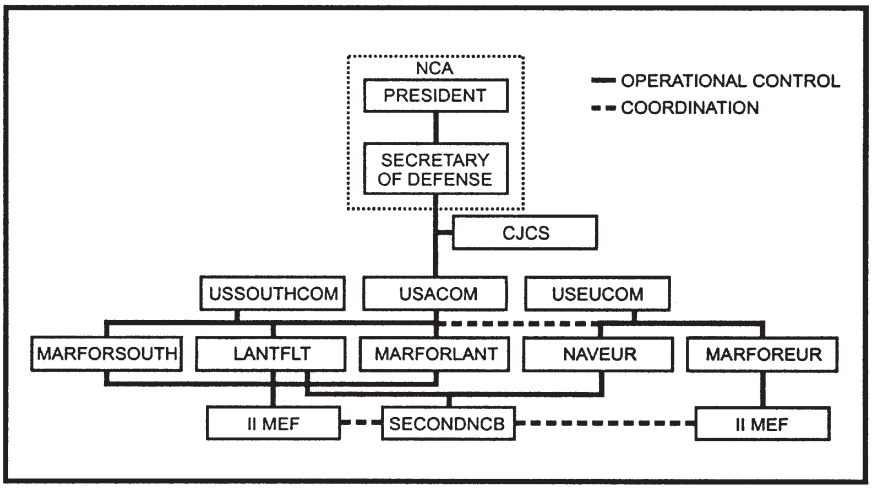

Figure 1-6. SECOND NCB/Unified CINC Command Relationships

1.4.4 Operations

1.4.4.1 General. The NCF is a responsive, mobile, modern, and versatile engineer force, capable of accomplishing diverse tasks. These tasks range from timber bunker construction in a forward ground combat environment to construction and operation of an advanced base in support of NEF and the logistics pipeline. Seabee units enhance the MAGTF's engineering capabilities through *complementary* (rather than *duplicative*) support. Seabee units consist of highly skilled specialists capable of executing expeditionary, CSS-oriented engineer projects of a more sophisticated nature than normally accomplished by Marine engineer organizations. Seabee organizations are not trained nor equipped for, and therefore should not be assigned, the following tasks of a more CS nature:

1. Explosive breaching of obstacles.

2. Minefield installation, marking, or clearing.

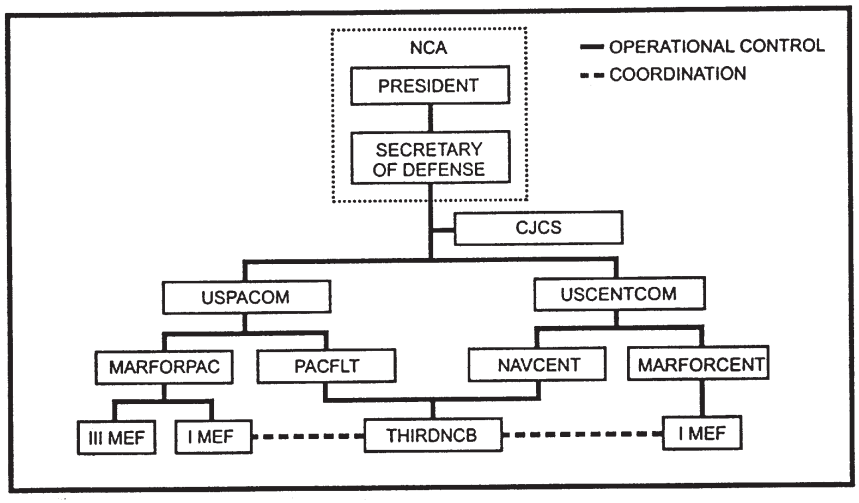

Figure 1-7. THIRD NCB/Unified CINC Command Relationships

3. Explosive ordnance disposal.

4. Other combat engineering tasks normally associated with direct support to the ground combat element.

1.4.4.2 Peacetime Operations. As the bulk of the Seabee's construction capabilities lie in the NMCBs, the following discussion focuses on normal peacetime operations for NMCBs in both the active and Reserve components.

1.4.4.2.1 Active NMCBs. In peacetime, active NMCBs are employed in direct support missions to the fleet CINCs. These missions typically entail 7-month deployments to four permanent deployment sites: two in the Atlantic theater at Roosevelt Roads, Puerto Rico and Rota, Spain, and two in the Pacific theater at Guam and Okinawa. When deployed, active NMCBs take on forward presence roles of naval civil engineering support and are available to respond to mission requirements of the unified combatant CINCs, CJTFs, fleet CINCs, or MAGTF commanders.

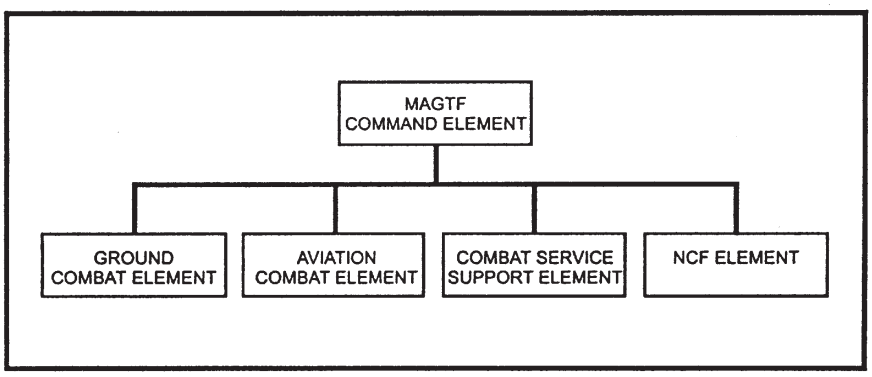

Figure 1-8. MAGTF with NCF Augmentation

1.4.4.2.2 Reserve NMCBs. Though part-time in nature, Reserve NMCBs are also employed in direct support missions to the fleet CINCs. Headquartered at readiness support sites located throughout CONUS, these commissioned units are typically assigned, on a rotating basis, to missions that emphasize either construction support or military training. Those NMCBs in a *Military Training Category* spend the majority of their monthly drill and annual training periods enhancing the military mission-essential skills needed upon mobilization. Those units in an *Operational Category*, on the other hand, spend the majority of their time in direct support to the fleet CINCs by providing critical construction and maintenance of real property support to shore stations.

1.4.5 Employment Factors. Primary factors to be considered in any decision to employ Seabee units are:

1. The general engineering tasks (specified and implied) in support of MAGTF mission requirements, such as advance naval base seizure, special operations, war/disaster relief, etc.

2. The requirements of the supported unified combatant CINC's OPLANs and/or CONPLANs.

3. The security or the level of combat support required for a Seabee unit.

1.4.6 Construction Capabilities. For a comparison of the military construction capabilities of Seabee organizations in relation to Marine engineer organizations (e.g., CEB, MWSS, ESB, NAVFACENGCOM organizations, and civilian assets, refer to Appendix A.

On an individual occupational skill basis, Navy ratings are broad enlisted career fields similar to MOSs and encompass similar duties and functions, requiring related patterns of aptitudes and qualifications that provide paths of advancement necessary for career development. These ratings normally identify personnel from pay grades E-4 through E-9 and provide the primary means of identifying billet requirements and personnel qualifications. Assigned distinctive rating badges, the seven occupational skills that comprise Seabee construction capabilities, are referred to as Occupational Field 13 (OF-13) construction ratings. The duties of these seven Seabee ratings are described in the following paragraphs.

1.4.6.1 Builder. BUs make up a large part of the Seabees and are much like civilian construction workers. They consist of skilled carpenters, plasterers, roofers, concrete finishers, masons, painters, and bricklayers.

1.4.6.2 Construction Electrician. CEs are responsible for the power production and electrical work required for naval installations. CEs consist of construction and powerhouse electricians; telephone and electrical repairmen; substation operators; linemen; and others.

1.4.6.3 Construction Mechanic. CMs are specialists in maintaining and repairing heavy construction and automotive equipment. They perform maintenance and repair on gasoline and diesel engines; ignition and fuel systems; steering, WHE repair, transmission, and electrical systems; and hydraulic and pneumatic systems.

1.4.6.4 Engineering Aid. EAs assist construction engineers in developing final construction plans. EAs conduct both land and underwater surveys; prepare topographic and hydrographic maps, sketches, and drawings; scheduling, planning, site layout and grade control; estimate costs; and perform quality assurance tests on common construction materials.

1.4.6.5 Equipment Operator. EOs perform tasks involving the deployment and operation of automotive, materials handling, weight handling, drilling and blasting, and construction equipment such as trucks, bulldozers, front end loaders, cranes, excavators, pile drivers, rollers, graders, and asphalt paving equipment.

1.4.6.6 Steelworker. SWs rig and operate all special equipment used to move, hoist, and install structural steel, structural shapes, and similar material. They place, fit, weld, cut, bolt, and rivet steel shapes and reinforcing materials commonly used in construction.

1.4.6.7 Utilitiesman. UTs are involved with plumbing, heating, steam, compressed air, fuel storage and distribution systems; water treatment and distribution systems; air-conditioning and refrigeration equipment; and sewage collection and disposal facilities.

1.4.7 Communications Capabilities. Seabee organizations maintain within their Tables of Allowance (TOAs) a wide range of voice and data command, control, communications, computers, and intelligence (C4I) capabilities for both secure and nonsecure transmissions. To ensure compatibility with USMC communications systems, the Seabees will transition to the SINCGARS family of radios, which is scheduled to replace current tactical VHF systems. UHF satellite communications radio systems are utilized by the Seabees. COMSEC cryptosystem features are imbedded in some tactical UHF and VHF radios. Interfaces are available to ensure interoperability with the MAGTF C4I local area network when Seabee units are co-located with a MAGTF. Peacetime usage of electronic mail systems is quite extensive as nearly all Seabee units (both active and Reserve, in homeport or deployed) are connected via the Internet. For standard software, Seabee organizations use commercially available suites of word processing, data base management, graphics, and spreadsheet programs. With the assistance of Marine advisors resident on the staffs of NCBs, NCRs, NMCBs, and NCFSUs, basic radio and field telephone training is provided on a regular basis to Seabee units.

1.4.7.1 NCF Communications Systems. Seabee units train and are equipped with a variety of radio and field phone systems similar and compatible

to Marine infantry communications. Figure 1-9 depicts the basic capabilities of communications systems within the various Seabee organizations.

1.4.8 Defensive Capabilities. In the execution of their assigned projects, Seabee units maintain a significant self-defense capability on their construction sites and can be employed as part of a perimeter defense force in a RAS network plan. All Seabee units are equipped with small arms and the larger units (e.g., NMCBs) maintain indirect fire weapons systems such as 60-mm mortars. Organic weapons include individual small arms and machine guns, mortars, and antipersonnel and light antiarmor weapons. Basic tactics and combat survival training are provided on a regular basis for units up to and including the NMCB. Seabee units are capable of constructing countermobility obstacles and field fortifications. In addition, Seabee units are capable of performing individual protective measures in a chemical, biological, and radiological contaminated environment.

As discussed previously, Marine advisors are resident on the staffs of NCBs, NCRs, NMCBs, and NCFSUs to provide guidance in tactics, training, and procedures to Seabee commanders and commanding officers. They also perform a vital role as a liaison with Marine units. NCR command elements have a Marine infantry officer (usually a Major) assigned, while NMCBs and NCFSUs each have a gunnery sergeant assigned.

1.4.8.1 Profile of Organizational Defensive Missions

1.4.8.1.1 NCR. The NCR is capable of performing limited, self-defense combat operations. The organic firepower of the NCR command element consists of individual small arms only.

1.4.8.1.2 NMCB. The NMCB is capable of simultaneously performing all defensive functions to protect personnel, camps, job sites, and convoys against ground troops and light armored vehicles to include: perimeter defense; security patrols; observation and listening posts; defensive reaction force; and other measures that enhance the defense of the unit. With their indirect fire weapons systems, NMCBs can also be employed in rear area security networks. The NMCB is capable of performing construction missions in a contested MOOTW environment, as well as in unsecured and isolated locations without the protection of supported forces. Construction capabilities of the

System Description	NCB	NCR	NMCB	NCFSU	UCT	PHIBCB	CBMU	CBU	Nomenclature
GPS	No	Yes	Yes	No	Yes	No	No	No	AN/PSN-11
Secure Telephone	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	STU III
Secure Telephone Cellular	Yes	No	No	No	Yes	No	No	No	STU III Cellular
Tactical Facsimile	No	Yes	Yes	No	Yes	No	Yes	No	UXC-7
Nontactical Facsimile	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Various
UHF Tactical SATCOM	Yes	No	No	No	No	Yes	No	No	LST-5
VHF ECCM Tac Manpack	No	No	Yes	No	No	Yes	Yes	No	AN/PRC-119A
VHF ECCM Vehicular	No	Yes	Yes	Yes	Yes	No	Yes	No	AN/VRC-90
VHF ECCM Base Station	No	Yes	Yes	Yes	Yes	Yes	Yes	No	AN/VRC-92
VHF (MB) Hand Held	No	Yes	Yes	Yes	Yes	No	No	No	SABER
VHF (MB) Base Station	No	Yes	Yes	No	Yes	No	Yes	No	SPECTRA
HF Tactical Manpack	No	No	No	No	No	No	Yes	No	AN/PRC-104/138
HF Vehicular	No	No	Yes	Yes	No	No	No	No	AN/GRC-231
HF Base Station	No	Yes	Yes	Yes	Yes	No	Yes	No	AN/GRC-231
Tactical Switchboard	No	No	Yes	Yes	No	Yes	Yes	No	SB-22
Digital Switchboard	No	Yes	No	No	No	No	No	No	SB-3614
Tactical Telephones	No	No	Yes	Yes	Yes	Yes	No	No	TA-312/TA-838
Digital Telephones	No	No	No	No	No	No	No	No	TA-1035/U or DSVT

Figure 1-9. Communications Capabilities for Seabee Organizations

NMCB decrease as defensive requirements increase. The organic firepower of the NMCB consists of individual small arms, crew-served machineguns, and mortars.

1.4.8.1.3 NCFSU. The NFCSU is capable of performing limited, local security, self-defense combat operations. The organic firepower of the NCFSU consists of individual small arms and crew-served machineguns.

1.4.8.1.4 UCT. The UCT is capable of performing limited, local security, defensive combat operations normally expected of a squad-sized unit. The organic firepower of the UCT consists of individual small arms.

1.4.8.1.5 PHIBCB. The PHIBCB is capable of simultaneously performing all defensive functions to protect personnel, operating sites, and convoys against ground troops to include: perimeter defense; security patrols; observation and listening posts; defensive reaction force; and other measures that enhance the defense of the unit. With their indirect fire weapons systems, PHIBCBs can also be employed in rear area security networks. Logistics-over-the-shore productivity decreases as defensive requirements increase. The organic firepower of the PHIBCB consists of individual small arms, crew-served machineguns, and mortars.

1.4.8.1.6 CBMU. The CBMU is capable of performing limited, local security, defensive functions to protect personnel, bases/camps, job sites, and convoys against ground troops and light armored vehicles. The organic firepower of the CBMU consists of individual small arms, crew-served machineguns, and mortars.

1.4.8.1.7 CBU. The CBU is capable of simultaneously performing fleet hospital facilities operations and maintenance functions as well as limited defensive functions during security force augmentation. The organic firepower of the CBU consists of individual small arms and crew-served machineguns.

1.4.8.2 Seabee Weapons Systems. All Seabee units are trained and equipped with a variety of infantry-level small arms and crew-served weapons, that are similar and compatible to Marine infantry weapons systems. Figure 1-10 depicts the basic weapons allowances for various Seabee organizations.

1.4.9 Tables of Allowance

1.4.9.1 Background. TOAs provide material and equipment to enable the NCF unit to carry out operational requirements. The unit will be required to construct a wide range of facilities in any climate, and the TOA represents the best mix of material and equipment for providing general construction capability. Each TOA has an alphanumeric designation.

1.4.9.2 NMCB TOA (TA01). Each of the four permanent, NMCB forward-deployment sites has a complete TOA, while TOAs to outfit active home-ported NMCBs are stored at the NCBCs. The standard NMCB TOA consists of approximately 265 pieces of CESE, tool kits, tent camp packup, communications

Description	NCR	NMCB	NCFSU	UCT	PHIBCB	CMBU	CBU	Nomenclature
Rifle, 5.56 mm	34 to 45	650	191	58	1160	275	41	M16A3
Pistol, 9 mm	24 to 45	175	40	7	75	57	5	M9
Machinegun, 7.62 mm	0	16	8	0	18	8	2	M60E3
Mortar, LWCMS, 60 mm	0	6	0	0	8	2	0	M224
Machinegun, 40 mm	0	6	4	0	0	0	0	Mk 19-3
Grenade Launcher, 40 mm	2	48	27	3	30	24	3	M203
Machinegun, .50 cal	0	6	4	0	0	0	0	M2HB
Shotgun	6	24	0	6	12	8	2	M500A2

Figure 1-10. Weapons Allowances for Seabee Organizations

gear, and weapons. The TA01 can be broken down into three distinct and separate echelons. Each echelon has been assigned its own TOA designation since any echelon may be deployed separately. Following is a description of each echelon:

1. Air DET (TA41) — The primary mission of the NMCB's Air DET will be to repair war damage and construct urgent projects required by the unified CINCs' OPLANs. The Air DET (TA41) may deploy independently or with the NMCB air echelon (TA31). The Air DET TOA is composed of 89 personnel, 30 to 40 pieces of CESE, which equates to approximately 300 short tons of air transportable gear.

2. Air Echelon (TA31) — The primary mission of the NMCB air echelon will be, on a scale significantly larger than the Air DET's capability, to repair war damage and construct urgent projects required by OPLANs. The air echelon (TA31) is composed of approximately 648 personnel, 100 to 110 pieces of CESE, which equates to approximately 2,200 to 2,250 STs of air transportable gear.

3. Sea Echelon (TA22) — The NMCB sea echelon (TA22) is composed of 25 personnel and the remaining portion of the NMCB TOA not included in the air echelon (TA31).

1.4.9.3 MPF NCF TOA (TA57). This TOA, similar to the NMCB TA01 but with reinforced horizontal capabilities, is designed to support an MPF

MAGTF and will be spreadloaded among the four ships of MPSRON 2 and on three ships in MPSRONs 1 and 3 as follows:

1. Two maritime pre-positioning ships will each have a 150-person "Reinforced Horizontal DET" module loaded.

2. Two MPSs will each have a 250-person "Reinforced Horizontal and Construction DET" module loaded.

3. MPSRONs 1 and 3 will each have three 250-person "Reinforced Horizontal and Construction DETs" module loaded.

1.4.10 The Advanced Base Functional Component System

1.4.10.1 Background. The ABFC system had its origins during World War II when it became apparent that significant savings in both time and material could be realized if units of material, equipment, and personnel required to perform specific functions were standardized. Today, each individual component within the overall system has a mission statement defining its capability; its personnel complement; the list of facilities and material contained within that component; and the original complement of equipment necessary to complete the mission or task defined.

1.4.10.2 Usage of the ABFC System Outside of Engineering. The ABFC system has three levels of information called assemblies, facilities, and components. Components are the highest level of grouping and consist of personnel, material, facilities, and equipment that have been designed and organized into a particular configuration to perform a specific mission or task. Most planners outside of the engineering community view the ABFC system only at the component or complete operating unit level and source ABFCs to provide working units to meet a mission tasking.

1.4.10.3 Usage of the ABFC System in CESP. The imbedded assembly and facility level information includes many common engineer projects such as bunkers and preengineered buildings. These building blocks, which are detailed down to the National Stock Number, can be used to develop concise, quick, and consistent estimates for materials and labor requirements. Most Seabee and Marine engineer planners refer to the ABFC system in terms

of this facility level information. Careful use of the term ABFC is required when engineer planners discuss plans with people outside of the engineering community.

1.4.10.4 ABFC Systems Engineering. NAVFACENGCOM coordinates engineering design efforts at the facility level to assure compatibility and to maximize commonality between components. NAVFACENGCOM prepares drawings as required for ABFC facilities, utilities, and basic construction items and publishes them electronically in CD-ROM format. This information, such as *ABFC Standard Designs, Bills of Material, Weight, Cube, Construction Man-hour Analysis,* and *Fuel Requirements*, is useful to the engineer planner.

1.4.11 Support of Seabee Units. Direct training, technical, and logistic (e.g., Class II, VII, and IX) support of Seabee units is provided by NAVFACENGCOM through two naval construction battalion centers. One NCBC is located at Port Hueneme, CA, providing support to Pacific Fleet Seabee units, while the other NCBC is in Gulfport, MS, to support Seabee units of the Atlantic Fleet. In addition, the CESO, a component organization of NCBC Port Hueneme provides a wide range of logistic management support.

1.4.11.1 The NCBC. The mission of the two NCBCs, as field activities of NAVFACENGCOM, is to ". . . support the Naval Construction Force, fleet units, and assigned organizational units deployed from, or homeported at the Center; to support mobilization requirements of the naval construction force; to store, preserve, and ship advance base and mobilization stocks; to perform engineering and technical services, and such other tasks as may be assigned by higher authority." Both NCBCs are organized to provide complete support to homeported and deployed NMCBs, as well as Reserve Seabee units.

1.4.11.2 CESO. CESO, as a program execution office for NAVFACENGCOM HQ, performs decentralized management functions and provides logistic support services directly related to the NCF in the areas of:

1. Responsibility for the design of ABFCs, sealift support facilities and equipment; the procurement of CESE and nonrolling stock, and all Reserve NCF pre-positioned war reserve materials.

2. Providing logistics management support for all tasks and functions that relate to the development, compilation, and in-service management of all NCF TOAs.

3. Identification, development, and review of Seabee personnel and training requirements; management of CBR equipment and material; development and maintenance of NCF information management systems; development of management and technical publications, elements of DOD acquisition standards and guide specification programs.

4. Management of equipment and material to support advanced base construction and amphibious operations. The support to amphibious operations includes components of the P-series pontoon system used to construct barges, causeways, piers, dry docks, and the elevated causeway system to provide facilities to offload container shipping and large oil tankers.

5. Management of the Navy's assets of construction, automotive, and specialized equipment.

6. Planning, analysis, and monitoring the effectiveness of the overall logistic support of the NCF program, to include various program and material management functions and organizations.

For further discussion on the specific CSS requirements of NCF organization when employed in support of a MAGTF, refer to Chapter 3.

1.5 CONCEPTS OF MAGTF ENGINEER OPERATIONS

1.5.1 General. The historical goal of Marine engineer organizations is to improve, repair, or construct facilities that enhance the infrastructure within the area of amphibious operations, thus increasing the sustainability, survivability, and capability of the building force. As a general battlespace orientation, Figure 1-11 graphically depicts the relative locations of engineer forces in the battlespace. The interrelationships shown by the arrows are typical.

1.5.2 Role of the MAGTF Engineer. The role of the MAGTF engineer is to increase rates of advance, modify terrain, provide critical ground support, participate in deception activities, increase force survivability and sustainability, and support the efforts of the MAGTF elements in carrying out the commander's plans. In fulfilling these roles, MAGTF engineers carry out missions related to the four functional areas of engineer effort: *Mobility*, *Countermobility*, *Survivability*, and *General Engineering*. Engineer units organic to each of the MAGTF's three MSCs are uniquely manned and equipped to provide engineer support required by these four engineer mission areas. They are able to reinforce MAGTF units tasked beyond their means, such as nonengineer units that possess limited engineer equipment and skills for performing engineer functions. MAGTF OPLANs and OPORDs also incorporate the assets and capabilities of the Seabees when appropriate. Totaled, the sources of potential engineer effort provided by both the MAGTF and the Seabees represent a significant combat multiplier within the MAGTF.

1.5.3 MAGTF Engineer Organizational Structure. The following discusses the engineer capabilities resident in each of the MAGTF's four basic components: *Command Element, Ground Combat Element, Aviation Combat Ele*ment*,* and *Combat Service Support Element*. Based on the MAGTF task-organized as a full MEF, Figure 1-12 depicts the Marine engineer organizations supporting each of these components.

1.5.3.1 Command Element. Normally there is only an engineer cell consisting of an engineer officer, a NCF LNO, and an engineer Staff Non--Commissioned Officer (SNCO). The engineer cell is located either in the operations section or logistics section depending on the type of mission and

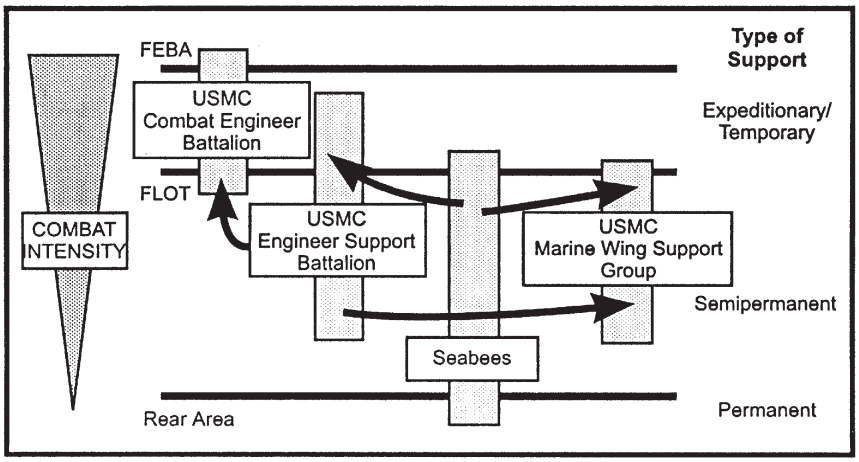

Figure 1-11. Naval Services Engineer Force Relationship

the discretion of the MAGTF commander. The number of people assigned to the cell may rise in an engineer intensive operation.

1.5.3.2 Ground Combat Element. The GCE can vary in size from a single battalion to one or more divisions. Organic to each GCE are engineer assets drawn from the CEB of the Marine division.

1.5.3.3 Aviation Combat Element. The ACE varies in size from an aircraft squadron to one or more aircraft wings. It is organized to provide Marine aviation functions essential to support the MAGTF. Organic to each ACE are engineer assets resident in the MWSG and its subordinate MWSSs.

1.5.3.4 Combat Service Support Element. The CSSE provides combat service support beyond the organic capabilities of MAGTF elements. Depending on the assigned mission, the CSSE may provide specific portions of any or all of the six functional areas of CSS: *Supply, Maintenance*, *Transportation*, *General Engineering*, *Health Services*, and *Other Services*. The ESB of a Force Service Support Group contains assets for the required engineer support of the CSSE, as well as to reinforce the engineer forces of other MAGTF elements when engineer requirements exceed their organic capabilities.

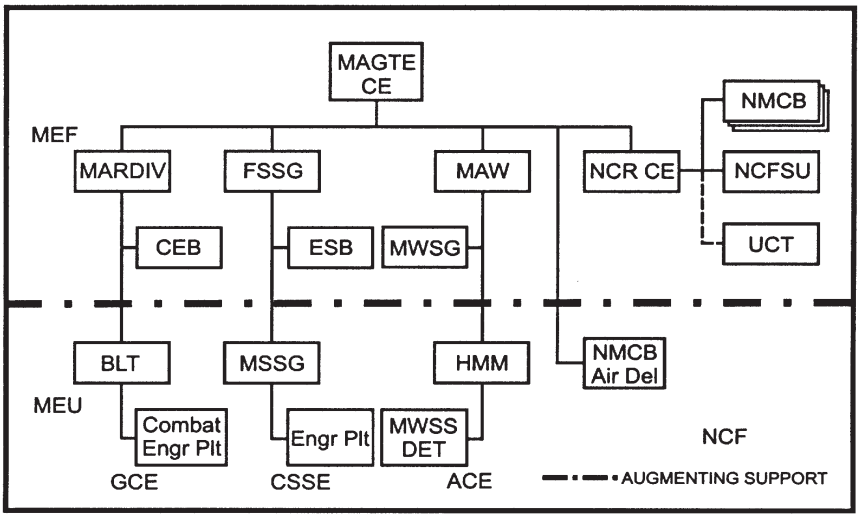

Figure 1-12. Organizational Structure of MAGTF Engineers

1.5.4 The Combat Engineer Battalion

1.5.4.1 Mission. The primary mission of the CEB is to enhance the mobility, countermobility, and survivability of the Marine division through close combat engineer support, in addition to providing limited general support.

1.5.4.2 Organization. The CEB consists of a Headquarters and Service (H&S) company, engineer support company, and four combat engineer companies. Elements of the H&S company provide the battalion commander with command and control functions and communications support for subordinate elements of the battalion. The engineer support company consists of a headquarters, equipment support platoon, utilities platoon, and a motor transport platoon. The combat engineer companies provide direct support to the infantry regiments and each consists of a headquarters and three combat engineer platoons.

1.5.4.3 Concept of Employment. In providing close combat engineer support, the CEB is task organized to provide one combat engineer company for each infantry regiment and its tasked elements, while still maintaining the flexibility to augment the combat engineer companies in forward areas. Operations of those companies in the forward areas will generally be decentralized. Engineer support requirements to the rear of the forward areas will be performed under centralized CEB control.

1.5.4.4 Tasks. Refer to Appendix B for further discussion on the specific tasks that CEBs are capable of. The primary tasks of the CEB include the following:

1. Conducting engineer reconnaissance and supporting intelligence collection within the division zone of action or sector of defense.

2. Augmenting other division elements by conducting reconnaissance missions that include requirements for engineer intelligence.

3. Planning, organizing, and coordinating the assault breaching of explosive and nonexplosive obstacles from the surf-zone inland.

4. Employing assault bridge systems. When augmented, employ other standard bridge systems.

5. Providing expedient repair to and reinforcement of existing bridges.

6. Constructing expedient, short-span bridges from local materials.

7. Providing temporary repair of existing roads and limited new construction and maintenance of combat roads and trails in support of combat operations.

8. Planning, organizing, and coordinating the construction of simple and complex explosive and nonexplosive obstacle systems.

9. Planning and constructing countermobility obstacles requiring engineer equipment or skills.

10. Performing demolition missions beyond the ability of other division units.

1.5.4.5 Combat Service Support Capabilities

1.5.4.5.1 Supply. The CEB is capable of organic supply support.

1.5.4.5.2 Maintenance. The CEB is capable of organizational (first echelon) maintenance on all assigned equipment, and organizational (second echelon) maintenance on organic communications equipment and infantry weapons. It is capable of organizational (second echelon) maintenance on motor transport and engineer equipment; intermediate (third and fourth echelon) maintenance is provided by the FSSGs maintenance battalion.

1.5.4.5.3 Transportation. The CEB possesses organic support required to accomplish stated mission. The mobility/countermobility, assault amphibian platoon provides transportation and enhances survivability during obstacle breaching operations.

1.5.4.5.4 General Engineering. The CEB possesses limited capability for both vertical and horizontal construction. Refer to Appendix B.

1.5.4.5.5 Health Services. The CEB is capable of organic routine and limited emergency medical support.

1.5.4.5.6 Other Services. The CEB is capable of organic administrative, postal, communications, and chaplain support.

1.5.4.6 Firepower. The CEB's firepower consists of infantry weapons, machineguns, and light antiarmor weapons.

1.5.5 The Marine Wing Support Group/Marine Wing Support Squadron

1.5.5.1 General. The MWSG, through its MWSS components, provides essential AGS, less organic squadron ground support equipment, to the MAW. The MWSG is generally composed of five squadrons: a Headquarters and Headquarters Squadron (H&HS) and four MWSSs. Two of the MWSSs

are structured to support fixed-wing aircraft and two are structured to support rotary-wing aircraft. General engineering support is performed by MWSS DETs or combinations of one or more MWSSs provided to an ACE. Normally, an MWSS DET supports a composite squadron similar to those deployed with a Marine expeditionary unit (special operations capable (MEU[SOC]); one MWSS supports a Marine aircraft group (MAG); and the MWSG and its organic MWSSs support a MAW.

1.5.5.2 Mission. The MWSS provides essential AGS requirements to a designated fixed-wing and/or rotary-wing component of an ACE and supporting or attached elements of the MACG.

1.5.5.3 Organization. The MWSS normally functions as an integral unit within an ACE. Both fixed-wing and rotary wing support squadrons organize identically, although their authorized Tables of Equipment (T/Es) and personnel vary slightly. The MWSS consists of a squadron headquarters, executive staff (S-1 through S-4), military police/flight line security, and equipment maintenance department. The S-3 holds staff cognizance over internal airfield communications, airfield operations division, motor transport operations division, and engineer operations division.

1.5.5.4 Concept of Employment. The MWSS is the basic organization for general engineering support to the ACE. The MWSS provides all AGS to designated components and simplifies chain of command relationships by providing a single source for all matters pertaining to AGS.

1.5.5.5 Tasks. Refer to Appendix B for further discussion on the specific tasks that MWSS units are capable of. The engineer operations division of the MWSS can be tasked to provide the following:

1. Engineer reconnaissance/survey.

2. Repairing, improving, and maintaining existing road nets within the ACE's tactical AOR.

3. Constructing and maintaining expedient roads.

4. Constructing, maintaining, and improving V/STOL sites.

5. Constructing and maintaining mission-essential base camp requirements (e.g., temporary bunkers, temporary aircraft revetments, troop strongback tents).

6. Technical and equipment assistance for erection of prefabricated shelters and to support camouflage requirements.

7. Essential utilities support (e.g., mobile electric power, water, potable water production, bath and laundry facilities, refrigeration services).

8. Assessing bomb damage and conducting minimal RRR operations.

9. Supporting base camp material handling equipment (MHE) operations.

1.5.5.6 Combat Service Support Capabilities

1.5.5.6.1 Supply. The MWSS is capable of performing supply and fiscal functions required for squadron operations, with the exception of Navy-funded equipment that requires support from a designated aviation element.

1.5.5.6.2 Maintenance. The MWSS is capable of organizational (first echelon) maintenance on all assigned equipment, and organizational (first echelon) maintenance on squadron and supported unit's motor transport, engineer, and utilities equipment; intermediate (second echelon) maintenance is provided by the FSSG's maintenance battalion.

1.5.5.6.3 Transportation. The MWSS possesses sufficient organic support required to accomplish assigned missions and tasks.

1.5.5.6.4 General Engineering. The MWSS possesses sufficient general engineering and utilities personnel and equipment to fulfill requirements of the squadron mission. Refer to Appendix B.

1.5.5.6.5 Health Services. The MWSS is capable of organic routine and limited emergency medical support. Dental support is provided by the FSSG's dental battalion.

1.5.5.6.6 Other Services. The MWSS is capable of organic administrative, postal, communications, and chaplain support.

1.5.5.7 Firepower. The MWSS's firepower consists of infantry weapons and machineguns for self-defense purposes only.

1.5.6 The Engineer Support Battalion

1.5.6.1 Mission. The mission of the ESB is to increase the combat effectiveness of the MAGTF by accomplishing general engineering missions of a deliberate nature.

1.5.6.2 Organization. The ESB consists of an H&S company, a bridge company, an engineer support company, a bulk fuel company, and three engineer companies. Although all ESBs have a bridging mission, there is only one bridge company in the USMC's active component and this is assigned to 8th ESB under the command of Marine Forces, Atlantic (MARFORLANT). There are an additional two bridge companies in the Reserve component.

1.5.6.3 Concept of Employment. The ESB provides general support to the MAGTF by providing composite engineer units/detachments to the MAGTF's CSSE, the size and composition of which depends on the type of support required. Once the FSSG has been composited within the AOA, the ESB regains OPCON of most of its committed assets, with water production and fuel being the exceptions. Operating under centralized control, the ESB gives depth to the overall engineering effort. It provides assistance to the GCE and ACE by assuming responsibility for engineer support in the rear areas or when required engineer efforts exceed their organic capabilities. The ESB also furnishes assistance to or receives assistance from Seabee or other units supporting the MAGTF.

1.5.6.4 Tasks. Refer to Appendix B for further discussion on the specific tasks that ESBs are capable of. Tasks unique to the ESB include the following:

1. Supervising and installing fixed panel and floating bridge equipage.

2. Conducting EOD operations.

3. Handling, storing, and dispensing of Class III bulk fuel resources.

1.5.6.5 Combat Service Support Capabilities

1.5.6.5.1 Supply. The ESB is capable of organic supply support.

1.5.6.5.2 Maintenance. The ESB is capable of organizational (first echelon) maintenance on all organic equipment; intermediate (second echelon) maintenance is provided by the FSSG's maintenance battalion.

1.5.6.5.3 Transportation. The ESB possesses organic support required for command and administrative purposes.

1.5.6.5.4 General Engineering. The ESB possesses significant capability in providing general engineering support. Refer to Appendix B.

1.5.6.5.5 Health Services. The ESB is capable of providing routine and limited emergency medical support.

1.5.6.5.6 Other Services. The ESB is capable of organic administrative, postal, communications, and chaplain support.

1.5.6.6 Firepower. The ESB's firepower consists of infantry weapons, machineguns, and light antiarmor weapons.

CHAPTER 2

Fundamentals of Seabee Operations

"We of the Marine Corps know firsthand, perhaps better than anyone else, the almost unbelievable contribution that the Seabees have made to victory. It was a comforting thought to know as we pushed the enemy back that you were right behind us with your bulldozers and tractors, your graders and your power shovels – guaranteeing us the roads to bring up our supplies and ammunition and to return our wounded, and airports for our planes to use in supporting our troops and in pushing the attack. The bond of fellowship between Marines and Seabees, forged by the heat of battle, is one which I am sure will last as long as there are veterans left to recount firsthand experiences of the many hard-won battles of the war. On behalf of all Marines in the Pacific, I want to say thank you and well done!"

— LTGen Roy S. Geiger, USMC

2.1 GENERAL

This chapter specifically addresses the missions, organization, doctrinal tasks, concepts of employment, and logistic capabilities of those Seabee organizations normally assigned to support MAGTF operations in accordance with the USMC/USN Terms of Reference. The organizations described in this chapter collectively represent the standard naval civil engineering support provided to augment the general engineering capabilities of the MAGTF's engineer units. Provided as a planning baseline, they in no way preclude the assignment of other component organizations of the NCF to support a

MAGTF. Refer to NAVFAC P-315, Naval Construction Force Manual, for additional information on Seabee organizations.

2.1.1 Principles of Seabee Operations. . NDP 4, *Naval Logistics*, defines the principles of logistics as responsiveness, simplicity, flexibility, economy, attainability, sustainability, and survivability. Similar principles apply to Seabee operations. Seabees have the resources and flexibility to quickly respond to requests for engineering support to meet the needs of the MAGTF. Sustainability of military operations and survivability of the logistics pipeline are directly linked to the Seabee's ability to construct, operate, maintain, and repair critical facilities and infrastructure. Seabees must effectively and economically apply both resources and capabilities to mission requirements.

2.1.1.1 Responsiveness. *Providing the right support at the right time, at the right place*. The ability to react quickly and effectively to operational commanders' direction and MAGTF requests is the cornerstone of Seabee operations. Requests for Seabee support span a myriad of tasks. Ensuring that adequate Seabee support is provided as requested requires the organizational agility to promptly assess both requirements and methods and apply the most appropriate resources to the task. Proper planning, pre-positioning, and training are essential to successful mission response. Well-established institutional processes are inherently necessary to mitigate the chaos in crisis/contingency response.

2.1.1.2 Flexibility. *Adapting Seabee support to unique mission requirements and simplicity.* This is accomplished in the mobility, personnel training and organizational makeup of the Seabees, and their ability to apply a variety of assets to a given task. Mission-oriented engineering support and standardized procedures reduce confusion. The operational commander must simplify the engineering task by communicating clear priorities, and forecasting needs based on current and accurate requirements analysis.

2.1.1.3 Survivability and Sustainability. Ensuring that required infrastructure and fixed facility assets prevail in spite of degradation and damage for the duration of the conflict. Seabees are capable of reconstructing or relocating key logistics nodes and command and operational centers. Establishment and maintenance/repair of transportation, communication and utility

systems also requires Seabees. Constructing hardened bunkers, providing battle damage repair at forward airfields, and operating and maintaining utility distribution systems at command posts or logistics nodes are all tasks that Seabees are prepared to accomplish.

2.1.1.4 Attainability and Economy. *Effectively providing the minimum essential facility and engineering support for combat operations.* Risk is defined as the difference between the commander's desired level of support and the absolute minimum needed to satisfy mission requirements. The commander must determine the minimum essential requirements and ensure that adequate Seabee support is programmed to assure mission success. Effective employment requires both realistic assessments of engineering requirements and prudent use of available Seabee assets.

2.1.2 Missions. Seabee units reinforce and augment the CSS general engineering capabilities of the MAGTF and broaden the naval civil engineering spectrum of construction to enhance and sustain MAGTF operations ashore. In addition to general engineering efforts, Seabee missions also contribute military and amphibious assault construction support to MAGTF operations and enhance the MAGTF's capability to provide disaster relief and forces for civic action employment.

2.1.3 Organization. Seabee units are tasked, organized, and employed to support MAGTF operations, as discussed in paragraphs 2.3 through 2.6.

2.1.4 Tasks. The general task categories that Seabee units are capable of when they are employed to support MAGTF operations include *Deliberate Construction*, *Assault Construction Support, Disaster Control and Recovery*, and *Civic Action*. Refer to Chapter 1 and Appendix B for further discussion on the range of Seabee construction tasks.

2.2. THE NAVAL CONSTRUCTION REGIMENT

2.2.1 General. While the term *naval construction regiment*, as used in this publication, collectively refers to those Seabee units notionally configured in a task organization for support to (and placement under the OPCON of) a full Marine expeditionary force, paragraphs 2.2.2 through 2.2.7 provide background on the NCR command element of the NCR task organization.

2.2.2 Mission. The NCR CE provides administrative and operational control over two or more NCF units operating in a specific geographic area or operating in support of a specific military operation and is the command and control element for all subordinate Seabee units assigned to support a MEF-sized MAGTF. The basic mission of the CE is to develop construction plans, assign construction projects to NMCBs, and direct redistribution of units' equipment and materials. The CE has a planning, estimating, and engineering capability over and above that contained in the NMCBs.

2.2.3 Organization. Normally commanded by a Navy CEC Captain, a deployable, operational NCR CE consists of a staff organized into the following departments: *Executive*, *Administrative*, *Intelligence*, *Operations*, *Supply*, and *Readiness*. The NCR CE typically has OPCON over two to four assigned NMCBs and an NCFSU. However, if the mission and engineering requirements warrant such, one or more Air DETs from a UCT may also be assigned to augment the NCR task organization.

2.2.4 Concept of Employment. The NCR CE is task-organized and equipped for employment as an assigned force in support of MEF-sized operations when two or more NMCBs operating in a specific area are assigned to support the MEF. The NCR CE is structured to provide air or surface-deployable elements in support of a specific military operation. Generally, the NCR CE:

1. Maintains an organic TOA (TA11) capable of sustaining operations planned or envisioned under contingency or general war conditions for 60 days without resupply, except that Class I material is limited to 5 days, Class III is limited to 3 days, and Class V is limited to 15 days. Organic Class IV is limited to only those materials required to construct the command element's base camp. Resupply past the timeframes noted is the responsibility of the supported MAGTF.

2. Is capable of performing its mission using basic individual protective measures in a CBR-contaminated environment for 30 days.

2.2.5 Tasks. The NCR CE is a command and control organization that plans, monitors, directs, coordinates, and controls construction operations for all subordinate NMCBs, NCFSUs, and other attached units. It also collects

construction/facility engineering data/information from the supported commander for dissemination to subordinate units. Refer to Appendix B for specific construction engineering tasks within the range of the NCR CE's capabilities.

2.2.6 Combat Service Support Capabilities

2.2.6.1 Supply. The NCR CE possesses organic supply support capability only. Procurement of Class IV materials for tasked projects undertaken by subordinate Seabee units is coordinated by the MEF G-4.

2.2.6.2 Maintenance. The NCR CE is capable of performing organizational (first echelon) level maintenance on engineer organizational equipment, communications equipment and assigned weapons, less optical equipment.

2.2.6.3 Transportation. The NCR CE possesses sufficient motor transport equipment to accomplish assigned missions and tasks.

2.2.6.4 General Engineering. The NCR CE is capable of providing construction engineering only. Refer to Appendix B for specific capabilities.

2.2.6.5 Health Services. As the NCR CE has no organic medical or dental capabilities, it is dependent on co-located MEF and/or NMCB medical and dental assets.

2.2.6.6 Other Services. The NCR CE is capable of self-administration, security, legal, civil affairs, graves registration, and information systems support.

2.2.7 C^3 and Defensive Capabilities. The NCR command element maintains:

1. A combat operations center capable of collecting, processing, displaying, evaluating, and disseminating operational and tactical information.

2. An organic communications capability. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.3 THE NAVAL MOBILE CONSTRUCTION BATTALION

2.3.1 Mission. The mission of the NMCB is to provide responsive military construction support to Navy, Marine Corps, and other forces in military operations; to construct and maintain base facilities; to repair battle-damaged facilities, and to conduct limited defensive operations as required by the circumstances of the deployment situation. It can also accomplish disaster control and recovery efforts when required. Specifically, mission areas of the NMCB include the following:

1. Performing horizontal and vertical construction simultaneously while defending their project sites from hostile forces.

2. Deploying an Air DET with airliftable supplies and equipment within 48 hours of notification. (Refer to paragraph 2.3.8 below for additional information on the NMCB Air DET.) The remainder of a deployed NMCB can embark within 6 days.

3. Conducting active defensive operations against overt or clandestine enemy attacks directed toward unit personnel, convoys, camps, and facilities under construction.

4. Performing intermediate maintenance on organic and assigned augment equipment simultaneously with construction effort.

2.3.2 Organization. Commanded by a Navy CEC commander, the NMCB normally functions as an integral unit. As illustrated in Figure 2-1, the NMCB generally consists of a headquarters company, one equipment/horizontal company, one camp maintenance/utilities company, two to three vertical construction companies, and a Reserve augment.

2.3.3 Concept of Employment. The NMCB can function as an integral unit of the NCR, or operate independently. The NMCB can provide specialized, task-organized detachments up to one-half its organizational size to address specific support requirements. Nearly 85 percent of each NMCB can deploy as an air echelon via strategic airlift (approximately 60 C-141, 44 C-17,

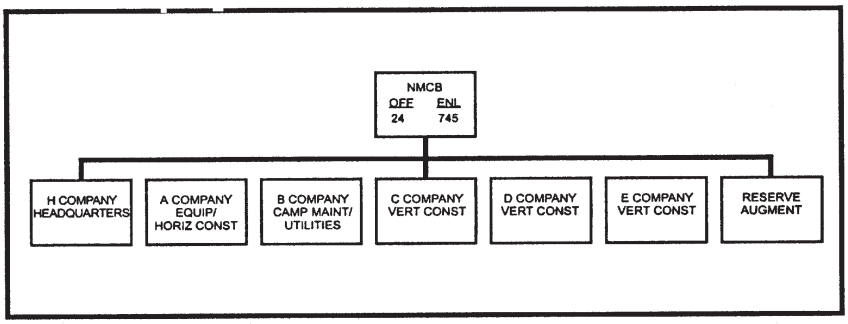

Figure 2-1. Organization of the Naval Mobile Construction Battalion

or 30 C-5 lift equivalents), with the remaining 15 percent, known as the sea echelon, following via sealift. Additionally:

1. The NMCB maintains an organic TOA (TA01) capable of sustaining construction operations planned or envisioned under contingency or general war conditions for 60 days without resupply, except that Class I material is limited to 5 days, Class III is limited to 3 days, and Class V is limited to 15 days. Class IV is limited to only those materials required to construct the NMCB's base camp. Resupply past the timeframes noted is the responsibility of the supported MAGTF's G-4, to be coordinated through the cognizant NCR's command element if the NMCB is task-organized in an NCR.

2. The NMCB is capable of conducting construction operations in a MOOTW environment, and in unsecured and isolated locations without protection of the supported MAGTF.

3. The NMCB is capable of sustaining two 10-hour work shifts per day for 60 days and a work force of 100 personnel in a CBR-contaminated environment for 30 days. The entire NMCB is capable of performing basic individual protective measures in a CBR environment for 30 days.

2.3.4 Tasks. Refer to Appendix B for specific tasks within the range of the NMCB's capabilities. Typical NMCB tasks generally include, but are not limited to, the following:

1. Perform tactical construction, to include preengineered buildings, bunkers, and towers; horizontal construction including unpaved roads and EAFs for fixed and rotary-wing aircraft consisting of mat runways and taxiways, helicopter landing areas, parking aprons, revetments, and FARPs; contingency staging facilities such as ISBs and ASPs; power generation and water purification systems; beach improvements, beach exits, helopads, and minor roads and camps; installation of standard (e.g., Bailey and MGB) bridging and nonstandard bridging; and maintenance, repair, and construction of MSRs.

2. Perform base construction, to include preengineered buildings, concrete and masonry buildings, and steel and concrete nonstandard bridging; horizontal construction including asphalt roads, asphalt and concrete runways, and paved storage/staging/parking areas; and base powerplant, sewage and water systems, water purification and desalination systems, and wire communication systems.

3. Perform construction engineering, to include surveying and drafting; materials testing; Planning and Estimating work; and design for local expedient projects.

4. Perform specialized construction, to include well drilling operations; other operations of limited scope (e.g., batch plant, quarry, rock crusher, railroad construction, saw mill, and limited pile driving operations; rock drilling and blasting; and pier and wharf construction).

5. Conduct war damage repair and RRR operations to include repairs to base camp utility systems; POL and bulk liquid distribution/storage systems; and communications facilities.

2.3.5 Combat Service Support Capabilities

2.3.5.1 Supply. The NMCB possesses an organic supply support capability only. Procurement of Class IV materials for tasked projects is coordinated with the supported MAGTF G-4.

2.3.5.2 Maintenance. The NMCB is capable of performing organizational and intermediate (first and second echelon) level maintenance on engineer organizational equipment and NCFSU augment equipment, as well as organizational (first echelon) maintenance of communications equipment and assigned weapons, less optical equipment.

2.3.5.3 Transportation. The NMCB possesses sufficient motor transport equipment to accomplish assigned missions and tasks, but does not have a motor transport mission. It requires equipment augmentation to move its TOA after arrival in theater.

2.3.5.4 General Engineering. The NMCB is capable of construction engineering; vertical and horizontal construction of large scale projects; WDR and/or RRR operations; and base and utilities maintenance operations. Possesses limited specialized construction capabilities. Refer to Appendix B for specific construction capabilities. Refer to Appendix C for selected items of CESE.

2.3.5.5 Health Services. The NMCB is capable of providing Echelon I (battalion aid station (BAS)) medical care and limited organic dental support.

2.3.5.6 Other Services. The NMCB is capable of self-administration, organic ships services, disbursing, postal, legal, chaplain, and graves registration services support. The NMCB is capable of providing food services support to itself and co-located NCF units.

2.3.6 C^3 and Defensive Capabilities. The NMCB maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data communications systems. NMCBs can also implement OPSEC measures. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.3.7 The NMCB Air Detachment

2.3.7.1 Mission. The mission of the Air DET, as an advance element of an NMCB, is to repair war damage and construct urgent projects as required by major operational plans or as tasked by a MAGTF commander. Although its taskings are mission-dependent, the Air DET generally spans the scope of possible NMCB construction taskings. Refer to Appendix B for specific construction capabilities.

2.3.7.2 Organization. Typically commanded by a Navy CEC Lieutenant, an NMCB Air DET is a task-organized, advance element of the NMCB typically organized as illustrated in Figure 2-2. The personnel and equipment of an Air DET can be tailored to specific projects. It typically is composed of 89 personnel and 39 items of CESE and equates to 250 to 300 STs (approximately 14 C-141, 8 C-17, or 5 C-5 lift equivalents) of strategic airlift. The Air DET may

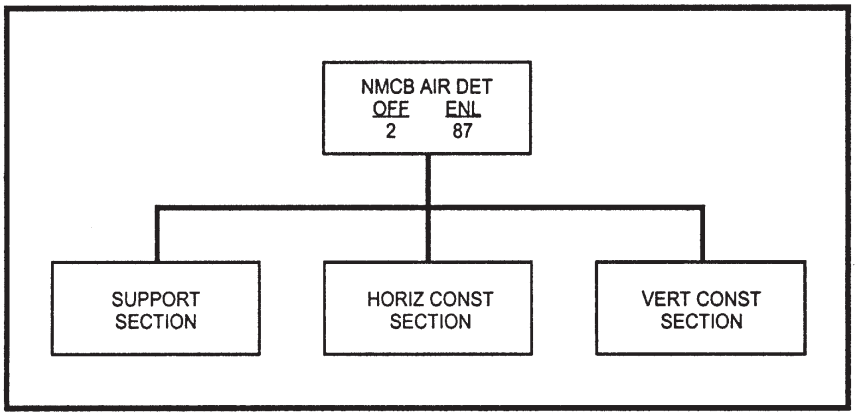

Figure 2-2. Organization of the NMCB Air Detachment

also have its personnel and equipment TOA tailored to a mission-specific role and configured for deployment on tactical (e.g., C-130 or C-17) airlift.

2.3.7.3 Concept of Employment. The NMCB Air DET can deploy by strategic lift with the assets listed in Appendix C within 48 hours and may either be employed independently or with other Seabee elements. The Air DET is an augmentation unit capable of supporting the short-term engineering requirements of forward-deployed MEUs on little advance notice. It should be considered as the lead echelon of an NMCB.

1. The NMCB Air DET maintains an organic TOA (TA41) capable of sustaining construction operations planned or envisioned under contingency or general war conditions for 30 days without resupply, except that Classes I, III, and V are limited to 5 days. It is also capable of performing basic individual protective measures in a CBR environment for 30 days. Class IV is limited to only those materials required to construct the Air DET's base camp. Resupply past the timeframes noted is the responsibility of the supported MAGTF's G-4.

2.3.7.4 Combat Service Support Capabilities. Mission dependent. The Air DET spans the scope of NMCB administrative and CSS capabilities. Refer to Appendix B for general engineering capabilities. Refer to Appendix C for selected items of CESE.

2.3.7.5 C^4 Capabilities. The NMCB Air DET maintains a COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information. When deployed away from the parent NMCB, the Air DET comes under the OPCON of the supported MAGTF.

2.4 THE NAVAL CONSTRUCTION FORCE SUPPORT UNIT

2.4.1 Mission. The mission of an NCFSU is to provide augmenting, logistic-oriented, construction support within the AOR to the elements of an NCR. It can support up to four NMCBs.

2.4.2 Organization. Commanded by a Navy CEC commander, the NCFSU is organized into four sections as illustrated in Figure 2-3: *Administrative Services, Equipment Management, Engineering Support*, and *Logistics*.

Normally functioning as an integral unit of the NCR, the NCFSU consists of fourteen *echelons* that can be individually mobilized to assist an NCR or an individual NMCB in the execution of assigned tasks. Augment equipment may be assigned to NMCBs without mobilization of NCFSU personnel. NMCBs will normally support operation of equipment contained in Echelons 8 through 14. These echelons are described further in Appendix D.

2.4.3 Concept of Employment. The NCFSU, co-located with the NCR command element or NCF unit, provides support to all or portions of the NCR. It provides unique engineer, motor transport, supply, and technical services to supported Seabee units. Additionally, the NCFSU:

1. Maintains an organic TOA (TA13) capable of sustaining construction logistic support operations planned or envisioned under contingency or general war conditions for 60 days without resupply, except that Class I material is limited to 5 days, Class III is limited to 3 days, and Class V is limited to 15 days. Class IV is limited to only those materials required to construct the NCFSU's base camp. Resupply past the time frames noted is the responsibility of the supported MAGTF's G-4, to be coordinated through the cognizant NCR's command element if the NCFSU is task-organized in an NCR.

2. Is capable of sustaining two work shifts per day for 60 days. Capable of performing basic individual protective measures in a CBR-contaminated environment for 30 days.

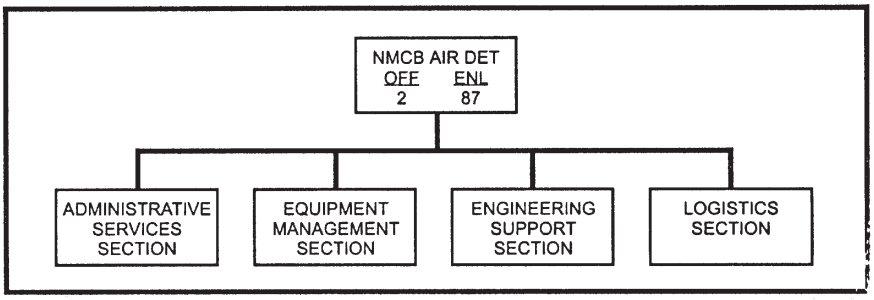

Figure 2-3. Organization of the Naval Construction Force Support Unit

2.4.4 Tasks. Refer to Appendix B for specific tasks within the range of the NCFSU's capabilities. Typical NCFSU tasks generally include, but are not limited to, the following:

1. Maintenance, custody, and inventory control for special Seabee support equipment and the issue of this specialized support equipment to NMCBs.

2. Operation of local and long-haul transportation equipment in support of Seabee units. The performance of organizational and intermediate level maintenance and repair for NCR, organic and NCFSU support equipment not issued to an NMCB. Repairs equipment assemblies and subassemblies such as transmissions, engines, generators, and motors for NCFSU support equipment. (NMCBs will perform organizational and intermediate level maintenance as well as repair of NCFSU support equipment issued to the NMCBs.)

3. Provision of augment equipment as well as augment supervisory and technical personnel to support NMCB quarry and rock crusher operations, asphalt production and lay-down, soil analysis and stabilization, electrical transmission line installation, nonstandard bridge construction, and concrete production and emplacement.

4. Provision of construction materials inventory management for supported Seabee units, including those for ABFCs, consisting of requisitioning, expediting, receiving, controlling, issuing, delivering, and other supply functions.

5. Provision of advanced facility planning, designing, estimating, and engineering services, as required, for NMCBs to execute construction projects. These services include facility planning, engineering, and design services; planning and estimating of time, manpower, materials, equipment, and cost requirements; construction surveying services for projects assigned to Seabee units; evaluation of load bearing capacity of soils; assessment and suitability of both local and imported project construction materials; quality control of earth-fill construction, concrete, and asphalt.

6. Provision of limited convoy defense for long-haul operations and augmenting security operations of the host NMCB organization.

7. Provision and operation of limited ADP services in support of the NCR.

2.4.5 Combat Service Support Capabilities

2.4.5.1 Supply. The NCFSU provides repair parts for NCFSU organic equipment; provides Seabee consumables and supplies; requisitions NMCB project materials; operates materials expediting and liaison office, and yard; and provides limited ADP support. Procurement of any required Class IV materials is coordinated with the MAGTF G-4.

2.4.5.2 Maintenance. Capable of performing organizational and intermediate (first and second echelon) level maintenance on organizational equipment, as well as organizational (first echelon) maintenance of assigned communication equipment and weapons, less optical equipment.

2.4.5.3 Transportation. The NCFSU possesses sufficient motor transport equipment to accomplish assigned missions and tasks. Routinely provides augmentation support to NMCBs.

2.4.5.4 General Engineering. The NCFSU provides full operational construction logistic support and construction engineering services in the deployment area. Refer to Appendix B for specific construction capabilities. Refer to Appendix C for selected items of CESE.

2.4.5.5 Health Services. No organic medical or dental capabilities. Health services are dependent on co-located MAGTF or NMCB medical and dental services.

2.4.5.6 Other Services. The NCFSU is capable of self-administration, organic disbursing, and information services only. Food services support provided by co-located NMCBs.

2.4.6 C^3 and Defensive Capabilities. The NCFSU maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data communications systems. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.5 THE UNDERWATER CONSTRUCTION TEAM

2.5.1 Mission. The primary mission of a UCT is to provide responsive underwater engineer/construction capabilities to Navy, Marine Corps, and other forces in military operations; to construct, inspect, and maintain ocean and waterfront facilities; to repair battle-damaged ocean and waterfront facilities and to conduct defensive operations as required by the deployment environment. UCTs have secondary missions to conduct disaster recovery, humanitarian assistance, and civic action operations.

2.5.2 Organization. Normally commanded by a Navy CEC Lieutenant Commander, each UCT is organized and equipped to be self-sufficient in underwater construction capability for the various tasks anticipated. This outfitting includes underwater weight-handling equipment, underwater and terrestrial construction tools, diving equipment, safety equipment, and a standard allowance of infantry gear. UCTs, like all Seabee units, are capable of self-defense. As illustrated in Figure 2-4, the UCT is structured as an operational unit with three active duty Air DETs, an operations department, and various support departments. It typically is composed of 69 personnel and 32 items of CESE and equates to approximately 300 STs (approximately 14 C-130, 5 C-141, or 2 C-5 lift equivalents) of strategic airlift. The Air DETs may also have their personnel and equipment TOAs tailored to a mission-specific role and configured for deployment on tactical (e.g., C-130 or C-17) airlift.

2.5.3 Concept of Employment. Generally, a UCT deploys as individual construction Air DETs of 15 personnel each in support of the fleet CINCs, a unified CINC, other NCF units (e.g., a PHIBCB), and/or a MAGTF in

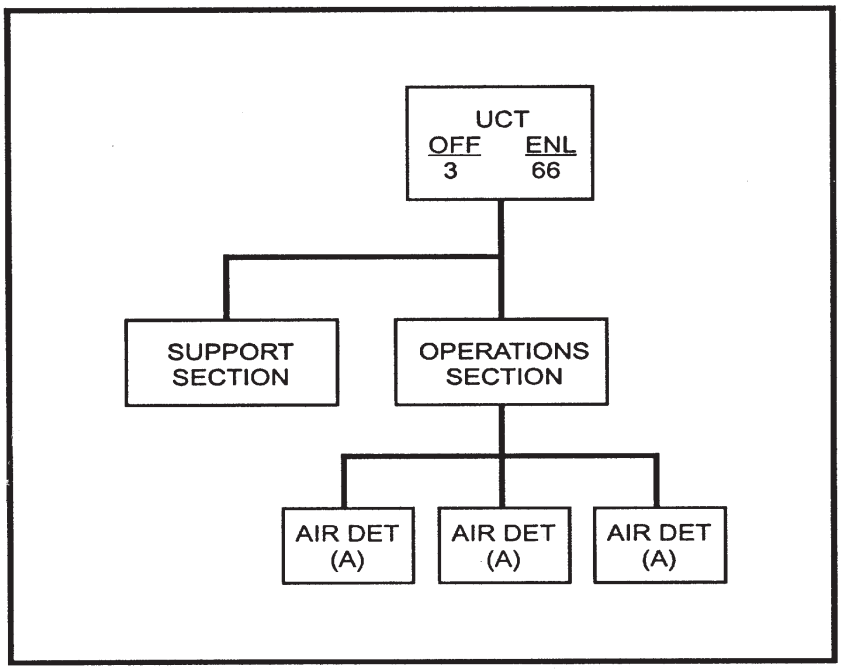

Figure 2-4. Organization of the Underwater Construction Team

conjunction with the amphibious assault phase. Unlike an NMCB, a UCT's Air DETs normally deploy to five or six sites during a single 6-month peacetime deployment cycle, completing each assigned project before proceeding to the next. There is no typical deployment scenario; assignments range from support of underwater surveillance systems to waterfront facilities inspections. Although not addressed under the USMC/USN Terms of Reference, MAGTF commanders may require UCT capabilities to conduct certain operations, specifically those involving employment of the MPF and/or execution of the OPDS mission for the NBG together with the PHIBCB during amphibious operations. Requests for UCT support shall be forwarded through the appropriate

fleet CINC to the cognizant NCB as discussed later in Chapter 3. Additionally, the UCT:

1. Is capable of conducting underwater construction operations independently in climatic extremes ranging from arctic to tropical to desert environments.

2. Maintains an organic TOA (TA04) capable of sustaining ocean facility construction operations planned or envisioned under contingency or general war conditions for 60 days without resupply, except that Class I material is limited to 5 days, and Classes III and V are limited to 15 days. Resupply past the timeframes noted is the responsibility of the supported unit.

3. Is capable of performing limited, basic individual protective measures in a CBR-contaminated environment for 30 days.

2.5.4 Tasks. Generally, all ocean and underwater engineering, construction, inspection, and repair tasks fall under the purview of the UCT. Refer to Appendix B for specific tasks within the range of the UCT's capabilities. Typical UCT tasks generally include, but are not limited to, the following:

1. Assisting the PHIBCB in the installation of the OPDS supporting amphibious operations.

2. Performing hydrographic surveys to allow optimum siting of nearshore expeditionary facilities.

3. Performing inspection assessment, battle damage repair, maintenance and installation/construction of underwater and waterfront facilities including ocean moorings, piers, wharves, and oceanographic sensor systems.

4. Performing sustained underwater construction operations down to a maximum depth of 190 feet in any climate.

2.5.5 Combat Service Support Capabilities

2.5.5.1 Supply. The UCT possesses organic supply support capability only. Procurement of Class IV materials for tasked projects is coordinated by the supported unit.

2.5.5.2 Maintenance. The UCT is capable of performing organizational and intermediate (first and second echelon) level maintenance on organic engineer equipment, as well as organizational (first echelon) maintenance of communications equipment and assigned weapons, less optical equipment.

2.5.5.3 Transportation. The UCT possesses sufficient motor transport equipment to accomplish assigned missions and tasks, but does not have a motor transport mission.

2.5.5.4 General Engineering. The UCT is capable of both specialized engineering and construction of a wide range of underwater projects, as well as vertical construction of organic expeditionary facilities. Refer to Appendix B for specific construction capabilities.

2.5.5.5 Health Services. The UCT possesses organic medical capability limited to treatment by an independent duty corpsman, including preventive medicine, first aid and diagnosis, and treatment of barotrauma (including hyperbaric treatment) and other diving-related injuries.

2.5.5.6 Other Services. The UCT is not capable of providing organic disbursing, postal, and security. It is capable of self-administration for 30 days before requiring support from the supported unit. The UCT is not capable of providing organic food services support.

2.5.6 C^3 and Defensive Capabilities. The UCT maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data, as well as underwater, communications

systems. UCTs can also implement OPSEC measures. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.6 OTHER SEABEE ORGANIZATIONS

In addition to those units assigned to MAGTFs and described previously in this chapter, the NCF employs other types of unique and specialized maintenance and construction units in support of either the naval beach group or the Navy component commander of a unified CINC. These include Seabee organizations not intended to directly support MAGTF operations while under the OPCON of a MAGTF commander, and, as such, are not addressed under the USMC/NCF Terms of Reference. OPNAVINST 3510.115 Series, Projected Operational Environment (POE) and Required Operational Capabilities (ROC) Statements for the Naval Construction Force (NCF), OPNAVINST 5450.46, Doctrine and Policy Governing Naval Construction Forces, and NAVFAC P-315, Naval Construction Force Manual, should be consulted to clarify the level of construction support the MAGTF or Navy component commander may expect from the *amphibious construction battalions*, *construction battalion maintenance units*, and *construction battalion units*.

2.6.1 The Amphibious Construction Battalion

2.6.1.2 Mission. The mission of the PHIBCB (also known as an ACB) is to provide designated elements to the CATF and amphibious assault support to the NBG during the initial assault and early phases of an amphibious landing. PHIBCBs also assist the LFSP naval support element (NSE) in such MPF operations that do not interfere with the primary CSS mission during amphibious assault. The PHIBCB is not capable of prolonged field employment without the appropriate augmentation by mobilized SELRES personnel.

2.6.1.3 Organization. The PHIBCB or ACB is commanded by a Navy CEC commander. The PHIBCB is organized administratively into a headquarters company, an equipment company, a limited construction company, and a pontoon/craft company as illustrated in Figure 2-5. PHIBCBs are established units of the NBGs.

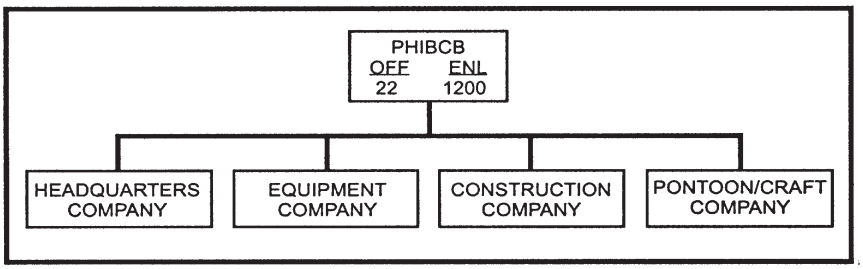

Figure 2-5. Organization of the Amphibious Construction Battalion

2.6.1.4 Concept of Employment. There are two PHIBCBs, one each under the OPCON of the fleet CINCs via the amphibious groups' naval beach groups and Commander, Naval Surface Forces Atlantic (COMNAVSURFLANT) or Commander, Naval Surface Forces Pacific (COMNAVSURFPAC). They are readily organized to perform specific tasks and, when employed in support of amphibious operations, they become essential elements of the NBG, the naval component of the LFSP. A PHIBCB supports the MAGTF landing over two designated beaches during the amphibious assault. PHIBCBs maintain organizational command integrity under all assignments. Additional information on the employment of PHIBCBs is contained in NWP 3-02.1/FMFM 1-8, Ship-to-Shore Movement.

2.6.1.5 Tasks. Refer to Appendix B for specific tasks within the range of the PHIBCB's capabilities. Essentially providing logistics-over-the-shore support of an amphibious operation during the assault echelon and/or assault follow-on echelon phases or offload support of an MPSRON. The most common tasks of the PHIBCB are to:

1. Provide, assemble, and operate pontoon causeway barge ferries.

2. Provide side-loadable warping tugs and causeway sections powered for causeway ferry operations and installation of piers, elevated causeway system (ELCAS), ship-to-shore bulk fuel and water systems, and the OPDS.

3. Provide, assemble, maintain, and operate the ELCAS.

4. As part of logistics-over-the-shore or JLOTS operations, assemble and operate barge ferries; and assemble, install, and operate a RRDF, an administrative or RO/RO pier, and the ELCAS.

5. Install and operate both the AABFS and AABWS. Install, with the assistance of UCT personnel, the OPDS for the NBG.

6. Provide part of the NSE of the LFSP to facilitate the landing and movement over the beaches of troops, equipment, and supplies, and to assist the evacuation of casualties and EPW.

7. Establish and operate a support camp, and provide limited construction support for the NBG and other subordinate elements on the beach.

2.6.1.6 Combat Service Support Capabilities

2.6.1.6.1 Supply. The PHIBCB possesses organic supply support capability to include clerical and inventory services, and material support.

2.6.1.6.2 Maintenance. The PHIBCB is capable of performing organizational and intermediate (first and second echelon) level maintenance on organizational equipment, as well as organizational (first echelon) maintenance of communications equipment and assigned weapons.

2.6.1.6.3 Transportation. The PHIBCB possesses sufficient motor transport equipment to accomplish assigned missions and tasks, but does not have a motor transport mission.

2.6.1.6.4 General Engineering. The PHIBCB is capable of only limited tactical and specialized construction required to support logistics-over-the-shore missions. Refer to Appendix B for specific construction capabilities.

2.6.1.6.5 Health Services. The PHIBCB is capable of providing routine and limited organic emergency medical support.

2.6.1.6.6 Other Services. The PHIBCB is capable of performing self-administration, messing and custodial services, and providing ship's services to other units.

2.6.1.7 C^4 and Defensive Capabilities.

The PHIBCB maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information to its subordinate elements.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data communications systems. PHIBCBs can also implement OPSEC measures. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.6.2 The Construction Battalion Maintenance Unit

2.6.2.1 Mission. The mission of the CBMU is to maintain, operate, and repair public works, utilities, and other facilities at an established advance base after departure of the unit(s) that started the construction.

2.6.2.2 Organization. Commanded by a Navy CEC Lieutenant Commander, the CBMU is organized, manned, trained, and equipped to perform continuing maintenance tasks at combat support facilities, to provide self-defense, and to be self-sustaining so as to constitute no burden on the supported base commander. As illustrated in Figure 2-6, the CBMU consists of a headquarters company, equipment company, utilities company, and a construction company.

2.6.2.3 Concept of Employment. Once the NMCB completes a construction project or repair mission and redeploys to other sites, the CBMU then deploys to the site to operate and maintain the recently constructed/repaired facilities and utilities. In situations when a CBMU deploys to an advanced base before base construction or repair is completed, the unit may be attached to the construction unit (usually an NMCB) to assist in completing the facilities that the CBMU will subsequently operate and maintain. When employed, CBMUs carry out their assigned functions under the command of the advanced base commander or Navy component commander.

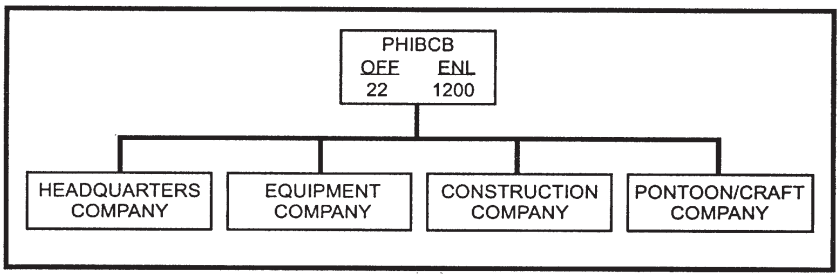

Figure 2-6. Organization of the Construction Battalion Maintenance Unit

2.6.2.4 Tasks. Refer to Appendix B for specific tasks within the range of the CBMU's capabilities. Typical CBMU tasks generally include, but are not limited to, the following:

1. Designated public works responsibilities at a Navy base, Marine Corps base, or other installation.

2. Maintenance, repair, and minor construction for structures and grounds, including waterfront facilities, runways, taxiways, parking aprons, and helicopter pads (including matting surfaces).

3. Operation and maintenance of automotive and construction equipment and maintenance of MHE, with the exception of that equipment organic to combat units.

4. Operation and maintenance of base utilities systems except expeditionary systems such as the AAFS, TAFDS, and water supply support system equipment.

5. Engineering services for the advance base as requested.

2.6.2.5 Combat Service Support Capabilities

2.6.2.5.1 Supply. The CBMU possesses organic supply support capability only. Procurement of Class IV materials for tasked projects is coordinated by the supported unit.

2.6.2.5.2 Maintenance. The CBMU is capable of performing organizational (first echelon) level maintenance on assigned communications equipment and weapons.

2.6.2.5.3 Transportation. The CBMU possesses sufficient motor transport equipment to accomplish assigned missions and tasks, but does not have a motor transport mission.

2.6.2.5.4 General Engineering. With a primary mission to provide public works support, construction tasks can only be performed by the CBMU at the expense of public works functions. The CBMU has limited tactical construction: base construction, and construction engineering capabilities. The CBMU possesses sufficient WDR/RRR as well as base facility maintenance and utilities operations capabilities. The CBMU is capable of emergency/ disaster control and recovery operations. Refer to Appendix B for specific construction capabilities.

2.6.2.5.5 Health Services. The CBMU is capable of providing only limited organic medical support.

2.6.2.5.6 Other Services. The CBMU is capable of self-administration and providing organic food services support. The CBMU is capable of limited organic disbursing, postal, legal, civil affairs, and information systems support services.

2.6.2.6 C^4 and Defensive Capabilities. The CBMU maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data communications systems. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.6.3 The Construction Battalion Unit

2.6.3.1 Mission. The mission of a CBU is to erect, operate, and maintain a rapidly deployable medical facility (RDMF) employed by Navy fleet hospitals. CBUs also provide limited construction support for the advance base, maintain a self-defense capability, and can accomplish disaster control and recovery efforts when required. In peacetime, the primary mission of a CBU is to provide limited construction at designated Navy shore installations.

2.6.3.2 Organization. Normally commanded by a Navy CEC Lieutenant (junior grade), a CBU normally functions as an integral unit. As illustrated in Figure 2-7, the CBU consists of a single platoon of three squads. Operationally, the CBU is configured in two divisions, *Transportation* and *Construction*, which reflect its normal peacetime supporting role to the naval shore installation.

2.6.3.3 Concept of Employment. The purpose of CBUs is to provide Seabee personnel shore duty billets with follow-on construction training opportunities and to provide shore station (e.g., Naval Base and Naval Air Station) commanding officers with military construction forces to relieve MRP burdens. CBUs have a secondary peacetime mission of providing disaster relief and contingency support as directed by their host base

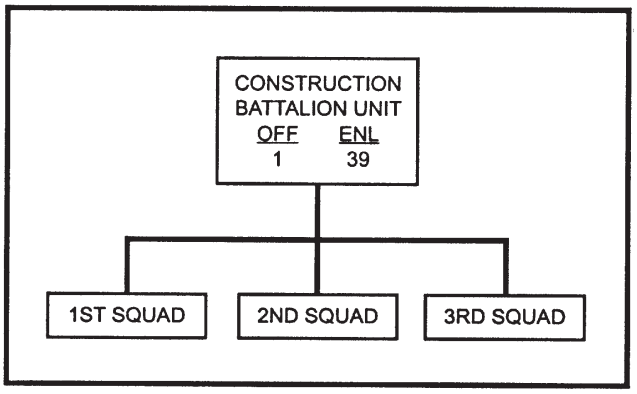

Figure 2-7. Organization of the Construction Battalion Unit

commander. The primary contingency mission for CBUs is to provide construction support and follow-on public works functions for assigned forward-deployed Navy fleet hospitals.

2.6.3.4 Tasks. Refer to Appendix B for specific tasks within the range of the CBU's capabilities. The CBU is expected to perform both specialized and operational construction logistic support, which generally includes the following:

1. Erect, maintain, and support Navy fleet hospitals.

2. Conduct WDR operations to restore central base camp power, sewage, and water systems.

3. Establishment and operation of limited ADP service.

2.6.3.5 Combat Service Support Capabilities

2.6.3.5.1 Supply. The CBU possesses organic support capability only. This capability is maintained in the supported fleet hospital's TOA. Procurement of Class IV materials for tasked projects is coordinated through, in peacetime, the host base commander, and, in wartime, through the supported fleet hospital.

2.6.3.5.2 Maintenance. The CBU is capable of performing organizational and intermediate (first and second echelon) level maintenance on engineer organizational equipment, as well as organizational (first echelon) maintenance of communications equipment and assigned weapons, less optical equipment.

2.6.3.5.3 Transportation. The CBU possesses sufficient motor transport equipment to accomplish assigned missions and tasks, but does not have a motor transport mission.

2.6.3.5.4 General Engineering. The CBU is capable of specialized construction related to fleet hospital support, as well as WDR and RRR operations. Refer to Appendix B for specific construction capabilities.

2.6.3.5.5 Health Services. No organic medical or dental capabilities. The CBU is dependent on supported unit.

2.6.3.5.6 Other Services. The CBU is capable of self-administration. The CBU is not capable of providing organic food services, disbursing, postal, and graves registration services support.

2.6.3.6 C^3 and Defensive Capabilities. The CBU maintains:

1. A COC capable of collecting, processing, displaying, evaluating, and disseminating tactical information.

2. An organic communications capability that provides visual and internal, tactical and secure, voice and data communications systems. Refer to paragraph 1.4.7.

3. A local security defensive combat capability. Refer to paragraph 1.4.8.

2.7 ELEMENTS OF THE ENGINEERING PROCESS

The engineering process involves six fundamental elements: Project management, planning, design, construction, operations/maintenance, and disposal. All six elements exist in almost any civil engineering undertaking. No construction project can be undertaken without some amount of planning and design, as well as the project management to ensure that material, equipment, and labor resources are available when required. Similarly, operation and maintenance of facilities and utility systems invariably require some amount of redesign, repair, and construction. All civil engineering operations generate some waste requiring disposal and most facilities are at some point in time excessed, demolished, or reconstructed. These elements are briefly discussed below.

2.7.1 Project Management. This is the overarching element by which project scope, schedule, costs, and resources are defined and managed. All levels of the chain of command have some responsibility for project management and project management is required on all projects. In peacetime, project scope for a new construction project may be developed in substantial

detail within a well-defined budget by a team of engineers and architects along with customer representatives. In contingency situations, project scope is likely to be established through the CESP process or by the direction of the commander, and detailed project management performed by the NCF regiment and NMCB operations staff.

2.7.2 Planning. Facility planning is the process by which requirements are developed and forecast, and general timeframes and methods for implementation established. Facility requirements may be requested by the commander or base facility, or may be developed directly by engineering planners in response to operational requirements. Planners develop a course of action that may include utilization of existing facilities, modifications to existing facilities, or new construction. Planning also includes assessment and establishment of project priorities, both in the peacetime facility process and in CESP development. Methods of implementation for facility projects include utilization of existing facilities or leased facilities, or facility renovation/ construction by contract or by troop construction assets. For locations outside the United States, NAVFAC will negotiate Host Nation agreements and NAVFAC real estate experts may develop leasing agreements to mitigate new construction requirements where the Navy is the contract construction agent (CCA). In contingency situations, Real Estate officers survey, select and lease facilities required by the commander.

2.7.3 Design. Obviously a critical element of the engineering process, facility design can range from contracted architectural and engineering services for custom design to implementation of advanced base functional components (ABFC) and NAVFAC standard designs. NAVFAC is the primary facility design agent for the Navy and can provide a full range of architectural, structural, civil, mechanical, electrical, system, geotechnical, environmental, fire protection, and surveying services, both in-house and contracted.The NCF has limited design capabilities, but can modify existing designs to meet existing site conditions.

2.7.4 Construction. Construction is defined as construction, alteration, or repair of buildings, structures, or other real property. Construction projects are generally divided into two categories: expedient and permanent. Expedient construction is primarily utilized during contingency operations to provide required facilities for the desired timeframe in the most expeditious manner

utilizing available resources. Permanent facilities are those constructed to meet long-term mission requirements. Naval civil engineers can perform facility construction or can contract for construction through any of several contracting mechanisms. Host Nation agreements may dictate particular design, construction, and contracting standards. Permanent facilities are generally constructed in peacetime by contract. Contract acquisition is provided by the engineering field division (EFD) that also assigns a resident officer in charge of construction (ROICC) for construction management and contract administration. Expedient facilities may be constructed by Seabees, by separate contingency contracts, or through CONCAP, the Navy's on-call emergency construction capabilities contract. If contractor assets are used, an in-country ROICC office will be established.

2.7.5 Operations and Maintenance. The operation and maintenance of bases, stations, and other facilities, both in the United States and overseas, provides a foundation for support of operational forces. Once constructed and occupied, all facilities require operations and maintenance. This includes maintenance and repair of structures, maintenance of roads and bridges, minor alterations and improvements to facilities, operation and maintenance of water, electrical, sanitary, and heating/cooling systems, and operation and maintenance of transportation pools and material handling equipment. Navy civil engineers operate and maintain all permanent Navy shore facilities. Civil Engineer Corps officers provide public works management and leadership with services being provided by civil servants, Host Nation employees in foreign countries, contract – either limited scope facility support contracts or a comprehensive BOS contract, or by Seabees. Particularly at overseas bases, Seabees provide significant public works support and are capable of operating and maintaining systems and facilities during contingency situations.

2.7.6 Disposal. This element spans in scope from disposal of construction debris and waste oil to environmental restoration for base closure and retrograde of contingency facilities. Navy civil engineers are among the first on the scene in contingency situations to establish required temporary and expedient facilities and the last to leave to ensure U.S. temporary facilities are removed or restored to conditions suitable for turnover to the Host Nation.

Retrograde operations, including redeployment of personnel, materials and equipment, disestablishment of contingency bases, and disposal of wartime material or war-generated wastes, are enormous undertakings and require detailed planning. Engineer responsibilities during retrograde operations include:

1. Continued operation and maintenance of facilities during the redeployment process

2. Scheduling and operation of material handling equipment

3. Cleaning of equipment and material containers

4. Returning facilities and land to its original or better condition

5. Dismantling of temporary facilities

6. Environmental cleanup and hazardous materials/waste disposal

7. Compliance with Host Nation, international, and national regulations and laws.

Navy civil engineers contribute greatly to this transition to a peacetime working environment. Available expertise in public works functions, environmental matters, and contracting can all be used to smooth the transition.

CHAPTER 3

Seabee Planning

3.1 GENERAL

Following a 7-month homeport period for reconstitution and training of personnel, NMCBs normally deploy overseas for 7-month construction missions to permanent main body deployment sites. Details from these forward-deployed NMCBs are routinely reassigned to remote bases within the theater to provide general construction and MRP support. Deployment to these main body sites, currently located at Guam and Okinawa in the Pacific theater, and at Roosevelt Roads and Rota in the Atlantic and European theaters, constitutes a forward presence of potential and significant engineer support available to the MAGTF commander during a contingency. In terms of operating environments, Seabees are capable of supporting sustained MAGTF operations in arctic, temperate, desert, and tropical climates.

3.1.1 Engineer Force Multiplier. The Seabee task organization notionally assigned to support a full MEF is a naval construction regiment (normally consisting of an NCR command element, four NMCBs, one NCFSU, and elements of a UCT) that provides a significant increase in the engineering capability of a MAGTF of that size. To put this engineer force multiplier in perspective, there are approximately 2,350 engineers in the table of organization for a notional MEF. The Seabee task organization structured to support a full MEF, as called for in the USMC/USN Terms of Reference and discussed elsewhere in this publication, exercises command and control over approximately 3,340 Seabee officers and enlisted personnel.

The following planning factors significantly impact on the employment of Seabee units within a MAGTF and should be completely understood by both USMC and USN civil engineer planners:

1. Seabee units are capable of significant CSS tasks involving vertical, horizontal, and specialized construction utilizing most construction-grade material. Refer to Appendix B for a range of specific CSS tasks.

2. Seabee units have a limited capability to execute CS tasks. Refer to Appendix B for the range of these limited CS tasks.

3. All Seabee units are capable of self-defense.

4. Seabee units generally complement (*rather than duplicate*) the existing general engineering capabilities of Marine engineer organizations.

The addition of approximately 3,340 skilled CEC officer engineers and Seabee craftsmen in support of a full MEF produces the necessary and desired synergistic effect only if properly employed, controlled, and coordinated. So that the employment of Seabee units is most effective to mission success, it is absolutely imperative that MAGTF commanders understand the missions, capabilities, organization, and employment considerations of the Seabees. Crucial to this understanding is the advisory support provided the MAGTF commander by a Navy CEC liaison officer (LNO) known as the NCF LNO. When properly integrated into the MAGTF, Seabee units significantly enhance the four functional areas of engineer effort (discussed previously in Chapter 1) critical to a MAGTF's mission success: *mobility, countermobility, survivability*, and *general engineering*.

3.2 SEABEE OPERATIONAL PLANNING CONSIDERATIONS

3.2.1 General. National objectives, as articulated by the NCA, are translated into strategic concepts and military objectives. The decisions as to threat assessment, force level, and force mix are reflected in the strategic, logistic, and programming guidance provided by the Joint Chiefs of Staff in the Joint Strategic Capabilities Plan to the unified and specified CINCs and military services. OPLANs and CONPLANs to meet the specified threats are prepared by the unified combatant CINCs with input from their individual Service component commanders. In turn, the Navy and Marine Corps component commanders will identify the engineering support deemed necessary to support the mission, in terms of both logistics and force level requirements and depending on the strategic mission identified by the unified CINC. CESPs

necessary to guide engineers' efforts are thus developed as an appendix to Annex D (Logistics) to OPLANs and CONPLANs.

3.2.2 Engineer Staff Actions

3.2.2.1 General. The MEF engineer officer, with the assistance of the NCF LNO in those areas involving the Seabees, advises the commander on the employment of all engineer forces under MAGTF command or control (e.g., Seabee, joint, unified combined, military, or civilian).

3.2.2.2 Engineer Staff Augmentation. With the addition of the NCR in support of a full MEF, the greatest portion of the MAGTF commander's general engineering capability lies in his supporting Seabee units. To effectively plan, direct, and coordinate the activities of Seabee forces as delineated in FMFM 3-1, Command and Staff Action, the MAGTF engineer staff will require augmentation to include CEC officers and other appropriate liaison personnel. The present MEF command element's nucleus engineer staff, with the assigned NCF LNO, can adequately accomplish peacetime, preemployment staff requirements. However, the engineering requirements generated subsequent to the employment of a MEF will require a more capable staff structure. Because of the time, personnel, and expertise necessary to adequately address the full spectrum of engineering requirements, a MAGTF's engineer staff will require augmentation to ensure that the efforts of all engineer and construction organizations, military or civilian, support the accomplishment of the assigned mission.

3.2.2.3 Augmenting the MEF Engineer Staff. The command element of each standing MEF contains a billet for the NCF LNO, whose role is to advise and assist the MEF engineer officer with the coordinated execution of engineer tasks utilizing Seabee units. He also advises the MEF commander on all matters pertaining to the mission, capabilities, deployment, and employment of Seabee units. Additional Seabee augmentation to the MEF engineer staff may vary significantly based on the scope and complexity of the engineer requirements, and the priorities of the MAGTF commander. In addition to the NCF LNO, the engineer staff can be augmented as necessary with a liaison officer from the supporting Seabee organization.

3.2.2.4 Augmenting the MEF (FWD) Engineer Staff. The NCF LNO is also organic to the command element of a MEF (FWD). However, the option to deploy this officer is situation-dependent. The requirement for an additional liaison officer from the supporting Seabee organization may also exist.

3.2.2.5 Augmenting the MEU Engineer Staff . If sustained operations ashore are anticipated, the general engineering capability of a MEU(SOC) may be augmented with an NMCB Air DET. However, if the augmentation required the support of more than one Seabee unit, consideration should be given to augmenting the MEU(SOC) command element with both a Marine engineer officer and a Seabee LNO to direct and coordinate the activities of subordinate and associated engineer organizations. Although Marine Corps and Seabee engineer augmentation is not routinely required to support peacetime MEU(SOC) deployments, it is strongly advised to do so when sustained operations ashore are anticipated.

3.2.3 Seabee and MAGTF Planning. To ensure mission success achieved through complementary engineering support, MAGTF commanders must be assured that Seabee personnel, organizations, and equipment are ready, responsive, and prepared to meet the MAGTF's contingency engineering requirements. Strategic engineer planning at both the MEF and NCB levels is an ongoing, evolutionary process to ensure that Seabees are ready to support the MAGTF. This process addresses the following issues of *Deliberate Planning*, *Determination of Construction Support Requirements*, and *Support of Operational Forces* as described below.

3.2.3.1 Deliberate Planning. This consists of reviewing, validating, and refining the CESP portion of the unified combatant CINCs (as well as the Navy and Marine Corps component commanders') OPLANs and CONPLANs as directed by the JSCP; ensuring the time phasing, available force structure, and employment schedules coincide with the supported commanders' expectations as expressed in time-phased force and deployment data documents; and coordinating with planning staffs of both external supported and supporting commands.

3.2.3.2 Determining Construction Support Requirements. Participation in combined, joint, fleet, and FMF exercises and wargames provides opportunities for engineer planners to enhance their understanding of the role

that civil engineering plays in military operations. Analysis of the lessons learned from such participation forms the basis for validating both current as well as future Seabee force structure requirements to meet the CINCs' civil engineering support plans. The Joint Engineer Planning and Execution System may also be used to assist Marine and Seabee engineer planners in estimating engineer workloads to support MAGTFs of varying sizes and compositions.

3.2.3.3 Support of Operational Forces. A USMC/NCF interoperability working group (USMC/NCF IWG) meets regularly to ensure that NCF units remain capable of supporting operational forces. This group examines all aspects of interoperability from equipment, weapons, and ammunition to missions, capabilities, and doctrine.

3.2.4 Command Relationship Factors. As delineated under the USMC/USN Terms of Reference, Seabee units are assigned to and employed under the *direct OPCON of the MAGTF commander*. Seabee units are not to be attached to Marine organizations. The MAGTF commander will determine if OPCON of any element of the Seabee component should be further established between Seabee units and subordinate element commanders of the MAGTF. Factors influencing this decision typically include consideration of the following:

1. The priority, scope, and geographic location of the MAGTF's general engineering requirements.

2. The size, capabilities, mission, and current location of the appropriate Seabee organizations available to support the MAGTF.

3. The time or phase of the operation when Seabee units are available for employment.

3.2.4.1 Concept of Organization. Planners should be aware of the notional supported/supporting organizational associations established to support MAGTF operations as shown in Figure 3-1.

It must be emphasized that the above organizational associations are provided as general guidelines. The specific Seabee organizational relationship to the

Supported MAGTF Organization	Supporting Seabee Organization
MEF	NCR (NCR CE), four NMCBs, and UCT Air DET(s)
MEU (SOC)	One NMCB, Air DET and/or UCT Air DET

Figure 3-1. Notional MAGTF/Seabee Organizational Associations

MAGTF is based solely on the naval civil engineering mission as initiated and established by the supported MAGTF commander.

3.2.5 Navy and Marine Corps Component Planning. Navy and Marine Corps component commanders subordinate to a unified CINC may identify a range of forces such as the Military Sealift Command, PHIBCBs, and NMCBs to support their specific missions. These forces would normally be called in, for example, to support logistic movements, amphibious assault construction, and general engineering, respectively. The component commanders must have a clear concept of the assigned operation and subsequently the magnitude of the unique logistics and engineering support required in order to complete the mission effectively. Within the NCF, a planning tool used to define these support requirements at the facility level is the ABFC system. Described in more detail previously in Chapter 1, NAVFACENGCOM has developed a software program that lists detailed material requirements for the ABFC system at the facility level.

3.2.6 Miscellaneous Planning Considerations. Naval civil engineering planning shall always take into consideration the following issues of *Civil Engineering Plan Development*; *Use of JEPES*; *Facilities*; *Real Estate*; *Environmental*; and *Host Nation Support*.

3.2.6.1 Civil Engineering Support Plan. Civil engineering planning is an integral part of the joint operations planning process. The CESP identifies the minimum essential facilities and civil engineering capabilities needed to support the commitment of military forces. Unified CINCs are responsible for preparing CESPs, based on Service component input. The following issues

should be considered and identified by MAGTF and Seabee engineer planners when preparing input for a CESP:

1. Host Nation restrictions imposed on the use of bases and installations.

2. Assumptions regarding the availability of critical Host Nation Support.

3. Major construction resources to be allocated.

4. Availability of Class IV materials.

5. Desired standards of construction (initial or temporary) to be used.

6. Provision for force withdrawal, such as base denial and movement of relocatable residual assets.

3.2.6.2 Use of JEPES. As a planning tool, JEPES is used to develop data to assist the unified CINC and Service component staffs in determining their civil engineering support requirements and documenting their CESP as an appendix to the logistics annex of the OPLAN and/or OPORD.

3.2.6.3 Facilities. The unified CINC is responsible for the coordination of planning, programming, and construction of facilities to meet the requirements of Service component forces. Facility requirements are optimized consistent with operational requirements, duration of need, and forces to be supported. Initial or temporary construction standards and facility requirements, as required by the mission, determine the types of materials and construction techniques used in constructing facilities in support of contingency operations. Standard facility designs are utilized by naval civil engineers and may be modified in response to operational, environmental, unusual site, or unique customer requirements. When planning for contingency operations, MAGTF and Seabee engineer planners shall ensure that specific facility requirements are identified and forwarded to the unified CINCs, Navy and Marine Corps component commanders, and CJTF.

3.2.6.4 Real Estate. The unified CINC is responsible for coordinating real estate requirements of the Service component forces. Navy and Marine Corps component commanders conduct such real estate activities as determin-

ing requirements for their forces; selecting, acquiring, maintaining, and disposing of property; processing of claims; and maintaining accurate records. Aspects of acquisition and/or leasing real estate in support of naval civil engineer operations shall be a consideration by MAGTF and Seabee engineer planners.

3.2.6.5 Environmental. All naval civil engineer operations shall be planned and conducted with appropriate consideration of their effect on the environment in accordance with U.S. and HN agreements, environmental laws, and regulations, as well as Federal, state, or local environmental laws and standards. An annex or appendix to each OPORD and OPLAN under which Marine and Seabee engineer units will deploy shall address such environmental considerations as:

1. Policies and responsibilities to protect and preserve the environment.

2. Certification of local water sources by appropriate medical personnel.

3. Solid and liquid waste management, to include open dumping and burning; and the disposal of gray water, pesticides, human waste, and hazardous materials.

4. Hazardous materials management including the potential use of pesticides.

5. Protection of indigenous animals and vegetables.

6. Archaeological and historical preservation.

7. Contingency spill plans.

3.2.6.6 Host Nation Support. Logistic assistance sought from HNs can include, but is not limited to, POL, transportation, telecommunications, civilian labor, rear area protection, facilities, contracting, acquisition of equipment, supplies, services, and health services support. Subject to agreements and restrictions, unified CINCs will obtain authority for negotiations with HNs through Joint Staff, Office of Secretary of Defense, and Department of State

channels. Marine and Seabee engineer planners will identify specific requirements for HNS and forward their requests through the CJTF or the Service component commanders to the unified CINC.

3.2.7 Requesting Seabee Support

3.2.7.1 General. With the objective being to validate general engineering requirements of the supported MAGTF elements, Marine and Seabee engineer planners at the unified CINC, Service component commander, and MEF/NCB levels shall continually review appropriate operational and contingency plans. Deliberate planning shall ensure that the CSS and CS requirements for Seabee units are met and that Seabee units are integrated into the appropriate supporting and implementing documents (e.g., TPFDDs). In a contingency, however, and during either the predeployment planning or postembarkation stages, the designated MAGTF commander may determine the requirement for Seabee augmentation exceeds the level specified in the implementing OPORD. In this case, the assignment of additional Seabee units specifically task-organized for the mission assigned shall be requested through appropriate channels.

3.2.7.2 Appropriate Channels. Requests for Seabee support should be forwarded through the chain of command to the cognizant fleet CINC for action as reflected in Figure 3-2.

3.2.7.3 Preparing the Support Request. When the MAGTF commander determines a requirement for Seabee support, the requirement should contain specific, rather than generalized, tasks to the greatest degree possible. Descriptive requirements provide Seabee engineer planners the information necessary to tailor the appropriate support (both equipment and personnel) to best fit the mission. A suggested request worksheet format is contained in Appendix E.

3.3 SEABEE EMPLOYMENT CONSIDERATIONS

3.3.1 General. The MAGTF's general engineering requirements will normally determine the scope of Seabee employment during any operation. Seabee units focus on general engineering tasks and are limited by training and equipment in the areas of combat and combat support capabilities. Prior

to assigning a mission to a Seabee unit, a thorough analysis should be conducted by Marine and Seabee engineer planners to determine if all aspects of the assignment fall within the capabilities of a given Seabee organization. Seabee units should receive specific tasks or types of tasks, vice area or general support tasks. The Seabees are *construction* organizations. Although they do have credible defensive capabilities, Seabee organizations do not possess the offensive combat capabilities resident in Marine engineer units and, thus, should not be viewed as interchangeable with or used in lieu of MAGTF engineer organizations.

The internal organization of the supporting NCR-sized task organization is based on the MEF mission, geographic area of employment, spectrum of conflict, and a variety of other personnel, equipment, and organizational factors. Seabee commanders are obviously more knowledgeable, experienced, and capable of determining the appropriate structure of an NCF task organization than their Marine counterparts. When specific task organization is required, MAGTF engineer planners should clearly articulate their general engineering support requirements, thus allowing the Seabee commander the flexibility to configure his organization in order to accomplish the anticipated mission.

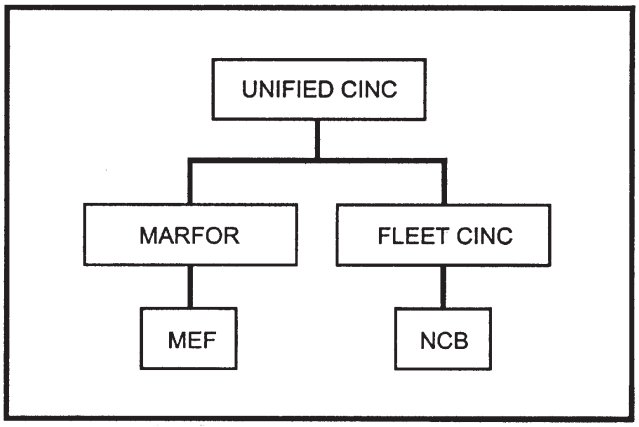

Figure 3-2. Chain of Command for Request of Seabee Support

3.3.2 Organizational Planning. As stated throughout this publication, Seabee units may be task-organized and tailored to provide specific engineering support for an assigned mission under the OPCON of a MAGTF commander. Although organizational integrity should be maintained, Seabee units may be placed along with joint and/or combined (military or civilian) construction forces, under the OPCON of an engineer group commander at the direction of the supported CJTF or unified CINC.

3.3.3 Organizational Integrity. Seabee units are always employed in such a manner that command and organizational integrity are maintained at all times.

3.3.4 Employment Phasing. The MAGTF's assigned Seabee units will normally deploy with the AFOE. However, task-organized Seabee units (e.g., a PHIBCB) may be employed with the AE if the mission warrants. Upon arrival in the AOA, the Seabee unit will be employed in a base development or damage repair role within the force beachhead or other area and shall be immediately integrated into the RAS plan. Those general engineering tasks that enhance sustainability and survivability will normally have priority of effort during this phase of the campaign.

3.3.5 Mobilization and Assignment. Seabee units assigned to the MAGTF commander can be available to embark as shown in Figure 3-3. These assignments are subject to approval of the cognizant fleet CINC and, in the case of Reserve component Seabee organizations, mobilization to active duty and preparation for deployment.

Depending on the applicable OPLAN or CONPLAN, an NCR command element should deploy with the NMCBs to provide Seabee command and control functions to a MEF-sized MAGTF.

3.3.6 Personnel Allowances. As over 65 percent of the NCF resides in the Reserve component, active units typically are manned at only 70 to 80 percent of their wartime strength. However, the active NMCBs shall man up to full strength upon mobilization at M+1 of their assigned augment units. If an active Seabee unit is requested prior to the mobilization of Reserve forces, the number of personnel listed in Figure 3-4 will be available for deployment. The activation of SELRES personnel required is dependent on mobilization

orders issued by the NCA, with the degree of mobilization (*selective*, *partial*, *full*, or *total*) specified in the orders.

NMCBs and their task-organized detachments and teams are flexible organizations capable of responding on short notice. By deploying only the equipment and personnel tailored for specific tasks, the embarkation requirements are greatly reduced, thus enhancing response time to the supported MAGTF.

3.3.7 Deployment Considerations . The deployment and subsequent employment of Seabee units in support of a MAGTF will be tailored to the anticipated mission. Forward-deployed MAGTFs, such as the MEU(SOC) or SPMAGTF, may ordinarily request assignment of Seabee units up to and including an NMCB. These Seabee units may redeploy either from the existing NMCB forward-deployment sites, or from aboard ship as part of the landing force for incorporation into either the AE and/or the AFOE. Transportation via strategic air is the primary deployment mode. Figure 3-5 lists the notional transportation requirements of Seabee units. The lift requirements can be reduced when units are tailored to meet assigned missions. Additionally, both amphibious and MPF operations may require the specific capabilities of unique Seabee units. Though not forward-deployed, these Seabee units may also be available for employment upon request of the MAGTF commander through the cognizant fleet CINC.

3.3.7.1 Lift Considerations. Should a requirement exist for the expeditious deployment of the MAGTF's assigned Seabee units into the theater,

Supporting Seabee Organization	Availability
One NMB Air DET and/or UCT Air DET	48 Hours
NMCBs, UCT Air DET(s)	6 Days
NCR, (NCR CE), four NMCBs, and UCT Air DET(s)	6 Days

Figure 3-3. Availability of Seabee Units to a MAGTF

Type of Organization	Peacetime	M+1
NCR Command Element	45	64
NMCB	626	769
NMCB Air DET	89	89
NCFSU	214	214
UCT	69	85
UCT Air DET	15	15
PHIBCB	400	1,300 to 1,800
CBMU	351	352

Figure 3-4. Personnel Allowances of Seabee Organization

significant elements of the NCF, primarily the NMCB and UCT Air DETs, can deploy by air. In addition to its Air DET, each NMCB can deploy an air echelon composed of 648 personnel and 108 pieces of CESE, which equates to 875 STs of air shipment. For planning purposes, the remaining personnel and equipment (known as the sea echelon) should be scheduled to arrive at the NMCB's deployed location within 30 days, thus enabling each NMCB to maintain a capability for 60 days' sustainability. While an NMCB is not totally air transportable, the NCR CE can deploy completely by air.

3.3.8 Seabee Support Requirements. As all components of a MAGTF require CS and/or CSS augmentation to sustain combat operations ashore, assigned Seabee organizations will also require augmenting support to execute general engineering tasks assigned by the MAGTF commander. The USMC/NCF Terms of Reference provides policy governing the level and scope of CS and CSS provided to Seabee units by the MAGTF commander. General examples of CS and CSS requirements follow.

3.3.8.1 Combat Support. As large construction projects (e.g., airfields, cantonments) and remote site locations (e.g., well drilling sites, rock quarry

Type of Organization	M+1 Manning	Weight (STs)	Sealift (SF)	C-5 Sorties	C-141 Sorties	C-17 Sorties	C-130 Sorties
NCR (Command Element)	64	115	3,295	1	4	2	9
NMCB (Full)	769	3,005	75,214	N/A	N/A	N/A	N/A
NMCB (Air Echelon)	749	875	55,281	30	60	44	136
NMCB (Sea Echelon)	20	2,130	19,933	N/A	N/A	N/A	N/A
NMCB Air DET	89	300	5,828	5	14	8	22
NCFSU	214	4,449	60,782	71	207	104	324
UCT	70	300	6,990	2	5	3	14
UCT Air DET	15	91	2,330	1	4	2	7
PHIBCB	1,222	336	39,920	5	16	8	24

Figure 3-5. Notional Transportation Requirements for Seabee Organizations

operations, nonstandard bridge construction) will draw enemy attention, threat-dependent augmentation to counter enemy air and ground forces may be required to effect completion of the MAGTF's engineering priorities. Examples of possible CS to be provided to supporting Seabee units to satisfy their defensive requirements could include air defense units, artillery and/or naval gunfire, and reinforcing infantry.

3.3.8.2 Combat Service Support. CSS expected by the supporting Seabee units can best be summarized through a review of the six functional levels of operational logistics and CSS (e.g., supply, maintenance, transportation, general engineering, health service, and other services) as described below. Refer to FMFM 4, Combat Service Support, for additional information.

3.3.8.2.1 Supply. Seabee units will generally require replenishment of Classes I (after 5 days), II (after 60 days), III (after 3 days), V (after 15 days of sustained combat operations), and VI (after 60 days) following depletion of their organic allowances. Seabee units deploy with limited quantities of Class IV to complete their own base camp construction. The MAGTF must source all other Class IV required to complete NCF engineering tasking. Classes VII, VIII, and IX will require replenishment on an *as needed* basis. Navy unique Class VII and Class IX items will typically be sourced by the NCBCs and distributed through MAGTF channels.

3.3.8.2.2 Maintenance. Seabee units are generally capable of organizational through intermediate (first and second) levels of maintenance on organizational engineer equipment, as well as organizational (second echelon) maintenance on assigned communications and weapons systems (less optics). External support for maintenance above these levels will be required.

3.3.8.2.3 Transportation. Critical to the overall throughput system, Seabee units will require landing support to facilitate receipt, storage, and further shipment of material and personnel across beaches, through ports, and into helicopter landing zones; augmentation motor transport of Class IV materials to project sites; port and terminal operations, and passenger/freight transportation.

3.3.8.2.4 General Engineering. In addition to engineer reconnaissance, Seabee units will require assistance with deliberate demolitions and explosive obstacle removal.

3.3.8.2.5 Health Services. The NMCB, which is the most capable of Seabee organizations with respect to the level of organic medical and dental care available, possesses the ability to provide Echelon I (BAS) medical care and limited organic dental support only. All other Seabee units co-located and supporting the MAGTF will generally require Echelon I (beyond the unit corpsman level) and Echelon II. Echelon III, Echelon IV, and Echelon V care are beyond the capabilities of a MEF-sized MAGTF.

3.3.8.2.6 Other Services. With the exception of the NMCB, Seabee organizations will generally require field exchange services support, security

support, legal services, civil affairs, and graves registration. However, if Seabee units are co-located to an NMCB, many of these CSS functions may be available from the NMCB.

CHAPTER 4

Seabee Operations

"Boy, am I happy to see you!" — ADM Leighton Smith, USN, Commander, NATO Implementation Force (IFOR) to Seabees upon their arrival in Bosnia in support of Operation *Joint Endeavor*.

4.1 GENERAL

This chapter addresses, in concept, the wide range of NEF operations that Seabee units may be assigned to support. It also discusses the roles of Seabee support critical to the mission success of these operations. The types of operations include the following:

1. Forward-Deployed MAGTF Operations
2. Amphibious Operations
3. Pre-positioning Operations
4. Military Operations Other Than War.

For additional information, refer to JP 3-02, Doctrine for Amphibious Operations, JP 3-07, Joint Doctrine for Military Operations Other Than War, MJCS-275-89, Planning Factors for Military Construction in Contingency Operations, FMFM 2, Marine Air-Ground Task Force Doctrine, FMFM 1-5/ NWP 3-02.3, Maritime Pre-Positioning Force (MPF) Operations.

4.2 SEABEE SUPPORT OF FORWARD-DEPLOYED MAGTF OPERATIONS

4.2.1 General. Flexibility and responsiveness are key to supporting the expeditionary nature of such forward-deployed MAGTFs as MEU(SOC)s. If sustained operations ashore are anticipated and it has been determined a significant level of CSS engineering support is required to support the mission, the MEU(SOC) commander, on the advice of Marine and Seabee engineer planners, may request the augmentation of a task-organized Seabee unit.

Another type of MAGTF, the special purpose MAGTF (SPMAGTF), can be task organized to accomplish specific missions that another MAGTF would be too large or inappropriate to employ. SPMAGTFs can be organized, trained, and equipped to conduct a wide range of expeditionary operations in response to a crisis or peacetime mission. Their duties can range from noncombatant evacuation to disaster relief and humanitarian missions. If deployed ashore for a prolonged period, a SPMAGTF may also require augmenting general engineering support from a Seabee unit.

4.2.2 The Seabee Role in Forward-Deployed Operations. Although notional Seabee support of a MEU(SOC) is typically in the form of an NMCB Air DET, it is conceivable a UCT Air DET may also be employed if conditions of the MEU(SOC)'s mission require the unique capabilities of a UCT. Both of these basic task organizations, ready to deploy by air within 48 hours of notification, may be reconfigured and expanded as engineering support requirements dictate.

Seabee support can be employed by co-locating the Air DET with the MEU(SOC) ashore via airlift or aboard amphibious shipping. A request for Seabee augmentation will normally occur on short notice from the MEU (SOC) commander. Pre-positioned personnel and equipment from the permanent NMCB deployment sites may provide additional and specialized Seabee support. Since it is appropriate to employ Seabee units in response to specific general engineering missions, Seabee units may support only a portion or phase of an operation and then redeploy. In a MOOTW environment, NCF organizations may be employed to support a wide range of MAGTF missions (e.g., disaster relief and recovery, nation-building requirements) and may remain ashore for prolonged periods.

4.3 SEABEE SUPPORT OF AMPHIBIOUS OPERATIONS

4.3.1 General. The amphibious operation, an attack launched from sea by naval and landing forces embarked in ships or craft involving a landing on a hostile shore, is one of the most decisive tools of power projection by naval expeditionary forces. The task organization for conducting amphibious operations, as determined by the mission, is the ATF and consists of both a naval force and a landing force with organic aviation and logistic support. For additional information, refer to NWP 3-02.1/FMFM 1-8, Ship-to-Shore Movement.

4.3.2 Concept of Amphibious Operations

4.3.2.1 Naval Force. The NBG is one of four key components of the naval force that also includes the transport group, movement groups, and control groups. The NBG is a permanently organized command that in addition to providing beachmaster units (BMUs) and displacement landing craft/LCAC assault craft units, also provides PHIBCBs to the ATF to support the landing of a MEF. It provides Navy elements to both the CATF and the Commander, Landing Force (CLF) in support of waterborne ship-to-shore movement and landing force support party (LFSP) operations. During MPF operations, the NBG commander becomes commander of the NSE and directs the naval cargo handling and port group element.

4.3.2.2 Landing Force. The LF is the highest troop echelon in the ATF and encompasses the entire MAGTF. Besides the GCE, ACE, and CSSE, a MAGTF involved in amphibious operations also consists of the tactical logistics group (a temporary LF organization advising the CATF and CLF of LF requirements during ship-to-shore movement) and the LFSP (a temporary LF organization established to provide the LF with initial combat support and CSS during ship-to-shore movement until relieved by the CSSE). The mission of the LFSP, task-organized from the NBG and other Navy organizations as directed by CATF, is to:

1. Facilitate the landing and movement of troops, equipment, and supplies across beaches and landing zones, ports, and airfields.

2. Facilitate the establishment of the CSSE, ACE, and NBG ashore.

3. Assist in the beaching, extraction, and salvage of landing craft and amphibious vehicles.

4. Assist in the evacuation of casualties and EPW personnel.

4.3.2.3 MAGTF Movement. Strategic lift constraints and tactical considerations dictate that some MAGTFs be echeloned into the landing area. While MEU(SOC)s from forward-deployed amphibious ready groups are employed as single units, MEF is divided into two echelons: the AE and the AFOE. The AFOE, normally required in the AOA within 5 days after commencement of the assault landing, may arrive on schedule with some elements required as early as D-day, or may remain in a specified operating area until called forward by the CLF. A portion of the AFOE may include air-transportable personnel to assemble with their equipment on MPF ships.

4.3.3 Engineer Support of Amphibious Operations. Engineer support during the early phases of the amphibious assault is directly influenced by the ability to land engineer equipment. Under extreme conditions, the use of landing craft air cushion during the ship-to-shore movement may be required.

4.3.4 The Seabee Role in Amphibious Operations

4.3.4.1 Concept of Employment. Not all component Seabee organizations may be employed during amphibious operations. Normally employed under OPCON of the CATF, PHIBCBs and UCTs conduct construction missions that assist with the ship-to-shore movement of personnel, equipment, and supplies. Those Seabee units normally under OPCON of the MAGTF commander, such as the NMCB, NCFSU, and elements of a UCT, may be located in either the AE and the AFOE. The priority given to construction tasks assigned to Seabee units will determine the echelon in which the NCF will be employed, to be decided by the CATF and CLF.

Additional Seabee organizations may be assigned to the CATF and employed within the AOA. Examples of tasks requiring immediate priority are water well drilling and establishing or enhancing forward operating bases for fixed-wing aircraft.

4.3.4.2 Seabee Capabilities. Air-transportable, task-organized Seabee units such as the NMCB and UCT Air DETs are available for deployment upon 48 hours notice. Although extensive horizontal construction cannot be efficiently addressed with equipment that is transported by air, priority construction projects can be initiated by the Air DETs days prior to the arrival of MSC shipping. Additionally, local contractual acquisition of heavy engineer equipment may be possible to augment air-transported Seabee assets in a secure environment.

4.3.4.3 Seabee Tasks. As part of their primary mission, PHIBCBs, UCTs, and NMCBs provide development of the beach support area and beach throughput, and enhance the reception, staging, onward movement, and integration (RSO&I) to support the AFOE. Examples of the engineer effort required for the amphibious operation include the following:

1. Advise commanders on suitable locations for pontoon causeway piers and for beaching amphibious vehicles and landing craft.

2. Within the beach support area, facilitate the landing and movement of troops, equipment, and supplies across beaches and into LZs, ports, and airfields.

3. Construct helicopter LZs, FARPs, casualty evacuation stations, and EPW holding facilities.

4. Establish multiclass (e.g., Classes I, III, and V) supply dumps, to include operation of the AAFS and AABFS.

5. Construct and maintain beach lateral and exit roads.

4.4 SEABEE SUPPORT OF PRE-POSITIONING OPERATIONS

4.4.1 General. Pre-positioning operations present the unified CINC with two options for establishing a MAGTF's combat power ashore rapidly: the MPF operation and the Norway Airlanded MAGTF (NALM) operation. Both are strategic deployment options that utilize the Seabees' unique capabilities. The purpose of these pre-positioning operations is to establish a MAGTF ashore that is prepared to conduct sustained combat operations across the

operational spectrum as soon as possible. Because of the limited deployment means available and the likelihood of severe time constraints, the coordinated, detailed, timely, concurrent, and continuous planning of the engineer effort to support any pre-positioning force operation is essential.

4.4.2 Concept of MPF Operations. An MPF operation is a strategic deployment option that uses equipment and supplies pre-positioned aboard forward-deployed MPS(s). These ships are grouped together as an MPSRON, of which there are three stationed around the globe. MPF operations are global in nature, naval in character, and suitable for employment in a variety of circumstances. During an MPF operation, an appropriate-sized MAGTF and NSE are airlifted by Air Mobility Command into a host nation's secure airfield and taken to the arrival and assembly area to join up with their equipment and supplies in preparation for combat operations. The combination of Maritime Pre-positioned Equipment and Supplies (MPE/S) and airlifted elements associated with a MPSRON provides the MAGTF with sustainment capability for up to 30 days.

MPSRON 1 is based in the Mediterranean Sea and consists of four ships; MPSRON 2 is based at Diego Garcia and consists of five ships; and MPSRON 3, based at Guam, consists of four ships. Each of the MSC's three MPSRONs is commanded by a Navy Captain with a staff of 22 to 30 personnel. Each MPS is maintained and operated by an average of 30 civilian contract mariners and a small contingent of civilian maintenance personnel contracted by the Marine Corps to maintain the MPE/S. Marines ensure that each MPSRON is properly spreadloaded with enough equipment, supplies, fuel, and water to support a heavily mechanized MAGTF of 17,300 Marines and an 850-person naval support element for 30 days of combat operations. Each ship has RO/RO capability ideal for rapid loading and unloading of MPE/S, and is equipped with flight decks for limited helicopter operations to move personnel to and from the MPSs.

Fundamental requirements for an MPF operation to succeed include a secure environment for the AAA, adequate strategic airlift provided by the AMC, an arrival airfield, offload forces from the NSE, a port and/or beach, and a road network between the port/beach and the airfield. MPF operations occur in four distinct phases: *planning, marshaling, movement*, and

arrival and assembly. For additional information on MPF operations, refer to NWP 3-02.3/FMFM 1-5, Maritime Prepositioning Force (MPF) Operations.

4.4.2.1 MPF Planning Phase. MPF operations, essentially logistic in nature, require the development of unique support plans for deployment and arrival and assembly. The MAGTF commander's concept for operations ashore, while not part of the MPF operation, directly affects the overall logistics planning. Constraints affecting this planning include the fixed sets of MPE/S aboard the MPSRONs, and the available facilities at beaches, seaports of debarkation, and aerial ports of debarkation. Because the required construction tasks will most likely exceed Marine engineer and HNS capabilities, the MAGTF commander should request that the supporting NMCB be included in the fly-in echelon. MPF operation planners must pay close attention to the NMCB and its MPE/S requirements when the NMCB's employment is anticipated as NMCB equipment and supplies may have to be drawn from theater or HN assets.

4.4.2.2 MPF Marshaling Phase. During the marshaling phase, units complete final preparations for movement to the aerial port of embarkation for loading aboard AMC aircraft. This phase begins on arrival of the first FIE element at the APOD adjacent to a designated marshaling point and ends on departure of the last FIE element from the APOE.

4.4.2.3 MPF Movement Phase. This phase consists of the movement by sea and air of forces to the AAA and begins on lift-off of the first aircraft from the APOE or when the MPSRON begins transit to the designated AAA. This phase ends when the last FIE aircraft arrives in the AAA, and the last MPS arrives at the offload point.

4.4.2.4 MPF Arrival and Assembly Phase. The AAA phase begins on arrival of the first MPS or the first aircraft of the FIE's main body at the designated AAA. The phase ends when adequate MPE/S are offloaded and issued to the awaiting MAGTF units, command and control communications are established, and the MAGTF commander reports all essential elements of the MATGF have attained combat readiness. Simultaneous or subsequent tactical operations by the MAGTF, and movements to those operations, are not considered part of the MPF operation.

The AAA phase is the most crucial of the four phases. The supported unified CINC first designates an area, strictly administrative in nature and not denoting command of a geographic area, for AAA operations. The arrival and assembly operations group consists of personnel from the deploying MAGTF and NSE and is formed to provide control of reception and subsequent association of MPE/S with arriving organizations. Other task-organized units within the MPF MAGTF include the LFSP and the arrival airfield control group. To ensure the efficient offload of FIE aircraft while precluding the saturation of the APOD, close coordination by the AACG with AMC's airlift control element team is required. Offloading MPE/S from the MPS(s) and subsequent delivery ashore is the responsibility of the NSE, while the LFSP controls throughput of personnel and MPE/S at the beach, SPOD, and APOD.

4.4.3 Engineer Support of Pre-Positioning Operations. While pre-positioning operations are logistic, the engineer effort required to execute such an operation is CSS in character. Seabee units in support of the MPF MAGTF enhance the flexibility, development, and closure times of the pre-positioning operation. Navy and Marine engineers may need to plan for additional facilities at the marshaling areas, or improve facilities and roads to accommodate increased use. The primary concern for engineers, however, is in the AAA. Engineer tasks in the AAA will focus on enhancing throughput capability by the improvement of beach, port, or airfield facilities to include refrigeration container hookup and provision of mobile electric power. Construction of fuel, ammunition, water storage; troop beddown facilities; and road maintenance or improvement occur simultaneously. To ensure their proper utilization, control of engineer assets should be centralized throughout the arrival and assembly phases.

4.4.4 The Seabee Role in MPF Operations

4.4.4.1 Concept of Employment. Seabee units employed under OPCON of the MPF MAGTF commander (e.g., an NMCB) will be tasked in accordance with MAGTF construction priorities. However, those Seabee units employed in direct support of the NSE or other Navy component commander (e.g., a PHIBCB) during MPF operations are not subject to MAGTF priorities. See NWP 3-02.3/FMFM 1-5, Maritime Prepositioning Force (MPF) Operations, for additional information.

4.4.4.2 Seabee Capabilities. Air-transportable, task-organized Seabee units are available for deployment upon 48 hours notice. Although extensive horizontal construction cannot be efficiently addressed with equipment that can be transported by air, priority construction projects can be initiated days prior to the arrival of MPF shipping. Additionally, local HN contractual acquisition of heavy engineer equipment may be possible to augment air-transported Seabee assets in a secure environment.

4.4.4.3 Seabee Tasks. As part of their primary mission, NMCBs, PHIBCBs, and UCTs are capable of constructing and repairing logistic terminal facilities at beaches, ports, arrival airfields, and railheads. Specific areas of emphasis at these facilities are detailed as follows:

1. Unlike amphibious operations, logistic considerations primarily drive beach selection for MPF operations. The NMCB can rapidly upgrade beach egress and road networks to staging and marshaling areas and other inland destinations, and construct expedient survivability structures (e.g., earthen berms) for Class III bulk liquids (AAFS) and Class V (A/W) storage.

2. For ports, the NMCB can evaluate surface and subsurface capabilities, and upgrade facilities as required to support the MPF operation.

3. For arrival airfields, Seabee tasks include analysis of soil and construction materials to include evaluating aircraft load bearing capability; construction and upgrade of airfields to accommodate tactical (C-130 and C-17) or strategic (C-141, B-747, and C-5) lift aircraft; enlargement of maximum aircraft on ground (MOG) staging areas to meet tactical and strategic, fixed- and rotary-wing aircraft requirements; upgrade of roadway systems; construction of expedient survivability structures (e.g., revetments and earthen berms) for aircraft, Class III bulk liquids storage site preparation (TAFDS), Class V (A/W) storage, and hardening of existing facilities; site preparation for and installation of EAF arresting gear; and construction and improvement of airfield utilities.

4. For railheads, Seabee tasks primarily include damage control and repair.

4.4.5 Concept of Norway Airlanded MAGTF (NALM) Operations. The NALM is the only land-pre-positioned strategic employment option currently in existence that supports a MAGTF.

4.4.6 The Seabee Role in NALM Operations

4.4.6.1 Concept of Employment. Seabee units should be employed in support of the NALM in accordance with current OPLANs.

4.4.6.2 Seabee Tasks. Seabee tasks in support of NALM operations do not differ from support normally provided to the MAGTF. However, Norwegian Host Nation Support, as reflected in existing agreements, significantly reduces the scope of construction necessary to support a NALM. This, in turn, reduces the requirement for extensive Seabee vertical construction, although horizontal construction and other logistics movement support functions may be required.

4.5 SEABEE SUPPORT OF MILITARY OPERATIONS OTHER THAN WAR

The years following the end of the Cold War have seen the U.S. Armed Forces participate in a multitude of new and challenging MOOTW missions, consisting of civil-military, combined, and joint forces being employed in a variety of roles and regions the likes of which were unforeseen just a few years ago. Usually occurring in lesser regional conflict environments in the world's littoral regions, where 7 out of every 10 people on earth live within 200 miles of the sea, where there are 125 cities with populations over 1 million, and where most of the international trade routes intersect. These operations have typically been assigned to naval expeditionary forces that are able to arrive first on the scene in advance of heavier sustainment forces. These MOOTW contingencies have ranged from humanitarian relief, noncombatant evacuation, and disaster recovery missions, to peacekeeping and nation-building missions.

Navy and Marine engineer planners should recognize that the type of MOOTW to be assigned to a MAGTF, as well as both the operating environment and duration on the ground, will have a substantial impact on all aspects of possible Seabee support expected and required by the MAGTF commander.

It may be necessary for the civil-military, combined, or JTF to employ numerous specialized engineering organizations (many of which reside in the NCF) to support a range of MOOTW taskings. For instance, to accommodate the staging, movement, and protection of supplies during humanitarian relief operations, construction, and maintenance of pioneer roads and expeditionary bridging, in addition to water well drilling and quarry/rock-crusher operations (capabilities inherent in such organizations as NMCBs and their Air DETs) may be required, or nation-building missions may need the assistance of Seabee civic action teams. Support to special operations forces in a MOOTW environment may require the unique engineering capabilities best provided by a UCT Air DET. However, larger, general construction organizations (such as the NMCB, PHIBCB, and NCFSU) may be the most appropriate for deliberate and sustained engineering and construction operations in MOOTW environments.

APPENDIX A

Reference Publications

A.1 JOINT PUBLICATIONS

DOD 6050.7	Environmental Effects Abroad of Major Department of Defense Actions
AFSC PUB 1	The Joint Staff Officer's Guide
JP 0-2	Unified Action Armed Forces (UNAAF)
JP 1-02	Department of Defense Dictionary of Military and Associated Terms
JP 3-07	Joint Doctrine for Military Operations Other Than War
JP 4-0	Doctrine for Logistic Support of Joint Operations
JP 4-04	Joint Doctrine for Civil Engineering Support
JP 5-0	Doctrine for Planning Joint Operations
JP 5-03.2	Joint Operation Planning and Execution System, Vol. II (Planning and Execution Formats and Guidance)
MJCS-275-89	Planning Factors for Military Construction in Contingency Operations

A.2 U.S. NAVY PUBLICATIONS

NDP 1	Naval Warfare
NDP 3	Naval Operations
NDP 4	Naval Logistics
NDP 5	Naval Planning
NDP 6	Naval Command and Control

NWP 1-01	The Naval Warfare Publication System
NWP 1-02	Naval Supplement to the DOD Dictionary of Military and Associated Terms
NWP 3-02.1	Ship-to-Shore Movement (also FMFM 1-8)
NWP 3-02.3	Maritime Prepositioning Force (MPF) Operations (also FMFM 1-5)
NWP 3-02.21	Military Sealift Command in Support of Amphibious Operations
NWP 3-02.21M	Naval Beach Group
NWP 4-01.1	Navy Expeditionary Shore-Based Logistic Support and RSOI Operations
NWP 4-04	Naval Civil Engineering Operations
NWP 4-04.2	Navy Civil Engineer Operations for Component Commanders
NWP 4-11	Environmental Protection
NAVEDTRA 82534	Utilitiesman (Advanced)
NAVEDTRA 80662	Utilitiesman 2
NAVEDTRA 82532	Utilitiesman 3
NAVEDTRA 80649	Builder 1
NAVEDTRA 82520	Builder 3 and 2, Volume 1
NAVEDTRA 82521	Builder 3 and 2, Volume 2
NAVEDTRA 82525	Construction Electrician 1
NAVEDTRA 82523	Construction Electrician 3
NAVEDTRA 80636	Construction Electrician 3 and 2
NAVEDTRA 10644-G1	Construction Mechanic 3 and 2
NAVEDTRA 82528	Construction Mechanic Advanced
NAVEDTRA 82540-A	Engineering Aid 1
NAVEDTRA 12540	Engineering Aid Intermediate/Advanced
NAVEDTRA 72540	Engineering Aid 2
NAVEDTRA 80696-A	Engineering Aid 3
NAVEDTRA 10696-A	Engineering Aid Basic
NAVEDTRA 82537	Equipment Operator Advanced
NAVEDTRA 82535	Equipment Operator Basic
NAVEDTRA 82543	Naval Construction Force/Seabee 1 and C
NAVEDTRA 82003	Seabee Combat Handbook, Volume 1
NAVEDTRA 82004	Seabee Combat Handbook, Volume 2

NAVEDTRA 82529	Steelworker, Volume 1
NAVEDTRA 82530	Steelworker, Volume 2
NAVFAC P-315	Naval Construction Force Manual
NAVFAC P-437	Facilities Planning Guide
OPNAV 41P3	Table of Advanced Base Functional Components
OPNAVINST 3501.115C	Projected Operational Environment (POE) and Required Operational Capabilities (ROCs) of the Naval Construction Force (NCF)
OPNAVINST 5450.46	Doctrine and Policy Governing Naval Construction Forces

A.3 U.S. MARINE CORPS PUBLICATIONS

FMFM 0-8	Basic Marksmanship
FMFM 0-25	The Law of Land Warfare (with Change 1)
FMFM 1-3	Field Firing Techniques
FMFM 1-5	Maritime Prepositioning Force (MPF) Operations (also NWP 3-02.3)
FMFM 1-7	Supporting Arms in Amphibious Operations (also NWP 22-2)
FMFM 1-8	Ship-to-Shore Movement (also NWP 22-3, Rev. B)
FMFM 2-6	Rear Area Operations
FMFM 3-1	Command and Staff Action
FMFM 4	Combat Service Support
FMFM 4-1	Combat Service Support Operations
FMFM 4-3	Landing Support Operations
FMFM 4-50	Health Service Support Operations
FMFM 4-6	Movement of Units in Air Force Aircraft
FMFM 5-1	Marine Aviation
FMFM 5-5	Antiair Warfare
FMFM 6-9	Marine Artillery Support
FMFM 7-5	Doctrine for Navy/Marine Joint Riverine Operations
FMFM 7-11H	Field Behavior of NBC Agents
FMFM 8-2	Counterinsurgency Operations
FMFM 11-9	NBC Protection
FMFM 11-10	NBC Decontamination
FMFM 13-5	Engineer Field Data
FMFM 13-7	MAGTF Breaching Operations

FMFRP 0-1B	Marine Physical Readiness Training for Combat
FMFRP 0-14	Marine Corps Supplement to the DOD Dictionary of Military and Associated Terms
FMFRP 3-28	Tri-MEF Standing Operating Procedures for Field Intelligence Operations
FMFRP 5-54	Small Arms Defense Against Air Attack
FMFRP 7-14A	The Individual's Guide for Understanding and Surviving Terrorism
FMFRP 12-9	Jungle Warfare
FMFRP 12-14	Logistics in the National Defense
FMFRP 12-19	Combat and Field Medical Practice
FMFRP 12-52	Engineer Comments on the Evolution of the Marine Engineer
MCDP 1	Warfighting
MCRP 3-0A	Unit Training Management Guide
MCRP 3-0B	How to Conduct Training
MCWP 3-15.1	Machineguns and Machine Gunnery
OH 7-8	Deployment of the Assault Follow-On Echelon (AFOE)
TM11275-15/3B	Principal Technical Characteristics of USMC Engineer Equipment
NAVMC 2500/ FM 41-5/ OPNAV 09B2P1/ AFM 110-7	Joint Manual for Civil Affairs

A.4 U.S. ARMY PUBLICATIONS

FM 3-4	NBC Protection
FM 3-5	NBC Decontamination
FM 3-11	Flame Field Expedients
FM 3-21	Chemical Accident Contamination Control
FM 3-50	Deliberate Smoke Operations
FM 3-100	NBC Operations
FM 5-20	Camouflage
FM 5-25	Explosives and Demolitions
FM 5-30	Engineer Intelligence

FM 5-34	Engineer Field Data
FM 5-35	Engineer's Reference and Field Data
FM 5-36	Route Reconnaissance and Classification
FM 5-100	Engineer Combat Operations
FM 5-101	Mobility
FM 5-102	Countermobility
FM 5-103	Survivability
FM 5-104	General Engineering
FM 5-105	Topographic Operations
FM 5-116	Engineer Operations
FM 5-134	Pile Construction
FM 5-163	Sewerage
FM 5-164	Tactical Land Clearing
FM 5-165	Hasty Revetments for Parked A/C (AFR 86-13)
FM 5-166	Well Drilling Operations
FM 5-233	Construction Surveying
FM 5-277	Bailey Bridge
FM 5-333	Construction Management
FM 5-335	Drainage
FM 5-340	Airbase Damage Repair (Pavement Repair)
FM 5-530	Materials Testing
FM 5-541	Military Soils Engineering
FM 5-551	Carpenter
FM 5-553	General Drafting
FM 5-554	Construction Drafting
FM 5-742	Concrete and Masonry
FM 10-18	Petroleum Terminal and Pipeline Operations
FM 10-52	Field Water Supply and Distribution
FM 10-67	Petroleum Supply in Theaters of Operations
FM 10-69	Petroleum Supply Point Equipment and Operations
FM 10-280	Mobile Field Laundry, Clothing Exchange, and Bath Operations
FM 20-31	Electrical Power Generation in the Field
FM 20-32	Mine/Countermine Operations at the Company Level
FM 30-10	Military Geographic Intelligence (Terrain)
FM 41-10	Civil Affairs Operations
FM 90-13	River Crossing Operations
FM 90-14	Rear Battle
FM 101-5	Staff Organization and Operations CCX

FM 101-5-1	Operational Terms and Graphics
FM 101-10-1	Staff Officer's Field Manual: Organizational, Technical and Logistic Data 340 Airbase Damage Repair (Coordinating Draft)
TM 5-200	Camouflage Materials
TM 5-301-1	Army Facilities Components System — Planning (Temperate)
TM 5-301-2	Army Facilities Components System — Planning (Tropical)
TM 5-301-3	Army Facilities Components System — Planning (Frigid)
TM 5-301-4	Army Facilities Components System — Planning (Desert)
TM 5-302	Army Facilities Components System — Design (5 volumes)
TM 5-303	Army Facilities Components System — Logistic Data and Bills of Material
TM 5-304	Army Facilities Components System — User Guide
TM 5-312	Military Fixed Bridges
TM 5-315	Fire Fighting and Rescue Procedures in Theaters of Operations
TM 5-330	Planning and Design of Roads, Airbases, and Heliports in the T/O
TM 5-332	Pits and Quarries
TM 5-337	Paving and Surfacing Operations
TM 5-343	Military Petroleum Pipeline Systems
TM 5-349	Arctic Construction
TM 5-360	Port Construction and Rehabilitation
TM 5-370	Railroad Construction
TM 5-704	Construction Print Reading in the Field

APPENDIX B

Comparison of Engineering Capabilities

B.1 COMPARISON OF ENGINEERING CAPABILITIES

The notes below pertain to Annexes B.1 and B.2 on the following pages:

1. Engineer tasks are based on Mission Area 26 (MA26) Engineering, U.S. Atlantic Command (USACOM)/J4ENG JTF ENG Guide, and U.S. European Command (EUCOM) 68-1.

2. The *Civ* column in Annex B.1 includes civilian engineering services organic to NAVFACENGCOM or procurable through NAVFAC-ENGCOM authority.

ANNEX B-1

Tasks, Capabilities, and Sources of Engineering Support

B1.1 LEGEND OF TASK PRIORITY AND CAPABILITY CODES

First Letter: P — Primary Task Responsibility
S — Secondary Task Responsibility
N — Not an assigned Task

Second Letter: H — Heavy Capability
M — Medium Capability
L — Light Capability
N — No Capability

MOBILITY TASKS (CS)	NCF	CEB	ESB	MWSS	CIV
Conduct Engineer Reconnaissance	NL	PM	PM	PL	NN
Breach Obstacles	NM	PH	SM	NL	NN
Construct Pioneer Roads	SH	PH	SH	SL	NN
Assault Bridging	SL*	PL	SL	NN	NN
Clear Mines	NN	PH	SH	SL	NN
Clear Helicopter Landing Sites	SH	PM	PH	SL	NN
Improve Beaches	PH	PH	SH	NN	NN
Employ Specialized Demolitions	SM	PH	SH	NL	NN
Provide Technical Engineer Advice	SH	PH	NH	PH	NH
Fight as Infantry	NL	SM	NL	NN	NN

* Assault Bridging (NCF Mission) — Disassemble MGB bridging placed by USMC engineers, pack and prepare bridge components for reuse by USMC engineers and build bridge in place of MGB.

COUNTERMOBILITY TASKS (CS)	NCF	CEB	ESB	MWSS	CIV
Conduct Engineer Reconnaissance	NM	PM	PM	PL	NN
Place Mines	NN	PH	SH	SL	NN
Plan/Install Obstacles and Barriers	NM	PH	SH	SL	NN
Employ Specialized Demolitions	SL	PH	SH	NL	NN
Provide Technical Engineer Advice	SH	PH	SH	PH	NH
Fight as Infantry	SL	SM	NL	NN	NN
SURVIVABILITY TASKS (CS)	**NCF**	**CEB**	**ESB**	**MWSS**	**CIV**
Construct Field Fortifications	SH	PH	PH	PM	NN
Employ Specialized Demolitions	SM	PH	PH	NL	NN
Provide Technical Engineer Advice	SH	PH	PH	PH	NH
GENERAL ENGINEERING TASKS (CSS)	**NCF**	**CEB**	**ESB**	**MWSS**	**CIV**
Conduct Engineer Reconnaissance	PM	SM	PM	PL	NH
Surveying and Drafting	PH	SL	PM	PL	NH
Plan/Construct/Repair/Maintain Camps	PH	SL	PH	PM	NH
Improve Beaches	PH	SL	PH	NL	NN
Construct Standard/Nonstandard Bridges	PH	SL	PH	NN	NH
Improve Unpaved Roads/Airstrips/ Marshaling Areas	PH	SL	PH	SL	NH
Perform Rapid Runway Repair	PH	NN	SM	PM	NN
Repair/Improve Bare Base Existing Airfields	PH	NN	PH	PM	NH
Build Expedient Airfields (Mats)	PH	NN	PH	SL	NH
Plan and Estimate Projects	PH	PM	PH	PM	PH
Materials Testing (Engineering Properties)	PH	SL	PM	PL	SH
Soil Stabilization	PH	SL	PH	PL	NH
Construct Aircraft Revetment/Dispersal Sites	PH	NL	SH	PM	NH
Repair Airfield Damage	PH	NL	PH	PM	NH
Engineering Design (Deliberate)	PH	NL	PH	SL	NH
Perform Pile Driving Operations	PM	NN	PM	SL	NH
Damage Assessment/Repair War Damage	PH	NL	NM	NL	NH
Drill Wells	PH	NN	NN	NN	NH

Construct Semipermanent Camps	PH	NL	PH	SL	NH
GENERAL ENGINEERING TASKS (CSS)	**NCF**	**CEB**	**ESB**	**MWSS**	**CIV**
Erect Preengineered Structures	PH	NL	PH	PL	NH
Construct Hard-Surfaced Storage/Staging/Marshaling Areas	PH	NN	NN	NN	NH
Vertical Construction (Including Concrete)	PH	NL	PM	PL	NH
Asphalt Roads	PH	NN	NN	NN	NH
Operate Base Central Power Plants	PM	NN	NN	NN	NH
Perform Base Maintenance	PH	NL	SM	SL	NH
Concrete Production Operations	PH	NN	NL	NL	NH
Asphalt Production Operations	PH	NN	NN	NN	NH
Perform Quarry Operations	PH	NL	SM	NL	NH
Perform Rock Crusher Operations	PH	NN	SM	NN	NH
Construct Logistic Support Bases	PH	NL	PH	NL	NH
Construct Airbases	PH	NN	PH	NN	NH
Construct/Repair Port/Waterfront Structures	PH	NL	NM	NL	NH
Employ Specialized Demolitions	PH	PH	SH	NL	NH
Conduct Nonexplosive Demolition and Obstacle/Debris Removal	PH	NL	PH	NL	NH
Provide Technical Engineer Advice	PH	NL	PH	PM	NH
Fight as Infantry	SL	NM	SL	NN	NN
Provide Tactical Water/Hygiene Services	SL	SL	PH	PM	NH
Provide Tactical Electrical Supply	PH	SL	PH	PM	NH
Develop Sewage and Water Systems	PM	NN	NL	NL	NH
Provide Tactical Bulk Fuel Storage/Dispensing	PH	NN	PH	PM	NH

ANNEX B-2

Tasks, Capabilities, and Sources of Seabee Support

B2.1 LEGEND OF TASK PRIORITY AND CAPABILITY CODES

First Letter: P — Primary Task Responsibility
S — Secondary Task Responsibility
N — Not an assigned Task

Second Letter: H — Heavy Capability
M — Medium Capability
L — Light Capability
N — No Capability

GENERAL ENGINEERING TASKS (CSS)	NMCB	Air DET	ACB	CBU	UCT	NCFSU	CBMU
Conduct Engineer Reconnaissance	PM	PL	NL	NL	SL	PM	NL
Surveying and Drafting	PH	PL	NN	SL	SM	PH	NL
Plan/Construct/Repair/Maintain Camps	PH	PL	NL	SL	NL	PH	SL
Improve Beaches — LOC	PH	PL	PM	NL	SM	PH	NN
Improve Beaches — Combat	NM	NL	PM	NN	SM	NL	NN
Construct Standard/Nonstandard Bridges	PH	PL	NN	NN	NN	PH	NN
Improve Unpaved Roads/Airstrips/ Marshaling Areas	PH	PL	NL	SL	NL	PH	NN
Perform Rapid Runway Repair	PH	PM	NN	NL	NN	PH	NN
Repair/Improve Bare Base Exist. Airfields							
Build Expedient Airfields (Mats) — LOC	PH	PL	NN	NN	NN	PH	NN

GENERAL ENGINEERING TASKS (CSS)	NMCB	Air DET	ACB	CBU	UCT	NCFSU	CBMU
Build Expedient Airfields (Mats) — Combat	PH	PL	NN	NN	NN	PH	NN
Plan and Estimate Projects	PH	PH	NL	PM	SM	PH	SL
Materials Testing (Engineering Properties)	PH	PL	NN	NN	NL	PH	SL
Soil Stabilization	PH	PM	NN	NN	NN	PH	NN
Construct A/C Revetment/Dispersal Sites	PH	PM	NN	NN	NN	SH	NN
Repair Airfield Damage	PH	PM	NN	NL	NN	PH	NN
Engineering Design (Deliberate)	PH	PL	NL	NN	NL	PH	NL
Perform Pile Driving Operations	PL	NN	PM	NN	NN	NN	NN
Damage Assessment/WDR	PH	PL	NN	NL	PM	SH	SL
Drill Wells	PH	PM	NN	SL	NN	PH	NN
Construct Semipermanent Camps	PH	PM	NL	PM	NL	PH	NL
Erect Preengineered Structures	PH	PM	NN	SM	NL	PH	NL
Construct Hard-Surfaced Storage/ Staging/Marshaling Areas	PH	PM	NN	NN	NN	PH	NL
Vertical Construction (including concrete)	PH	PM	NN	PL	NL	PH	NL
Asphalt Roads	PH	PL	NN	NN	NN	PH	NN
Operate Base Central Power Plants	PM	PL	NN	NN	NL	PM	PM
Perform Base Maintenance	SH	SL	NN	NL	NL	SH	PH
Concrete Production Operations	PM	NN	NN	NN	NN	PH	NN
Asphalt Production Operations	PM	NN	NN	NN	NN	PH	NN
Perform Quarry Operations	PL	NN	NN	NN	NN	PH	NN
Perform Rock Crusher Operations	PL	NN	NN	NN	NN	PH	NN
Construct Logistic Support Bases	PH	PL	PH	NN	NL	PH	NN
Construct Airbases	PH	PL	NN	NN	NN	PH	NN
Construct/Repair Port/Waterfront Structures	PH	PL	NL	NN	PH	PH	NN
Employ Specialized Demolitions	PH	PL	NN	NN	SM	PH	NN
Conduct Nonexplosive Demolition and Obstacle/Debris Removal	PH	PL	NL	NL	PH	PH	NN
Provide Tech Engineer Advice	PH	PH	NL	SL	PM	PH	NN
Fight as Infantry	SL	SL	NL	NL	SL	SL	SL

GENERAL ENGINEERING TASKS (CSS)	NMCB	Air DET	ACB	CBU	UCT	NCFSU	CBMU
Provide Tactical Water/Hygiene Services	SL	NN	NN	NL	SL	NN	NN
Provide Tactical Electrical Supply	NN	NN	NN	SM	NN	NN	NN
Develop Sewage and Water Systems	PM	NL	NN	NL	NN	PM	NN
Provide Tactical Bulk Fuel Storage/ Dispensing Over-the-Shore	NL	NN	PH	NN	PM	NN	NN
Over-the-Shore Causeway	NN	NN	PH	NN	NN	NN	NN
Bulk Fuel Support	NL	NN	NL	NN	NL	NN	NN
Class IV and IX Procurement/ Storage/Mount-Out Capability	NL	NL	NN	NN	NN	NN	NN
Disaster Prep and Recovery	SH	SM	NL	SM	SL	SH	SM
Project Management	SM	NN	NL	NN	NL	SM	NN
Environmental Projects	SL	SL	NL	SL	SL	SL	NN
Erect Field Hospitals	NM	NL	NN	PH	NN	NM	NL
Underwater Construction/ Maintenance	NN	NN	NL	NN	PH	NN	NN
Hazardous Materials Waste Management	SL	SL	NL	SL	SL	SL	NN
MOBILITY TASKS (CS)	**NMCB**	**Air DET**	**ACB**	**CBU**	**UCT**	**NCFSU**	**CBMU**
Conduct Engineer Reconnaissance	SM	NL	NL	NL	NL	NN	NN
Breach Obstacles	NN	NN	NN	NN	NN	NN	NN
Construct Pioneer Roads	SH	SL	NN	NN	NN	NN	NN
Assault Bridging	NN	NN	NN	NN	NN	NN	NN
Clear Mines	NN	NN	NN	NN	NN	NN	NN
Clear Helo Landing Sites	SH	SL	NN	NN	NN	NN	NN
Improve Beaches	NM	NL	PH	NN	SL	NN	NN
Employ Specialized Demolitions	NL	NN	NN	NN	SL	NN	NN
Provide Tech Engineer Advice	NH	NL	NL	NN	SL	NH	NL
Fight as Infantry	SL	SL	NL	NL	SL	SL	SL

COUNTERMOBILITY TASKS (CS)	NMCB	Air DET	ACB	CBU	UCT	NCFSU	CBMU
Conduct Engineer Reconnaissance	NM	NM	NL	NL	NL	NN	NN
Place Mines	NN	NN	NN	NN	NN	NN	NN
Plan/Install Obstacles/Barriers	NM	NL	NL	NN	NN	NN	NL
Employ Specialized Demolitions	NL	NL	NN	NN	SL	NN	NN
Provide Tech Engineer Advice	NM	NL	NL	NL	SL	NH	NN
Fight as Infantry	SL	SL	NL	NL	SL	SL	SL
SURVIVABILITY TASKS (CS)	**NMCB**	**Air DET**	**ACB**	**CBU**	**UCT**	**NCFSU**	**CBMU**
Construct Field Fortifications	SH	SM	NN	NL	NN	NN	NN
Employ Specialized Demolitions	NL	NL	NN	NN	SM	NN	NN
Provide Tech Engineer Advice	NH	NL	NL	NL	SM	NH	NL

APPENDIX C

CESE Organic to Naval Construction Units

ANNEX C-1

CESE Organic to the NMCB

Code	English Description	Qty
0360-XX	Truck, 4 Seats, HMMWV	16
0360-XX	Truck, Maintenance, HMMWV	16
0360-42	Truck, Cargo, HMMWV	4
0360-52	Truck, Armament Carrier, HMMWV	8
0361-43	Truck, Ambulance, HMMWV	2
0587-61	Truck, 8-ton, Dump (MTVR)	16
0588-61	Truck, 8-ton, Cargo (MTVR)	14
0607-61	Truck, 8-ton, Tractor (MTVR)	10
0645-21	Truck, Tractor, 15-ton	10
0709-61	Truck, Field Service (MTVR)	3
0730-61	Truck, Wrecker, 25-ton (MTVR)	2
0746-61	Truck, Tank, Fuel (MTVR)	2
0816-11	Semitrailer, ISO, 40 foot, 34-ton	10
0825-11	Semitrailer, Lowbed, 35-ton	13
0829-02	Dolly Trailer, Converter	5
0842-01	Trailer, 13-ton, Bolster, Pole	1
0880-02	Trailer, Tank, Water, 400 gallons	10
1820-04	Truck, Forklift, 4,000 lbs, Rough Terrain	5
1820-12	Truck, Forklift, 12,000 lbs, Rough Terrain	7

Code	English Description	Qty
1820-50	Truck, Forklift, 50,000 lbs, Rough Terrain Container Handler	2
2433-01	Mixer, Concrete, Kwik-Mix	2
2520-61	Distributor, Asphalt (MTVR)	1
2521-22	Tanker, Water, 6 to 8,000 gallons	2
2521-61	Distributor, Water (MTVR)	2
3135-02	Compressor, Air, 250 cfm	4
3165-02	Compressor, Air, 750 cfm, 100 psi	1
3165-11	Compressor, Air, 750 cfm, 300 psi	1
3630-32	Hammer, Pile	1
3635-01	Extractor, Pile	1
3710-61	Auger, Earth (MTVR)	2
3720-02	Drilling Machine, Well, 1,500 foot (ITWP)	1
3720-61	Truck, Well-Drill Support (MTVR)	1
4310-XX	Ditcher Ladder, Large	1
4310-01	Ditcher, Ladder	1
4350-01	Excavator, Multipurpose Bucket, Full-Tracked	2
4420-21	Grader, Road, Motorized	6
4530-41	Loader, Front, Full-Tracked, 2-1/2 cy, Open ROPS	4
4531-10	Loader, Scoop, Wheeled, 2-1/2 cy, Open ROPS	3
4531-30	Loader, Scoop, Wheeled, 2-1/2 cy, Open ROPS	3
4615-01	Roller, Motorized	2
4635-20	Roller, Vibratory, Open ROPS	3
4750-20	Scraper-Tractor, 14 to 18 cy	6
4830-10	Tractor, Full-Tracked, 105 hp, Winch, Open ROPS	2
4850-12	Tractor, Full-Tracked, 200 hp, Angle, T-9	3

Code	English Description	Qty
4850-21	Tractor, Full-Tracked, 200 hp, Semi-U, w/Ripper, T-9	3
4875-10	Tractor, Wheeled, w/Backhoe	2
4875-03	Tractor, Wheeled, w/Scraper Box	1
5110-22	Floodlight Set, Trailer-Mounted	10
5121-10	Generator Set, 10KW, Skid-Mounted	2
5121-15	Generator Set, 15KW, Skid-Mounted	4
5122-30	Generator Set, 30KW, Skid-Mounted	3
5124-60	Generator Set, 60KW, Skid-Mounted	6
5160-01	Lubricator, Skid	1
5170-71	Welding Machine, Arc, Trailer-Mounted	7
5210-11	Pump, Reciprocating, 100 gpm	2
5220-19	Pump, Centrifugal, 500 gpm	2
5220-21	Pump, Centrifugal, 400 gpm	8
5220-31	Pump, Centrifugal, 1,000 gpm	1
5250-10	Pump Module, Sixcon, POL	6
5250-11	Storage Module, Sixcon, POL	26
5250-20	Pump Module, Sixcon, Water	3
5250-21	Storage Module, Sixcon, Water	10
5420-01	Decontaminating Apparatus, Power-Driven, 50 gpm	2
5490-01	Container, Refrigerator, Rigid Box, 8x8x20 feet	2
5498-03	Laundry Unit, Field	2
5710-21	Sweeper, Magnetic, Towed	2
5900-01	Saw, Woodwork, Trailer	4
5910-11	Shop Equipment, Machine, Trailer	1
5920-01	Automatic Building Machinery MIC-240	1
8215-01	Crane, Truck, 35-ton	2
8254-25	Crane, Wheeled, 14-ton	2

ANNEX C-2

CESE Organic to the NMCB Air DET

Code	English Description	Qty
0360-XX	Truck, Maintenance, Utility, HMMWV	1
0360-42	Truck, Cargo, HMMWV	1
0360-52	Truck, Armament Carrier, HMMWV	1
0587-61	Truck, 8-ton, Dump (MTVR)	2
0588-61	Truck, 8-ton, Cargo (MTVR)	2
0607-61	Truck, 8-ton, Tractor (MTVR)	2
0825-11	Semitrailer, Lowbed, 35-ton	2
0880-02	Trailer, Tank, Water, 400 gallons	2
1820-12	Truck, Forklift, 12,000 lbs, Rough Terrain	2
2433-01	Mixer, Concrete, Kwik-Mix	1
2521-61	Distributor, Water (MTVR)	1
3135-02	Compressor, Air, 250 cfm	1
4420-21	Grader, Road, Motorized	1
4531-10	Loader, Scoop, Wheeled	1
4635-20	Roller, Vibratory, Open ROPS	1
4830-10	Tractor, Full-Tracked, 105 hp, Winch, Open ROPS	1

Code	English Description	Qty
4875-10	Tractor, Wheeled, w/Backhoe	1
5110-22	Floodlight Set, Trailer-Mounted	4
5121-15	Generator Set, 15KW, Skid-Mounted	2
5122-30	Generator Set, 30KW, Skid-Mounted	2
5170-71	Welding Machine, Arc, Trailer-Mounted	2
5210-11	Pump, Reciprocating, 100 gallons	1
5220-21	Pump, Centrifugal, 400 gpm	2
5250-10	Pump Module, Sixcon, POL	1
5250-11	Storage Module, Sixcon, POL	5
5250-20	Pump Module, Sixcon, Water	1
5250-21	Storage Module, Sixcon, Water	2

ANNEX C-3

CESE Organic to the NCFSU

Code	English Description	Qty
0360-XX	Truck, Utility, Maintenance, HMMWV	1
0360-42	Truck, Cargo, HMMWV	10
0360-52	Truck, Armament, HMMWV	5
0361-43	Truck, Ambulance, HMMWV	1
0587-61	Truck, 8-ton, Dump (MTVR)	36
0588-61	Truck, 8-ton, Cargo (MTVR)	13
0607-61	Truck, 8-ton, Tractor (MTVR)	15
0709-61	Truck, Field, Service (MTVR)	1
0713-61	Truck, Tire, Service (MTVR)	1
0725-61	Truck, Maintenance, Aerial, Platform (MTVR)	1
0730-61	Truck, Wrecker, 25-ton (MTVR)	2
0825-11	Semitrailer, Lowbed, 35-ton	9
0842-01	Trailer, 13-ton, Bolster, Pole	1
0843-02	Trailer, Cable Reel, 9-ton	2
0880-02	Trailer, Tank, Water, 400 gallons	2
Code	**English Description**	**Qty**
1820-04	Truck, Forklift, 4,000 lbs, Rough Terrain	2

1820-12	Truck, Forklift, 12,000 lbs, Rough Terrain	5
2120-00	Central Mix Plant, Concrete	1
2200-02	Crusher, Rock, Primary	5
2200-03	Crusher, Rock, Secondary	5
2300-01	Paver, Asphalt, Tracked	2
2410-12	Mixer, Asphalt, Drum, Trailer	1
2417-01	Mixer, Soil Stabilizer	2
2420-11	Mixer, Transit	6
2425-01	Mixer, Concrete, Mobile	8
2470-02	Saw, Concrete Self-Propelled, 24-inch Blade	1
2520-61	Distributor, Asphalt (MTVR)	2
2521-22	Distributor, Water, Semitrailer (MTVR)	3
2610-11	Conveyor, EMD	25
2740-02	Kettle, Bituminous, Trailer	1
3165-02	Compressor, Air, 750 cfm, 100 psi	2
3532-02	Drill, Rock, Tracked, Mounted	6
4260-01	Crane, 60-ton, Crawler, Mounted	1
4310-XX	Ditcher, Ladder, Large	2
4310-01	Ditcher, Ladder	3
4350-01	Excavator, Multipurpose Bucket, Full-Tracked	2
4420-21	Grader, Road, Motorized	1
4531-30	Loader, Scoop, Wheeled, 2-1/2 cy	7
4531-42	Loader, Scoop, Wheeled, 4 cy	6
4622-01	Roller, Compaction, Self-Propelled	4
4635-30	Roller, Vibratory, Asphalt, Self-Propelled	2
Code	**English Description**	**Qty**
4750-20	Scraper, Wheeled, 19 to 21 cy	6

4760-00	Truck, Dump, Off-Highway, Articulating, 20-ton	15
4850-21	Tractor, Full-Tracked w/Ripper	8
5110-22	Floodlight Set, Trailer-Mounted	5
5124-60	Generator Set, 60KW, Skid-Mounted	3
5128-01	Generator Set, 200KW, Skid-Mounted	8
5160-01	Lubricator, Skid	1
5170-71	Welding Machine, Arc, Trailer-Mounted	7
5220-19	Pump, Salt Water, Centrifugallons 500 gpm	1
5220-31	Pump, Centrifugal, 1,000 gpm	3
5250-10	Pump Module, Sixcon, POL	6
5250-11	Storage Module, Sixcon, POL	47
5250-20	Pump Module, Sixcon, Water	3
5250-21	Storage Module, Sixcon, Water	10
5420-01	Decontaminating Apparatus, Power-Driven, 500 gallons	1
5452-01	Water Purification Unit (ROWPU)	9
5498-03	Laundry Unit, Field	2
5710-21	Sweeper, Magnet, Towed	1
5740-01	Sweeper, Broom, Towed	2
5910-11	Shop Equipment, Machine, Trailer	1
8254-25	Crane, Wheeled, 14-ton	2

APPENDIX D

Table of NCFSU Echelons

Note

All echelons contain equipment, facilities, and technical advisors. NMCBs will normally support operation of the equipment contained in Echelons 8 through 14.

Echelon	Description	Area (Sf)	Weight (lbs)	Cube (Cf)
1	Headquarters and Administration	1,275	807,326	48,642
2	Engineer Support	249	23,306	2,265
3	Long Haul Equipment Support	6,581	1,416,273	74,420
4	Augment Equipment Support	807	1,612,738	47,2
5	Facilities Support	336 each	(CESE only)	
6	Cold Weather Augment	0	4,201,932	108,312
7	Open			
8	Soil Stabilization Equipment	2,675	365,440	24,673
9	Asphalt Plant/Paving Equipment	5,382	735,325	69,812
10	Concrete Plant	3,394	409,822	41,084
11	Bridge/Waterfront Construction Equipment	1,964	255,882	13,245
12	Transmission Line	1,014	68,445	7,646
13	Earthmoving and Compaction Equipment	10,237	1,489,775	121,040
14	Quarry and Rock Crusher Equipment	18,502	14,806,002	833,853

APPENDIX E

Sample Seabee Support Request

E.1 BACKGROUND INFORMATION ON REQUESTING UNIT

MAGTF Unit:_____ Current Location: _____ Total Personnel:____
Point of Contact/Telephone/Fax: _____
Mission: _____
_____
_____
Mission Area: _____
Specify Required Completion Dates/Timeframes:_____

E.2 CONSTRUCTION SUPPORT REQUESTED

1. Horizontal Construction Required
   a. Airfield Construction.
      (1) Type and number of aircraft utilizing airfield (MOG):
      Rotary-Wing (e.g., *CH-46E, CH-53A/E, AH-1W, UH-1N*):_____
      Fixed-Wing (e.g., *F/A-18A/F, EA-6B*):_____
      V/STOL (e.g., *AV-8B, MV-22*): _____
      Tactical Transport (e.g., *C-130, C-17*): _____
      Strategic Transport (e.g., *C-141, C-5*): _____
      (2) Number of anticipated takeoffs/landings per day/per aircraft: _____

(3) Area of runway/taxiway/parking apron requirements (*sf*): _____

_____

b. Area of roads, marshaling/staging areas, landing, and drop zones (*sf*): _____

_____

2. Vertical Construction Required.
   a. Facility hardening requirements.
      (1) Earthen berms (*lf x ht*): _____
      (2) EAF Revetments (*lf x ht*): _____
   b. Utility requirements.
      (1) Water wells (*gals/day*): _____
      (2) ROWPU (*gals/day*): _____
      (3) Power generation (*Kwh/day*): _____
      (4) Power distribution (*Describe*): _____
   c. Expeditionary structures requirements _____ (*Quantity/Size/Use*): _____

      _____

      _____

   d. Beddown and storage requirements (e.g., *troops, ISBs, ASPs* — _____ *Quantity/Size/Use*): _____

      _____

      _____

   e. Bridging requirements.
      (1) Type of bridging (e.g., *Bailey, MGB*): _____
      (2) Length of span: _____
      (3) Required military load classification each: _____
   f. Countermobility requirements (*Explain*): _____

      _____

      _____

3. Class IV support available (*Describe/Source/Quantify*): _____

   _____

   _____

4. Standard of construction desired _____ (*Initial/Temporary*): _____

   _____

   _____

5. Free-form comment on specific tasks/projects requested: _____

   _____

   _____

APPENDIX F

Relevant Standardization Agreements

F.1 GENERAL

NATO Standardization Agreements, American, British, Canadian, and Australian (ABCA) Quadripartite Standing Agreements, and Air Standard Coordinating Committee (ASCC) Air Standards are international agreements that are on file at Marine Corps Combat Development Command (MCCDC), WFC, Combined Doctrine, Quantico, VA 22134-5001, and are not normally distributed. The required implementing documents of these international agreements are identified where possible.

F.2 NATO STANDARDIZATION AGREEMENTS

STANAG	NATO Standardization Agreement Title	Implementing Documents
1001 OP	Standardized System of Numbering Days and Hours Relative to a Given Operation or Exercise	JP 1-02, FM 101-5, FMFM 3-1
1059 MiS	National Distinguishing Letters of Use by NATO Forces	
1195 AW	Amphibious Embarkation	ATP 39(A), FM(J) 20-12

STANAG	NATO Standardization Agreement Title	Implementing Documents
2002 NBC	Warning Signs for the Marking of Con- taminated or Dangerous Land Areas, Complete Equipment, Supplies, and Stores	
2003 OP	Patrol Reports	FM 7-8
2010 ENGR	Military Load Classification Markings	FM 5-34, FM 5-35, FM 5-36, FM 5-312
2014 OP	Operation Orders, Warning Orders, and Administrative/Logistics Orders	FMFM 3-1, FM 1-111, FM 1-114, FM 1-116, FM 1-117, FM 5-100, FM 6-20-30, FM 55-2, FM 55-10, FM 101-5
2019 OP	Military Symbols for Land-Based Systems	APP 6
2020 OP	Operational Situation Reports	FM 101-5, FM 17-95
2023 MMS	Marking of Military Cargo for Interna- tional Movement by all International Means of Transportation	MILSTD-129
2027 M&T	Marking of Military Vehicles	FM 5-36, FM 5-34
2028 MiS	System for Field Cable or Field Wire Labeling	FM 24-20, FM 44-18
2035 OP	Signing of Headquarters and Installations	FM 3-5, FM 3-87, FM 5-34, FM 19-4, FM 21-30, FM 21-40, FM 101-5, FM 101-5-1
2036 ENGR	Land Minefield Laying, Marking, Re- cording, and Reporting Procedures	FM 5-34, FM 5-100, FM 5-102, FM 7-7, FM 7-8, FM 7-20, FM 20-32, AFR 206-2
2066 MiS	Layout for Military Correspondence	AFR 10-1, AR 25-50, AFP 13-2, SECNAVINST 5216.5C
2079 TAC	Rear Area Security and Rear Area Damage Control	
2096 ENGR	Reporting Engineer Information in the Field	FM 5-34

STANAG	NATO Standardization Agreement Title	Implementing Documents
2129 OP	Recognition and Identification of Forces on the Battlefield	FM 6-20-1, FM 17-95, FM 97, FM 22-6, FM 44-18, FM 71-1, FM 72-2
2154 M&T	Regulations for Military Motor Vehicle Movement by Road	CINCUSNAVEURINST 1600.7 USAEUR Reg 55-355, OH 4-9, USAFE Reg 75-4
2156 M&T	Surface Transport Request and Surface Transport Reply	FM 55-10
2158 VF	Identification of Military Trains	FM 55-20
2165 M&T	Forecast Movement/Transport Requirements — Rail, Road and Inland Waterways	
2173 VF	Regulations for the Securing of Military Tracked and Wheeled Vehicles on Railway Wagons	
2827 MH	Materials Handling in the Field	
2889 ENGR	Marking of Hazardous Areas and Routes Through Them	FM 5-102, FM 20-30
2929 SNLC	Airfield Damage Repair (NATO Confidential)	FM 5-340, FM 9-15,FM 9-59, AFR 93-2,AFR 136-8, AFR 136-10, AFR 360-1, T.O. 60A-2-1-39
3672 IGeo	Indexes to Series of Land Maps, and Aeronautical Charts and Indexes to Military Geographic Information and Documentation (MGID)	PS/1GB/250, PS/2ED/040, PS/2ED/041, PS/2ED/042, PS/3GD/001
3675 IGeo	Symbols on Land Maps, Aeronautical Charts and Special Naval Charts	PS/2AD/040, PS/3AA/101, PS/1AB/120, PS/1AE/201, PS/3BB/201, PS/1AC/140, PS/4AC/390, PS/1AA/100, PS/1AC/160
3680 MIS	NATO Glossary of Terms and Definitions (English and French)	AAP 6
3774 TN	Control Procedures for Pallets and Associated Restraint Equipment Used in Combined Air Transport Operations	FM 55-12, AFR 76-6

STANAG	NATO Standardization Agreement Title	Implementing Documents
4108 MMS	Allied Quality Assurance Publications (AQAPS)	DFAR, SUPLMT para 46-406
5048	The Minimum Scale of Communica-tions for NATO Land Forces Require- ments, Principles, and Procedures	FM 5-100, FM 6-20, FM 11-23, FM 11-30, FM 11-92, FM 24-1, FM 44-1, FM 44-100

F.3 ABCA QUADRIPARTITE STANDING AGREEMENTS

QSTAG	Quadripartite Standing Agreement Title	Implementing Documents
180 ENGR	Military Load Classification of Civil Bridges by the Reconnaissance and Correlation Methods	TM 5-36, FM 90-13, TC 5-32, TC 5-210
213 STANO	Camouflage Standards	
229 ES	Abbreviations for Use on Drawings	

F.4 ASCC AIR STANDARDS

Standard	ASCC Air Standards Title	Implementing Documents
104/13C	Revision of Engineering Drawings	DOD-STD-100C, Chap 500
104/2C	Graphic Symbology for Use on the Engineering Drawings and Associated Data	
104/14B	Directory of Engineering Data Repositories	Mil-HDBK-331B (ADV PUB) AFR 67-4

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