

ARMY, MARINE CORPS, NAVY, AIR FORCE, COAST GUARD



MDO

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR MILITARY DIVING OPERATIONS

ATTP 3-34.84
MCRP 3-35.9A
NTTP 3-07.7
AFTTP 3-2.75
CG COMDTINST 3150.1C

JANUARY 2011

DISTRIBUTION RESTRICTION:
Approved for public release; distribution is unlimited.

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES

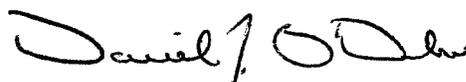
FOREWORD

This multi-Service tactics, techniques, and procedures (MTTP) publication is a project of the Air Land Sea Application (ALSA) Center in accordance with the memorandum of agreement between the Headquarters of the Army, Navy, Air Force, and Marine Corps doctrine commander directing ALSA to develop MTTP publications to meet the immediate needs of the warfighter.

This MTTP publication includes US Coast Guard participation and has been prepared by ALSA under our direction for implementation by our respective commands and for use by other commands as appropriate.



DALE A. ORMOND
Deputy to the Commanding General
US Army Combined Arms Center



DANIEL J. O'DONOHUE
Brigadier General, US Marine Corps
Director
Capabilities Development Directorate



WENDI B. CARPENTER
Rear Admiral, US Navy
Commander
Navy Warfare Development Command



DAVID S. FADOK
Major General, US Air Force
Commander
Curtis E. LeMay Center for Doctrine
Development and Education



VINCENT B. ATKINS
Rear Admiral, US Coast Guard
Assistant Commandant for Capability
US Coast Guard Headquarters

This publication is available through the following web sites: ALSA (<http://www.alsa.mil/>); US Army at Army Knowledge Online (AKO) (www.us.army.mil) and at General Dennis J. Reimer Training and Doctrine Digital Library (www.train.army.mil); US Navy at Navy Doctrine Library System (NDLS) (<https://ndls.nwdc.navy.mil>) and at Navy Warfare Development Command SIPRNET Doctrine Discussion Group (DDG) (www.nwdc.navy.smil.mil); and US Air Force at Air Force E-Publishing (<http://www.e-publishing.af.mil/>).

PREFACE

1. Purpose

Military Diving Operations (MDO) is a single source, descriptive reference guide to ensure effective planning and integration of multi-Service operations. This multi-Service tactics, techniques, and procedures (MTTP) publication provides combatant command, joint force, joint task force (JTF), and operational staffs with a comprehensive resource for planning military diving operations. It includes capabilities, limitations, and employment considerations.

2. Scope

MDO describes United States (US) military dive mission areas (DMAs) as well as the force structure, equipment, and primary missions each Service could provide in support of joint operations. Commanders and staffs at all levels can use the MTTP to plan for employment of the capabilities of the US military dive forces in situations across the spectrum of dive operations. *MDO* is designed for planners at the tactical and operational level. It defines methods to ensure diving capabilities are integrated and provides quick reference charts on Service-specific dive team capabilities.

3. Applicability

MDO applies to commanders and planners at all levels across the Armed Services, to include US Army, US Air Force, US Marine Corps, US Navy, and US Coast Guard, who employ military dive forces when directing multi-Service and joint force operations. It is intended to be theater nonspecific and provides information extracted from existing Service directives, current lessons learned, and inputs from subject matter experts (SMEs). This publication is unclassified with Distribution Statement A in accordance with DODD 5230.24.

4. Implementation Plan

Participating Service command offices of primary responsibility (OPRs) will review this publication, validate the information and, where appropriate, reference and incorporate it in Service manuals, regulations, and curricula as follows:

Army. Upon approval and authentication, this publication incorporates the TTP procedures contained herein into the US Army Doctrine and Training Literature Program as directed by the Commander, US Army Training and Doctrine Command (TRADOC).

Marine Corps.¹ The Marine Corps will incorporate the procedures in the publication in US Marine Corps training and doctrine publications as directed by the Commanding General, US Marine Corps Combat Development Command (MCCDC). Distribution is in accordance with the Marine Corps Publication Distribution System (MCPDS).

Navy. The Navy will incorporate these procedures in US Navy training and doctrine publications as directed by the Commander, Navy Warfare Development Command (NWDC)[N5]. Distribution is in accordance with Military Standard Requisition and Issue Procedure Desk Guide (MILSTRIP Desk Guide) Naval Supply Systems Command Publication 409 (NAVSUP P-409).

¹ Marine Corps PCN: 14400019800

Air Force. The Air Force will incorporate the procedures in this publication in accordance with applicable governing directives. Distribution is in accordance with Air Force Instruction (AFI) 33-360.

Coast Guard. The Coast Guard will incorporate the procedures in this publication in accordance with applicable directives.

5. User Information

- a. US Army Combined Arms Center (CAC), MCCDC, NWDC, Curtis E. LeMay Center for Doctrine Development and Education (LeMay Center), and the Air Land Sea Application (ALSA) Center developed this publication with the joint participation of the approving Service commands. ALSA will review and update this publication as necessary.
- b. This publication reflects current joint and Service doctrine, command and control organizations, facilities, personnel, responsibilities, and procedures. Changes in Service protocol, appropriately reflected in joint and Service publication, will likewise be incorporated in revisions to this document.
- c. We encourage recommended changes for improving this publication. Key your comments to the specific page and paragraph and provide a rationale for each recommendation. Send comments and recommendations directly to—

Army

Commander, US Army Combined Arms Center
ATTN: ATZL-MCK-D
Fort Leavenworth KS 66027-6900
DSN 552-4885 COMM (913) 684-4885
E-mail: LEAV-CADD-WEB-CADD@conus.army.mil

Marine Corps

Deputy Commandant for Combat Development and Integration
ATTN: C116
3300 Russell Road, Suite 204
Quantico VA 22134-5021
DSN 278-2871/6227 COMM (703) 784-2871/6227
E-mail: Publication POC at <https://www.doctrine.usmc.mil>

Navy

Commander, Navy Warfare Development Command
ATTN: N5
1528 Piersey St., Bldg O-27
Norfolk VA 23511-2723
DSN 948-1070/4201 COMM (401) 841-1070/4201
E-mail: alsapubs@nwdc.navy.mil

Air Force

Commander, Curtis E. LeMay Center for Doctrine Development and Education
ATTN: DDJ
401 Chennault Circle
Maxwell AFB AL 36112-6004
DSN 493-2640/2256 COMM (334)953-2640/2256
E-mail: lemayctr.ddj.workflow@maxwell.af.mil

Coast Guard

Assistant Commandant for Capability
US Coast Guard Headquarters
2100 2nd St. SW
Washington, DC 20593
COMM (202)372-2021

ALSA

Director, ALSA Center
114 Andrews Street
Langley AFB VA 23665-2785
DSN 575-0902 COMM (757) 225-0902
E-mail: alsa.director@langley.af.mil

This page intentionally left blank

ATTP 3-34.84
MCRP 3-35.9A
NTTP 3-07.7
AFTTP 3-2.75
CG COMDTINST 3150.1C

ATTP 3-34.84 US Army Training and Doctrine Command
US Army Combined Arms Center
Ft. Leavenworth, Kansas
MCRP 3-35.9A Marine Corps Combat Development Command
Quantico, Virginia
NTTP 3-07.7 Navy Warfare Development Command
Norfolk, Virginia
AFTTP 3-2.75 Curtis E. LeMay Center for Doctrine
Development and Education
Maxwell Air Force Base, Alabama
CG COMDTINST 3150.1C US Coast Guard Headquarters
Washington, DC

12 JANUARY 2011

MDO

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR MILITARY DIVING OPERATIONS

EXECUTIVE SUMMARY	VIII
CHAPTER I MILITARY DIVING OPERATIONS PLANNING	1
1. Introduction	1
2. Command and Control Relationships	2
3. Planning Considerations	3
4. Planning Decision Aids	4
5. Interservice, Interagency, and Combined Operations	8
CHAPTER II DIVE MISSION AREAS	9
1. Introduction	9
2. Dive Mission Area Descriptions	9
CHAPTER III US NAVY DIVING	17
1. Overview	17
2. Explosive Ordnance Disposal	17
3. Navy Fleet Diving	19

DISTRIBUTION RESTRICTION:
Approved for public release; distribution is unlimited.

4. Naval Sea Systems Command Supervisor of Salvage and Diving/Director of Ocean Engineering (NAVSEA SUPSALV 00C)	26
5. Seabee Underwater Construction Team.....	28
6. Submarine Security Dive Teams	30
7. US Navy SEALs	30
CHAPTER IV US ARMY DIVING.....	31
1. Overview.....	31
2. US Army Engineer Divers.....	31
3. US Army Special Forces.....	33
CHAPTER V US MARINE CORPS COMBATANT DIVING	35
1. Overview.....	35
2. Marine Combatant Diver.....	35
CHAPTER VI US AIR FORCE DIVING.....	39
1. Overview.....	39
2. USAF Personnel Recovery Divers.....	39
3. USAF Special Tactics (ST) Divers	40
CHAPTER VII SPECIAL OPERATIONS FORCES DIVING	41
1. Overview.....	41
2. Navy SEALs	41
3. Marine Corps Forces, Special Operations Command.....	42
4. Air Force Special Tactics Forces	42
5. US Army Special Forces.....	44
CHAPTER VIII NON-DOD DIVING	45
1. US Coast Guard Diver	45
2. Contract Divers.....	46
3. Law Enforcement Divers.....	46
APPENDIX A DIVE POINT OF CONTACT LIST	47
APPENDIX B COMMON EQUIPMENT AND RESTRICTIONS	53
1. Description of Common Equipment.....	53
2. Common Equipment and Restrictions Table	53
APPENDIX C DMA UNIT CAPABILITY CHART	55
REFERENCES.....	59
GLOSSARY	61

List of Figures

Figure 1. Dive Planning Guide.....	4
Figure 2. DMA Decision Aid.....	5

Figure 3.	DMA Subcategory Breakout	6
Figure 4.	Mobile Diving and Salvage Company Organization.....	21
Figure 5.	Battle Damage and Repair Organization	26
Figure 6.	Seabee Underwater Construction Team Organization	29
Figure 7.	Engineer Dive Detachment Organization.....	32
Figure 8.	Sample Marine Combat Diver Profile	37
Figure 9.	Special Tactics Organization	43

List of Tables

Table 1.	Dive Unit Initial Coordination	7
Table 2.	Dive Mission Areas.....	9
Table 3.	Regional Maintenance Center/Intermediate Maintenance Facility Diving Assigned Area of Responsibility	23
Table 4.	Common Equipment and Restrictions	53
Table 5.	Dive Mission Area Unit Capability Reference Chart	55

EXECUTIVE SUMMARY

MDO *Multi-Service Tactics, Techniques, and Procedures for* *Military Diving Operations*

Over the history of diving, each of the five US Armed Services have evolved their diving capabilities to meet the demands of Service-specific mission requirements and their divers have specialized training, equipment, and capabilities based on those Service-specific missions. These dive capabilities are detailed in chapters III through VIII.

The MDO MTTP publication is designed to assist commanders and planning staffs who require dive operations capability. It provides considerations for immediate response as well as deliberate planning for situations requiring dive capabilities. It describes the 13 dive mission areas (DMAs) performed by military divers, describes the 11 different types of military divers within the Services, and lists associated capabilities and limitations for the types of divers.

Chapter I Military Diving Operations Planning

Chapter I provides an introduction to MDO and outlines considerations for coordinating and planning dive operations. It provides decision aids to assist the staff planner with determining which DMAs and subcategories are required to support the overall mission.

Chapter II Dive Mission Areas

Chapter II describes the thirteen major dive mission areas and their subcategories that may be performed by military divers.

Chapters III-VIII

Chapters III-VIII provide Service-specific dive missions, organizations, employment concepts, and capabilities.

Appendix A Dive Point of Contact List

Appendix A provides a comprehensive list of dive program points of contact, including Service program managers and major units.

Appendix B Common Equipment and Restrictions

Appendix B provides a list of equipment and restrictions common to divers from all Services.

Appendix C Dive Mission Area Unit Capability Chart

Appendix C provides a quick-reference chart listing dive unit capabilities to accomplish each of the DMAs and subcategories.

PROGRAM PARTICIPANTS

The following commanders and agencies participated in this publication:

Joint

HQ US Special Operations Command, MacDill AFB, FL

Army

US Army Combined Arms Center, Fort Leavenworth, KS

US Army Engineer Dive Detachments (74th, 86th, 511th, 544th, 569th), Fort Eustis, VA

US Army Engineer School, Fort Leonard Wood, MO

Marine Corps

Marine Corps Combat Development Command, Quantico, VA

1st Marine Special Operations Battalion, United States Marine Corps Forces Special Operations Command, Camp Pendleton, CA

Marine Corps Systems Command, Raids and Recon Amphibious Section, Quantico, VA

Marine Corps Plans, Policy, and Operations, Washington, DC

Training and Education Command, Recon and Special Skills, Quantico, VA

Navy

Navy Warfare Development Command, Norfolk, VA

Norfolk Navy Shipyard Dive Locker, Norfolk, VA

Naval Sea Systems Command, Washington Navy Yard, Washington, DC

Mobile Diving and Salvage Unit One, Pearl Harbor, HI

Mobile Diving and Salvage Unit Two, Norfolk, VA

Naval Facilities Engineering Command, Washington Navy Yard, Washington, DC

Commander Explosive Ordnance Group One, San Diego, CA

Navy Expeditionary Combat Command, N3 Force Integration, Naval Amphibious Base Little Creek, Norfolk, VA

Naval Diving and Salvage Training Center, Panama City, FL

Naval Surface Warfare Center, Washington Navy Yard, DC

Air Force

Curtis E. LeMay Center for Doctrine Development and Education,
Maxwell Air Force Base, AL

HQ Air Force Special Operations Command, Hurlburt Field, FL

HQ Air Force A3O-AS, Pentagon, Washington, DC

342nd Training Squadron Detachment 2, Panama City NSA, FL

HQ Air Combat Command/A3T, Command Pararescue Functional Area Manager,
Langley AFB, VA

Coast Guard

Assistant Commandant for Capability, US Coast Guard Headquarters, Washington, DC

This page intentionally left blank.

Chapter I

MILITARY DIVING OPERATIONS PLANNING

1. Introduction

- a. In the US military, dive capabilities are maintained as skill sets to facilitate accomplishing a unit's assigned missions. Diving is not a stand-alone mission and can be compared to tasks such as air-to-air refueling for aircraft or parachuting for airborne units.
- b. Current and future operations require commanders and planners to fully understand how divers support the joint force commander (JFC). Planners are challenged with trying to decide which type of dive unit is best suited for particular missions.
- c. *MDO* is a single-source document intended to provide planners with a general understanding of dive mission areas (DMAs) and what type of dive units are recommended to accomplish each mission. The real-world example below from Operation IRAQI FREEDOM (OIF) highlights the dilemma for planners who require unique diving capabilities from different military divers to accomplish the mission.

On 21 October 2005 at 1730L, the 64th Expeditionary Rescue Squadron was notified by the Joint Personnel Recovery Coordination Center (JPRCC) that a HUMVEE with five Marines onboard had been hit by an improvised explosive device (IED) near Fallujah, Iraq. Two Marines had been ejected from the vehicle, presumably into a 75 ft wide, 15 ft deep irrigation canal.

USAF personnel recovery (PR) forces on alert at Balad, Iraq, were tasked to initiate search and rescue efforts. The PR forces immediately deployed to the incident site by helicopter, linked up with the Marine ground force commander, and initiated recovery operations.

United States Central Command (USCENTCOM) planners continuously monitored the progress of the recovery operations and alerted Navy divers to help with the recovery efforts.

The Air Force PR dive team worked throughout the night and into the afternoon, locating partial remains of the Marines, dog tags, and equipment items which allowed commanders to reclassify the two Marines as "Killed in Action." Navy dive teams arrived at 1600 the day after the incident and a handover of the recovery operation was conducted.

Over the next few days, the Navy team continued sensitive recovery operations and recovered the remainder of the personnel effects and sensitive equipment from the incident site. The ability of the joint force planners to quickly initiate dive recovery operations and transition the dive force to sustain the operation ensured the remains of these Marines could be returned with honor.

Source: HQ USAF/A30-AS

d. There are currently 13 types of DMAs performed by divers of the five US Armed Services, which include the four military Services and the US Coast Guard. Various dive units conduct these missions within Service DMAs. *MDO* provides information on how each Service organizes and supports its dive-capable units and how Service-specific capabilities integrate with the overall universal joint task list (UJTL).

e. When planning for the deployment of military dive units, it is crucial for a joint planner to know the condition and capabilities of waterways and military diving resources in the area of operations (AO). This information enables the joint force planner to determine the types and mix of assets required to support operational requirements. This chapter details the command and control (C2) relationships and planning considerations for tasking Service dive capabilities and includes an overview of MDO capabilities.

2. Command and Control Relationships

a. Relationships. The following guidance outlines duties and responsibilities during a joint operation.

(1) Joint Force Commander (JFC). The JFC exercises operational control (OPCON) over assigned forces and normally over attached forces, to include dive forces.

(2) Joint Force Maritime Component Commander (JFMCC). The JFMCC is responsible for all Navy and most Marine units with dive capabilities.

(3) Joint Force Land Component Commander (JFLCC). The JFLCC normally exercises OPCON of assigned Army and Marine Corps forces with dive capabilities, except those assigned to the joint forces special operations component commander.

(4) Joint Force Air Component Commander (JFACC). The JFACC normally exercises OPCON of assigned Air Force dive forces, except those assigned to the joint forces special operations component commander (JFSOCC).

(5) Joint Force Special Operations Component Commander (JFSOCC). The JFSOCC normally exercises OPCON of special operations and other forces assigned to it from the other Services.

(a) Theater Special Operations Command (TSOC). A subunified command responsible to the geographic combatant commander (GCC). The TSOC commander normally exercises combatant command (command authority) (COCOM) of assigned and OPCON of attached special operations forces on behalf of the GCC.

(b) Joint Special Operations Task Force (JSOTF). When a GCC establishes and employs multiple JTFs and independent task forces (TFs) concurrently, the TSOC commander may establish and employ multiple joint special operations tasks forces (JSOTFs) to manage SOF assets and accommodate JTF/TF special operations requirements. Accordingly, the GCC, as the common superior, normally will establish support or tactical control (TACON) command relationships between the JSOTF commanders and JTF/TF commanders.

(6) Service Component Command. The Service component command retains the responsibility to make recommendations to the JFC on employment of component forces, to include dive units.

b. Dive Units. These units provide military diving capabilities in order to support overall operational or tactical objectives.

3. Planning Considerations

a. Service commanders should determine the dive capabilities and forces required, arrival sequence, and support requirements to plan diving operations, including planning for the full range of military diving operations to support deliberate and crisis action planning for deployment, employment, sustainment, and redeployment of forces. The JFC will need expertise from Service diving representatives for coordination with all relevant agencies.

b. During deliberate planning, planners should first determine the dive capabilities that may be required to support expected and contingency operations using the decision aids in this chapter and the DMA descriptions in chapter II. They should then use this analysis to initiate appropriate requests for forces through the established combatant command request process. This will ensure forces with the required capabilities are in the area of operations when needed.

(1) Deployment timelines for dive units can vary greatly and are dependent on the unit's equipment and transportation modes available. Timelines typically range from a couple of days with airlift available to several weeks if sealift is utilized.

(2) Most dive units are air deployable, with equipment such as hyperbaric chambers increasing the amount of cargo space required. Dive units may also deploy with a reduced equipment inventory scaled to the expected missions. Planners should carefully consider the reduced flexibility this scaled deployment provides and balance it with other mission requirements.

c. Planners, in conjunction with dive unit commanders, should consider all phases of the operation when determining required capabilities. In addition, it may be necessary to utilize different organizational dive teams for different phases of the operation.

d. In time-critical operations, planning for subsequent phases should occur concurrently with execution of the initial phase. Planners should initiate contact with first response dive teams as quickly as possible to provide rescue, recovery, and initial site survey. First responders provide quick reaction with limited capabilities but are a vital source of information for follow-on operations. For example, in the case of a downed aircraft, divers may be tasked to:

- Locate aircraft.
- Make positive identification.
- Make the initial inspection.
- Render safe explosives.
- Recover remains.
- Recover/sanitize sensitive equipment.
- Remove hazardous materials.

- Recover critical structural elements.
- Recover aircraft.

4. Planning Decision Aids

a. When determining which dive units to use, planners should ask a series of questions to ensure the appropriate assets are matched to the mission. These questions begin with the time-critical decision of determining the need for rescue operations, then continues with methodically determining the required capabilities, and finishes with selecting dive units with the required capabilities. Staff planners can utilize the Dive Planning Guide (Figure 1) to assist in the planning process. By answering the questions in this guide, the planner who is unfamiliar with diving operations will be able to not only determine what type(s) of divers will be required to accomplish the mission, but also what information and support may be needed by the dive unit.

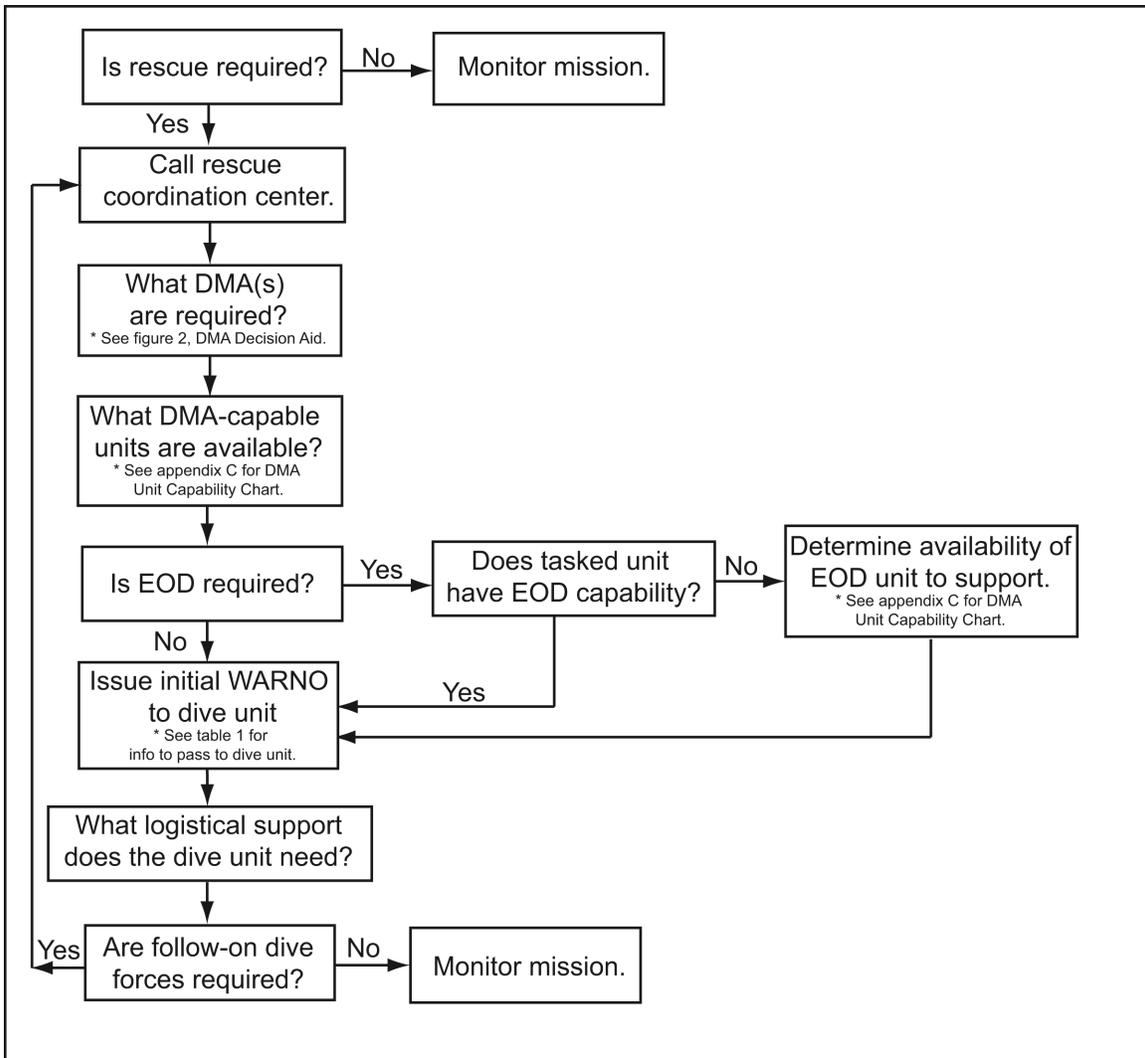


Figure 1. Dive Planning Guide

b. The DMAs are derived from specific tasks in the UJTL and describe the main areas where divers provide support to operations. Planners should refer to chapter II for detailed descriptions of the DMAs and their subcategories. Figure 2, “DMA Decision Aid,” provides a quick reference for planners to determine which DMAs may be applicable to each of the five major types of operations supported by the DMAs. These five types of operations are:

- (1) Offensive.
- (2) Defensive.
- (3) Salvage/Repair.
- (4) Logistical Support.
- (5) Search and Rescue/Recovery.

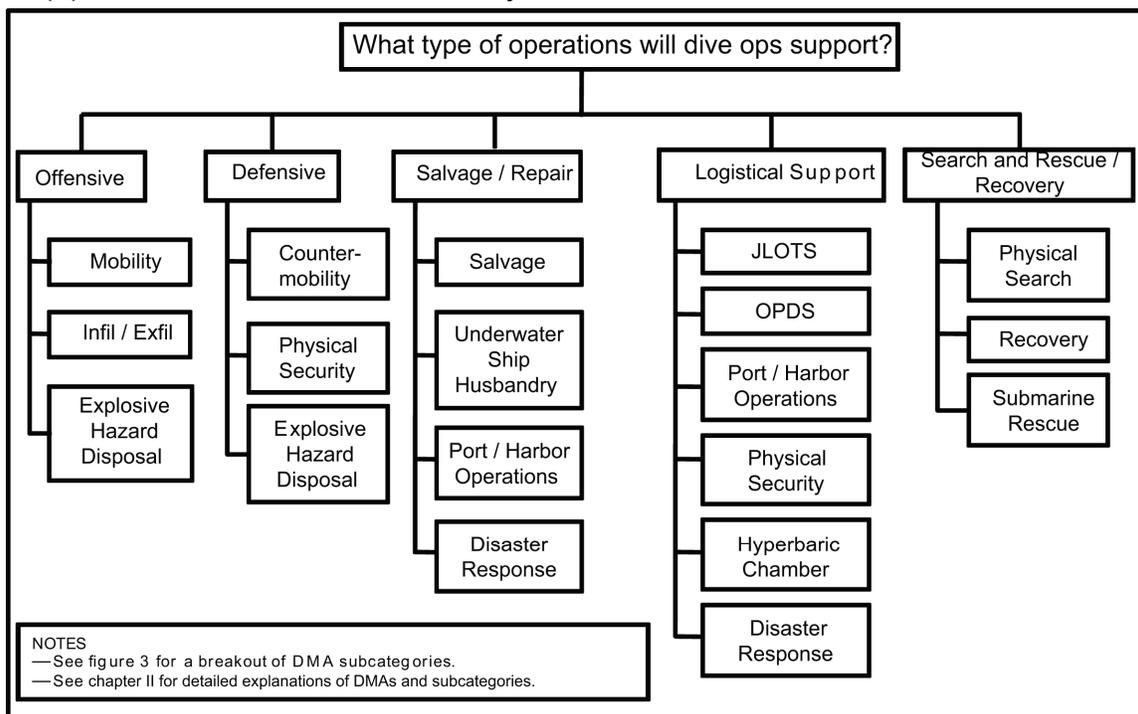


Figure 2. DMA Decision Aid

c. The DMA subcategory breakout (Figure 3) further assists the planner in logically determining the DMAs appropriate to the operation. After a required DMA is identified, planners should use the DMA subcategory breakout to further refine specific requirements. For example, divers may be called upon to support a river crossing (mobility) by conducting an underwater survey to find suitable crossing sites and to reduce natural or man-made obstacles. Once mission-specific requirements are determined, planners should use the DMA Unit Capability Chart at appendix C to match required capabilities to available types of dive units. This step is critical because not all dive units are capable of all DMAs or subcategories.

Mobility <ul style="list-style-type: none"> • Structure recon • River recon • Obstacle reduction • Installation • Underwater survey • Very shallow water 	JLOTS <ul style="list-style-type: none"> • Survey • Obstacle reduction • Medium salvage • Anchoring system recovery / repair • Installation of causeway anchors
Countermobility <ul style="list-style-type: none"> • Obstacle emplacement • Bridge demo 	OPDS <ul style="list-style-type: none"> • SALMS installation • Hydrographic survey • Improving beach approaches • Obstacle clearance • Anchoring pipelines • Pipeline Inspection
Physical Security <ul style="list-style-type: none"> • Passive / active • Security swims • Inspections • Vulnerability assessments • Contraband search 	Salvage <ul style="list-style-type: none"> • Light • Medium • Heavy
Explosive Hazard <ul style="list-style-type: none"> • Locate and ID • Render safe ordnance • Render safe mines • Marine animals 	Search and Rescue / Recovery <ul style="list-style-type: none"> • Physical search • Recovery / submarine rescue
Infil /Exfil	Disaster Response <ul style="list-style-type: none"> • Plans / assessments • Obstacle removal • Repair retaining structures • Survey validation
Underwater Ship Husbandry <ul style="list-style-type: none"> • Inspection • BDA and Repair (Light / Heavy) 	Hyperbaric Chamber
Port / Harbor Operations <ul style="list-style-type: none"> • Planning and inspection • Survey • Clearance • Repair • Construction 	
<p>* See chapter II for detailed descriptions of DMAs and subcategories.</p>	

Figure 3. DMA Subcategory Breakout

d. After determining required DMAs and available dive units, staff planners should initiate contact with the dive units as soon as possible. This will allow dive teams to plan technical aspects of the mission, begin preparation of equipment and personnel, and begin movement to the dive site. In addition to the normal planning considerations, dive operations have specific logistical and environmental considerations which must be addressed during planning. These considerations will determine the manning, equipment, qualifications, and time required for mission accomplishment. Planners should gather as much of this information as possible and pass it to the dive unit as soon as practical to help ensure dive mission success. Sources for this information will depend on the dive location, but should include personnel at the dive site, weather observations, forecasters, and the internet. Table 1 provides a checklist to assist staff planners with this process.

Table 1. Dive Unit Initial Coordination

This checklist is a quick reference for initial coordination with dive units for missions. Timely dive unit notification with as much of the basic information listed below as possible will increase the degree of mission success. Utilize weather observers, forecasters, on-scene personnel, the internet, and any other available sources to gather data.

<p>1) Determine required capabilities.</p> <ul style="list-style-type: none"> • Refer to Figure 2, "DMA Decision Aid," and Figure 3, "DMA Subcategory Breakout." • Chapter II provides detailed DMA descriptions. 	<p>a) DMA(s): _____</p> <p>b) Subcategories: _____</p>
<p>2) Identify and request available/capable units.</p> <ul style="list-style-type: none"> • Contact Combatant Command/JFC Staff Dive Representative. <ul style="list-style-type: none"> ➢ Rescue Center POC ➢ Diver POC • Refer to Appendix C, "DMA Unit Capability Chart." 	<p>a) Higher headquarters POC: _____</p> <p>Contact #: _____</p> <p>b) Dive unit POC: _____</p> <p>Contact #: _____</p> <p>c) Dive unit POC: _____</p> <p>Contact #: _____</p>
<p>3) Contact assigned dive unit.</p> <ul style="list-style-type: none"> • Provide as available: <ul style="list-style-type: none"> ➢ Combative or noncombative dive site ➢ Water contamination ➢ Air/water temperature ➢ Water depth ➢ Current ➢ Tide charts ➢ Underwater visibility • Coordinate logistics prior to dive team arrival: <ul style="list-style-type: none"> ➢ Hazardous materials transportation ➢ Compressed gas ➢ Explosives ➢ Generators/motors ➢ Transportation requirements ➢ Site security ➢ Fuel (gas/diesel) ➢ Dive platform ➢ Other 	<p>a) Site / water / weather conditions:</p> <p>Combative dive: Y / N</p> <p>Water contaminates: _____</p> <p>Air/water temperature: _____</p> <p>Water depth: _____</p> <p>Current: _____</p> <p>Tides: _____</p> <p>Underwater visibility: _____</p> <p>b) Logistics support required:</p> <p>Passenger/equip trans: _____</p> <p>Fuel: _____</p> <p>Platform / generators: _____</p> <p>Explosives: _____</p> <p>Site security: _____</p> <p>Compressed gas: _____</p>
<p>Coordination Notes:</p>	

(1) Logistics.

(a) Transportation and Storage of Compressed Air. Full dive tanks are typically not allowed on aircraft. If the dive team is transported by air, the tanks must be refilled at the destination.

(b) Transportation Requirements of Divers and Equipment. Not all dive teams have integral transportation capability. Planners may be required to task units to provide transportation.

(c) Security of the Dive Site. Most dive teams have a limited self-defense capability. The dive mission may be negatively impacted if dive teams are required to provide their own security.

(d) Fuel Requirements (Gasoline and Diesel). Dive team support equipment varies and may require gasoline, diesel, or both.

(e) Diving Platform Available/Required. Divers operate from a wide variety of platforms, including piers, shores, barges, boats, and ships and vessels of opportunity (VOO). The platform required will depend on the mission. Teams may be able to provide their own platform.

(2) Environmental Conditions.

(a) Water Contamination. Fuel, biological, or chemical contaminants may be damaging to dive equipment and hazardous to divers. Additional equipment or post-dive medical assistance may be required if these conditions exist.

(b) Water Temperature. Cold water will reduce submerged times for divers and may require additional equipment or manning.

(c) Water Depth. Deeper dive operations reduce submerged times for divers. Maximum operating depths are dependent, in part, on equipment.

(d) Currents. Currents greater than 1 knot may require additional planning or equipment.

(e) Tide Charts. Tidal phases may influence water depth and currents at the dive site.

(f) Underwater Visibility. Low visibility may increase time required to accomplish a task. For example, if searching an area for a piece of equipment, low visibility may require a denser search pattern or alternate search technique.

5. Interservice, Interagency, and Combined Operations

All Service divers graduate from a DOD-approved dive school. However, there may be differences in procedures, training, and equipment between Services, agencies, and nations. Dive teams consisting of personnel from different Services, agencies, and nations are possible but require additional coordination.

Chapter II DIVE MISSION AREAS

1. Introduction

The DMAs are derived from the UJTL and are divided into the main areas where divers provide support to operations. Not all dive units are capable of all DMAs. For example a dive unit may only have scuba equipment and be limited to a sub-category of one or two DMAs. Refer to appendix C for a crosswalk of DMA to dive unit and specific dive capability. The 13 DMAs are listed in Table 2 for reference, and each DMA is described in detail in this chapter.

Table 2. Dive Mission Areas
<ul style="list-style-type: none">- Mobility- Countermobility- Protection (physical security)- Explosive hazard disposal- Infiltration/exfiltration- Underwater ship husbandry- Port/harbor facilities opening, construction, clearance, and rehabilitation- Joint logistics over-the-shore/in stream offload- Offshore petroleum distribution systems- Salvage- Search and rescue/recovery- Conduct disaster response measures- Hyperbaric chamber

2. Dive Mission Area Descriptions

a. Mobility. Divers provide the commander with critical support for water obstacle crossing by supplying the information needed to determine crossing sites, bridging locations, and time estimates for reduction/removal of obstacles. This information is gathered by conducting hydrographic/bathymetric surveys, shore reconnaissance, and obstacle reduction/removal.

(1) Reconnaissance of Bridges, Fording Sites, and Existing Structures. Divers determine the type of construction used, condition of structure, battle damage assessment, and repair estimates. Structural engineer augmentation may be required.

(2) River Reconnaissance Operations. Divers conduct reconnaissance of both the near and far shores of a water obstacle to determine the ability of the site to support future crossing operations. They identify the bottom composition, establish bank slopes, water depths, and possible staging areas and rally points on the near and far shore.

(3) Obstacle Reduction. After identifying obstacles to mobility, divers can remove or reduce obstacles using mechanical and/or explosive methods.

(4) Installation of Protective Barriers for Bridging Structures. Divers assist in installing impact booms, anti-mine booms, and anti-swimmer nets both upstream and downstream of crossing sites. They can also inspect these devices routinely for signs of tampering or damage and repair them as required.

(5) Underwater Surveys. Dive units can create sub-meter accurate charts of the bottom and note any obstacles to navigation. The initial survey can be conducted by a few personnel and small water craft configured with various types of technology packages to provide a quick and fairly accurate description of the underwater terrain. If obstructions are found or there are questionable readings divers can conduct a physical inspection of the anomaly. There are three kinds of underwater surveys:

(a) High Resolution. A high resolution survey involves post-survey data rendering and aerial photograph overlays and provides sub-meter accuracy. Survey data can be provided in both paper and digital form. High resolution surveys take the most amount of time compared to the other types of underwater surveys.

(b) Medium Resolution. A medium resolution survey provides a graphic representation of the bottom profile with sub-meter accuracy. A digital copy is available within hours of the survey.

(c) Low Resolution. A low resolution survey provides 1-3 meter accuracy with a verbal description of the site and basic markings.

(6) Very Shallow Water (VSW) Operations. Divers conduct advanced-force and pre-assault mine countermeasures exploratory and reconnaissance operations in the VSW zone (from 10- to 40- foot water depths) to locate and, if required, to clear potential landing sites in support of joint littoral power-projection operations.

b. Countermobility. Divers aid the countermobility mission by creating obstacles in and around potential crossing sites. They are capable of emplacing underwater minefields and rigging bridges for command-fused and time-fused detonations.

(1) Obstacle Emplacement. Divers can build various types of obstacles designed to slow or impede the enemy's ability to conduct wet-gap crossing operations. These obstacles can be placed underwater with sub-meter accuracy creating an interlocking barrier navigable by allied forces and an obstacle to enemy forces.

(2) Demolition of Bridge Structures. To slow / impede an enemy's ability to cross bridges, demolitions can be emplaced to render the bridge impassible to the enemy. Some dive units have substantial training in the precise and surgical use of demolitions. These teams, when augmented with structural engineers, can perform demolitions of a bridge in such a manner as to create an obstacle for the enemy but not for allied nations.

c. Protection (Physical Security). Divers can enhance protection in contingency operations or in response to national security concerns, including counterterrorism and counterdrug operations. Divers can rapidly deploy in order to secure critical areas. Physical security of bridges, ports, locks, and dams may include both active and passive systems to protect or provide early warning of impending danger.

- (1) Passive/Active Detection Methods. Divers assist in placing and maintaining physical security systems in port areas and waterways and on fixed bridges, locks, or dams.
 - (2) Security Swims. Divers provide security by searching the underside of a ship's hull and the adjacent pier to provide an active early detection system.
 - (3) Physical Security Inspections. Divers conduct inspections on the underwater portion of a vessel before it enters a facility or while moored outside a secured perimeter to locate possible explosive hazards.
 - (4) Vulnerability Assessments. Divers perform inspections and surveys to facilitate assessment of vulnerabilities to threats by enemy/terrorists with dive capabilities.
 - (5) Contraband Search. Divers conduct searches on the underside of a ship's hull to locate foreign devices and objects.
- d. Explosive Hazard Disposal.
- (1) Locate and Identify. Divers search for and record any identifying markings on foreign objects placed along ships hulls, piers, port facilities, and other underwater structures.
 - (2) Render Safe and/or Dispose of Underwater Ordnance. Divers disarm or remove munitions designed to function underwater except naval mines (e.g. torpedoes, limpet mines, depth charges, etc.). This category also covers ordnance normally designed to function on land or in the air but is found underwater.
 - (3) Render Safe and/or Dispose of Sea Mines. Divers disarm, remove, or employ other methods to prevent or reduce damage from ordnance expressly designed to be placed in the water and function by contact or receipt of an appropriate signal from a target vessel.
 - (4) Marine Mammal System (MMS) Operations. MMS detachments use trained animals including dolphins and sea lions to provide an enhanced capability to detect, identify, mark, render safe, recover, and neutralize objects within the water column as well as objects on or below the sea floor.
- e. Infiltration/Exfiltration. These operations use diving as a means to circumvent enemy lines and defenses to facilitate follow-on missions such as surveillance/reconnaissance and direct action.
- f. Underwater Ship Husbandry. Ship husbandry is the in-water inspection, maintenance, and repair of vessels. Inspections of vessels are performed to assess the condition of the underwater hull and appendages. These inspections cover all parts of the vessel below the waterline and are part of the scheduled or emergent maintenance or damage assessment.
- (1) Inspections.
 - (a) Hull—Check damage assessment and identification of buildup from marine organisms growing on the hull, plus the condition of antifouling paint surfaces.

(b) Propulsion and Steering Systems—Check condition of shafts, propellers, and rudders and the serviceability of protective coatings, seals, and bearings.

(c) Vessel Appendages—Determine the general condition and operational ability.

(2) Maintenance—Underwater maintenance tasks include hull cleaning; replacing sacrificial anodes; maintaining cathodic protection systems; replacing worn or corroded nuts, bolts, and screws; fairing in hydrodynamic surfaces; and servicing any items that would fall into disrepair if they were not maintained. Maintenance procedures require hand tools, pneumatic or hydraulic tools, and other special equipment, such as hull-cleaning devices.

(3) Repair—Most underwater repairs are intended to be permanent repairs. Repair tasks consist of removing and replacing hull appendages, sealing cracks or separated seams, performing mechanical and metal repairs. Repairs may be accomplished in a wet environment or may require a cofferdam to provide a dry environment.

(4) Battle Damage Assessment and Repair (BDA/R)—BDA/R provides immediate assistance to a vessel in distress. A remotely operated vehicle (ROV) is used to inspect and assess areas of damage, providing real-time video feed to repair facilities via satellite. Repairs are temporary in their application and are meant to keep the vessel afloat until permanent repairs are made. BDA/R normally is conducted in a remote, semi-permissive/permissive environment. BDA/R capabilities are grouped into two categories:

(a) Light repair—Install small damage control plugs, and design and emplace patches.

(b) Heavy repair—Wet weld on large patches and repair or replace underwater propulsion and steering systems.

g. Port/Harbor Facilities Opening, Construction, Clearance, and Rehabilitation. Port facilities are fundamental to the movement of personnel and material for any military operation. Port facilities can either be improved for friendly forces or modified to deny use by the enemy.

(1) Planning and Inspection. Divers assist in the planning of any port operation to help determine priorities of work or prepare work estimates. A completed inspection can provide the water terminal commander with a report of existing conditions of underwater port facility structures.

(2) Hydrographic/Bathymetric Survey. Divers conduct surveys to depict water depths and obstruction locations to determine the size of ship the port can support.

(3) Clearance. Clearance operations are undertaken to neutralize or reduce obstacles +blocking the shipping channels in ports, loading facilities, mooring sites, marine railways, dry-dock facilities, lock and dam structures, and other navigable waterways.

(4) Repair. Repairing port facilities is more desirable than initial construction because it requires far less time and fewer resources. The repair may involve both underwater and surface operations and will depend on the close integration

of both divers and general engineer assets. The inspection and repair of these structures may require specialized equipment.

(5) Construction. Constructing new ports and facilities is a major undertaking, usually requiring extensive use of divers. Divers provide valuable information during the initial site selection and survey. Hydrographic surveys of the proposed area are conducted to determine water depths, sea-bottom contours, and the location of shipping channels and underwater obstacles.

h. Joint Logistics Over-the-Shore (JLOTS)/In Stream Offload. JLOTS operations occur when Navy and Army logistics over-the-shore (LOTS) forces conduct LOTS operations together under a JFC. LOTS is the process of loading and unloading ships without the benefit of deep-draft capable, fixed-port facilities; or as a means of moving forces closer to tactical assembly areas. Generally LOTS operations will be joint with few exceptions. Divers support JLOTS operations through the following tasks:

(1) Survey. Divers conduct a survey of the operation site to include underwater bottom profile to determine potential LOTS operation sites. Dive units create sub-meter accurate charts of the bottom and note any obstacles to navigation. The initial survey can be conducted by a few personnel with small water craft configured with various types of technology packages which will provide a quick and fairly accurate description of the underwater terrain. If obstructions are found or there are questionable readings divers can conduct a physical inspection of the anomaly.

(2) Obstacle Reduction. After identifying obstacles to LOTS sites, divers can remove or reduce obstacles using mechanical and/or explosive methods.

(3) Medium Salvage. In the event supplies are lost overboard, dive units can search the area to locate the submerged equipment. Depending on the size and depth of the submerged equipment divers will attach lifting devices to the object for surface cranes to raise. If overhead lift support is not available divers can secure inflatable bags and pontoons to the object and float it to the surface, then tow it into shore where vehicles can pull the object onto land.

(4) Anchoring System Recovery and Repair. During LOTS operations a ship's anchor and anchor chains may become entangled in underwater cables, caught on reef structures or wrapped around sunken objects. Divers can unfoul an anchor and anchor chain so the surface vessel can get underway. Anchors may also become detached from their chains and cables. Divers locate and reattach these anchors.

(5) Anchoring Systems to Stabilize Causeway. Divers imbed anchoring systems into the sea floor to provide greater stability to the causeway during rough seas.

i. Offshore Petroleum Distribution Systems (OPDSs). OPDSs are designed to facilitate the high-volume movement of bulk liquid cargo from ship to shore and are used extensively during fuel transfer operations. Engineer port construction companies, divers, and transportation watercraft groups play an important role in the preparation, installation, repair, and operation of the OPDS. Divers will be required to support it by:

- (1) Installing single-anchor, leg-mooring system (SALMS). The SALMS is emplaced as a mooring station and discharge manifold, providing a semi permanent installation for the bulk transfer of fuel directly from an offshore tanker to port storage.
 - (2) Conducting hydrographic surveys to determine beach gradient, underwater contour, and geotechnical information.
 - (3) Improving beach approaches.
 - (4) Clearing enemy-emplaced or natural obstacles from beach approaches.
 - (5) Anchoring underwater pipelines to seafloor.
 - (6) Inspecting pipelines and their components.
- j. Salvage. Major salvage operations include the clearance and removal of submersed/sunken vessels, equipment, supplies, or other materials from port channels, berthing and docking facilities, mooring sites, lakes, lock and dam facilities, and other navigable waterways. A diver's ability to salvage vessels or other equipment depends on the type, size, and location of the object and the time available for the salvage effort. Salvage methods range from simple operations to large-scale operations requiring complex integration of surface-support assets, including multiple vessels and lift assets. There are three categories of salvage operations: light, medium, and heavy.
- (1) Light salvage, normally done to clear berthing spaces, is considered objects weighing less than 10 tons.
 - (2) Medium salvage is considered objects weighing more than 10 tons, but less than 75 tons.
 - (3) Heavy salvage is anything over 75 tons.
- k. Search and Rescue/Recovery. Divers assist in the search and recovery of equipment and personnel lost in or near water.
- (1) Physical searches—Divers use various techniques to locate personnel during combat, natural disasters, and other operations.
 - (2) Recovery—Recovery operations are focused on the recovery of personnel or sensitive equipment.
 - (3) Submarine disaster rescue—Operations to recover personnel and equipment from distressed submarines.
- l. Conduct Disaster Response Measures.
- (1) Assist in making plans and assessments to mitigate damage caused by natural disasters.
 - (2) Remove obstacles to navigation in areas damaged or covered by floods, earthquakes, or other naturally occurring and manmade disasters.
 - (3) Repair dams, levees, breakwaters, and other manmade retaining structures.
 - (4) Validate hydrographic surveys by verifying existing charts are accurate and waterways were not affected by a disaster.
- m. Hyperbaric Chamber. Provide recompression therapy for pressure-related injuries resulting from flight or diving operations. Dive units may provide their own

hyperbaric chambers. If not, available chambers may be located through the Naval Sea Systems Command (NAVSEA) worldwide web address <https://secure.WWW.SUPSALV.ORG> or by contacting the Naval Experimental Dive Unit emergency number (850) 230-3100. These are not the definitive sources for all recompression chambers worldwide, however, they can be used as planning resources.

This page intentionally left blank.

Chapter III US NAVY DIVING

1. Overview

The Navy has five types of divers, explosive ordnance disposal (EOD), Navy diver (ND), underwater construction team (UCT), submarine security divers, and sea-air-land (SEAL).

2. Explosive Ordnance Disposal

- a. Mission. EOD personnel provide the capability to detect, identify, render safe, recover, evaluate, and dispose of explosive ordnance which has been fired, dropped, launched, projected, or placed in order to constitute a hazard to operations, installations, personnel, or material. The mission extends to all explosive ordnance, particularly in those areas which are the responsibility of the Navy or ordnance discovered within the ocean, including inlets, bays, and harbors.
- b. Capabilities. Navy EOD units integrate into fleet battle groups in order to support special operations forces and conduct mine countermeasure (MCM) operations. Specific units also maintain and operate various marine mammal systems (MMS) to conduct MCM, port security, and underwater object location operations.

(1) EOD MCM Platoon.

(a) EOD MCM platoons are dedicated to support the mine warfare (MIW) mission and are functionally organized to locate, identify, neutralize, recover, exploit, and dispose of underwater ordnance that impedes maneuver. MCM platoons normally support other MIW platforms and units but are capable of limited independent MCM operations.

(b) MCM platoons also provide diving and demolition support, intelligence collection, range clearance, underwater clearance, shore detachment augmentation, riverine operations, Chief of Naval Operations (CNO) project support, contingency and special operational support and can be a force multiplier to support aircraft and ordnance recovery.

(2) MMS Platoon. All MMS platoons are mobile systems that can rapidly deploy to most areas of the world on short notice. Systems can utilize fixed-wing aircraft, helicopters, trucks, boats, amphibious ship well decks, or command ships. These highly mobile, reliable, and effective systems provide a trained, contingency response capability in several mission areas. MK4 and MK7 MMS provides post-assault mine hunting from 10 to 200 ft. This system is capable of mine localization and neutralization. MK8 MMS provides pre-assault mine hunting from 10 to 40 ft. This system is capable of mine localization and marking only. MK6 MMS provides swimmer detection and defense capabilities.

(3) Ordnance Clearance Platoon (OCP). OCP personnel are members of the Naval Reserve Force (NRF) and are trained to locate, identify, and destroy conventional ordnance but are not trained to perform render safe or field exploitation procedures. OCPs can be employed for routine hull searches, limpet, and underwater searches in support of port security/harbor defense operations,

and can counter ordnance in support of MCM and port clearance operations. OCPs provide contributory peacetime support in areas of offensive mine scoring/recovery (practice mining), retrograde ordnance/explosives disposal, and range clearance operations. NRF OCPs perform basic diving and demolition duties. OCPs provide diving and demolition support, perform manpower-intensive tasks to free up USN EOD personnel for more critical procedures, and serve as force multipliers when integrated with USN EOD forces.

(4) Area Search Platoons (ASP). ASPs are deployable teams that operate side-scan sonar and precise navigation equipment to detect, locate, mark, and reacquire underwater objects. ASPs are frequently employed in support of salvage/search operations, with a limited mine detection capability. ASPs are employed to detect and/or reacquire underwater objects and non-influence ordnance proud of (resting on) the bottom using side-scan sonar and ROVs. ASPs are also deployed in hydrographic and Q-route survey operations but are not used as a mine hunting asset.

(5) Very Shallow Water Company (VSW CO). VSW COs conduct advanced-force and pre-assault MCM exploratory and reconnaissance operations in the VSW zone (from 10- to 40- foot water depths) to locate and, if required, to clear potential landing sites in support of joint littoral power-projection operations.

c. Task Organization. Naval EOD capabilities are organized under EOD Group One, headquartered in San Diego, CA, and EOD Group Two, headquartered in Norfolk, VA. Each EOD group is responsible for multiple EOD mobile units and an operational support unit. The following units belong to or support EOD mobile unit operations:

(1) EOD MCM Platoon. EOD MCM platoons deploy as required to support the MIW mission. MCM platoons are normally tasked as support to surface mine countermeasures (SMCM) platforms, airborne mine countermeasures (AMCM) platforms, and MMS platoons.

(2) Marine Mammal System (MMS) Platoons. The Navy's current marine mammal program has one fleet operational site and one fleet support facility, both located in San Diego, CA.

(3) Ordnance Clearance Platoon (OCP). OCPs are members of the NRF assigned to EOD operational support units.

(4) Area Search Platoons (ASP). ASPs are assigned under Mobile Diving and Salvage Unit (MDSU) ONE and TWO but may be tasked to support EOD units.

(5) Very Shallow Water Company (VSW CO).

(6) In addition to their assigned EOD units, EOD Group ONE and EOD Group TWO have administrative control (ADCON) over MDSU ONE and MDSU TWO, respectively.

3. Navy Fleet Diving

a. Mission. NDs operate across the entire spectrum of the water column. They specialize in salvage, ocean search and recovery, ship's husbandry, harbor clearance, special operations support, and deep diving operations. NDs are world-wide deployable and fall into two categories: MDSUs and Regional Maintenance Centers.

b. Mobile Diving and Salvage Unit (MDSU).

(1) Mission. MDSUs provide combat ready and rapidly deployable capabilities including a C2 cell, specialized diving and salvage teams, and mobile diving and salvage (MDS) companies to conduct harbor and waterway clearance, salvage, underwater search and recovery, underwater ship husbandry, and emergency underwater ship repairs.

(2) Capabilities. MDSUs are equipped with a diverse range of diving and salvage equipment deployable, scalable, and tailorable according to mission objectives. MDSUs can operate from ports, US Navy, and Military Sealift Command vessels, or commercial contract salvage or repair vessels. Capabilities include:

(a) Enabling Area Access. This is a proactive means to ensure forces can deploy and freely enter the theater of operations by enhancing entry capabilities and infrastructure, mitigating adverse effects of the environment (terrain, weather, enemy action, infrastructure, hazards, and local population), and protecting/facilitating multiple points of departure (PODs), lines of communication (LOCs), and theater entry points. Sub capabilities to enabling area access include the following:

- Port/harbor and riverine/waterways assessment and clearance.
- De-beaching operations.
- Hydrographic surveys.
- Manned underwater inspection, search, location, and detection.
- Unmanned underwater inspection, search, location, and detection.
- Aids to navigation operations.
- Beach clearance and beach salvage.
- Employ explosives.

(b) Rescue Salvage and Recovery. Expeditionary salvage and diving operations are conducted primarily by MDS forces. These operations encompass the entire spectrum of diving and salvage operations, from providing humanitarian assistance to supporting combat operations by enabling friendly forces increased access and freedom of movement throughout the maritime and riverine operating environments. The primary focus of expeditionary salvage and diving is to provide a force capable of operating independently or semi-independently in a semi-permissive or hostile environment. MDS forces provide rescue salvage and recovery capabilities including:

- Conduct damage assessment.
- Port recovery/harbor clearance.

- Emergency underwater ships husbandry.
- Provide diving services.
- Shallow water search and recovery (<300 FSW).
- Submarine search and limited rescue.
- Recover objects of high value (OHV).
- Rigging and crane related services.
- Rig for and augment towing.
- Employ explosives in the use of underwater ship's husbandry (screw removal) and salvage.
- Manned underwater inspection, search, location, and detection.
- Unmanned underwater inspection, search, location, and detection.
- De-beaching.

(c) Force Protection. MDS units have limited self defense capability. MDS forces can conduct preventative actions to mitigate hostile actions against Department of Defense (DOD) personnel, resources, facilities, and critical information. For MDS forces, force protection does not include direct action against the enemy or protecting against accidents, weather, or disease. Sub capabilities of MDS forces in providing force protection include the following:

- Provide both manned and unmanned underwater inspection, search, location, and detection.
- Conventional self-defense.
- Chemical, biological, and radiological (CBR) self-defense.
- Manage emission control (EMCON) and execute operations security (OPSEC).

(d) Task Organization. MDSUs employ a commanding officer, an executive officer, one operations officer, and one supply officer. The HQ element supports eight Mobile Diving and Salvage Companies (MDS COs) at MDSU One and Six MDS COs at MDSU Two. Each company is manned with 17 divers including 1 diving officer and 1 master diver (MDV). Figure 4 depicts MDS CO organization and capabilities.

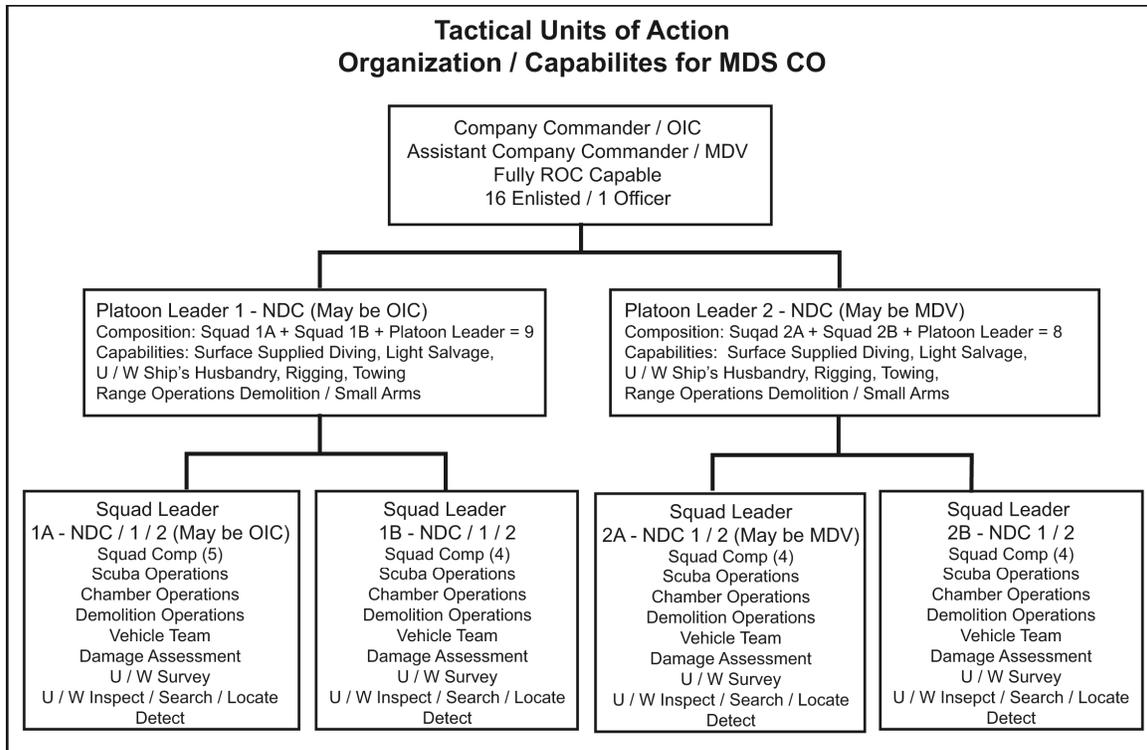


Figure 4. Mobile Diving and Salvage Company Organization

(3) Concept of Employment. MDSUs deploy MDS COs and ASPs as required to support salvage operations. They are capable of deploying multiple MDS COs simultaneously to support larger operations. In these cases deploying units can be augmented with a deployable C2 cell to provide control and direction for a task group commander exercising control over larger expeditionary salvage operations.

(a) Mobile Diving and Salvage Company (MDS CO). MDS COs provide expeditionary salvage, clearance reconnaissance, battle damage assessment, underwater explosive demolitions, site survey, lightweight towing, and aircraft recovery with a craft of opportunity. A MDS CO is also capable of exploiting available retrograde or abandoned opposition-force craft and assets to augment the mission. A MDS CO has an organic capability of air dives to depths of 190 ft using underwater breathing apparatus and surface supplied diving systems. Deeper dives to the 300 foot depth require the use of a helium-oxygen (HeO₂) mixed gas flyaway mixed gas system (FMGS). Heavier salvage capability is represented in the emergency ship salvage materials (ESSM) equipment pool. Typically, this equipment is provided by the MDS parent command or through the in-theater ESSM pool. Due to their size, MDS COs are limited in their ability to provide self-protection and may require nonorganic force protection when in a non-permissive environment.

(b) Area Search Platoon (ASP). The primary mission of the ASPs is to provide a capability to detect and localize submerged objects as necessary in

support of salvage operations. These units are equipped with side scan sonar, ROVs with a variety of sensors, and expeditionary equipment in order to conduct area search operations via organic small craft. Due to their small size, platoons are limited in their ability to provide force protection and will require non-organic waterborne force protection when in a non-permissive environment.

c. Regional Maintenance Centers (RMC).

(1) Mission. RMC divers provide the theater maintenance coordinator with the following: underwater ship husbandry (UWSH), battle/terrorist damage waterborne inspections, evaluations, and repairs in order to return the combatant to the fight.

(2) Capabilities. Conduct repairs to include:

- Security swims (Submarine) and Anti-Terrorism/Force Protection (ATFP) hull searches (Ship).
- Countermeasure set acoustic (CSA) pod inspection, repair, and replacement (Submarine).
- Pre-deployment noise inspection and sound silencing (Submarine).
- Special installs (Seaview) (Submarine).
- Main Sea Water/Auxiliary (MSW/ASW) hydro blast and repair (Submarine).
- Cathodic protection, inspection, cleaning, repair and replacement.
- Bridal air, main ballast tank (MBT) cofferdams (Submarine).
- Towed array inspection preventive maintenance services (PMS)/repair and component replacement (Submarine).
- Range and special pinger "transducer" install and removal (Submarine).
- Rudder inspection, sounding, repair, measuring, wrap and replacement.
- Perform all underwater inspections (manned and unmanned).
- Auxiliary Power Unit (APU) repair and replace.
- Fixed pitch and or control pitch blade replacement.
- Propeller repair and replacement.
- Secondary propulsion motor (SPM) inspections, PMS, repair and replacement (Submarine).
- Install and remove all cofferdams, patches, plugs and hull blanks / seals.
- Sonar dome inspection (wet and dry) and repair.
- Shaft re-lamination and repair.
- Prairie air system inspection, cleaning, and repair.
- Stave bearing inspection, measurement, repair, and replacement.
- Shallow Water ASW Target (SWAT) install and removal (Submarine).
- Sound Hull Tile (SHT) repairs (Submarine).

- Various radiological control (RADCON) services to include Primary Affluent Tank (PAT) hook-up and removal (Submarine), hull survey swipes (Ships, Carriers, and Submarines).
- NAVSEA certified underwater welding and non-destructive testing (NDT) (ultra-sonic testing (UT), visual testing (VT), and magnetic testing (MT) services (Southwest Regional Maintenance Center [SWRMC] only).
- Transducer and hydrophone repair and replacement with associated cable.
- Bow plane cofferdams.
- Outboard Transducer Acoustic Array Assembly (OTAA) repair and replacement (Submarine).
- Torpedo tube and variable launch system (VLS) repair and component replacement with associated cable.
- Anchor and associated handling equipment inspection, PMS, repair, and component replacement (Submarine).
- Light and medium salvage.
- Dry-docking (Ship and Submarine) and bearing block inspection.
- Fin stabilizer inspection, repair, and replacement.
- Shaft seal and wrap (Ship and Submarine).
- Pitsword/speedlog clean, repair and replace (Ship and Submarine).
- Rope guard remove line and repair or replace (bolted or welded).
- Underwater photography, video, and boroscope.
- ROV inspection with Broadband Global Area Network (BGAN) and viewcast satellite uplink.

(3) Task Organization. RMCs and intermediate maintenance facilities (IMFs) fall under the cognizance of NAVSEA Supervisor of Salvage and Diving/Director of Ocean Engineering (SUPSALV) 00C (www.supsalv.org). Table 3 lists maintenance facility locations and areas of responsibility.

Table 3. Regional Maintenance Center/Intermediate Maintenance Facility Diving Assigned Area of Responsibility	
AREA RMC / IMF	AREA OF RESPONSIBILITY (AOR)
Southwest RMC (SWRMC) San Diego, CA	Ships, submarines [attack submarine, nuclear (SSN) class], aircraft carriers, and craft in port or operating off the US West Coast from the San Francisco Bay area south to the southern point of South America. BDA/R teams support all areas in the US Seventh Fleet AOR.
Puget Sound Naval Shipyard and Intermediate Maintenance Facility (IMF) Bremerton, WA	Ships, submarines [SSN class], aircraft carriers, and craft in port or operating in the Pacific Northwest (PACNORWEST) area from north of San Francisco, CA, to northern Pacific/Alaska area and all US Pacific Fleet (USPACFLT) fleet

	ballistic-missile submarine, nuclear (SSBNs) / guided-missile submarine, nuclear (SSGN) units.
--	---

Table 3. Regional Maintenance Center/Intermediate Maintenance Facility Diving Assigned Area of Responsibility	
AREA RMC / IMF	AREA OF RESPONSIBILITY (AOR)
Pearl Harbor Naval Shipyard and IMF Pearl Harbor, HI	Ships, submarines [less SSBN/SSGN assets] , aircraft carriers, and craft in port or operating in the Mid-Pacific (MIDPAC) area.
Ship Repair Facility (SRF) and Japan Regional Maintenance Center (JRMC) Yokosuka, Japan	Ships, aircraft carriers, and craft in port or operating in the US Seventh Fleet AOR.
Norfolk Naval Shipyard Portsmouth, VA Norfolk Naval Shipyard (NNSY) Divers Norfolk, VA	Ships, aircraft carriers, and craft in port or operating in the Atlantic Ocean from Charleston, SC, latitude northward. Submarines in port and all non-SSGN submarines operating in the Atlantic Ocean to the southern tip of South America excluding those in port or operating in New London/Groton, CT, regional waters.
Regional Support Group New London, CT	Submarines in port or operating in the Groton/New London, CT, regional waters.
TRIDENT Refit Facility Kings Bay, GA	All US Atlantic Fleet (USFF) SSBN/SSGN units.
Southeast RMC (SERMC) Mayport, FL	Ships, aircraft carriers, and craft (not including mine warfare craft in port or operating along the Texas Gulf Coast) in port or operating south of the Charleston, SC, latitude in the Atlantic Ocean to the southern tip of South America.
USS Emory S. Land (AS-39) USS Frank Cable (AS-40)	Repairs to deployed submarines and deployed ships on as-available basis in Seventh Fleet AOR.

d. Battle Damage Assessment and Repair (BDA/R).

(1) Mission. The mission of US Navy BDA/R is the same as under Ship Husbandry in chapter I, which is to provide immediate assistance to a vessel in distress. Inspect and assess areas of damage with ROV, providing real-time video feed to repair facilities via satellite. Repairs are temporary in their application and are meant to keep the vessel afloat until permanent repairs are made. BDA/R normally is conducted in a remote, semi-permissive/permissive environment.

(2) Capabilities. The US Navy BDA/R capabilities are more specific depending on type of vessel and extent of repairs needed. They are separated into two categories listed below;

(a) Surface ship capabilities—

- All U/W inspections.

- APU repair/replace.
- Fixed pitch and/or control pitch blade replacement.
- Propeller repair and replacement.
- Install and remove all cofferdams, patches, and plugs.
- Sonar dome inspection (wet and dry) and repair.
- Shaft re-lamination and repair.
- Prairie air system inspection, cleaning, repair.
- Fin stabilizer inspection, repair, and replacement.
- Shaft seal and wrap.
- Rope guard remove line and repair or replace (welded or bolted).
- Pitsword clean, repair, replace.

(b) Submarine capabilities—

- All U/W inspections.
- SPM inspection, PMS, repair/replace.
- Propeller repair and replacement.
- Stave bearing inspection and measurement.
- Towed array inspection, PMS/repair.
- Range and special pinger install and removal.
- Shaft seal and wrap.
- Security swims.
- Sound hull tile (SHT) repairs.
- RADCON hull swipes.
- Install and remove all cofferdams, patches, plugs, and hull blanks/seals.

(3) Task Organization. The BDA/R consists of one officer and 15 enlisted. It is organized into two dive teams, each with 7 divers and an OIC/MDV, for a total of 8 in each team. Each 8-man team can further be broken down into two smaller 4-man teams. The organization and capabilities are depicted in Figure 5.

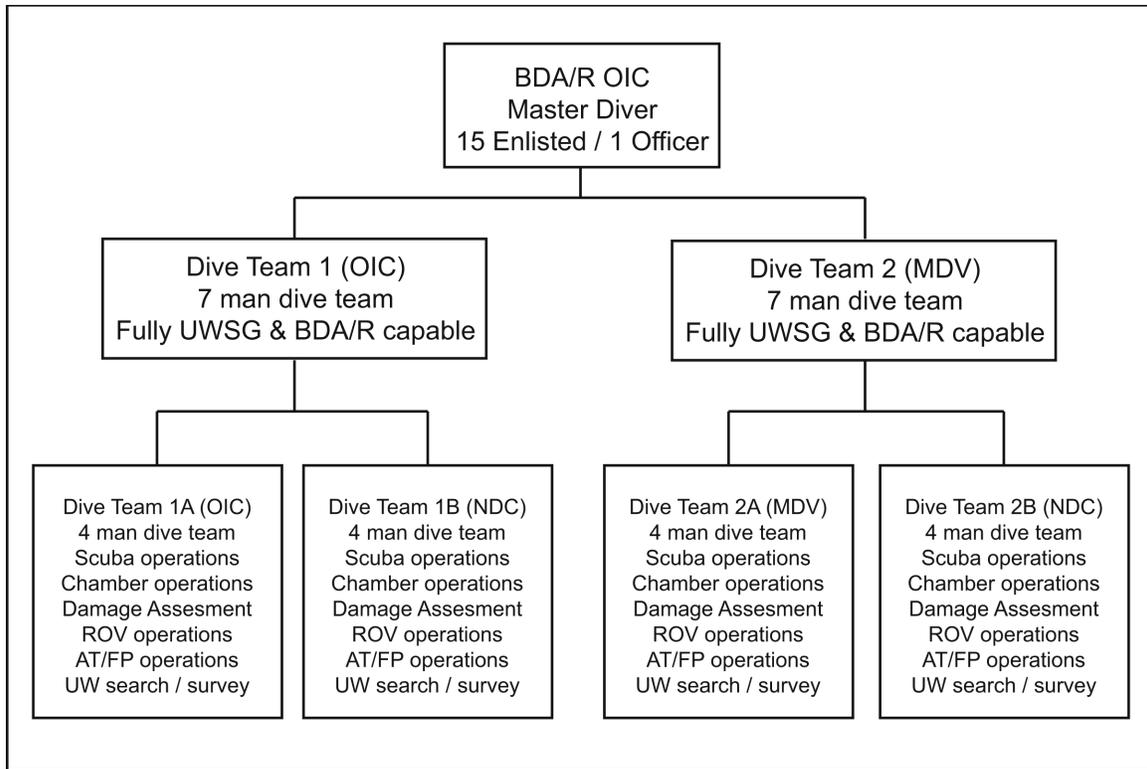


Figure 5. Battle Damage and Repair Organization

4. Naval Sea Systems Command Supervisor of Salvage and Diving/Director of Ocean Engineering (NAVSEA SUPSALV 00C)

a. Mission. The Supervisor of Salvage (NAVSEA SUPSALV Code 00C) is the executive agent for NAVSEA and the Secretary of the Navy in all matters of salvage, emergency towing, search and recovery, open sea oil and hazardous substance spill response, and ocean engineering.

b. Capabilities.

- (1) Provide technical direction and guidance for the Salvage, Recovery, and Open Sea Spill Response Programs.
- (2) Serve as the Navy technical agent for all matters pertaining to the employment of salvage, towing, search and recovery, open sea oil and hazardous substance spill response systems, and equipment.
- (3) Act as the representative of Commander, Naval Sea Systems Command (COMNAVSEA), with authority to commit the resources of the NAVSEA, on any technical advisory group (TAG) formed to deal with salvage, search, or recovery matters.
- (4) Act as the Navy representative for salvage, search and recovery, and open sea spill response technical matters with the Department of Defense and other Federal agencies.

- (a) Provide the Chief of Naval Operations (CNO) with information which has an impact on Navy programs.
 - (b) Consult with the CNO on all matters which vary from established Navy policy.
 - (5) Coordinate the efforts of all COMNAVSEA organizations in support of salvage, towing, search and recovery, open sea spill response, and ocean engineering operations.
 - (6) Assume responsibility for the conduct of salvage, search and recovery, and ocean engineering operations upon agreement with the cognizant fleet commander or when directed by the CNO.
 - (7) Coordinate salvage and/or salvage-related towing, search and recovery, and spill response services. Provide information, liaison, and financial advice to the organization requiring the services, whether the operations are undertaken by the Navy or under contract.
 - (8) Prepare budgets and budget justification for all salvage related matters including:
 - (a) Salvage operations for which NAVSEA has mission funding responsibilities.
 - (b) Procurement of salvage and spill response equipment for the Emergency Ship Salvage Material (ESSM) System.
 - (c) Management and maintenance of the ESSM System.
 - (d) Development and introduction of specialized salvage, towing, search and recovery, open sea spill response, and ocean engineering equipment.
- c. Task Organization.
- (1) The Director of Ocean Engineering staff consists of 10-15 military personnel, 35 civilian personnel and several foreign exchange personnel.
 - (2) NAVSEA SUPSALV 00C consists of a directorate staff, five functional divisions, a field activity, and two reserve components. The headquarters includes a diving medical officer to manage the Navy's deep submergence biomedical research and development program and the US Navy's Admiralty Attorney. The five functional divisions within SUPSALV are described below.
 - (a) Management Support Division prepares and tracks contractual and financial documents for the other divisions in NAVSEA SUPSALV 00C.
 - (b) Salvage Operations Division handles ship salvage and towing; deep ocean search and recovery; and oil spill control and recovery operations.
 - (c) Diving Program Division is responsible for setting diving policy, approving US Navy Diving Equipment, and acquiring diver life support equipment for the fleet.
 - (d) Diving Certification Division serves as the System Certification Authority for shipboard and portable hyperbaric systems.
 - (e) Underwater Ship Husbandry Division (UWSH) develops techniques, procedures, and equipment to perform ship repairs waterborne.

(f) Navy Experimental Diving Unit (NEDU) is a SUPSALV field activity providing a wide range of diving research and development capability.

(g) Reserve components provide critical support to SUPSALV in the areas of diving, salvage, towing, underwater ship husbandry, and ship heavy lift.

5. Seabee Underwater Construction Team

a. Mission. Seabee Underwater Construction Teams (UCTs) conduct inshore and deep ocean facility underwater construction, inspection, repair, and maintenance operations and conduct amphibious landing support of JLOTS operations, including foreign humanitarian assistance (FHA), civil support (CS), and recovery operations. The UCT conducts:

(1) Responsive underwater engineering/construction, inspection, repair, maintenance, and demolition of ocean and waterfront facilities in support of Navy, Marine Corps, and combatant command operations in permissive and combat environments. When assigned by fleet commanders, UCTs accomplish additional underwater construction projects for other naval commands, laboratories, and offices.

(2) Diving operations to provide underwater construction in support of other naval construction force units, amphibious operations for naval beach groups, the operating forces, sealift support facilities, and other fleet units as directed.

(3) Installation, inspection, maintenance, and repair of undersea range facilities and inshore cables for undersea surveillance systems.

(4) FHA, CS, and military civic action operations.

b. Capabilities. UCTs are capable of scuba and surface supplied diving operations in nearly all environmental conditions: zero visibility, contamination, day or night operations, under-ice diving, rivers, harbors, and open ocean. UCT capabilities and functional tasks include:

(1) Underwater engineering/construction, repair, and maintenance. This includes shallow and deep water structures, mooring systems, underwater instrumentation, light salvage, and blasting.

(2) Inspection. The UCT conducts hydrographic surveys using the differential global positioning system (D-GPS) and hydrographic survey systems. Survey teams can quickly perform field data collection, edit data, prepare survey plans, and present data on a small boat deployable mobile workstation. Advanced underwater reconnaissance techniques include bathymetric surveys, side scan imagery, still photography, and full-motion video. The UCT operates 500 foot, electrically-powered ROVs, capable of deploying vertically or horizontally. Hydrographic survey data can be geo-rectified and post-processed in the field by the UCT construction diving detachment and sent to headquarters via high frequency (HF) radio or ultrahigh frequency (UHF)/satellite communications (SATCOM). This information assists commanders in assessing battle damage, avoiding navigational hazards, recovering lost equipment, and selecting locations for the installation of underwater facilities such as pilings, moorings, and cable landings.

- (3) Data Collection. The UCT collects water-crossing data for bridging operations.
 - (4) Blasting/Demolition. The UCT performs precision terrestrial and underwater blasting using military or commercial explosives.
- c. Task Organization. Commanded by a Navy diver civil engineering officer, the UCT is a permanently structured unit. The UCT plans, coordinates, and supervises general engineering and construction diving operations. The UCTs are organized into sea duty and shore duty components. Figure 6 depicts UCT organization.

(1) The shore duty component consists of the operations and support departments. The operations department oversees construction-diving tasking and employment of construction-diving detachments. The support department consists of administration, intelligence, supply, equipment, communications, and training sections.

(2) The sea duty component is organized into three independent worldwide deployable construction diving detachments, comprised of 16 personnel who conduct diving operations. The construction diving detachments can be task-organized to support a mission or operation.

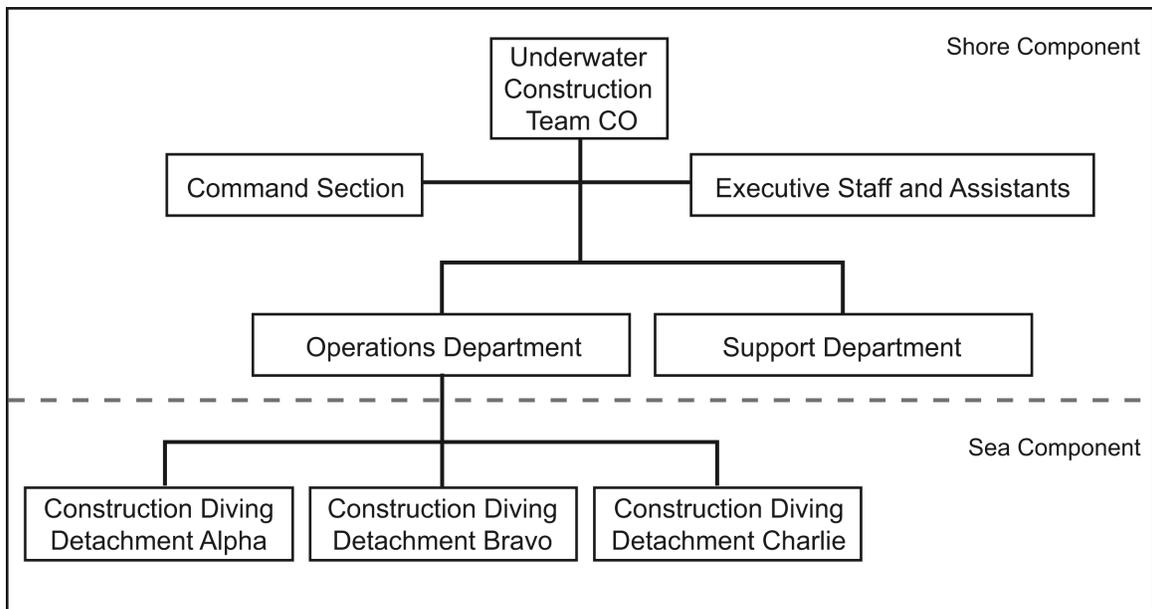


Figure 6. Seabee Underwater Construction Team Organization

d. Concept of Employment. The UCT functions independently and as an integral unit of the Seabee Naval Construction Regiment. It operates with decentralized control providing specialized underwater/general engineering to the supported unit. The UCT is employed as independently deployed construction diving detachments. It is equipped and trained for self-sufficiency in underwater construction to respond to emergencies within 48 hours for inspection and repair of essential fleet waterfront systems. The UCT also provides:

- (1) Deployment of a task-organized construction diving detachment of 16 personnel and required equipment within 48 hours, a second construction diving detachment of 16 personnel within 6 days, and a third construction diving detachment of 16 personnel within 30 days.
- (2) Trained and equipped construction diving detachments to conduct defensive combat tactics. They receive additional training to conduct force protection (FP) operations on open water and urban terrain. Due to the UCT's small unit size, specialized equipment, and expertise, they employ these tactics in direct support of construction diving operations only. The UCT requires assistance from the supported unit in the following areas: convoy operations, perimeter security support, and waterfront security operations at UCT job sites in non-permissive environments.
- (3) Construction diving operations in permissive and non-permissive environments and in climates ranging from extreme cold weather to tropical or desert environments. They conduct operations in unsecured and isolated locations with prior coordination of the operations area commander or supported unit. Since security requirements take away from direct labor assets, the preference is to have other/supported commands assume security and other nontechnical tasking in order to maximize the UCT's core construction competencies.

6. Submarine Security Dive Teams

- a. Mission. Submarine security dive teams provide the capability to inspect the underwater body of a submarine in order to locate and identify explosive ordnance placed on the hull.
- b. Capabilities.
 - (1) Conduct limpet mine search.
 - (2) Perform predeployment noise inspections.
 - (3) Conduct minor underwater maintenance actions.
 - (4) Unfoul ship's propeller from foreign material.
 - (5) Clear ship from net entanglement.
 - (6) Perform initial damage assessment.
 - (7) Recover light-weight objects.
 - (8) Perform underwater inspection.
- c. Task Organization: Submarine security dive teams are organized as a 4-man scuba dive team from the crew of each submarine and do not comprise their own unit. The scuba team is headed by the Command Diving Officer from the submarine. The Commanders, Submarine Force US Pacific Fleet and Submarine Force US Atlantic Fleet, are responsible for the US submarine fleet and its submarine security dive teams.
- d. Concept of Employment. Submarine security dive teams are tasked with locating and identifying foreign objects by performing underwater hull inspection on their own submarines.

7. US Navy SEALs

Naval Special Warfare Command specializes in Maritime Special Operations. SEAL combat swimming/diving capabilities are covered in detail in Chapter VII.

Chapter IV US ARMY DIVING

1. Overview

The US Army (USA) has two types of divers: engineer divers and special operations divers. The engineer divers specialize in conducting underwater maintenance, inspections, and repairs of waterfront facilities and vessels. They also conduct hydrographic surveys, port reconstruction, river reconnaissance, demolitions, underwater salvage, security swims, and searching operations. Special operations divers are members of a special forces (SF) team, trained in the use of basic scuba and closed-circuit re-breathers. This group uses diving as a mode of transportation to infiltrate enemy areas.

2. US Army Engineer Divers

- a. Mission. Engineer divers provide support to assured mobility for the forward movement of troops and equipment. Divers also provide support to general engineering operations in and around water. Supporting assets range from a small scuba team to multiple larger teams with a diverse range of capabilities. Divers enhance protection by conducting force protection swims and emplacement of underwater obstacles and barriers. Divers also enable expeditionary logistics by providing accurate waterway datum, surveys, and repair of existing waterfront facilities. Engineer diving missions assist in building capacity through infrastructure support and sustainment operation. Dive detachment capabilities are tailored to the mission allowing the use of surface-supplied diving (SSD) apparatus, scuba, remotely operated vehicles, and work closely with heavy equipment operators for large scale operations.
- b. Capabilities. Engineer divers maintain the capability to scuba dive and/or SSD in nearly all environmental conditions: zero visibility, contamination, day or night operations, under-ice diving, rivers, harbors, or open ocean. The Army has identified 12 dive mission areas for its engineer divers:

Note: For detailed description on Army engineer diver capabilities see FM 3-34.280, *Engineer Diving Operations*.

- (1) Mobility.
- (2) Countermobility.
- (3) Protection (physical security).
- (4) Explosive hazard disposal (locate and identify only).
- (5) Underwater ship husbandry.
- (6) Port opening, construction, clearance, and rehabilitation.
- (7) Joint logistics over-the-shore (JLOTS).
- (8) Offshore petroleum distribution system (limited).
- (9) Salvage.
- (10) Search and rescue/recovery.

(11) Conduct disaster response measures.

(12) Hyperbaric chamber operations.

c. Task Organization. Engineer dive detachments consist of 25 personnel and 3 heavy duty pumps to aid in major salvage operations. Engineer dive detachments are relatively small, specialized organizations assigned as a theater asset and may be assigned or attached to supported units anywhere within the area of operation. Each detachment can be split apart and is flexible enough to conduct small dive operations, simultaneously providing multiple commanders with diving support. Figure 7 depicts the typical engineer dive detachment organization.

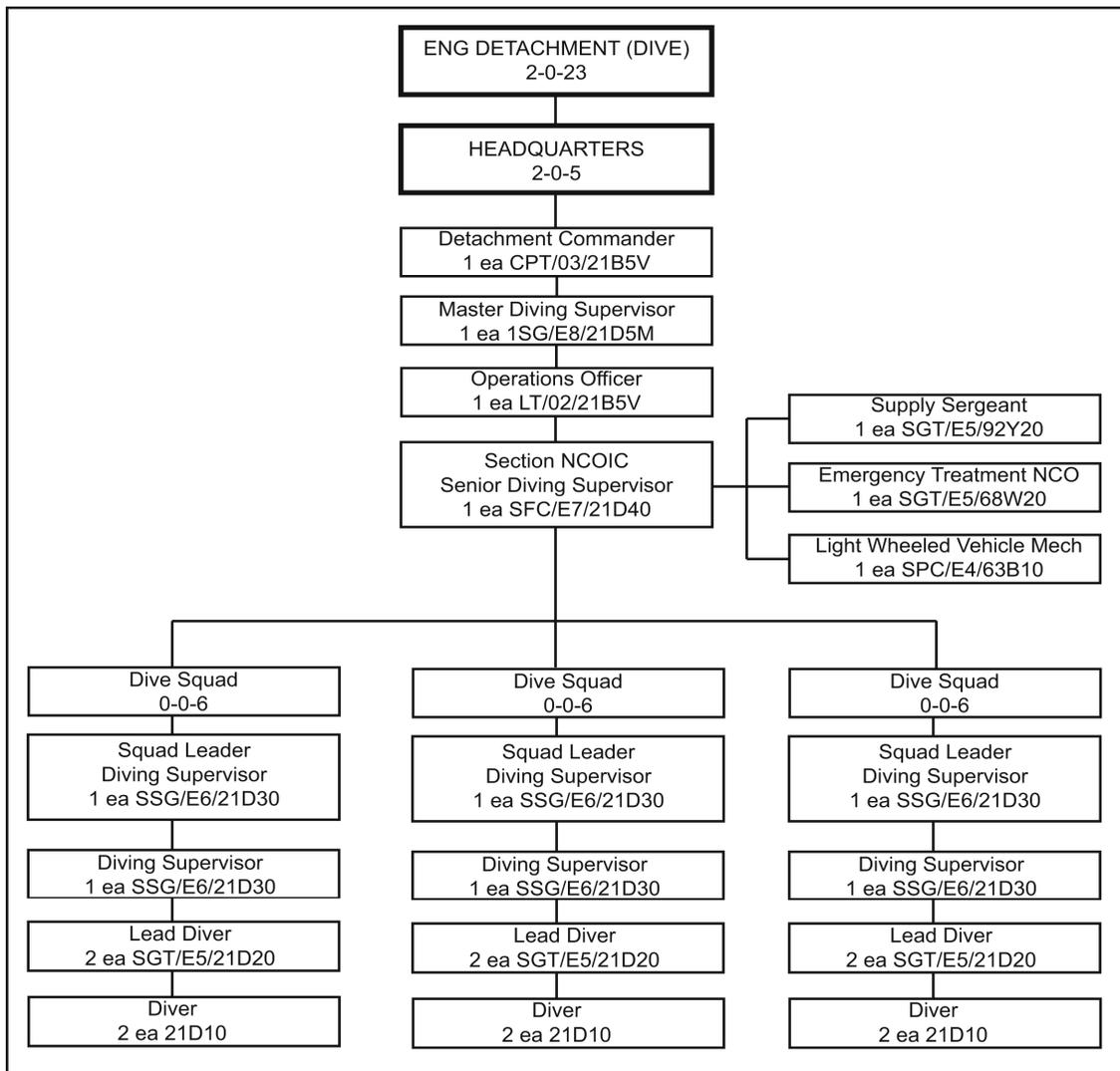


Figure 7. Engineer Dive Detachment Organization

d. Concept of Employment. The primary objective of engineer diving operations is to conduct underwater engineering operations throughout the theater. Engineer divers are also an integral part of a task organization that supports the movement in or

around any wet gap crossing to include ports, harbors, beachfronts, and rivers. If an organization requires diving assets, the requests are forwarded through normal channels to the combatant command headquarters. The combatant command forwards requests to the engineer command. For short-term missions, diving assets are assigned in direct support through command channels to the area support group (ASG). For long-term or complex missions, divers are normally attached to a company or battalion-size unit.

e. Employment Considerations/Limitations. In addition to the inherent limitations and risks common to all military dive operations, US Army Engineer Divers have additional considerations for their employment. Specifically, engineer divers do not possess organic transportation assets, so planners must make arrangements for support. Additionally, engineer divers are not manned or equipped to provide their own perimeter security while conducting dive operations and will require a security detail when operating in non-permissive environments.

3. US Army Special Forces

SF maritime operations are one of the many options available to a commander to infiltrate and exfiltrate a detachment into (or out of) a designated AO for the purpose of executing any of the SF missions. Besides infiltration/exfiltration, other missions for SF combat divers include tactical reconnaissance, demolition raids against bridges and other maritime structures, and underwater searches for security and recovery. SF divers are covered in more detail in chapter VII.

This page intentionally left blank.

Chapter V US MARINE CORPS COMBATANT DIVING

1. Overview

The US Marine Corps (USMC) has one type of diver, the Marine combatant diver (MCD); this diver is trained in basic scuba and Mk-25 re-breather operations. The primary purpose of the MCD program is to provide a clandestine infiltration/exfiltration means for USMC ground reconnaissance elements that facilitates the full range of amphibious reconnaissance and ground reconnaissance operations. The Marine Corps' underwater reconnaissance capability (URC) provides the supported unit commander with a capability to conduct clandestine subsurface operations in support of the force. Combatant diving is one of numerous specialized insertion and extraction methods used by Marine ground reconnaissance units to infiltrate and exfiltrate mission areas.

2. Marine Combatant Diver

- a. Mission. MCDs conduct under-water operations to facilitate amphibious reconnaissance, ground reconnaissance, surveillance, and operational environment shaping in support of the Marine expeditionary force (MEF), other Marine air-ground task forces (MAGTFs), or the Marine component of a joint force.
- b. Capabilities. Task organized USMC ground reconnaissance elements plan, coordinate, and execute over the horizon clandestine subsurface dive operations via Naval shipping (surface and subsurface) or aircraft to conduct full spectrum amphibious and ground reconnaissance missions. USMC ground reconnaissance elements are manned, trained, and equipped to conduct combatant dive operations in the following mission areas:
 - (1) Conduct amphibious reconnaissance to collect and report information about the activities and resources of an enemy or adversary or information concerning the hydrographic characteristics of a particular area well in advance of an amphibious landing force.
 - (a) Conduct subsurface detailed hydrographic survey in support of all US Navy landing craft and amphibious assault vehicles (AAVs).
 - (b) Conduct initial and/or confirmatory beach reconnaissance.
 - (c) Conduct initial terminal guidance of AAVs, tactical boats, amphibious ships, landing craft, and aircraft.
 - (2) Conduct subsurface insertion and extraction of combatant dive teams in order to clandestinely infiltrate and exfiltrate designated ground reconnaissance mission areas.
 - (3) Conduct subsurface infiltration and exfiltration in support of specialized reconnaissance of littoral/coastal areas and defenses, to include but not limited to: ports, harbors, piers, and estuaries, to include fords and bridges.
 - (4) Conduct subsurface search and recovery of sensitive equipment or personnel.
 - (5) Conduct hull search operations for the amphibious ready group (ARG), expeditionary strike group (ESG), and maritime preposition squadron (MPS)

shipping in support of ARG/ESG and MPS force protection. These operations include, but are not limited to, the following: ship's hull, piers, harbor, and ports, to include surrounding area fords and bridges.

c. Task Organization.

(1) The USMC combatant dive capability resides within the active and reserve reconnaissance battalions and force reconnaissance companies. A complete list of all USMC units with an organic dive capability and their geographic location is provided at Appendix A.

(2) USMC ground reconnaissance units will be task organized for conducting the full range of ground reconnaissance missions to include combatant diving. The commander of deployed USMC ground reconnaissance elements in concert with the supported unit, will plan, direct, and coordinate the actions of Marine combatant dive teams. General organization of the MCD capability within task organized reconnaissance elements is as follows:

(a) Reconnaissance battalion: 12 dive teams per battalion.

(b) Reconnaissance company: 4 dive teams per company.

(c) Force recon company: 4 dive teams per force recon company.

d. Concept of Employment. An assigned Marine ground reconnaissance unit typically employs six man teams conducting reconnaissance. This unit can be employed in general support of the MEF or in direct support or attached to a subordinate unit of the MEF or a joint force. Marine reconnaissance platoons are routinely assigned to the ground combat element of each forward deployed Marine Expeditionary Unit (MEU). If a company sized element, the company headquarters will establish and maintain a reconnaissance operation center (ROC) in support of the MEF or supported unit's command operation center (COC) to conduct command and control functions of subordinate units conducting ground/amphibious reconnaissance missions (including combatant dive operations). USMC reconnaissance platoons can be task organized and attached to subordinate units of the MEF or a joint force. Under such employment, the platoon headquarters will establish and maintain a ROC in support of the supported unit's COC. Figure 8 depicts a notional Marine combat diver profile.

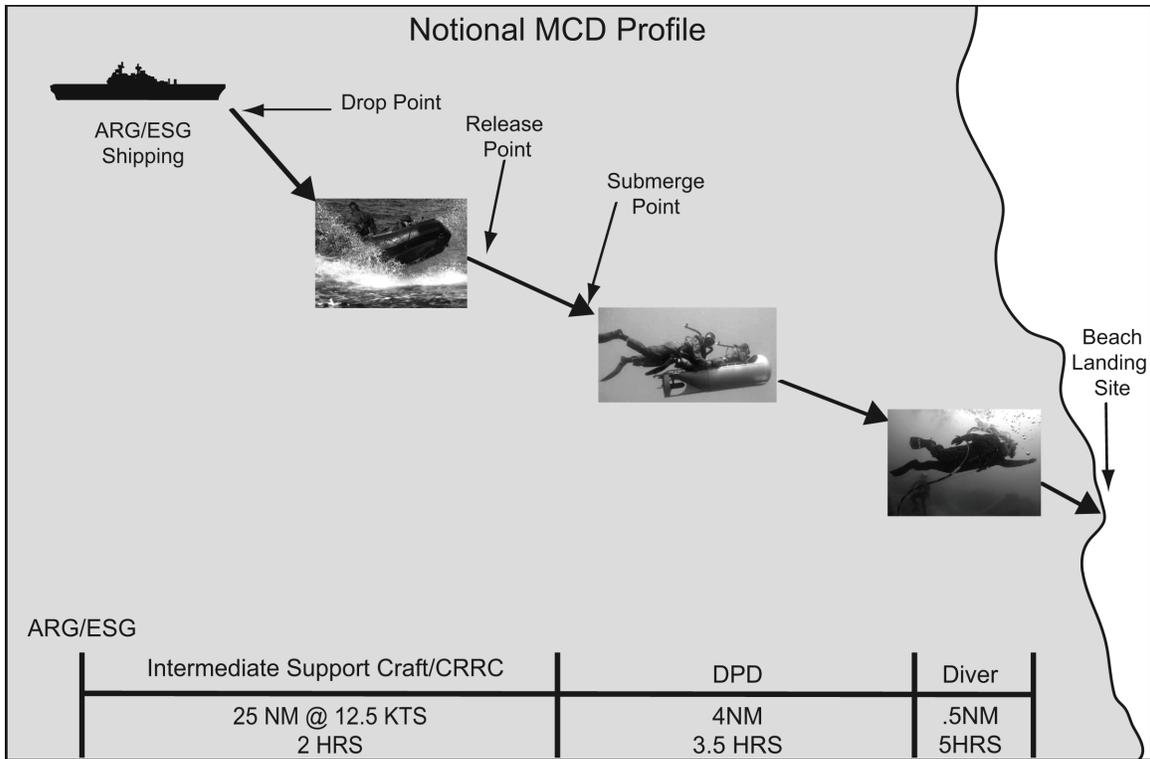


Figure 8. Sample Marine Combat Diver Profile

e. Employment Considerations/Limitations. In addition to the inherent limitations and risks common to all military dive operations, USMC combatant divers have unique considerations for their employment. The following must be considered when employing MCDs:

- (1) The Marine Corps does not possess the organic tactical boat assets to conduct over the horizon surface movement to a dive insert point. Any execution of these types of missions by Marine forces will be dependent on tactical boat support from the joint force. The sole USMC tactical boat asset is the combat rubber raiding craft (CRRC), which has very limited applicability in this mission area.
- (2) For planning purposes the average speed for both surface and subsurface swimming for MCDs is 1.0 knot unassisted. This translates into a maximum distance of 1 nautical mile subsurface under ideal conditions. Assisted by the diver propulsion device (DPD), the average motorized speed is 1.2 knots. Due to less energy expended, the DPD more than doubles the distance a dive team is able to travel.

This page intentionally left blank.

Chapter VI US AIR FORCE DIVING

1. Overview

The US Air Force (USAF) employs two types of combat divers: personnel recovery (PR) and special tactics (ST) divers. PR divers, comprised of pararescue jumpers (PJ) and combat rescue officers (CRO), use scuba and specialize in conducting underwater search and rescue/recovery of personnel and equipment as part of the combatant commanders PR capability. Special tactics squadrons (STS) comprised of combat controllers, pararescuemen, and special operations weather teams operate in the joint arena and conduct dive operations as an infiltration/exfiltration function. Special tactics forces train and maintain combat divers to conduct maritime operations worldwide in support of US policy and objectives while maximizing interoperability.

2. USAF Personnel Recovery Divers

a. Mission. PR divers provide dedicated search and rescue/recovery teams and equipment to perform 24-hour world-wide personnel recovery operations to include report, locate, support, recover, and phase-1 reintegration of isolated personnel. USAF search and rescue/recovery teams are equipped to provide mission planning/operations management in tactical operations centers and alert response transportation. They provide rapid day/night response in adverse geographic and urban environments and employ from vertical lift, fixed wing aircraft, or as stand-alone surface/subsurface teams to recover personnel and materiel from denied/sensitive areas. They provide air-to-ground interface, extrication, emergency trauma medicine, survivor contact/authentication, assisted evasion, movement, and security to friendly control. Additional capabilities include staging/evacuation, maritime, mounted/dismounted, confined space/collapsed structure, high altitude, and technical rescue. If a team is deployed to a forward operating base without base operating support, additional equipment is required.

b. Capabilities. PR divers are equipped with side-scan and diver hand-held sonar, tactical satellite communications, high-frequency radios, global positioning systems, medical kits, individual weapons, night-vision devices, scuba equipment, advanced rescue craft, and Zodiac boats. Immediate incident response actions include:

- (1) Expedient removal of personnel from parachutes, aircraft, and vehicles.
- (2) Collection of DNA or objects for identification.
- (3) Zeroize sensitive equipment.
- (4) Provide emergency medical treatment. Pararescuemen are certified emergency medical technician paramedics and receive specialized training in dive medical emergencies.
- (5) Conduct para-scuba operations to provide specialized rescue and recovery.

c. Task Organization.

- (1) The Air Force PR dive rescue and recovery capability resides within the active and reserve component rescue squadrons. Rescue squadrons deploy with

individual and team dive equipment, watercraft, and aerial delivery equipment to provide commanders with a dive search and rescue capability.

(2) In theater Air Force PR dive rescue and recovery capability is embedded in expeditionary rescue squadrons with associated fixed and rotary wing aircraft. These squadrons are task organized to provide full spectrum PR missions including recovery of personnel and/or sensitive equipment. The commander of the expeditionary rescue squadron will plan, direct, and coordinate the actions of dive teams.

(3) General organization of the rescue and recover dive capability is as follows:

(a) Air Combat Command (ACC): Three squadrons with 18 dive teams per squadron.

(b) US Pacific Air Forces (USPACAF): 1 squadron: 6 dive teams.

(c) US Air Forces Europe (USAFE): 1 squadron: 3 dive teams.

(d) Air National Guard (ANG): 3 squadrons with 9 dive teams per squadron.

(e) Air Force Reserve Command (AFRC): 3 squadrons with 12 dive teams per squadron.

(f) Expeditionary Rescue Squadron: 3 dive teams assigned.

d. Concept of Employment.

(1) The Air Force has PR units that employ PJ combatant divers. These units employ as part of the combatant commander's PR capability and provide rapid response (first responder) search, rescue, and recovery capability. Air Force PR forces are designed to penetrate hostile areas to rescue and recover isolated personnel or sensitive equipment. PJ divers are open circuit scuba divers and skilled in shallow water (max depth 190 feet of salt water [fsw]) search, rescue, and recovery operations. PJs maintain the capability to conduct dives from shore or surface craft in bodies of water at elevations up to 10,000 mean sea level (MSL).

(2) Once assigned to a combatant commander, PJs are part of the joint force air component commander's PR force. In this capacity, PJs normally maintain an on-call strip alert with Air Force fixed and/or rotary wing aircraft to provide a quick response (launch within 30 minute) in-land PR capability for combatant commanders.

3. USAF Special Tactics (ST) Divers

Air Force ST units employ dive teams as part of the special operations component commander's forces. Once assigned to a combatant commander, STS units are part of the joint special operations component. In this capacity, STS combatant divers may be attached to other components or conduct personnel recovery in support of the joint special operations component. ST teams are comprised of combat control teams (CCTs), pararescuemen, special operations weather team (SOWT), and support personnel. This capability resides within the active and reserve component STS and they are part of 81 series UTCs. ST combat dive capability is covered in more detail in Chapter VII.

Chapter VII SPECIAL OPERATIONS FORCES DIVING

1. Overview

Special operations forces (SOF) maritime operations are one of the many options available to a commander to infiltrate and exfiltrate a detachment into (or out of) a designated AO for the purpose of executing SOF missions. Other missions for SOF combat divers include tactical reconnaissance, demolition raids against bridges or other maritime structures, and underwater searches for security and recovery. SOF combat divers are task organized in accordance with the assigned mission and are normally aligned under a joint special operations task force.

2. Navy SEALs

a. Mission. Navy Special Warfare Command (NAVSPECWARCOM) is the US Special Operations Command (USSOCOM) lead component for maritime special operations conducted in all maritime environments. NAVSPECWARCOM trains, equips, organizes, resources, deploys, and sustains Navy special warfare (NSW) forces in support of the Commander USSOCOM (CDRUSSOCOM) and other combatant commander requirements to include maritime direct action, special reconnaissance, security force assistance, and foreign internal defense.

b. Capabilities. NSW forces are tasked with additional maritime missions that require more sophisticated combat diving skills which facilitate the clandestine approach and assault on targets by swimmers beneath, at, and from the waterline. NSW unique combat swimming operations include:

- (1) Combat swimmer ship attack.
- (2) Underwater demolition raids.
- (3) Harbor reconnaissance.
- (4) Submerged hydrographic reconnaissance.
- (5) Underwater obstacle demolition.

c. Task Organization.

(1) The NAVSPECWARCOM headquarters is located in San Diego, CA. Deployed SEAL squadron coordination, training, and tasking is a function of four NSW groups. NSW Groups ONE and THREE, are also located in San Diego, CA and NSW Groups TWO and FOUR are located in Norfolk, VA. The SEAL Deliver Vehicle (SDV) Teams are attached to NSW Group THREE but are located in Pearl Harbor, HI.

(2) NSW SEALs are task organized into eight NSW teams / squadrons; four in Norfolk, VA, and four in San Diego, CA.

(3) SEAL squadrons are task organized into task units comprised of two troops each. Each troop is comprised of 16 SEALs and can operate as a full troop or two individual platoons. Each troop can be task organized down to a squad of four personnel or used as individuals performing supporting roles such as

trainer/advisors, snipers, or JTACs. In any of these configurations SEALs can operate as an integrated cell within a larger amphibious or land-based force.

(4) SDV teams have a similar task, unit, and troop level configuration, but at the troop level the teams are split into SDV pilot/navigator positions and mission specialist elements. These troops conduct direct action (DA) and special reconnaissance (SR) missions from various subsurface platforms when augmented with specially trained NDs.

d. Concept of Employment. SEAL combat swimmers specialize in clandestine direct action and special reconnaissance missions in non-permissive to hostile environments. NAVSPECWARCOM employs the MK-25 mod 2 and MK-16 closed circuit underwater breathing apparatus (UBA).

3. Marine Corps Forces, Special Operations Command

a. Mission. MARSOC trains, equips, sustains, maintains combat readiness, and deploys task organized, saleable, and responsive Marine Corps Special Operations forces (MARSOF) worldwide in support of CDRUSSOCOM and other combatant commander requirements.

b. Capabilities. In addition to infiltration/exfiltration, MARSOC divers can perform the following tasks:

- (1) Harbor reconnaissance.
- (2) Submerged hydrographic reconnaissance.
- (3) Beach landing site establishment.
- (4) Initial terminal guidance for amphibious landing forces.

c. Task Organization. Headquarters MARSOC is located at Camp LeJeune, NC. Subordinate commands within MARSOC that maintain a combatant dive capability are the Marine special operations battalions (MSOB). 1st MSOB is located at Camp Pendleton, CA, the 2nd and 3rd MSOBs are located at Camp Lejeune, NC. Each battalion has four Marine special operations companies (MSOCs). Each company has three 14-man Marine special operations teams (MSOTs) with qualified combatant divers. Each company has one designated combatant dive team.

d. Concept of Employment. MSOT dive teams employ scuba, MK-25, and the DPD for subsurface, clandestine entry into non-permissive or hostile environments for missions that may include DA or SR.

4. Air Force Special Tactics Forces

a. Mission. The Air Force Special Operations Training Center (AFSOTC) is Air Force Special Operations Command's (AFSOC) focal point for recruiting, assessing, selecting, educating, and training air commandos. The training center is the command's proponent for and conducts mission training for ST and other AFSOC specific skill sets. One of its sub-units, the special tactics training squadron (STTS) provides among other things, advanced skills training for ST operator training pipeline capabilities. ST divers consist of pararescue, combat control, and special operations weather divers who are organized, trained, and equipped to operate unilaterally or as attachments to joint/combined special operations forces, providing

the air-ground interface in both permissive and non permissive austere environments. Functions include assault zone reconnaissance and surveillance, establishment, and terminal control; personnel recovery; combat casualty care and evacuation staging; special operations terminal attack; and tactical weather observations and forecasting. In addition to infiltration/exfiltration, ST divers can perform search, rescue, and recovery operations.

b. Task Organization. The lead command for Air Force special operations is AFSOC, Hurlburt Field, FL.

(1) Special tactics combat dive capability resides within the active and reserve component special tactics squadrons in 81 series UTCs. The commander of the expeditionary special tactics unit plans, directs, and coordinates the actions of dive teams. The 123 and 125 STS ANG units augment the 720th Special Tactics Group (STG) in supporting national security objectives, humanitarian efforts, and training.

(2) General organization of special tactics units is shown in Figure 9.

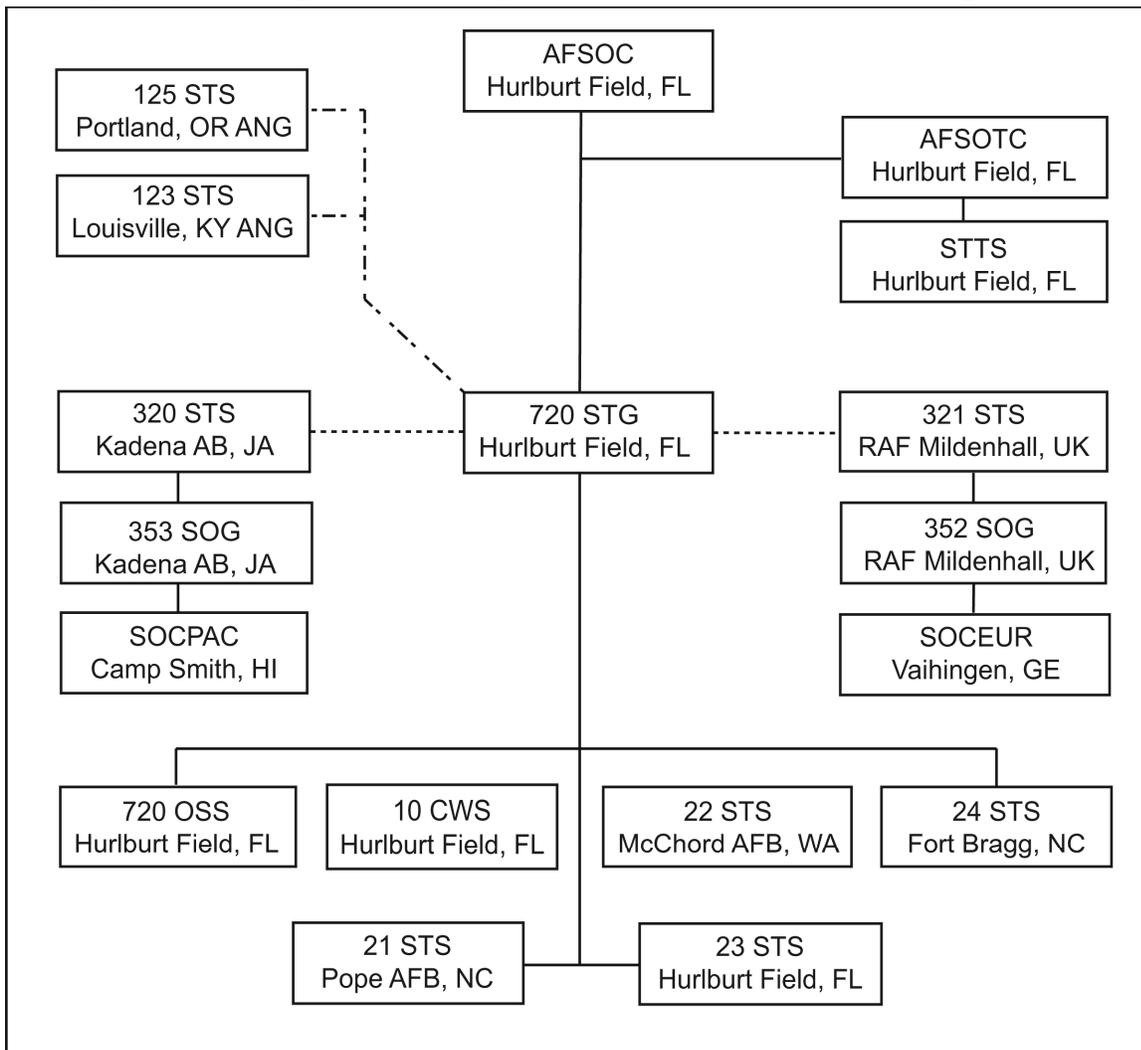


Figure 9. Special Tactics Organization

c. Concept of Employment. Air Force ST units employ dive teams as part of the special operations component commander's forces. The lead command for ST units is AFSOC at Hurlburt Field, FL. Once assigned to a combatant commander, ST units are part of the joint special operations component. In this capacity, ST divers may be attached to other components or conduct personnel recovery in support of the joint special operations component.

5. US Army Special Forces

a. Mission. US Army SF utilize dive operations when required in order to execute any of the SF missions, including infiltrating and exfiltrating into (or out of) a designated AO. Other missions for SF combat divers include tactical reconnaissance, demolition raids against bridges and other maritime structures, and underwater searches for security and recovery.

b. Capabilities. SF combat divers use closed-circuit oxygen re-breathers to make covert underwater approaches to land or maritime targets. These approaches are usually the last legs of longer infiltration routes that may use air, surface, submarine, or a combination of movement assets. Open-circuit scuba diving is used for non-tactical search and recovery. The following six dive mission areas are identified for SF combat divers:

Note: For detailed descriptions see FM 3-05.212, *Special Forces Maritime Operations*.

- (1) Mobility.
- (2) Countermobility.
- (3) Protection (physical security).
- (4) Infiltration/exfiltration.
- (5) Search and rescue/recovery.
- (6) Hyperbaric chamber operations.

c. Task Organization. Each special forces (SF) battalion is comprised of three SF companies. Each company has six special forces operational detachments. One detachment per company is designated as a combat dive team. Therefore, each special forces battalion typically has three combat diving teams.

d. Concept of Employment. The primary objective of SF diving operations is to conduct stealthy final approaches to pre-selected Beach Landing Site (BLS) where the assault force transitions environments to conduct missions ashore. can be the most advantageous avenue of approach and combined with other movement techniques extends infiltration/ exfiltration range.

Chapter VIII NON-DOD DIVING

1. US Coast Guard Diver

a. Overview. USCG has one type of diver: the US Coast Guard diver. This diver is trained in basic scuba and surface supplied diving equipment.

b. Mission. The US Coast Guard diver's mission is to conduct security searches of vessels and piers; conduct maintenance, repairs, and inspections of navigational aids; and conduct engineering support for the Coast Guard's Polar Class Icebreakers. Coast Guard divers also maintain ship's husbandry as well as search and recovery capabilities.

c. Capabilities. Coast Guard divers are trained and equipped to perform the following missions:

(1) Ports, Waterways, and Coastal Security (PWCS). USCG dive teams conduct subsurface inspections of piers, vessels, and adjacent shorelines in order to detect, identify, and mark underwater threats including mines, parasitic devices, IEDs, hazards to navigation, or other conditions that may hazard a vessel.

(2) Aids to Navigation (ATONs). Divers provide buoy tenders with the ability to conduct extensive, independent ATON operations requiring minimal support. Divers can inspect moorings, change out buoys, salvage sunken buoys, and lift buoy sinkers. Most ATON diving is conducted from small boats, allowing the dive team to work ATON in shallow water where the cutter would be at risk.

(3) Polar Class Icebreaker Engineering Support. Divers provide embarked science parties on polar icebreakers with the ability to take still and video images and collect samples of various organisms and objects beneath polar ice. Polar icebreaker dive teams also perform engineering support inspection and limited repair functions in remote geographic locations.

(4) Underwater Ship Husbandry (UWSH). All Coast Guard diving units possess the capability to perform basic underwater tasks including running gear / hull inspections, propeller cleanings, and propeller pitch calibrations.

(5) Underwater Search and Recovery. All Coast Guard diving units are trained in basic search techniques and may be used to locate and retrieve/raise limited size objects underwater.

(6) Rescue Diving. While Coast Guard divers are not specifically trained to perform rescue diving operations, especially those involving capsized hulls, they may attempt a rescue in some circumstances.

d. Task Organization.

(1) The Coast Guard has two primary duty dive lockers. Each dive locker consists of three teams of six divers plus a diving officer in charge of the locker (total 19 divers at each dive locker). The dive locker's primary missions are PWCS and providing engineering support to the Polar Class Ice Breakers (teams deploying to the icebreakers receive specialized training prior to deployments in just-in-time

fashion). UWSH and underwater search and recovery skills are also maintained at each of the lockers.

(2) The dive lockers are under the operational control of the deployable operations group (DOG) who processes all requests for forces.

(3) The Coast Guard is also billeted for a 6-person collateral duty dive team aboard each of three 225 ft buoy tenders to service ATONs. Ship's divers are integral crew members and perform vital ship's duties in addition to diving duties.

e. Concept of Employment. Coast Guard divers operate in conventional teams from small craft and from pier side applications. ATON divers can deploy in teams to locations without cutter support. The PWCS mission is performed by the dive locker teams which deploy to major US ports primarily by commercial air, supported by pre-positioned equipment trailers containing compressors, tanks, weights, and other support gear to minimize air freight considerations. Local operations (within practical traveling time) are conducted using vehicles and equipment trailers located at the dive lockers.

f. Employment Considerations/Limitations. In addition to the inherent limitations and risks associated with all dive operations, the following considerations apply to Coast Guard divers:

(1) Coast Guard divers shall not be employed as combatants but have the right to self defense at all times.

(2) Coast Guard divers do not possess any EOD capabilities and are not trained or equipped to perform render safe procedures (RSP) on ordnance. If ordnance is found, EOD divers will be contacted for assistance.

2. Contract Divers

Department of Defense has a large capacity to contract diving operations. Contracted divers are normally employed in permissive environments and are governed by Occupational Safety and Health Administration (OSHA) regulations. Contracted divers may have different standards of operations and are not suitable for pooled dive teams. Civilian capacity often exceeds military capabilities for specific tasks.

3. Law Enforcement Divers

a. Divers from sheriff and police organizations may occasionally work alongside military divers, particularly during disaster response operations. Law enforcement divers shall not be employed as combatants. Civil law enforcement officials can, however, provide arresting authority for antiterrorism and antidrug operations.

b. Situations may arise where military divers are providing support to an investigation, such as after the attack on the USS Cole. In these cases, law enforcement personnel may provide technical assistance to military divers in order to meet legal requirements.

Appendix A DIVE POINT OF CONTACT LIST

US AIR FORCE

Headquarters Air Force (HAF)
Air Force Operations and Training Division, DCS Operations, Plans, & Requirements (AF/A3O)

-Office: Combat Search and Rescue & Special Activities Division (AF/A3O-AS)

--Location: Pentagon, Washington DC

--Phone: (Comm) 703-695-4522, DSN 225-4522

--Email: afxoos.workflow@pentagon.af.mil

Air Combat Command (ACC) –AF CSAR (Pararescue) Divers

-Office: Air Combat Command, Flight Operations Division (ACC/A3T)

--Location: Langley AFB, VA

--Phone: (Comm) 757-225-9250, DSN 575-9250

--Email: acc.A3T@langley.af.mil

Air Force Special Operations Command (AFSOC) –Special Operations (Special Tactics) Divers

-Office: Air Force Special Operations Command, Operations and Training Division (AFSOC/A3T)

--Location: Hurlburt Field, FL

--Phone: (Comm) 850-884-0476, DSN 579-0476

--Email: AFSOC.A3T@hurlburt.af.mil

Air Force Material Command (AFMC) – Diving Equipment/Material

-Office: 669 Aeronautical Support Squadron

--Location: Wright Patterson AFB, OH

--Phone: (Comm) 937-225-5478, DSN 785-2245

--Email: 669AESS.THP@WPAFB.AF.MIL

Air Force Education and Training Command (AETC/A3T)

-Office: Detachment 2, 342nd Training Squadron (Det 2, 342 TRS)

--Location: Randolph AFB, TX

--Phone: (Comm) 210-652-9464, DSN 487-9464

--Email: aetc.a3t.workflow@randolph.af.mil

US ARMY

USNORTHCOM:

-- US Army Engineer Dive Detachments: 74th, 86th, 511th, 544th, 569th

--Location: Fort Eustis, VA

--Phone: (Comm) 757-878(-1365 for 74th), (-2805 for 86th),

(-2433 for 511th), (-5658 for 544th). (-3500 for 569th), DSN: 826

USPACOM:

-7th Engineer Dive Detachment

--Location: Fort Shafter, HI

--Phone: (Comm) 808-438-6384/9393/2674, DSN: 315

USCENTCOM:

-Theater Dive Detachment

--Location: Kuwaiti Navy Base, Kuwait

--Phone: (Comm) 9-011-965-975-8573 / 9-011-964-7128, DSN: 318-839-1066/1067

USSOUTHCOM:

-US Army National Guard 232nd Engineer Dive Detachment

-Location: Ceiba, Puerto Rico

-Phone: (Comm) 787-586-9946

-US Army National Guard 627th Engineer Dive Detachment

-Location: Corpus Christi, TX

-Phone: (Comm) 512-782-4103

Army Special Operations:

-Office: HQ, USASOC

Bldg E-2929

ATTN: AOOP-TRS

--Location: Fort Bragg, NC

--Phone: (Comm) 910-432-2069

US COAST GUARD

Coast Guard Diving Program

-Office: Commandant (CG-7212)

ATTN: Chief Dive Capabilities Division

--Location: Washington, DC

--Phone: (Comm) 202-372-1294

US MARINE CORPS

Marine Active Component

I Marine Expeditionary Force (I MEF)

-1ST Force Recon Co

--Location: Camp Pendleton, CA

--Phone: (Comm) 760-725-9690

-1st Recon Bn
--Location: Camp Pendleton, CA
--Phone: (Comm) 760-763-6043

II Marine Expeditionary Force (II MEF)
- 2d Force Recon Co
--Location: Camp LeJeune, NC
--Phone: (Comm) 910-450-7802

- 2d Recon Bn
--Location: Camp LeJeune, NC
--Phone: (Comm) 910-450-7802

III Marine Expeditionary Force (III MEF)
- 3d Recon Bn
--Location: Okinawa, Japan
--Phone: (Comm) 081-611-725-2527

Marine Special Operations Command (MARSOC)
--Location: Camp LeJeune, NC
--Phone: 910-451-3575

-1st Marine Special Operations Bn
--Location: Camp Pendleton, CA
--Phone: (Comm) 760-725-2126

-2d Marine Special Operations Bn
--Location: Camp LeJeune, NC
--Phone: (Comm) 910-450-7246

US NAVY

- Naval Sea Systems Command Supervisor of Salvage and Diving / Director of Ocean Engineering (NAVSEA 00C/ SUPSALV)
--Location: 1333 Isaac Hull Ave, SE Stop 1073
Washington Navy Yard, DC 20376-1073
--Phone: (Comm) 202-781-1731/3453
--Fax: (Comm) 202-781-4588
--Emergency Contact: (Comm) 202-781-3889 (This is an emergency number. You will reach the NAVSEA Duty Officer, who will contact key SUPSALV personnel.)
--Website: www.supsalv.org

Navy EOD

-COMEODGRU ONE

--Location: 2424 Rendova RD, bldg 156
San Diego, CA 92155

--Website: www.NECC.Navy.Mil

-COMEODGRU TWO

--Location: 2520 Midway Rd, Suite 100
Norfolk, VA. 23521

--Website: www.necc.navy.mil

Navy Regional Maintenance Centers (RMC) and Intermediate Maintenance Facilities (IMF)

-Commander

Norfolk Naval Shipyard

--Location: Portsmouth, VA 23709

-NNSY Divers

--Location: 9170 Second Street, Suite 120
Norfolk, VA 23511-2393

--Phone: (Comm) 757-444-9632 (Diving Officer)

-Commander

Southeast Regional Maintenance Center
Office of Counsel (Code 100C)

--Location: P.O. Box 280057
Mayport, FL 32228-0057

--Phone: (Comm) 904-270-5126 x 3179 (Diving Officer)

-Commander

Southwest Regional Maintenance Center
Office of Counsel (Code 100C)

--Location: 3755 Brinser Street, Suite 1
Building 77, Room 104
San Diego, CA 92136-5105

--Phone: (Comm) 619-556-1501 (Quarter Deck)

-Commander

Northwest Regional Maintenance Center
Office of Counsel (Code 107)
Puget Sound Naval Shipyard & IMF

--Location: 1400 Farragut Avenue
Bremerton, WA 98314-5001

--

-Commander
Pearl Harbor Naval Shipyard and IMF
--Location: 667 Safeguard St Ste 100
Pearl Harbor, HI 96860-5033
--Phone: (Comm) 808-368-0304 (Command Duty Officer)

-Commander
U.S. Naval Ship Repair Facility and Japan
Regional Maintenance Center
--Location: PSC 473 BOX 8
FPO AP 96349-0008
--Phone: (Comm) 011-81-46-816-4578/4579 (Dive Locker)

Navy Seabee

-Underwater Construction Team ONE
--Location: 1465 Hewitt Drive
Norfolk, VA 23521
--Phone: (Comm) 757-462-3984
--Website: www.NECC.navy.mil

-Underwater Construction Team TWO
--Location: 524 Dock Rd.
Port Hueneme, CA 93041
--Phone: (Comm) 805-982-5948
--Website: www.necc.navy.mil

Mobile Diving and Salvage Units

-Office: Mobile Diving and Salvage Unit ONE
--Location: BLDG 17 Bishop Point Road
Pearl Harbor, HI 96860
--Phone: (Comm) 808-471-9292
--Website: www.necc.navy.mil

-Mobile Diving and Salvage Unit TWO
--Location: Joint Base Little Creek/Fort Story, Norfolk, VA
--Phone: (Comm) 757-462-8801
--Website: www.necc.navy.mil

This page intentionally left blank.

Appendix B COMMON EQUIPMENT AND RESTRICTIONS

1. Description of Common Equipment

- a. Combat Rubber Raiding Craft—Inflatable rubber boat that can support outboard motors up to 55 HP. Also referred to as a Zodiac.
- b. Lift-bags—Open bottom bags capable of being attached to submerged objects, inflated with air to float submerged objects to the surface.
- c. Re-breather—Re-breathers are closed circuit oxygen or mixed-gas underwater breathing apparatuses primarily used by the USSOCOM community. This equipment combines the mobility of a free-swimming diver with the depth advantages of mixed gas. The term closed circuit refers to the recirculation of 100 percent of the mixed-gas breathing medium and results in bubble-free operations.
- d. Salvage Pontoons—Inflatable rubber pontoons that can be attached to submerged objects to create artificial buoyancy.
- e. Scuba (Self-Contained Underwater Breathing Apparatus)—Divers do not need to be tethered to a surface ship or personnel. A scuba diver is limited in the amount of air stored in the scuba tanks and by currents up to 1 knot.
- f. Surface Supplied Diving (SSD)—Divers are tethered by an umbilical which provides surface stored air to the diver. Surface supplied equipment gives a diver relatively unlimited air and allows dives to depths of 190 fsw using air or 300 fsw when using mixed gas. A diver using surface supplied dive equipment can work in currents up to 2.5 knots without the aid of additional weight and equipment. Surface supplied divers have limited mobility based on the length of their air supply hose (typically 300 ft or 600 ft).
- g. Umbilical—The umbilical is a group of hoses and communications cables that provide breathing air and voice communications to a surface supplied diver.

2. Common Equipment and Restrictions Table

Table 4. Common Equipment and Restrictions			
AGENCY	DIVING APPARATUS	DEPTH (FSW*)	MINIMUM MANNING
AIR FORCE			
SPECIAL TACTICS	SCUBA	190	4
	MK25	50	5
PERSONNEL RECOVERY	SCUBA	190	4
ARMY			
ENGINEER DIVER	SCUBA	190	4
	SURFACE SUPPLIED	190	5
SPECIAL FORCES	SCUBA	190	4
	MK25	50	5

Table 4. Common Equipment and Restrictions			
COAST GUARD			
DIVER	SCUBA	190	4
MARINES			
COMBAT DIVER	SCUBA	190	4
	MK25	50	6
NAVY			
NAVY DIVER	SCUBA	190	4
	SURFACE SUPPLIED	190 AIR	5
		300 HeO2	12
UCT	SCUBA	190	4
	SURFACE SUPPLIED	190 AIR	5
EOD	SCUBA	190	4
	MK16	300	4
	VIPER	50	4
SEAL	SCUBA	190	4
	MK16	300	5
	MK25	50	5
Operational Considerations:			
- Hyperbaric chamber required for Surface Supplied HeO2 diving.			
- Hyperbaric chamber required on-site for MK 16 dives >200 FSW.			
- All diving limited to 10,000 feet above sea level.			
*FSW – feet salt water			

Appendix C DMA UNIT CAPABILITY CHART

F: Full capability. DMA is a **primary task** this unit is trained and equipped to conduct.

L: Limited Capability. DMA is a **secondary task** this unit may be able to perform based on skill sets inherent in primary tasks.

Table 5. Dive Mission Area Unit Capability Reference Chart													
	USAF Special Tactics	USAF Personnel Recovery	Special Forces	SEALS	Marine Combat Diver	Army Engineer Diver	Navy MDSU	Navy UCT	Regional Maintenance Centers (RMC)	Navy EOD	NAVSEA 00C/ SUPSALV	US Coast Guard	Deep Submergence Unit
MOBILITY													
Reconnaissance	L	L	L	L	L	F	L	F		L			
River Recon	L	L	F	F	F	F	L	F		L			
Obstacle Reduction	L	L	L	L	L	F	F	F		L			
Installation			L	L		F	L	L		L			
U/W Survey			L	L	L	F	F	F	F	L	F	L	
- High Resolution						F	L	L	L	L	F		
- Medium Resolution						F	F	F	L	F	F		
- Low Resolution				F	F	F	F	F	L	F	F		
Very Shallow Water				F			L		L	F	F		
COUNTERMOBILITY													
Obstacle Emplacement			L	F		F		F					
Demolition of Bridge Structures			F	F	L	F	L	F		L			
PROTECTION (PHYSICAL SECURITY)													
Passive/Active	L	L	L	F	L	F	L	F	F				
Security Swims	L	L	L	L	F	F	F	F	F	F		F	
Physical Security Inspections	L	L	L	L	L	L	F	F	F	F		F	
Vulnerability Assessments			L	L		L	F	L	F	L		L	
Contraband Search	L	L	L	L	L	F	L	L	F	F		F	

	USAF Special Tactics	USAF Personnel Recovery	Special Forces	SEALS	Marine Combat Diver	Army Engineer Diver	Navy MDSU	Navy UCT	Regional Maintenance Centers (RMC)	Navy EOD	NAVSEA 00C/ SUPSALV	US Coast Guard	Deep Submergence Unit
EXPLOSIVE HAZARD DISPOSAL													
Located and Identify	L	L	L	F	L	F	F	F	F	F		L	
Render Safe Ordnance										F			
Render Safe Mines										F			
Marine Mammals										F			
INFILTRATION AND EXFILTRATION													
Infiltration/Exfiltration	F	L	F	F	F					L			
UNDERWATER SHIP HUSBANDRY													
Inspection						F	F	L	F	L	F	L	
BDA and Repair						F	F		F	L	L		
- Light Repair						F	F		F	L	F		
- Heavy Repair						L	L		F		L		
PORT/HARBOR FACILITIES OPENING, CONSTRUCTION, CLEARANCE, AND REHABILITATION													
Planning and Inspection						F		F	F	F	F		
Hydrographic/Bathymetric Survey				F	L	F	F	F	L	F	L		
Clearance				F	L	F	F	F	L	F	L		
Repair						F		F	F		L		
Construction						F		F	L		L		
JLOTS/ IN STREAM OFFLOAD													
Survey						F	F	F			F		
Obstacle Reduction						F	F	F	L		L		
Medium Salvage						F	F	L	L		L		
Anchoring System Recovery & Repair						F	F	F	L		L		
Installation of Causeway Anchors						F	L	F			L		
OFFSHORE PETROLEUM DISTRIBUTION SYSTEMS													
SALMS Installation						L	L	F					
Hydrographic Surveys						F	L	F			L		
Improving Beach Approaches							L	F			L		
Clearing Obstacles						F	L	F					
Anchoring Pipelines to Sea Floor						F	L	F					
Pipeline Inspection						F	L	F	L		L		

	USAF Special Tactics	USAF Personnel Recovery	Special Forces	SEALS	Marine Combat Diver	Army Engineer Diver	Navy MDSU	Navy UCT	Regional Maintenance Centers (RMC)	Navy EOD	NAVSEA 00C/ SUPSALV	US Coast Guard	Deep Submergence Unit
SALVAGE													
Light						F	F	L	F		L		
Medium						F	F	L	L		L		
Heavy						L	F		L		L		
SEARCH AND RESCUE/RECOVERY													
Physical Searches	F	F	L	L	L	F	F	F	F	F	L	F	F
Recovery	F	F	L	L	L	F	F	F	F	F	L	L	F
Submarine Rescue							L				L		F
CONDUCT DISASTER RESPONSE MEASURES													
Plans and Assessments						F	F	F	F		F		
Obstacle Removal	L	L			L	F	F	F	L		L		
Repair Retaining Structures						F		F	L		L		
Hydrographic Survey Validation					L	F		F	L		L		
HYPERBARIC CHAMBER													
Hyperbaric Chamber			L	L		F	F	F	F		F		

This page intentionally left blank.

REFERENCES

ARMY

FM 3-05.212, *Special Forces Waterborne Operations*, 30 September 2009.
FM 3-34.280, *Engineer Diving Operations*, 20 December 2004.

DEPARTMENT OF DEFENSE

DODD 5230.24, *Distribution Statements on Technical Documents*, 18 March 1987.

AIR FORCE

AFI 33-60, *Publications and Forms Management*, 18 May 2006.

NAVY

NAVSUP P-409, *MILSTRIP/MILSTRAP Desk Guide*, 9 May 2003.

OTHER

JP 1, *Doctrine for the Armed Forces of the United States*, 2 May 2007.

JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*, 12 April 2001.

JP 3-0, *Joint Operations*, 17 September 2006.

JP 3-05, *Doctrine for Joint Special Operations*, 17 December 2003.

JP 3-05.1, *Joint Operations*, 17 September 2006.

JP 4-01.6, *Joint Logistics Over-the-Shore (JLOTS)*, 5 August 2005.

JP 5-0, *Joint Operations Planning*, 26 December 2006.

This page intentionally left blank.

GLOSSARY

PART I – ABBREVIATIONS AND ACRONYMS

A

AAV	amphibious assault vehicle
ACC	Air Combat Command
ADCON	administrative control
AFB	Air Force Base
AFI	Air Force Instruction
AFRC	Air Force Reserve Command
AFSOC	Air Force Special Operations Command
AFSOTC	Air Force Special Operations Training Center
AFTTP	Air Force Tactics, Techniques, and Procedures
AKO	Army Knowledge Online
ALSA	Air Land Sea Application [Center]
AMCM	airborne mine countermeasures
ANG	Air National Guard
AO	area of operations
AOR	area of responsibility
APU	Auxiliary Power Unit
ARG	amphibious ready group
ASG	area support group
ASP	area search platoon
ASW	auxiliary sea water
AT/FP	Anti-Terrorism/Force Protection
ATON	aid to navigation

B

BDA	battle damage assessment
BDA/R	battle damage assessment and repair
BLS	beach landing site

C

C2	command and control
CAC	Combined Arms Center
CADD	Combined Arms Doctrine Directorate
CBR	chemical, biological, and radiological
CCT	combat control team
CNO	Chief of Naval Operations
CO	company
COC	command operation center
COMNAVSEA	Commander, Naval Sea Systems Command
CRO	combat rescue officer
CRRC	combat rubber raiding craft
CS	civil support
CS	combat support
CSA	countermeasure set acoustic
CSS	combat service support

D

DA	direct action
DDG	Doctrine Discussion Group
D-GPS	differential global positioning system
DMA	dive mission area
DOD	Department of Defense
DODD	Department of Defense Directive
DOG	deployable operations group
DPD	diver propulsion device

E

EMCON	emission control
EOD	explosive ordnance disposal
ESG	expeditionary strike group
ESSM	emergency ship salvage material
EXFIL	exfiltrate

F

FHA	foreign humanitarian assistance
FM	field manual
FMGS	flyaway mixed gas system
FP	force protection
fsw	feet of seawater

G-H-I

GCC	geographic combatant commander
HeO2	helium-oxygen
HF	high frequency
IED	improvised explosive device
IMF	intermediate maintenance facility
INFIL	infiltrate

J

JFACC	joint force air component commander
JFC	joint force commander
JFLCC	joint force land component commander
JFMCC	joint force maritime component commander
JFSOCC	joint forces special operations component commander
JLOTS	joint logistics over-the-shore
JPRCC	Joint Personnel Recovery Coordination Center
JRMC	Japan Regional Maintenance Center
JSOTF	joint special operations task force
JTF	joint task force

K-L

LeMay Center	Curtis E. LeMay Center for Doctrine Development and Education
LOC	line of communication
LOTS	logistics over-the-shore

M

MAGTF	Marine air-ground task force
MARSOC	United States- Marine Corps Forces, Special Operations Command
MBT	main ballast tank
MCCDC	Marine Corps Combat Development Command
MCD	Marine combatant diver
MCM	mine countermeasures
MCPDS	Marine Corps Publication Distribution System
MCRP	Marine Corps Reference Publication
MDO	military diving operations
MDS	mobile diving and salvage
MDSU	mobile diving and salvage unit
MDV	master diver
MEF	Marine expeditionary force
MEU	Marine expeditionary unit
MIDPAC	Mid-Pacific
MILSTRIP	Military Standard Requisition and Issue Procedure
MIW	mine warfare
MMS	marine mammal system
MPS	maritime preposition squadron
MSL	mean sea level
MSOB	Marine special operations battalion
MSOC	Marine special operations company
MSOT	Marine special operations team
MSW	main sea water
MT	magnetic testing
MTTP	multi-Service tactics, techniques, and procedures

N

NAVSEA	Naval Sea Systems Command
NAVSPECWARCOM	Naval Special Warfare Command
NAVSUP	Navy Supply Systems Command
ND	Navy diver
NDLS	Navy Doctrine Library System
NDT	Non-destructive testing
NEDU	Navy Experimental Diving Unit
NNSY	Norfolk Naval Shipyard
NRF	Navy Reserve Force
NSW	naval special warfare
NTTP	Navy Tactics, Techniques, and Procedures
NWDC	Navy Warfare Development Command

O

OCP	ordnance clearance platoon
OHV	objects of high value
OIC	officer in charge
OPCON	operational control

OPDS offshore petroleum distribution system
OPR office of primary responsibility
OPSEC operations security
OSHA occupational Safety and Health Administration
OTAA outboard transducer acoustic array assembly

P

PACNORWEST Pacific Northwest
PAT primary affluent tank
PJ Pararescue jumper
PMS preventive maintenance services
POD point of departure
PR personnel recovery
PWCS ports, waterways, and coastal security

Q-R

RADCON radiological control
RMC regional maintenance center
ROC reconnaissance operation center
ROV remotely operated vehicle
RSP render safe procedure

S

SALMS single-anchor leg-mooring system
SATCOM satellite communications
scuba self-contained underwater breathing apparatus
SDV sea-air-land delivery vehicle
SEAL sea-air-land
SERMC Southeast Regional Maintenance Center
SF special forces
SHT sound hull tile
SMCM surface mine countermeasures
SME subject matter expert
SOF special operations forces
SOWT special operations weather team
SPM secondary propulsion motor
SR special reconnaissance
SRF ship repair facility
SSBN fleet ballistic-missile submarine, nuclear
SSD surface-supplied diving
SSGN guided-missile submarine, nuclear
SSN attack submarine, nuclear
ST special tactics
STG special tactics group
STS special tactics squadron
STTS special tactics training squadron
SUPSALV Supervisor of Salvage and Diving
SWAT shallow water auxiliary sea water target
SWRMC Southwest Regional Maintenance Center

T

TACON	tactical control
TAG	technical advisory group
TRADOC	US Army Training and Doctrine Command
TSOC	theater special operations command
TTP	tactics, techniques, and procedures

U

UCT	underwater construction team
UHF	ultrahigh frequency
UJTL	universal joint task list
URC	underwater reconnaissance capability
US	United States
USA	United States Army
USAF	United States Air Force
USAFE	United States Air Forces Europe
USCENTCOM	United States Central Command
USCG	United States Coast Guard
USMC	United States Marine Corps
USN	United States Navy
USPACAF	United States Pacific Air Forces
USPACFLT	United States Pacific Fleet
USSF	United States Fleet Forces Command
USSOCOM	United States Special Operations Command
UT	ultra-sonic testing
UTC	unit type code
UW	underwater
UWSH	underwater ship husbandry

V-W-X-Y-Z

VLS	variable launch system
VOO	vessels of opportunity
VSW	very shallow water
VT	visual testing
WARNO	warning order

PART II – TERMS AND DEFINITIONS

combatant command—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. (JP 1-02. SOURCE: JP 5-0)

combatant command (command authority)—Nontransferable command authority established by title 10 ("Armed Forces"), 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. (JP 1-02. SOURCE: JP 1)

joint force air component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking air forces; planning and coordinating air operations; or accomplishing such operational missions as may be assigned. The JFACC is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. Also called **JFACC**. (JP 1-02. SOURCE: JP 3-0)

joint force commander—A general term applied to a combatant commander, subunified commander, or joint task force (JTF) commander authorized to exercise combatant command (command authority) or operational control over a joint force. Also called **JFC**. (JP 1-02. Source JP 1)

joint force land component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking land forces; planning and coordinating land operations; or accomplishing such operational missions as may be assigned. The joint force land component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. Also called **JFLCC**. (JP 1-02. SOURCE: JP 3-0)

joint logistics over-the-shore operations—Operations in which Navy and Army logistics over-the-shore forces conduct logistics over-the-shore operations together under a joint force commander. Also called LOTS operations. (JP 1-02. SOURCE: JP 4-01.6)

joint force maritime component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment

of assigned, attached, and/or made available for tasking maritime forces and assets; planning and coordinating maritime operations; or accomplishing such operational missions as may be assigned. The joint force maritime component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. Also called **JFMCC**. (JP 1-02. SOURCE: JP 3-0)

joint force special operations component commander—The commander within a unified command, subordinate unified command, or joint task force responsible to the establishing commander for making recommendations on the proper employment of assigned, attached, and/or made available for tasking special operations forces and assets; planning and coordinating special operations; or accomplishing such operational missions as may be assigned. The joint force special operations component commander is given the authority necessary to accomplish missions and tasks assigned by the establishing commander. Also called **JFSOCC**. (JP 1-02. SOURCE: JP 3-0)

joint special operations task force — A joint task force composed of special operations units from more than one Service, formed to carry out a specific special operation or prosecute special operations in support of a theater campaign or other operations. The joint special operations task force may have conventional non-special operations units assigned or attached to support the conduct of specific missions. Also called **JSOTF**. (JP 1-02. SOURCE: JP 3-05)

logistics over-the-shore operations—The loading and unloading of ships without the benefit of deep draft-capable, fixed port facilities; or as a means of moving forces closer to tactical assembly areas dependent on threat force capabilities. Also called LOTS operations. (JP 1-02. SOURCE: JP 4-01.6)

Service component command—A command consisting of the Service component commander and all those Service forces, such as individuals, units, detachments, organizations, and installations under that command, including the support forces that have been assigned to a combatant command or further assigned to a subordinate unified command or JTF. (JP 1-02. SOURCE: JP 1)

theater special operations command—A subordinate unified or other joint command established by a joint force commander to plan, coordinate, conduct, and support joint special operations within the joint force commander's assigned operational area. Also called TSOC. (JP 1-02. SOURCE: JP 3-05.1)

This page intentionally left blank.

ATTP 3-34.84
MCRP 3-35.9A
NTTP 3-07.7
AFTTP 3-2.75
CG COMDTINST 3150.1C

12 January 2011

By Order of the Secretary of the Army

Official:

GEORGE W. CASEY JR.
General, United States Army
Chief of Staff



JOYCE MORROW
Administrative Assistant to the
Secretary of the Army
1104607

DISTRIBUTION:

Active Army, Army National Guard, and United States Army Reserve: Not to be distributed. Electronic means only.

By Order of the Secretary of the Air Force

DAVID S. FADOK
Major General, USAF
Curtis E. LeMay Center for Doctrine Development and Education

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading or ordering.

RELEASABILITY: Distribution Statement A: Approved for public release; distribution is unlimited.

US Department of Homeland Security
US Coast Guard

VINCENT B. ATKINS
RADM, US Coast Guard
Assistant Commandant for Capability

