



# Naval Expeditionary Warfare Vision 2010





# FOREWORD

N85 serves the nation, the Chief of Naval Operations, the Navy and the Marine Corps in the development, funding, implementation and delivery of all amphibious and expeditionary warfare requirements and programs on time and on cost. Intellectually, we are guided in all our force development efforts by *"A Cooperative Strategy For 21st Century Seapower (CS21), Naval Operations Concept 2010, and the family of Marine Operating Concepts"*. Through its five major branches: Naval Special Warfare, Mine Warfare, Amphibious Warfare, Navy Expeditionary Combat Command, and Seabasing, the division ensures that the Expeditionary Warfare forces of the United States Navy remain the most cost effective, best equipped, best trained and most combat ready and responsive in the world. **"Best"** and **"most combat ready and responsive in the world"** will be our ultimate measures of the quality delivered to the battle force and Navy.

Expeditionary warfare is the essence of naval operations from the sea anytime and anywhere in any manner. Today the Navy is continually transforming its naval expeditionary forces - ships, aircraft, weapons, equipment, and systems - to operate across the full spectrum of roles, missions, and tasks of the 21st century. Expeditionary warfare forces, equipped with sound doctrine and appropriate capabilities, will continue to provide our nation with forward presence, deterrence, sea control, power projection, maritime security, and humanitarian assistance and disaster relief across the full range of military operations. The Naval Expeditionary Warfare Division is the foundation for the impetus behind peacetime forward deployments, rapid response to worldwide crises, and protection to United States citizens, allies, and interests wherever and whenever they might be at risk.

In support of our nation's effort to deliver our amphibious and expeditionary warfare requirements and programs in a fiscally responsible manner, I sincerely thank Congress, our industrial base, and the personnel who form our ranks and make it possible to determine requirements, resource our programs and execute our Maritime Strategy on behalf of the nation and United States Navy and Marine Corps.

The intent of the pages that follow is to take the reader inside today's expeditionary warfare forces. We welcome your comments, concerns, and assistance in providing our Nation the ability to provide: persistent presence, self-sustaining, sea-based expeditionary forces; maritime domain expertise; flexible force options; expanded deterrence; and joint, multinational, and interagency enabling forces.



Major General T. Hanifen, USMC  
 Office of the Chief of Naval Operations  
 October 2010



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# INTRODUCTION

*Naval Expeditionary Warfare Vision 2010* promotes an increased awareness of expeditionary programs and forces, and the way they are supporting the Maritime Strategy.

Five of the previous six books in this series were titled *Naval Amphibious Warfare Plans*. The sixth, and most recent, was the inaugural *Naval Expeditionary Warfare Plan*. All six warfare plans listed below have targeted an audience of military, industry and Congressional staff readers.

- *Decisive Power from the Sea* in 1999
- *Decisive Power ... Global Reach* in 2001
- *Naval Expeditionary Forces ... Globally Engaged* in 2003 (supplement to the second plan)
- *Seabasing ... Speed, Access, Persistence* in 2005
- *Expeditionary Power Projection ... Flexible, Scalable, Forward* in 2007
- *Expeditionary Warfare ... Shaping for the Future* in 2008.

This document continues the description of expanded naval expeditionary capabilities initiated in the 2008 *Naval Expeditionary Warfare Plan*. It includes *Naval Special Warfare*; *Mine Warfare*; *Amphibious Warfare*; *Navy Expeditionary Combat*; and *Seabasing Integration* programs for which the Navy's *Expeditionary Warfare Division (N85)* provides resource sponsorship and/or has current or future requirements oversight. While addressing programs supporting amphibious capabilities of the Navy - Marine Corps team, it also addresses a wide spectrum of expeditionary capabilities that are similarly important to our nation. This edition of the *Naval Expeditionary Warfare Plan* will follow the format of its predecessors; it will describe expeditionary warfare assets and programs, and their uses in current expeditionary operations worldwide.

The objectives of this publication are to:

- Promote an increased awareness of current and future expeditionary warfare capabilities and to stimulate discussion amongst the target audience
- Show how expeditionary forces support the Maritime Strategy and combatant commanders' (CCDRs') requirements by being forward deployed and rapidly deployable to influence events on a global scale
- Describe expeditionary forces and recent expeditionary operations.



*Peleliu Amphibious Ready Group*





# CHAPTER 1

## The World Today

*"The United States is a nation at war. In Afghanistan, our forces fight alongside allies and partners in renewed efforts to disrupt, dismantle, and defeat Al Qaeda and the Taliban. In Iraq, U.S. military personnel advise, train, and support Iraqi forces as part of a responsible transition and drawdown. Above all, the United States and its allies and partners remain engaged in a broader war - a multifaceted political, military and moral struggle - against Al Qaeda and its allies around the world."*

*2010 Quadrennial Defense Review (QDR) Report*

### Introduction

U.S. strategic interests include global security; prosperity; broad respect for universal values; and an international order that promotes cooperative action. Naval expeditionary forces are at the forefront of our national responses to ongoing international conflicts; moreover, they play a vital role in advancing these strategic interests confronting irregular challenges to prevent potential future conflicts. These conflicts and irregular challenges are caused primarily by instability and insecurity, which constitute pervasive threats to the nation's interests. As articulated by our military's senior leadership, these threats, and the corresponding call for our military forces, specifically expeditionary forces, are expected to continue and will likely increase in the future.

### Background

Expeditionary force requirements, capabilities development, and global force posture are solidly grounded in Navy and Defense guidance.

### Maritime Strategy

A *Cooperative Strategy for 21st Century Seapower* was published in October 2007 after significant analysis, research, and an unprecedented level of collaboration with the public. This Maritime Strategy reaffirmed the commitment of the United States Navy, Marine Corps, and Coast Guard to use seapower to influence actions and activities at sea and ashore. The Maritime Strategy also recognized that our nation's seapower should take on an even larger role in confronting "the challenges of a new era" and articulated that the global reach, persistent presence, and operational flexibility inherent in United States seapower would be employed to accomplish the following six key tasks, or strategic imperatives:

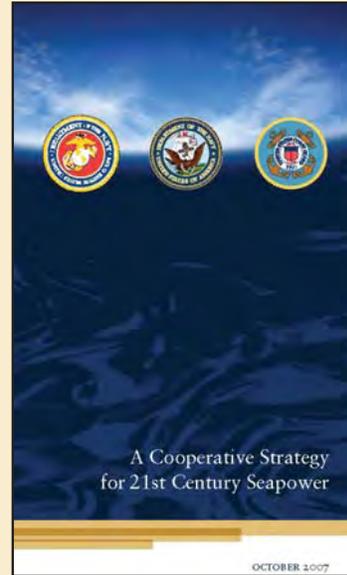


*Naval Leadership and the Fiscal Year (FY) 2010 Budget*



- Limit regional conflict with forward-deployed, decisive maritime power
- Deter major power war
- Win our nation's wars
- Contribute to homeland defense in depth
- Foster and sustain cooperative relationships with more international partners
- Prevent or contain local disruptions before they impact the global system.

The first three imperatives focus on more traditional combat power primarily provided by a powerful fleet. The final three reflect awareness of the impacts, both positive and negative, of expanding globalization, and the growing importance of "soft power" applied in appropriately sized force packages, as and when required, to enhance partnerships and cooperation. Moreover, the Maritime Strategy recognizes that naval forces - characterized by their expeditionary nature, scalability, flexibility, and agility - are uniquely poised to address the strategic imperatives and deliver the following core capabilities:



Maritime Strategy

- Forward presence
- Deterrence
- Sea control
- Power projection
- Maritime security
- Humanitarian assistance/disaster response (HA/DR).



Riverines Build Partner Capacity to Confront Irregular Challenges

## Naval Expeditionary Forces and Irregular Warfare

In January 2010, the Chief of Naval Operations (CNO) released *The U.S. Navy's Vision for Confronting Irregular Challenges*. In it, the CNO noted that the Navy must "continue efforts to balance emphasis and investments between countering irregular threats and countering near-peer forces to successfully meet today's and tomorrow's dynamic and interrelated security challenges." A key challenge inherent in achieving the balanced

investment is the reality that difficult decisions will have to be made and our Defense establishment may be required to reduce capability in one area to enhance a capability in another. For example, reducing



or adversely impacting aspects of combat power in order to enhance our capabilities to confronting irregular challenges. Naval expeditionary forces are designed to be flexible, agile, and balanced across the range of military operations. Generally, most expeditionary forces already have the desired "balance" in that they provide a wide spectrum of capabilities to support regular, conventional combat operations as well as to confront a myriad of irregular challenges facing our nation today. The vision emphasizes the importance of maximizing the multi-purpose effectiveness of the Navy's capabilities, personnel, and platforms to "achieve the greatest effectiveness against the most likely 21st Century threats", and establishes the following goals:

- Enhance and formalize interoperability
- Build partner capacity
- Improve our regional awareness and understanding of complex environments and challenges
- Achieve an improved understanding and ability to counter illicit and extremist actors
- Enhance and broaden the multi-mission capabilities and applications of today's force
- Identify necessary and distinct shifts in emphasis and investment to confront irregular challenges.

## Naval Operations Concept

*Naval Operations Concept 2010 (NOC 10)* describes when, where and how U.S. naval forces will contribute to enhancing security, preventing conflict and prevailing in war in order to guide Maritime Strategy implementation in a manner consistent with national strategy. NOC 10 describes the ways with which the sea services will achieve the ends articulated in *A Cooperative Strategy for 21st Century Seapower*. Of note, among all ship types, the NOC 10 recognizes the inherent flexibility of amphibious ships to perform all six of the Navy's core capabilities.



*Africa Partnership Staff and LSD 44 Crew Assist in Haiti.*

*"In an increasingly complex world, naval forces provide the Nation with the global presence and the freedom of maneuver needed to influence world events. Persistently postured forward, naval forces are continuously engaged with global partners in cooperative security activities aimed at reducing instability and providing another arm of national diplomacy. Their expeditionary capabilities enable and support the joint force effort to combat both conventional and irregular challenges."*

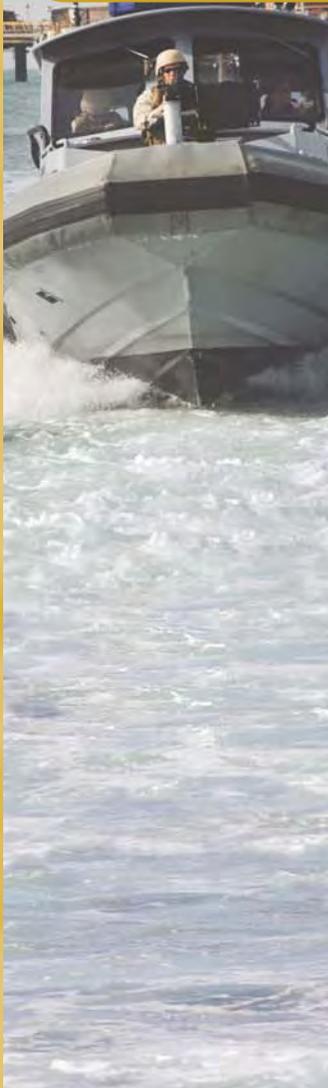
*NOC 10*





The table below directly excerpted from NOC 10 shows the relationship between major naval service platforms and the Maritime Strategy's core capabilities.

Core Capabilities Platforms	Forward Presence	Maritime Security	HA/DR	Sea Control	Power Projection	Deterrence
Aircraft Carriers	X		X	X	X	X
Aircraft	X	X	X	X	X	X
<b>Amphibious Ships</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
SSNs	X	X		X	X	X
SSGNs	X	X			X	X
SSBNs					X	X
Large Surface Combatants	X	X		X	X	X
Small Surface Combatants	X	X		X		
Major Cutters	X	X	X	X		X
Patrol Craft	X	X	X	X		X
Combat Logistics Force	X	X	X	X	X	
Hospital Ships	X		X			
Maritime Prepositioning	X		X		X	
JHSV	X	X	X			
Command and Support	X					
Icebreakers	X	X	X	X		X



Naval Forces Alignment with the Maritime Strategy

### The Joint Operating Environment and Capstone Concept for Joint Operations

*"Over the next quarter century, U.S. military forces will be continually engaged in some dynamic combination of combat, security, engagement, and relief and reconstruction. There will continue to be those who will hijack and exploit religion for extremist ends. There will continue to be opponents who will try to disrupt the political stability and deny the free access to the global commons that is crucial to the world's economy. In this environment, the presence, reach, and capability of U.S. military forces, working with like-minded partners, will continue to be called upon to protect our national interests."*

*The Joint Operating Environment*

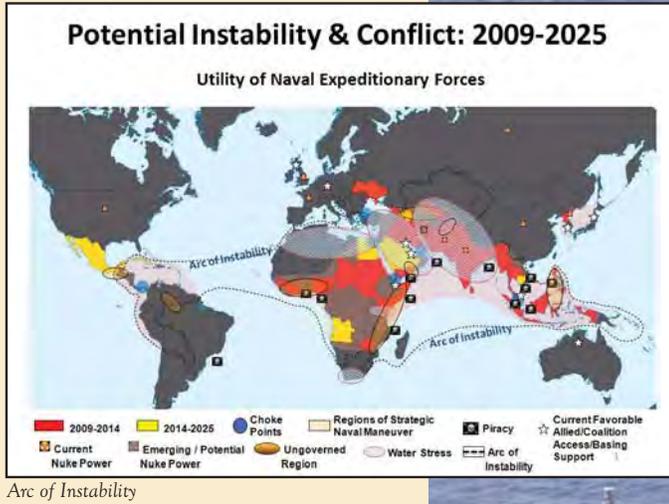
Promulgated by Commander, U.S. Joint Forces Command in February 2010, the Joint Operating Environment (JOE) analyzed trends to paint a picture of the operating environment for joint forces over in the next quarter century. Trends were assessed in demographics, globalization, economy, energy, food, water, climate change and natural disasters, pandemics, cyber, and space. The JOE concluded:

- Cooperation and competition among conventional powers will continue. A "conventional power" is an organization that is governed by, and behaves according to, recognized norms and codes or conventions.





- The power and influence of unconventional, nonstate, and trans-state actors will increase; however, the state will continue to be the most powerful international actor.
- The power of states will vary dramatically from culture to culture, region to region but will mutate and adapt to the international environment's changing conditions.
- The relative balance of power between states will shift, some growing faster than the United States and many states weakening relative to the United States. The era of our nation as the sole superpower may be ending. Additionally:



Arc of Instability

- Many nations/states will build military forces able to influence events in their regions
- Weak and failing states will continue to foment irregular challenges. These states are, and will continue to be, located primarily in an “Arc of Instability” in sub-Saharan and North Africa, Central Asia, and the Middle East.
- The vast region encompassing the Arc of Instability presents an environment where civil and sectarian wars; a havens for extremists; loss of control of their weapons arsenals (including the potential loss of nuclear weapons); and ethnic cleansing/genocide can and frequently do germinate.

With the JOE framing the future's challenging environment, in January 2010 the Chairman of the Joint Chiefs of Staff promulgated the companion document, Capstone Concept for Joint Operations (CCJO). CCJO builds upon the JOE analysis to "...forecast five broad national security challenges likely to require the employment of joint forces in the future." These challenges are summarized as:



Sailors from USS Chosin (CG 65) Aboard Suspected Pirate Dhow

- To win the nation's wars
- Deter potential adversaries
- Develop cooperative security
- Defend the homeland
- Respond to civil crises.

Further, the concept states that these security challenges will require the conduct of four broad types of military activities: combat, security, engagement, and relief and reconstruction and that there may be more challenges than the nation can respond to. This increases the importance of crisis prevention and maintaining security and stability via cooperative security





arrangements. Further, the CCJO recognizes that access overseas is diminishing, and assuring access to ports, airfields, foreign airspace, coastal waters, and host nation support will require active peacetime engagement with states in volatile areas.

## Expeditionary Organizations and Forces Supporting the Combatant Commander

*"We can expect this challenging set of circumstances to confront us for some time - a steady, if not increasing, demand for ready Naval forces and continued pressure on the available resources needed to sustain them."*

*Commander, US Fleet Forces Command 2010  
Commander's Guidance*

The US Navy and its expeditionary forces in particular are engaged globally in support of CCDRs' requirements. In addition to conducting combat and combat support operations in Operations IRAQI FREEDOM and ENDURING FREEDOM, expeditionary forces are also in high demand to support the Global Partnership Station initiative, security force assistance (SFA), and other efforts to engage and build partner capacity. This high demand is due in no small part to their maritime nature. As a maritime force, naval expeditionary forces are manned, trained, equipped, and task-organized to operate from the sea with a minimal footprint. Unlike garrison forces, maritime expeditionary forces provide the United States the asymmetric advantage of enlarging or contracting our nation's military footprint particularly in areas where access may be denied, or a limited presence ashore is preferred.

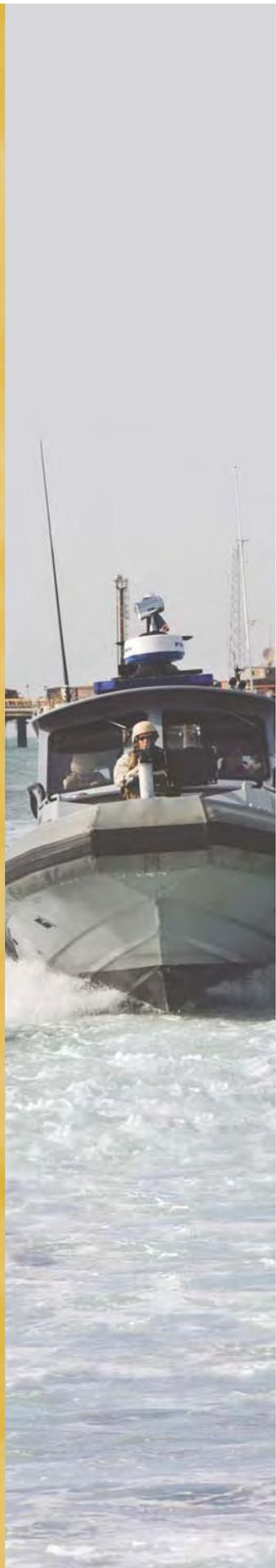
### Naval Special Warfare

The Naval Special Warfare (NSW) Branch (N851) is the resource sponsor for all NSW service common requirements and for the Navy Riverine Force (procurement funding only). NSW service common items include: small arms and weapons mounts, tactical communications equipment, night vision equipment, training support craft, operational stocks and planning and management support systems.

Additionally, N851 serves as the senior NSW advocate/advisor on the CNO's staff and is the Office of the Chief of Naval Operations (OPNAV) coordinator/advocate for Navy programs that involve NSW/Expeditionary Warfare.



NSW Operators





Recent examples include the procurement of the Scan Eagle Unmanned Aircraft System (in support of NSW and Commander, United States Central Command [USCENTCOM]), Special Operations Force (SOF) support attributes of future Navy ships and Navy rotary wing support to SOF. Lastly, N851 dictates Navy policy for the Premeditated Personnel Parachuting program and conduct of operations.

NSW forces are deployed independently or in conjunction with other SOF, allied units and coalition forces in small units organized, trained, and equipped to conduct special operations in maritime and riverine environments. SEALs, the primary warfighters in NSW, take their name from the elements in and from which they operate: Sea, Air, and Land. Their clandestine methods of operation allow them to find, fix, and finish targets that larger forces cannot approach without being detected. Their ability to provide real-time intelligence and eyes on target also offers decision makers immediate and virtually unlimited options in the face of rapidly changing crises.

**SEAL Mission**

"In times of war or uncertainty there is a special breed of warrior ready to answer our Nation's call. A common man with uncommon desire to succeed. Forged by adversity, he stands alongside America's finest special operations forces to serve his country, the American people, and protect their way of life."

Excerpt from SEAL credo

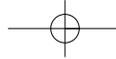


SEAL Warrior

NSW forces provide a highly effective counterforce option across the spectrum of hostilities from peacetime operations to limited and general war. They focus on the conduct of seven principal mission areas of special operations: counterterrorism, counter-proliferation, unconventional warfare, direct action, special reconnaissance, military information support operations, and SFA and civil affairs. Forces also conduct collateral missions such as counterdrug activities and personnel recovery. The NSW total

force is comprised of approximately 8,230 personnel. There are over 6,600 active duty personnel, including 3,000 SEALs and 3,650 support technicians. The command also calls upon a reserve force of 660 personnel and a civilian force of 1,020.



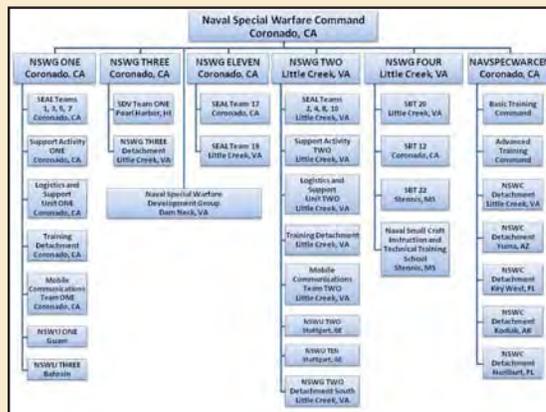


Maritime Craft Aerial Delivery System Operation

The principal resource sponsors for NSW service common and special operations-unique requirements are N851 and United States Special Operations Command (USSOCOM). Naval Special Warfare Command (NAVSPECWARCOM) is the maritime component of USSOCOM.

### Naval Special Warfare Command

The mission of NAVSPECWARCOM is to organize, train, man, equip, educate, sustain, maintain combat readiness, and deploy NSW Forces to accomplish special operations missions worldwide. N85 is OPNAV's principal advocate for NAVSPECWARCOM. A diagram of the NAVSPECWARCOM organization is depicted below and descriptions of major elements are provided in the following paragraphs.



NAVSPECWARCOM Organization

The major operational components of NAVSPECWARCOM are Naval Special Warfare Groups (NSWG) ONE, THREE, and ELEVEN in San Diego, CA; and NSWGs TWO and FOUR in Norfolk, VA. The NSWG mission is to equip, support, and provide command and control elements as well as trained and ready SEALs, SEAL delivery vehicle (SDV) platoons, special boat teams (SBT), and other forces to the CCDRs.

NSWG ONE and TWO are each organized into:

- Four SEAL teams that conduct reconnaissance, direct action, unconventional warfare, SFA, and other operations in maritime or riverine environments. A SEAL team is comprised of six platoons per team, organized in three troops (formerly called task units), and two platoons per troop. In addition to the thirty-two to thirty-six personnel from the two platoons, a troop may include a three or four-person command and control element consisting of a troop commander,





troop senior enlisted advisor, communicator, and joint terminal attack controller, for a total of thirty-five to forty personnel per troop. A SEAL team is designated as a Naval Special Warfare Squadron (NSWRON) six months prior to deployment. At that time, the SEAL Team commander assumes operational



*SEALs: Ready to Answer Our Nation's Call*

control (OPCON) and conducts pre-deployment squadron interoperability training with designated SBT, explosive ordnance disposal (EOD), Navy Seabees, mobile communications detachment, tactical cryptologic support, and other support detachments as required by the anticipated mission taskings.

NSWRON training, equipping, readiness assessment, and deployment is the responsibility of the NSWG. Once deployed, each NSWRON will normally support the operational requirements of two geographic CCDRs.

- SEAL Platoons are the largest operational elements normally employed to conduct tactical missions. With the addition of an explosive ordnance disposal technician, a platoon today contains sixteen to eighteen operators. All personnel are dive, parachute, and demolitions qualified. Platoons can destroy or sabotage enemy shipping, port and harbor facilities, bridges, railway lines, communications centers, and other lines of communication. They can infiltrate and exfiltrate selected personnel by submarine, surface vessel, aircraft, or land vehicle, and also conduct reconnaissance and surveillance in multiple environments. SEAL platoons are not equipped for sustained, direct engagements against enemy forces as they carry minimum amounts of equipment, munitions, and light armament, consisting primarily of individual weapons. Therefore, they are dependent on the theater Navy component or the joint special operations task force commander for logistics support.



*Special Warfare Combatant-craft Crewman Conducting Free Fall Jump*

- Naval Special Warfare Units (NSWUs) are small command and control elements located outside the continental United States responsible for naval special warfare theater planning and support for the Naval Special Warfare forces assigned. The geographic CCDR exercises combatant command authority over the NSWUs as depicted on the next page. The commander of the NSWU is the maritime component commander for the theater special





*Naval Special Warfare Units and Geographic CCDRs*

operations commander (TSOC). The NSWU commanding officer (CO) may be assigned to act as a commander of task-organized forces under the TSOC and/or the Navy component commander (NCC) for a specified operation, exercise or other purpose. In this case, the NSWU CO would be designated as commander of an NSW Task Force, NSW Task Group or other appropriate designation under the Joint Special Operations component commander, and/or as a Commander, Task Force (CTF) subordinate to the NCC or Maritime component commander.

NSWG ONE has OPCON and administrative control (ADCON) of SEAL Teams ONE, THREE, FIVE, and SEVEN based at the Naval Amphibious Base in Coronado, CA. Each team has six operational SEAL platoons. NSWG ONE also has ADCON of NSWU ONE and NSWU THREE. NSWG ONE units deploy as an integrated NSWRON and then are task organized into task groups upon arrival in theater. NSWG ONE acts as COMNAVSPECWARCOM's executive agent for advising on support of USCENTCOM and United States Pacific Command (USPACOM) geographic CCDRs and its forces geographically concentrate on these areas of responsibility; however, the group can deploy forces worldwide to meet any CCDR's requirements. Other organizations within NSWG ONE include:

- **Support Activity ONE** has the mission to organize, man, train, equip, and deploy elements to provide special operations intelligence collection, ISR and analytical capabilities. Support is normally provided by Cross Functional Troops with one or more (normally three) subordinate cross functional teams for each deploying west coast SEAL Squadron. Additionally, they provide regional support troops to provide specially trained elements in support of specific geographic CCDR requirements.



*NSW Operator with Unmanned Aerial Vehicle*

- **Logistics and Support Unit ONE and TWO** have the mission to organize, man, train, equip, and deploy elements to provide combat service support. Logistics and Support Unit ONE supports the west coast and Logistics and Support Unit TWO supports the east coast. These units' deployable combat service support troops provide each coast NSWGs - and their SEAL Teams,





SBTs, and NSWRONs contracting, supply, equipment maintenance, facilities management, military construction, hazardous materials, environmental, combat systems support, table of organic allowance, and ordnance management. The units provide range and training facility support including logistics, messing, maintenance, scheduling, and operation. Additionally, they support SEAL Team Supply, Preventative Maintenance System, Diving, Ordnance, Air Operations, First Lieutenant/Engineering, Administration, Career Counseling, Automated Information Systems, and Medical departments.



Mobile Communication Team ONE Sailors Assembling Satellite Communications

- **NSWG ONE Training Detachment** is responsible for coordinating, directing, and conducting NSWRON training and readiness evaluations.

- **Mobile Communications Detachment ONE** has the mission to organize, man, train, equip, and deploy personnel and communications

equipment to operate and maintain communications for NSW forces.

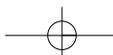
NSW communications include a variety of voice and data services for communicating with Joint and Fleet commands and units using man-portable, modular and tactical vehicle as well as messaging systems in high, very high, ultra high, super high, and extremely high frequency bands. Detachments are normally attached to deploying NSWRONs and provide rapidly deployable communications capabilities in austere environments.

- **NSWU ONE** has OPCON of a fluctuating number of SEAL platoons and two 11-meter rigid inflatable boat (RIB) SBT detachments. NSWU ONE reports for operational tasking to Special Operations Command, Pacific and U.S. 7th Fleet (COMSEVENTHFLT). NSWU ONE provides support to forward deployed NSWRON SEAL platoons and conducts theater planning for contingencies and exercises and for the NSW forces in the Pacific.

- **NSWU THREE** plans, coordinates, and supports the activities of NSWRON SEAL platoons and SBT detachments deployed to the USCENTCOM area of responsibility (AOR). OPCON of NSWU THREE is exercised by Commander, Naval Forces Central Command, but may be shifted to Special Operations Component, United States Central Command when operational tasking requires.



SEALs Conducting Special Patrol Insertion and Extraction (SPIE) Exercise





**NSWG TWO** has OPCON and ADCON of SEAL Teams TWO, FOUR, EIGHT and TEN based at the Joint Expeditionary Base Little Creek - Fort Story, VA. SEAL Team TWO is the only team with an Arctic capability and SEAL Team FOUR is the only team with a viable standing language capability, Spanish. NSWG TWO also has ADCON of NSWU TWO and TEN. NSWG TWO acts as COMNAVSPECWARCOM's executive agent for advising on support of United States European, Southern, Africa and Northern Commands (USEUCOM, USSOUTHCOM, USAFRICOM, and USNORTHCOM) geographic CCDRs and its forces geographically concentrate on these AORs. NSWG TWO has also deployed forces to the USCENTCOM AOR and worldwide to meet any CCDR's requirements. Other organizations within NSWG TWO include:



SEALs Prepared for Direct Action

- **Support Activity TWO, Logistics and Support Unit TWO, Mobile Communications Detachment TWO, and NSWG TWO Training Detachment** have the same missions, tasks, and responsibilities supporting east coast NSWGs, SEAL Teams, SBTs and NSWRONs as their west coast counterparts.
- **NSWU TWO** has OPCON of two SEAL platoons and one 11-meter RIB SBT detachment. NSWU TWO reports for operational tasking to Special Operations Command, Europe. It also provides operational support to NSWRON SEAL platoons and conducts theater planning for contingencies and exercises, and for the NSW forces in Europe.
- **NSWU TEN** plans, coordinates, and supports activities of NSWRON SEAL platoons and SBT detachments deployed to the USAFRICOM AOR. OPCON is exercised by USAFRICOM, via Special Operations Command, Africa when operational tasking requires.
- **NSWG TWO DET SOUTH** plans, coordinates, and supports activities of NSWRON SEAL platoons and SBT detachments deployed to the USSOUTHCOM AOR. OPCON is exercised by USSOUTHCOM via Special Operations Command, Africa when operational tasking requires.

**NSWG THREE** is based in Coronado, CA., and is the immediate superior to SDV Team ONE in Pearl Harbor, HI and an SDV Team detachment in Little Creek, VA. NSWG THREE is NAVSPECWARCOM's executive agent for undersea mobility. SEALs deploy from SDVs and dry-deck shelters (DDS). SDV Team ONE is a command



MK 8 Mod 1 SEAL Delivery Vehicle





of specially trained SEALs and support personnel who operate and maintain the SDV and DDS. SDVs are wet submersibles designed to conduct clandestine reconnaissance, direct actions, and passenger delivery missions. DDS deliver SDV and specially trained forces from modified ballistic missile submarines. NSWG THREE Detachment Little Creek supports east coast NSW SDV and DDS operations.

**NSWG FOUR** is headquartered in Little Creek, VA, and is responsible for SBT TWELVE in Coronado, CA; SBT TWENTY in Little Creek, VA; and SBT TWENTY-TWO and the Naval Small Craft Instruction and Technical Training School (NAVS-



*Riverine Training for Partner Nation Security Forces*

CIATTS) at the John C. Stennis Space Center, MS. Special Warfare Combatant-craft Crewmen (SWCC) assigned to these SBTs maintain and operate state of the art, high-performance craft. They are required to utilize a combination of specialized training in navigation, radio communications, engineering, weapons, parachuting, first aid, and tactics in the completion of their missions. Each team is unique in its location, mission, primary designated operational area, and numbers and type of craft. NAVSCIATTS provides a key capa-

**SWCC Code**

"On Time, On Target, Never Quit!"

bility in enhancing the nation's expanding SFA activities and is primarily responsible for teaching foreign military partners small boat seamanship, handling, maintenance, logistics, and sustainment. NSWG

FOUR serves as COMNAVSPECWARCOM's executive agent for surface mobility, SWCC community management, and professional development.

**NSWG ELEVEN** is headquartered in Coronado, CA and has OPCON and ADCON of SEAL teams SEVENTEEN and EIGHTEEN based in Coronado, CA and Little Creek, VA, respectively. NSWG ELEVEN is responsible for organizing, manning, training, educating, equipping, deploying and sustaining assigned NSW Reserve Component units and personnel to provide increased NSW capacity to meet CCDRs' Theater Security Cooperation Plan (TSCP) and named operations requirements. They provide NSW Reserve component special operations task force, SEAL, and SBT troops in support of NSW and Joint Special Operations Commanders worldwide. When tasked NSWG ELEVEN operational reserve units normally attach to and deploy as part of a NSWRON.





Reserve SEAL in Norway During Cold Response 2010

**Naval Special Warfare Development Group**, based in Dam Neck, VA, provides centralized testing, evaluation, and development of current and emerging technology applicable to NSW forces. This command also develops maritime ground and airborne tactics for naval special warfare and possible Department of Defense-wide application.

### Naval Special Warfare Training

**Naval Special Warfare Center**, located in Coronado, CA, is the schoolhouse for much of the naval special warfare training. In addition to the SEAL and SWCC qualification courses, the Center conducts advanced special operations training for naval special warfare and other service component special operations forces' personnel.

SEAL training is one of the most extensive and intensive courses of instruction available within the military. The year-long program based in Coronado, CA, focuses on physical conditioning, small boat handling, diving physics and techniques, land warfare, weapons, demolitions, communications, reconnaissance, tactics, and other skills required of SEAL operators.

- **Basic Underwater Demolition/SEAL (BUD/S) Preparatory School, eight weeks:**

In cooperation with the Naval Recruit Training Command, BUD/S Prep train and develop SEAL candidates physically for BUD/S. It focuses on core athletics tailored to SEAL training, nutrition, and running/swimming techniques.



BUD/S Students Conduct Surf Passage Training

- **BUD/S Orientation, eight weeks:** Transitions students to specific BUD/S skills, including the Obstacle Course, Log Physical Training, Inflatable Boat, Small procedures, sand running and open water swimming.
- **First Phase (basic conditioning), seven weeks:** Trains, develops, and assesses SEAL candidates in physical conditioning, water competency, teamwork, and mental tenacity.
- **Second Phase (diving), seven weeks:** Trains, develops, and qualifies SEAL candidates as competent basic combat swimmers.
- **Third Phase (land warfare), seven weeks:** Trains, develops, and qualifies SEAL candidates in basic weapons, demolition, and small unit tactics. Students also learn land navigation, patrolling techniques, rappelling, marksmanship, military explosives.





SEAL Trainee Cold Weather Training

- **SEAL Qualification Training (SQT):** Trains, develops and qualifies SEAL candidates in operationally required skills. SQT is designed to provide students with the core tactical knowledge they will need to join a SEAL platoon. It is the intermediate skills course that prepares students for the advanced training they will receive once they arrive at a SEAL Team. SQT includes weapons training, small unit tactics, land navigation, demolitions, cold weather training in Kodiak, Alaska, medical skills and maritime operations. Before graduating, students also attend Survival, Evasion, Resistance and Escape training and qualify in both static-line and freefall parachute operations.

Upon completing these requirements, trainees receive their SEAL Trident, designating them as Navy SEALs. They are subsequently assigned to a SEAL Team to begin preparing for their first deployment.

**SWCC Training** is tailored to prepare individual crewmen for the arduous environment and rigors these professionals will encounter while conducting NSW infiltration, exfiltration, coastal patrol, interdiction, gunfire support, ISR, tactical communications relay, and other NSW and SOF missions. SWCC training consists of:

- **Basic Crewman Training, five weeks:** Trains, develops and assesses SWCC candidates on fitness, basic seamanship, and basic boat handling and maintenance.
- **Crewman Qualification Training, fourteen weeks:** Trains, develops and qualifies SWCC candidates on tactics, communications, weapons, advanced seamanship, helo operations, and advanced craft maintenance.



SWCC Parachute Egress Training

## Mine Warfare

The Mine Warfare (MIW) Branch (N852) is the resource sponsor for MIW ships, mine countermeasure (MCM) combat systems, and equipment. N852 resources efforts to attain the MCM vision; and to locate, identify, and neutralize mines to assure access to the littoral, attain and maintain battlespace dominance, and project power ashore.





### Critical MCM Technologies and Capabilities

- Improve detection capability
- Decrease sensor false alarm rate
- Reduce or eliminate post-mission analysis detect, classify, identify, decide time
- Automatic target recognition
- Improve neutralization time
- Improve network communications
- Achieve in-stride detect-to-engage capabilities.

The sea mine remains today, as it has throughout naval history, an exceptionally fearful, cost-effective, offensive and defensive tactical weapon. The confirmed presence, or even the perceived presence, of these asymmetric threats can impact operational maneuver of expeditionary forces by creating restricted sea areas in an effort to deny access to our forces or to channelize our forces into areas of an adversary's choosing. Used tactically, these threats can slow, stop, or reroute ships at sea; disrupt humanitarian assistance or forcible entry operations; and temporarily close ports of embarkation and debarkation.

The impressive lethality of the sea mine was demonstrated in combat situations numerous times over the last two decades. Even less capable militaries have demonstrated the ability to deploy sea mines. During the Tanker Wars and Operations DESERT STORM and DESERT SHIELD conducted in the '80s and '90s, USS Samuel B. Roberts (FFG 58), USS Princeton (CG 59), and the MCM command ship, USS Tripoli (LPH 10), struck mines in the open waters of the Persian Gulf.

*"Field a common set of unmanned modular MCM systems employable from a variety of platforms that can quickly counter the spectrum of mines to enable assured access with minimum risk from mines"*

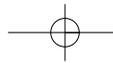
*FY 2011 MCM Master Plan*

The combined damage to the ships, which totaled over \$110 million, was caused by three mines with an estimated combined cost of under \$20,000. Iraqi forces planted an estimated 1,300 sea mines in the Persian Gulf, ranging from simple yet deadly contact type mines designed in the early 1900s, to the most modern types of magnetic and acoustic influence mines. Mines are readily acquired from reputable and not-so-reputable vendors throughout the world, and without question, mines are likely to be among the first weapons of choice in encounters with future belligerents. Today and into the future, the United States Navy can expect to encounter a wide spectrum of mine and obstacle threats in the littorals.



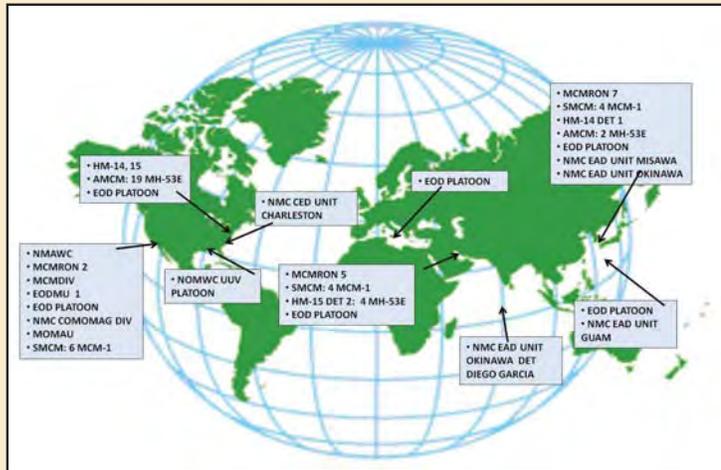
Damage Sustained by USS Tripoli (LPH 10) After Striking a Mine in the Persian Gulf.





## Mine Countermeasures Triad

Our nation's legacy MCM triad is a platform-centered complimentary capability that includes the surface mine countermeasures (SMCM) Avenger (MCM-1) - class ships; airborne mine countermeasures (AMCM) MH-53E Sea Dragon helicopters; and underwater mine countermeasures (UMCM) EOD divers; unmanned systems; and marine mammal systems (MMS) to detect, classify, identify, reacquire, and neutralize the mine threat. The diagram below depicts the legacy MCM triad and the global disposition of the MCM force.



Global MIW Posture

## Surface Mine Countermeasures

As recommended by the 2005 Defense Base Realignment and Closure (BRAC) Commission, in 2009 all SMCM assets previously based at Naval Station Ingleside, TX, shifted homeports to Naval Station San Diego, CA. There are fourteen **MCM-1 class ships**. Eight of the fourteen ships are manned with rotational crews and are forward deployed to support combatant commanders' theater requirements. In 2010, a Commander, Naval Surface Force, U.S. Pacific Fleet, Commander, U.S. 3rd Fleet (COMTHIRDFLT), Commander, U.S. 5th Fleet (COMFIFTHFLT), and Naval Mine and Anti-Submarine Warfare Command (NMAWC) rotation initiative was executed to put a full MIW operational staff under the command of a Navy Captain into the Bahrain Forward Deployed Naval Force (FDNF) to improve COMFIFTHFLT Task Force capability in support of USCENTCOM operation plans (OPLANs) and TSCP. This action also rotated a MCM operational staff to San Diego, CA to support COMTHIRDFLT with U.S. Northern Command Homeland Defense and CCDR Exercise and Contingency requirements. Accordingly Commander, Mine Countermeasures Squadron (COMCMRON) THREE executed a permanent duty station change



USS Champion (MCM 4)  
Arriving San Diego





from San Diego, CA, to Manama, Bahrain, to assume COMFIFTHFLT FDNF duties from Commander MCM Division (COMCMDIV) THREE ONE and was renamed to COMCMRON FIVE. COMCMDIV THREE ONE executed a duty station change from Manama, Bahrain, to San Diego, CA to support COMTHIRDFLT's Maritime Homeland Defense mission and COMSECONDFLT, COMFOURTHFLT, and COMSIXTHFLT AORs as required.



*USS Defender (MCM 2) Arriving Sasebo*

A similar action occurred to support USPACOM and enhance COMSEVENTHFLT MCM capability. COMCMRON ONE executed a permanent duty station change from San Diego, CA, to Sasebo, Japan to assume COMSEVENTHFLT FDNF duties from COMCMDIV ELEVEN and was renamed to COMCMRON SEVEN. COMCMDIV ELEVEN was disestablished in October 2010.

Additionally, MH-53E detachments and EOD MCM detachments are forward deployed to the 5th and the 7th Fleet to support UMCM and AMCM operations in the Arabian Gulf and Western Pacific AOR, respectively.

The four ships of MCMRON SEVEN are homeported in Sasebo, Japan, and the four ships of MCMRON FIVE are in Manama, Bahrain, with the remaining six ships homeported in San Diego, CA.

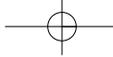


*Explosive Charge in Mine Neutralization System*

The MCM-1 class ships are fitted with a variety of systems to conduct the following MCM operations:

- Minehunting to search, detect, and classify moored, close-tethered, and proud bottom mines using the variable-depth mine detection and classification SQQ-32 sonar.
- Mine neutralization employing the SLQ-48(V) mine neutralization system to reacquire a previously detected target; to classify and identify it using a low light level television; and, if required, to emplace an explosive charge next to a bottom mine or attach a charge on the cable near a moored mine to "blow in place" or cut the mooring cable to allow the mine to rise to the surface, where it is rendered safe or destroyed.
- Mechanical near surface moored minesweeping using the SLQ-38 cable cutting sweep rigged to either, or both, sides of the MCM ship.
- Influence minesweeping using the Mk 5A straight-tail magnetic sweep to counter magnetic influence mines, or an acoustic sweeping device to counter acoustic influence mines.





- Combination sweeping (mechanical-acoustic and magnetic-acoustic).

While effective, MCM ships do have operational limitations. Foremost, they must conduct reconnaissance, clearance, and neutralization operations by placing the man in the minefield. Additionally, MCM ships based in continental United States (CONUS) often require heavy lift Float-On/Float-Off (FLO/FLO) ships and a lengthy timeline to transport them to theater. There are also water depth limitations that decrease the effectiveness of the dedicated SMCM force inside of the 40-foot depth contour, the beginning of the very shallow water (VSW) region.



FLO/FLO Ship Transporting MCM

MCM ships are an aging force with some systems approaching obsolescence. Accordingly, a modernization program to sustain the MCMs to their thirty-year expected service life is underway. The last ship of the MCM-1 class is expected to be decommissioned in 2024 when it reaches the thirty-year expected service life. SMCM capabilities and modernization plans are further discussed in Annex B.

### Airborne Mine Countermeasures

The first MH-53E entered operational service on April 1, 1986. It is the largest, most powerful, and most complex helicopter outside of the former Soviet Union. As a result of recommendations from the 2005 BRAC, all AMCM helicopter assets are now based at Helicopter Mine Countermeasures Squadron (HM) FOURTEEN and FIFTEEN in Norfolk, VA. There are twenty-nine MH-53E helicopters. Five are training assets and the remaining twenty-four are assigned to HM-14, HM-15, a forward-deployed detachment in Bahrain supporting 5th Fleet AMCM operations, and a second detachment to the 7th Fleet to support operations in the Western Pacific AOR.

MH-53E is configured with automatic flight controls and engine anti-icing system; and is the only Navy helicopter capable of air-to-air refueling giving it an all-weather and long range capability. The MH-53E aircraft can be airlifted anywhere in the world within 72 hours, and is fitted with a variety of systems to



MH-53E with SMCM

conduct the following MCM operations:

- Minehunting using a towed AN/AQS-24A multi-beam side-scan sonar with laser line scan to search, detect, and classify moored, close-tethered, or bottom mines.





- Magnetic influence minesweeping using a towed hydrofoil sled rigged with an extended buoyant cable and electrode array (Mk 105 Magnetic Sweep); or acoustic influence minesweeping with an acoustic sweep device(s) (Mk 104 Acoustic Sweep or Mk 2(G) Acoustic Sweep (rattle bars)).
- Magnetic-acoustic influence minesweeping with the Mk 105 and the Mk 104 Acoustic Sweep (Mk 106 Combination Sweep); or the Mk105 and Mk2(G) Acoustic Sweep.
- Moored minesweeping using rugged tow wire with port and starboard wire sweeps (Mk 103 Mechanical Sweep) armed with explosive cutters to target shallow water moored mines.

AMCM MH-53E is a highly capable helicopter, but due to its size the MH-53E is limited in the types of ships that can support its operations. Normally, an MH-53E requires a big deck amphibious ship to support it. Like the MCM ships, the MH-53Es are an aging force too; accordingly, a Fatigue Life Extension program is underway to enable the MH-53E fleet to remain operational until about 2025.



MH-53E towing Mk 105 Sled Conducts Training with USS Saipan (LHA 2)

### Underwater Mine Countermeasures

**Explosive Ordnance Disposal Mobile Units (EODMUs)** report administratively to Explosive Ordnance Disposal Group ONE or TWO, under their Type Commander, Navy Expeditionary Combat Command (NECC). All Navy EODMU forces are dive qualified to provide combat-ready forces capable of rapid worldwide deployment in support of national interests. A key mission for



EOD UMCM Operations

these units is the conduct of underwater mine and obstacle reconnaissance and clearance operations from over the horizon to the seaward edge of the surf zone (SZ) and in confined areas including ports and harbors. EOD MCM detachments operate from the MCM-1 class ships, other platforms, and ashore to reacquire, identify, and neutralize mines in deep waters into about the 40-foot depth contour. They also support combatant commanders' anti-terrorism force protection requirements performing pre-arrival dives to conduct pier inspections.

**EODMU ONE**, formerly Naval Special Clearance Team ONE, possesses the nation's only UMCM capabilities in the VSW region, the 40-foot depth contour to the beginning of the SZ at about the 10-foot depth. Like other EODMUs, EODMU is also organized for deeper water UMCM and other EOD missions





as well. To conduct the VSW reconnaissance and clearance missions, the EODMU ONE VSW Task Unit is organized with a:

- Combatant craft company to insert and extract forces from over the horizon to proximity of the VSW zone, conduct diversionary operations, and provide force protection

- Unmanned systems company to conduct intelligence preparation of the environment, minehunting, and battlespace situational awareness enhancement using the Swordfish unmanned underwater vehicle (UUV) and various unmanned aerial vehicles (UAVs)



EOD Marine Mammal Training

- Marine mammal company to locate and neutralize deep and shallow water moored and bottom mines employing the following specially-trained bottlenose

dolphin marine mammal systems:

- Mk 4: Detects and neutralizes close tethered moored mines near the bottom in deep water zone
- Mk 7: Detects, locates, marks or neutralizes moored, proud, and buried mines in the shallow water and VSW zones
- Mk 8: Low visible minehunting operations to detect, locate, mark or neutralize proud and buried mines in the VSW zone.
- Dive company to reacquire and neutralize mines marked by unmanned systems or MMS in the VSW zone.

Reflecting the priority for counter-improvised explosive device (IED) and more conventional EOD ground combat missions in Operations IRAQI FREEDOM and ENDURING FREEDOM, the VSWMCM capacity of EODMU ONE has been impacted by deployments of EODMU ONE EOD companies in support of CCDR requirements. Additional information on UMCM systems is provided in Annex B.

## Mining

To fully support power projection and battlespace dominance, the Navy must sustain a viable mining capability. In the event of war, U.S. policy will be to conduct offensive, defensive, and protective mining as necessary. The purpose is to reduce the enemy submarine and surface combatant threat by destruction and disruption of their operations, to interdict the enemy sea lines of communications and designated ports in order to neutralize or destroy combatant and merchant ships, and to defend U.S. and allied shipping. Accordingly, U.S. naval forces must develop, procure, maintain, and deploy a modern family



MK 6 Training Mines





of sea mines optimized for potential future military encounters associated with expeditionary warfare operations in littoral regions. Equally important, a comprehensive understanding of potential adversaries' sea mines is required to successfully counter them. Foreign sea mine design and development technologies must be continuously exploited to optimize our MCM capabilities.

The Navy's submarine, surface, air, and expeditionary warfare communities each have a requirement for and an interest in establishing a viable offensive and/or defensive sea mining capability. The United States Air Force also plays a key role. While submarines offer the best capability to clandestinely and precisely plant mines, and surface ships can provide high volume mine deliveries, aircraft offer the greatest potential to quickly lay mines in a variety of areas.

**Quickstrike Family of Mines**

Quickstrike mines include the Mk 65, a purpose-built thin-wall 2,300-pound mine, and two mines converted from bombs, the Mk 62 500-pound and Mk 63 1,000-pound bottom mines. Quickstrike mines use magnetic/seismic/pressure target detection devices. Because the Mk 62/63 mines are bomb-conversion weapons, aircraft carrier air wings have the flexibility to conduct mining operations without the need to carry mines as additional ordnance. Trained Navy and civilian professionals assemble and prepare these mines for training, exercises, and operational employment.



*Mk65 Quickstrike Mine*

**Submarine Launched Mobile Mine**

The Mark 67 submarine launched mobile mine weighs approximately 1,790 pounds and is a self-propelled bottom mine that can be covertly placed from safe standoff distances. Its target detection device uses magnetic and seismic sensors to detect stimuli generated by enemy vessels. The mine's purpose is to restrict ship and submarine traffic in an operational area.

**Mine Countermeasures Targets**

The Versatile Exercise Mine System (VEMS) is an instrumented MCM target that can emulate threat mine performance. There are two variants of the system; the Mk 74 is cylindrical shaped and the Mk 75 is shaped like a truncated cone emulating a stealth shallow water mine. Both VEMS variants utilize a programmable sensor suite and detection system enabling Fleet users and engineering analysis activities to assess the effectiveness of minesweeping operations.





## Mine Warfare Training and Technical Support

The **Mine Warfare Training Center** relocated to San Diego, CA in 2009 following the recommendations of the 2005 BRAC. This center is the Navy's single instructional site for providing tactical and hands-on training in MIW. The school has trained students from the United States and thirty-five other nations in its international training program providing full spectrum MIW tactical, doctrinal, and technical training while promoting the "mainstreaming" of MIW throughout our Navy. It is also available on-line to train the mine force worldwide and to support virtually anyone requiring its information, products, and services.



*Mine Warfare Training Center Point Loma*



*NSWC-PCD Technicians with AQS-20A Sonar*

**Naval Surface Warfare Center, Panama City Division**, located in Panama City, FL, is recognized as the world leader in research, engineering, and test facilities dedicated to mine warfare, amphibious warfare, special warfare, and diving/life support. This synergism of capabilities, experience, knowledge, facilities, and missions create

an extraordinary environment in which to develop requirements, system hardware and software, and tactics. Its strategic location on the Gulf of Mexico offers a local test environment that closely duplicates many of the areas of interest most important to naval missions today.

Established in October 2007, a key responsibility of the **Naval Oceanography Mine Warfare Center (NOMWC)** is the test and evaluation of UUVs in support of MIW. NOMWC detachments operate in the shallow water regime (200-40 ft depth) and in confined waterspace ports, harbors, and channels to provide manning for UUV platoon and environmental MIW teams, embedded components, and MIW reachback cell.



*NOMWC Personnel Deploying a UUV*





Established in 2006, the **Navy Munitions Command (NMC)** is headquartered in Yorktown, VA and aligns all ashore ordnance support operations in the United States and overseas to standardize ashore ordnance support; consolidate resource requirements; and serve as the advocate for ordnance funding requirements. NMC is comprised of four divisions: Commander, Mobile Mine Assembly Group (COMOMAG) Division; CONUS East Division (CED); CONUS West Division; and East Asia Division (EAD). Elements that support MIW are located around the world, as shown on page 17, and are provided by specific units, detachments, and Mobile Mine Assembly Units (MOMAUs) within NMC's four divisions. Their primary MIW-related responsibilities are to:

- When directed, assemble and complete final preparations on prepositioned war reserve mines to support strategic, operational, or tactical missions as required by CCDRs and Navy Fleet to meet National Defense Strategy requirements
- To maintain the Preposition War Reserve Stock service mine stockpile of underwater mines as directed by the Navy component commander in support of CCDRs' OPLANs
- To provide exercise and training mines and material to Allied, Joint, and naval forces.

### Mine Warfare in the Future

Mine warfare, specifically MCM, is in a period of transition. The goal of this transition is to deliver a seamless more efficient mine countermeasures capability from deep water through the beach exit to quickly counter all mine and obstacle types to assure access for our forces. The additional investment in the evolution of unmanned vehicles with advanced sensors and the improved processing of sensor data and the subsequent fusion of that data are essential to reducing

**Goals**

- Accelerate the detect-to-engage timeline
- Remove the Sailor, Marine, and Mammals from the minefield.

MCM timelines, removing Sailors and ships from the minefield, and minimizing manning requirements. The objective of future MCM technology investment is to integrate mine detection, classification, identification, and neutralization devices to enable a seamless capability to identify, localize, and eliminate the mine threat. An important aspect in the continued development of UUVs and sensors



MCM Mission Package Rollout





is the ability to precisely detect, localize, and identify mine-like contacts in a single pass while minimizing false contacts. Navy's MCM systems' collective capabilities must operate in an integrated and complementary manner, while fully exploiting our advantages in intelligence preparation of the operational environment. Collectively, these complementary future MCM systems need to address the full MCM detect-to-neutralize spectrum from deep water through the beach exit against the full mine and obstacle threat spectrum. Ultimately, our MCM capabilities will shift from the legacy dedicated platform-centered mine countermeasures force to a family of distributed and netted deployable organic mine countermeasures (OMCM) systems, modularized for employment from the Littoral Combat Ship (LCS, discussed below) or other suitable host platforms. Many of the OMCM systems will be carried as payloads on unmanned platforms embarked in the LCS. The MCM mission package (MP) is comprised of OMCM systems with support equipment; containers; interfaces; an MCM crew detachment (MCM MP DET) and aircraft. Modularity will expedite configuring the LCS or host platform for MIW missions. MCM MPs will be forward deployed; accelerate the detect-to-engage timeline; and, most importantly, will take the man out of the minefield.

**Mission Package Aircraft**

The aircraft in the MCM MP are the MH-60S Seahawk helicopter and the Fire Scout Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV).



MH-60S with AQS-20A

The MH-60S will ultimately replace the MH-53E as the primary AMCM aircraft platform. The intent of the U.S. Navy Helicopter Master Plan is to downsize from six helicopter types/models/series to only two, both of which are variants of the proven Sikorsky H-60 helicopter airframes which has been widely fielded. The two variants have many commonalities including a digital glass cockpit. Accordingly, the follow-on AMCM helicopter to the MH-53E will be the MH-60S Seahawk. When fitted with the airborne mine countermeasures mission kit, the MH-60S will begin the transformation from a dedicated to an organic airborne mine countermeasures (OAMCM) force. Seahawk OAMCM helicopters are planned to be organized in nine squadrons, consisting of two fleet replacement and nine Expeditionary Helicopter Sea Combat Squadrons (HSC (EXP)) located in San Diego/Norfolk/ Japan/Guam (4/3/1/1). The MH-60S will support OAMCM operations using advanced sensor and weapons packages to provide detection, localization, and neutralization of mine threats. The OAMCM systems destined for the MH-60S are:

- AN/AQS-20A, Minehunting Sonar
- AN/ASQ 235, Airborne Mine Neutralization System (AMNS)





- AN/AES-1, Airborne Laser Mine Detection System (ALMDS)
- AN/AWS-2, Rapid Airborne Mine Clearance System (RAMICS)
- AN/ALQ-220, Organic Airborne and Surface Influence Sweep (OASIS)

The Fire Scout VTUAV will be reconfigurable depending upon the MP type. In the MCM MP, the Fire Scout will carry the Coastal Battlefield Reconnaissance and Analysis (COBRA) payload to support minefield and mineline reconnaissance, detection, localization.



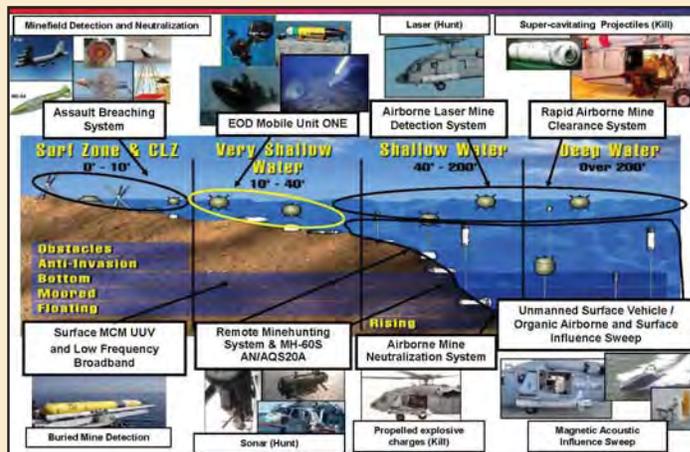
Fire Scout in Flight

### Organic Mine Countermeasures

OMCM is the U.S. Navy's response to address the nation's future MCM capability and capacity requirements for operations throughout the water column. Technology developments in advanced sensors; manned and unmanned sensor platforms; processing; tethered and untethered neutralizers; and targeting algorithms have provided, or are anticipated to provide, capabilities that are fast, light, agile, adaptable, precise, and modular - and that ultimately will remove the man and the marine mammals from the minefield. Future MCM sensors and weapon systems include:

- AN/AQS-20A Minehunting Sonar
- AMNS
- ALMDS
- RAMICS
- OASIS
- AN/WLD-1, Remote Minehunting System (RMS)
- Unmanned Surface Vessel (USV) with Unmanned Surface Sweep System (US3)
- COBRA
- Surface Mine Countermeasures Unmanned Underwater Vehicle (SMCM UUV) with Low Frequency Broad Band (LFBB) Sonar

These systems are employed in the water column as shown below.



Future MCM Systems and Waterspace





## Assault Breaching Systems

To address MCM in the SZ, the highly dynamic region from the 10-foot water depth to the high water mark; on the beach; and inland to the beach exit, Assault Breaching Systems (ABS) are in development. The components which comprise ABS are:

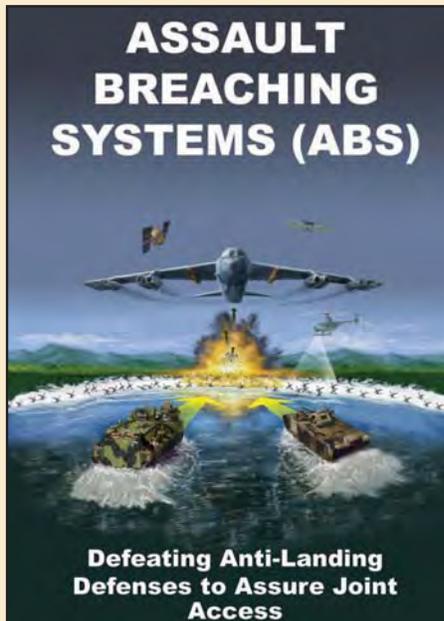
- Intelligence, surveillance, reconnaissance , and targeting (ISRT)
- Command and control (C2)
- Countermine counter-obstacle (CMCO) munitions
- Precision navigation and marking (PN&M)



*Fire Scout Configured with COBRA*

Breaching operations to neutralize the threat are conducted with the precision-guided CMCO munitions delivered by Air Force bombers or Navy tactical aircraft.

Assault breaching is a preplanned fire support mission that is coordinated with the landing force maneuver ashore and other D-day support fires. It is a deliberate breach designed to overcome antilanding defenses, mines, and obstacles located in the SZ, the 10-foot depth contour to the high water mark, and on the beach to the beach exit. It is characterized by thorough reconnaissance and detailed planning. It is employed in support of Marine Expeditionary Brigade (MEB) size and larger amphibious assaults.



*Assault Breaching Systems Brochure*

Assault breaching tactics, techniques, and procedures are contained in NTTP 3-15.24, *Mine Countermeasures (MCM) in Support of Amphibious Operations*. Assault breaching requires significant quantities of precision guided munitions. Air Force bombers are the preferred delivery platform because of their larger payload capability (twelve to twenty-four Joint Direct Attack Munition [JDAM]) when compared to Navy tactical aircraft (four). A Memorandum of Agreement exists between the Navy and Air Force allowing Air Force bombers to deliver the munitions.





### Littoral Combat Ship

The LCS is a small, fast, relatively inexpensive surface combatant designed to be reconfigurable with modular "plug-and-fight" MPs. There are two distinct and unique LCS designs - both are fully compatible with the modular LCS MPs due to common interface specifications; both possess similar capabilities and characteristics; and both have been determined by the Navy to meet Key Performance Parameters. The two designs are:

- Steel semi-planing monohull
- Aluminum trimaran hull.



LCS Conducting Underway Replenishment

USS Freedom (LCS 1) the first ship of the steel semi-planing monohull design was commissioned in 2008, and USS Independence (LCS 2) the first ship of the aluminum trimaran hull design was commissioned in 2010. Freedom completed a successful maiden deployment to the USSOUTHCOM area of responsibility and U.S. 4th and 3rd Fleets in April 2010 with a tailored surface warfare (SUW) mission package configuration. Independence has been designated as the primary platform for MCM MP Initial Operational Test and Evaluation (IOT&E).

LCS expands the battle space by complementing our established and proven blue water capability. LCS fills warfighting gaps in MCM, antisubmarine warfare, and SUW to counter anti-access threats and maintain dominance in the littorals and strategic choke points around the world.

The concept of operations and design specifications for LCS were developed to meet these gaps with focused mission packages that deploy manned and unmanned vehicles to execute a variety of missions. LCS' speed, agility, shallow draft, payload capacity, reconfigurable mission spaces, and mission package capabilities combined with its core seaframe weapons and sensors, make it an ideal platform for engaging in Irregular Warfare and Maritime Security Operations. The LCS' shallow draft permits coastal operations and entry into ports not accessible to larger surface combatants.

The LCS employs automation to achieve a reduced core crew of forty sailors. Thirty-five additional sailors are required for the mission package and aviation detachment, for a total crew of seventy-five sailors.



#### Littoral Combat Ship Acquisition and Procurement

- Fifty-five seaframes planned for procurement
- Down select decision in FY 2011 to determine the single design for all the remaining ships
- The winning shipyard will build 10 LCS commencing in FY 2011
- Up to five additional LCS of the same design from a 2nd shipyard
- Separate competition between the two shipyards for future LCS contracts.



## Summary

When the OMCM systems and ABS; the MCM MPs; and the LCS platforms have completed testing, evaluation, and are assessed as more capable than the legacy systems they will replace - when they are ready and fielded in sufficient numbers - then the nation's MCM capability will truly be enabled to transform to confront future mine warfare challenges.

## Amphibious Warfare

The Amphibious Warfare Branch (N853) is the resource sponsor for amphibious ships and oversees the development and acquisition of the ships and craft required to transport naval expeditionary forces to overseas conflict and crisis areas; sustain them indefinitely once there; and to provide them with force protection from a range of threats, both conventional and asymmetric.

*"The capabilities which allow an amphibious task force to provide globally distributed presence and rapid crisis response are the same capabilities that allow them to overcome limited or damaged local infrastructure during humanitarian assistance and disaster response (HA/DR) missions and when aggregated, assure access through the delivery and support of an amphibious expeditionary landing force on a hostile shore."*

NOC 2010

The foundation of the nation's amphibious warfare capabilities is the Navy-Marine Corps team. This amphibious warfare capability is routinely employed throughout the world as an Amphibious Ready Group (ARG)/Marine Expeditionary Unit (MEU) rotational amphibious force deployment package. In March 2009, following a Navy/Marine Corps review of options for restructuring and deploying amphibious forces, it was agreed to adopt an ARG/MEU construct as described here, "The nominal ARG/MEU baseline will consist of an Amphibious Squadron (PHIBRON), (1) LHA/D, (1) LPD, (1) LSD, embarked naval support elements and an embarked MEU. The ARG/MEU will be led by PHIBRON and MEU commanders." Prior to this decision and since the inception of the Expeditionary Strike Group (ESG) construct in 2001, the ESG was the baseline for deploying amphibious forces.

The ARG/MEU will routinely deploy without organic surface combatants, submarine(s), or an embarked flag/general officer-led command element as had occurred with the ESG construct prior to the 2009 decision. Components comprising the nominal ARG/MEU are sourced from a number of different Navy and Marine Corps commands, organizations, and units to develop the single cohesive ARG/MEU team including those listed in the following paragraphs.



USS Mesa Verde (LPD 19) Transiting the Suez Canal





## Amphibious Squadron

There are seven deploying amphibious squadrons or PHIBRONs manned, trained, and certified to plan, coordinate, and execute amphibious missions and, depending on the mission requirements, surface combatant operations such as naval surface fire support coordination and visit, board, search, and seizure (VBSS). Commanded by a Navy Captain, a PHIBRON provides the command and control organization that ensures troops, equipment, and supplies are landed on time, in the right location, and in the formations required by the landing force concept of operations. Elements attached to the PHIBRON staff for the ARG/MEU deployment are detachments from the Tactical Air Control Group to support air-space control and coordination; an embarked Fleet Surgical Team (FST) providing a level II medical facility, and detachments from the Naval Beach Group.

### Amphibious Squadrons

Norfolk, VA:

- COMPHIBRON FOUR
- COMPHIBRON SIX
- COMPHIBRON EIGHT

San Diego, CA:

- COMPHIBRON ONE
- COMPHIBRON THREE
- COMPHIBRON FIVE

Sasebo, Japan:

- COMPHIBRON ELEVEN

### Naval Beach Groups

#### COMNAVBEACHGRU ONE

Coronado, CA:

- Assault Craft Unit FIVE
- Amphibious Construction Battalion ONE
- Assault Craft Unit ONE
- Beachmaster Unit ONE

#### COMNAVBEACHGRU TWO

Norfolk, VA:

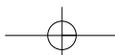
- Assault Craft Unit FOUR
- Amphibious Construction Battalion TWO
- Assault Craft Unit TWO
- Beachmaster Unit TWO

### Naval Beach Group

Naval Beach Groups (NBG) provide the ARG/MEU with landing craft, lighterage, beach control, bulk liquid transfer, and camp support to support amphibious ship-to-shore movement and beach operations. They also provide the ship-to-shore assets and personnel for Joint Logistics Over-the-Shore (JLOTS) operations. The NBGs are also key providers of Foreign Humanitarian Assistance and Disaster Relief capabilities in CONUS and worldwide. These personnel and assets are drawn from the CNBG staff and subordinate commands described below.

- **Assault Craft Unit (Displacement Vessel)**

The Assault Craft Unit Displacement Vessel (ACU (DV)) is a permanently commissioned naval command, subordinate to the CNBG, with the displacement landing craft and crews necessary to support amphibious operations. ACU TWO on the East coast and ACU ONE on the West coast provide landing craft, utility (LCU) and landing craft, mechanized (LCM) in support of ship-to-shore operations, general offload, and security as needed in JLOTS and maritime prepositioning force (MPF) operations. ACU ONE also has FDNF forces in Sasebo, JA.



- **Assault Craft Unit (Air Cushion Vessel)**

This ACU is a permanently commissioned naval command, subordinate to the CNBG, with the landing craft, air cushion (LCAC) and crews necessary to support high-speed amphibious operations. ACU FOUR on the East coast and its partner command on the West Coast, ACU FIVE, provide LCAC in support of ship-to-shore operations, general offload, or other operations. ACU FIVE also has forces in the FDNF.

- **Beachmaster Unit**

The Beachmaster Unit (BMU) is a commissioned naval unit of the NBG designed to provide the Beach Party Team to the Landing Force Support Party. BMU ONE and BMU TWO on the West and East coast, respectively, controls the landing and movement of troops, equipment, and supplies across the beach, salvage operations, and the evacuation of casualties and enemy prisoners of war. BMU ONE also has forces in FDNF.



*LCAC Touching Down During Dawn Blitz 2010*

- **Amphibious Construction Battalion**

The Amphibious Construction Battalion (PHIBCB) is a permanently commissioned naval unit subordinate to the CNBG. The PHIBCBs are Naval Construction Force units that operate the Improved Navy Lighterage System (INLS), assault bulk water and fuel systems, and civil engineering support equipment to provide in-stream and pierside offload of a Maritime Prepositioning Ship Squadron (MPSRON),



*PHIBCB TWO Conducting INLS Operations*

other Military Sealift Command (MSC) vessels, and/or Army cargo vessels. PHIBCBs also provide and construct the Elevated Causeway Section (Modular) (ELCAS(M)). PHIBCBs provide and construct up to 1200 person tent camps for the NBG and associated commands during

MPF and JLOTS operations, and also have a limited construction capability for beach improvements and egress routes. PHIBCB ONE and TWO provide the following capabilities in support of MPF offload and JLOTS operations:

- MPF Offload is designed to support a MEB with the assets carried by a single MPSRON. PHIBCBs operate and employ the following systems (carried by MPSRON assets) in support of an MPF offload:

- INLS Causeway Ferries
- Warping Tugs
- Roll-On/Roll-Off Discharge Facility (RRDF)





- Amphibious Bulk Liquid Transfer System (ABLTS) designed for rapid deployment of fuel and water systems, capable of pumping 720,000 gallons of product ashore per day.
- JLOTS operations are similar to MPF offload with the majority of the assets to support the operation being provided by the PHIBCBs through homeport assets.

PHIBCB INLS sections, ABLTS, ELCAS, and Offshore Petroleum Distribution System (OPDS) systems employed in JLOTS are transported via ships in a ROS status, normally requiring 5-10 days to activate.



Crane Ship SS Cornhusker State (T-ACS 6)

### The Marine Air-Ground Task Force

The Marine air-ground task force (MAGTF) is the Marine Corps' principal organization for missions across the range of military operations. It is composed of forces task organized under a single commander and can respond rapidly to a contingency anywhere in the world. MAGTF forces are functionally grouped into four core elements: a command element, a ground combat element, an aviation combat element (ACE), and a logistics combat element. These elements are categories of forces, not formal commands. The basic structure of the MAGTF never varies, but the number, size, and type of Marine Corps units comprising each of the four elements are always mission dependent. MAGTFs are normally sized as a MEU, MEB, or Marine Expeditionary Force (MEF), or in some cases, a Special Purpose MAGTF for Security Cooperation (SC MAGTF).

- **Marine Expeditionary Unit**

A MEU is a MAGTF constructed around a reinforced infantry battalion, a reinforced composite aircraft squadron, and a combat logistics battalion. A MEU does not have any Marine Special Operations Forces (MARSOFF) embarked and/or operating with it. The forward-deployed MEU is task-organized, trained, and equipped to provide the joint force commander with an expeditionary force that is sustainable, flexible, responsive, expandable, and credible. It consists of approximately 2,200 Marines and Sailors, deploys with 15 days of sustainability, and is commanded by a Colonel. It is the landing force organization typically associated with and transported by the three amphibious ships of the ARG (LHA/D, LPD, LSD) are required to transport a MEU. The Marine Expeditionary Unit must be able to plan and execute any of the first twelve missions shown to the right, take action within hours of notification using the rapid



response planning process, and conduct multiple missions simultaneously, if required.

A MEU which is certified as "Special Operations Capable" is designated a MEU(SOC). A MEU(SOC) is a MEU with MARSOF specifically task-organized, embarked, and directed to conduct operations with that MEU. The MEU has been certified and undergone interoperability training and evaluation with SOF. As depicted in the insert, there are fifteen MEU(SOC) mission essential tasks, with three of the fifteen tasks characterized as special operations missions. These three missions are conducted by the associated MARSOF of a MEU(SOC). Its special operations capability makes the MEU(SOC) well suited for crisis response, immediate reaction operations, limited objective attacks, raids, and to act as an enabling force for a larger follow-on MAGTF.

### MEU (SOC) Mission Essential Tasks

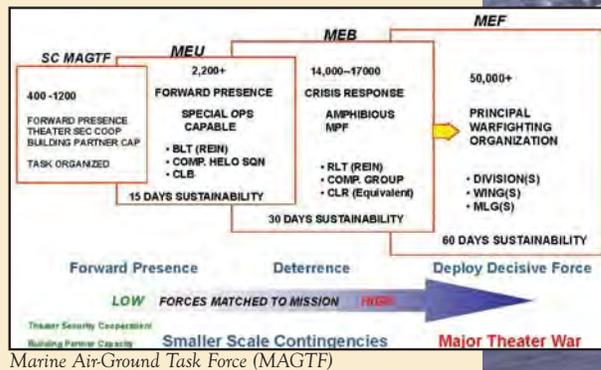
1. Amphibious Assault
  2. Amphibious Raid
  3. Maritime Interception Operations
  4. Advance Force Operations
  5. Noncombatant Evacuation Operations
  6. Humanitarian Assistance
  7. Stability Operations
  8. Tactical Recovery of Aircraft and Personnel
  9. Joint and Combined Operations
  10. Expeditionary Airfield Operations
  11. Theater Security Cooperation
  12. Airfield and Port Seizure
  13. Direct Action Operations\*
  14. Special Reconnaissance \*
  15. Foreign Internal Defense \*
- \* MARSOF Operations

In the future as detailed in the Enhanced MAGTF Operations (EMO) concept, Marine Corps forces with specialized engagement enabling capabilities will be task-organized for deployment with each MEU while additional elements will be aligned to the deployed MEU in a reach-back capacity. Additional pre-deployment training for Marines and Sailors will prepare ARG/MEU personnel for increased performance of engagement activities.

- **Marine Expeditionary Brigade**

The MEB is considered to be the smallest MAGTF required to conduct forcible entry operations. It is constructed around a reinforced Infantry Regiment, a composite Marine Aircraft Group, and a Combat Logistics Regiment. It can deploy in amphibious shipping or be transported by strategic lift into an area of operations to link up with Maritime

Prepositioning Force MPSRON assets. Normally commanded by a Brigadier General or Major General, and comprised of 8,000 to 18,000 Marines and Sailors, a MEB varies in size and composition and is task-organized to meet the requirements of a specific situation. It typically deploys with up to 30 days of





sustainment and can conduct combat operations of a limited scope. A MEB requires the combined lift capability of seventeen amphibious ships.

- **Marine Expeditionary Force**

The MEF is the largest MAGTF. It is constructed around a Marine Division, a Marine Air Wing, and Regimental Landing Team, a Marine Aircraft Group, and a Marine Logistics Group. A MEF is capable of missions across the full range of military operations, including amphibious assault and sustained operations ashore in any environment. It can operate from a sea base, land base, or both, and typically deploys with more than 45,000 personnel with up to 60 days of sustainment, and is normally commanded by a Lieutenant General. The assault echelon of the MEF (two MEBs) is transported by the entire amphibious force. Other shipping, including chartered ships, would be required to transport an entire MEF.

**Special Purpose MAGTF for Security Cooperation (SC MAGTF)**

- **Training, Advisor, and Assessment Teams** of 5-15 Marines and Sailors who will episodically deploy for short-duration missions of approximately 15 days
- **Detachments** of 15-200 Marines and Sailors who will episodically deploy for medium-duration missions of 30-90 days
- **SC MAGTF** of 200-500 Marines and Sailors who will episodically deploy for longer-duration missions of 90-150 days.

- **Special Purpose Marine Air-Ground Task Force for Security Cooperation (SC MAGTF)**

The SC MAGTF is an element of EMO. Formed from each MEF which will be increasingly regionalized, SC MAGTFs are comprised of up to 500 Marines and Sailors specially trained, attached and rotationally deployed to a geographic CCDR's AOR for a period of approximately six months to support security cooperation, building partner capacity, and SFA operations. As specified in the Marine Corps Operating Concepts 3rd Edition, a SC MAGTF will be able to conduct sequential, simultaneous, or overlapping missions of varying duration and location by task-organizing and deploying small

teams, medium-size detachments, and if necessary the entire SC MAGTF as depicted to the left.

**Expeditionary Strike Group**

There are four Expeditionary Strike Groups (ESGs) as shown. The ESGs are numbered to reflect the Fleet under which the ESG staff is aligned. ESGs oversee amphibious ships' readiness, serviceability, Marine Corps interoperability, and their ability to integrate with other Navy and Joint forces. Commanded by a Navy Flag Officer and manned by a staff which includes amphibious warfare

**Expeditionary Strike Groups**

- ESG TWO Norfolk, VA
- ESG THREE San Diego, CA
- ESG FIVE Manama, Bahrain
- ESG SEVEN Sasebo, Japan





and composite warfare commander subject matter experts, the ESG is responsible for all amphibious support and planning functions. The ESG staff is normally shore-based deploying only in response to circumstances requiring a flag-officer command element. The ESG could embark and lead an ARG/MEU, if the situation required a flag officer and staff.

### Amphibious Ships

Amphibious ships are designed and the force is sized to meet Marine Corps lift requirements to provide the lift for a 2.0 Marine Expeditionary Brigade assault echelon (AE). The lift requirement for an AE; that is, the Marines, vehicles, aircraft and equipment assigned to conduct the initial assault of an amphibious operation, is defined using the following five elements of amphibious lift:

- Troop berthing
- Vehicle stowage in square feet
- Cargo stowage in cubic feet
- Aircraft operating spots (MV-22)
- Well deck operating spots (LCAC).

Navy and Marine Corps analysis has determined that a future ship mix of LHA/D, LPD-17, and LSD (11/11/11) is required to transport the 2.0 MEB AE. The current amphibious lift capability consists of the ship classes and landing craft as detailed in Annex C.

### Future Amphibious Force

The future amphibious force is being forged through today's shipbuilding program. Amphibious force shipbuilding programs are the LPD 17 and LHA 6 classes. The recapitalization of Whidbey Island class LSDs and Wasp class LHDs will begin within the next decade. Accordingly, and due to the long lead times associated with shipbuilding programs, the early phases of requirements development for these recapitalizations began in FY 2010 with a capabilities-based assessment as required by the Joint Capabilities Integration Development System.

#### LPD 17-class

The LPD 17-class is a revolutionary new class of amphibious transport dock ships, and is

*"...The Chief of Naval Operations and Commandant of the Marine Corps have determined that the force structure requirement to support a 2.0 MEB lift is 38 total amphibious assault ships. Understanding this requirement, and in light of the fiscal constraints with which the Navy is faced, the Department of the Navy will sustain a minimum of 33 total amphibious ships in the assault echelon. ..."*

*Excerpt from 7 January 2009 cover letter accompanying "Report to Congress on Naval Amphibious Force Structure" with CNO, CMC, and SECNAV as signatories*



PCU New York LPD 21 Arrives for Commissioning





critical to maintaining the aggregate amphibious lift required to carry the assault echelon required for conducting forcible entry operations. The San Antonio-class of amphibious warfare ships represents the Navy's commitment to an expeditionary, power projection and engagement Fleet capable of operating across the full spectrum of warfare. The class provides significant command, control, communications, computers and intelligence (C4I), survivability, and quality of life improvements and serves as the replacement for four classes of older amphibious cargo, tank landing, dock landing, and transport dock ship classes. San Antonio-class ships play a key role in supporting ongoing overseas operations by forward deploying Marines and their equipment to respond to global crises.



Graphic Illustration of LHA 6-Class

**LHA 6-class**

LHA(R) is the replacement for the four Tarawa-class ships that will reach the end of their already extended service life between 2011 and 2015. LHA(R) will provide flexible, multi-mission amphibious capabilities that span the range of military operations from forcible entry to humanitarian and disaster relief. LHA(R) will leverage the LHD 8 design while providing modifications that remove the well deck and increase aviation capacity to better accommodate aircraft in the future Marine Corps ACE, such as the short take-off vertical landing Joint Strike Fighter and the MV-22.

**LSD(X)-class**

According to the *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2011*, a 33-ship force comprised of 11 LHA/D amphibious assault ships and a mix of 11 LPD 17 amphibious transport docks and 11 LSD(X) dock landing ships would be sufficient to support forcible entry operations providing essential lift for 2.0 MEB with acceptable risk in the speed of arrival of combat support elements of the MEB. The LSD(X) is a planned replacement for the LSD 41/49 class and has a projected FY 2017 contract award date.

**Future Support Ships**

**Joint High Speed Vessel (JHSV)**

The JHSV will provide high-speed support vessels for the Army and the Navy. JHSV will be an effective alternative to move assets throughout marginally developed theaters of operation while also requiring a less well developed port facility than is the case for today's principal lift assets. In addition, this vessel's relatively shallower draft permits operation in a greater number of port facilities around the globe. The combination of these attributes permits rapid transport of medium size payloads, including company-sized units integrated with their associated equipment, over



Graphic Illustration of JHSV Cut-Away





intra-theater distances to austere ports, and load/offload without reliance on well developed, heavy port infrastructure. CCDRs have made clear to the Navy their desire for this niche capability that can execute unique operations with partner nations throughout each of their areas of responsibility.

### Maritime Prepositioning Force Enhancements

In addition to the shipbuilding programs described above, N853 is providing resources to enhance the capabilities of the current MPF with the addition of three Auxiliary Dry Cargo/Ammunition (T-AKE) ships and three Mobile Landing Platform (MLP) ships.

The Maritime Prepositioning Force (Future) (MPF(F)) concept envisioned a forward-deployed squadron of ships to enable rapid closure, at-sea assembly, and employment of sea-based forces. In May 2005, the Secretary of the Navy defined the MPF(F) squadron as twelve new construction ships and two legacy container ships. Although useful in the lower end of the war-fighting spectrum, the MPF(F) squadron was primarily designed for use in major combat operations.

Early in the development of the 2010 Quadrennial Defense Review and as part of the process of completing the Department of Defense budget submission for FY 2010, the Secretary of Defense took action to address priorities for that budget and in future years. Those decisions included deferring production of new maritime prepositioning ships. Instead of developing a single MPF(F) squadron of the above 14 ships, the Navy's 30-Year Shipbuilding Plan reflects the decision to enhance the existing MPF's three MPSRONs. Specifically, the current MPF will be enhanced with the addition of:



LMSR and MLP Surrogate Conducting Vehicle Transfer Testing

- 3 x T-AKEs all awarded and under construction with deliveries planned in FY 2011 and FY 2012
- 3 x MLPs, lower cost variants of the MPF(F) MLP, lead ship to be awarded in FY 2011 and follow ships in FY 2013 and FY 2015
- 3 x Large Medium-Speed Roll-on/Roll-off (RO/RO) (LMSR) cargo ships (transferred from the Army)
- 1 x fleet tanker (T-AOT) and 1 x container ship maintained to support the three MPSRONs
- A support program to enable development of the tactics, techniques and procedures required to fully exploit this mission area in the future.

Together with the legacy MPF ships, these enhancements will provide each MPSRON with the capabilities to support further MPF concept validation and operational testing. Additionally, an incremental operational capability enhance-





ment will be provided in each MPSRON to better provide the delivery ashore and resupply of up to MEB size forces. Specifically, the MLP, based on commercial (FLO/FLO) technology, will facilitate the at-sea transfer of vehicles and equipment loaded on LMSR ships and JHSVs (to the MLP) for delivery ashore by LCAC. The T-AKEs as a selectively off-loadable afloat warehouse ship with a day/night capable flight deck will support the sortie rates necessary for delivering daily dry cargo and ammunition sustainment requirements ashore. Utilizing a shuttle ship replenishment scheme, three T-AKEs will have sufficient dry cargo, ammunition, and cargo fuel capacities to persistently sustain up to a brigade sized force operating ashore.

The current and future amphibious lift platforms, existing MPF, and the planned MPF enhancements are discussed further in **Annex C**.

## Navy Expeditionary Combat Command

### Navy Expeditionary Combat Command

- Naval Construction Force
- Explosive Ordnance Disposal Force
- Riverine Force
- Maritime Expeditionary Security Force
- Navy Expeditionary Logistics Support Group
- Navy Expeditionary Intelligence Command
- Maritime Civil Affairs and Security Training Command
- Expeditionary Combat Readiness Center
- Navy Expeditionary Guard Battalion
- Expeditionary Training Group

The principal resource sponsor for Navy Expeditionary Combat forces is OPNAV Expeditionary Warfare Division Navy Expeditionary Combat Branch (N857).

NECC serves as the Type Commander to centrally manage current and future readiness, resources, manning, training and equipping of the Navy's expeditionary forces. NECC provides units ready for tasking to operational commanders in all theaters across a wide range of joint- and service-specific expeditionary missions.

NECC's globally deployed, mission-tailored forces accomplish missions that combat terrorism, prevent crises and promote stability.

NECC's more than 30,000 active and reserve Sailors link the land and maritime domains, extending the Navy's influence from blue to green to brown water in direct support of all six phases of Joint operations. On a given day, approximately one-third of NECC's forces are deployed on missions ranging from partnership building to infrastructure protection. Because of the operational capabilities represented and where they operate, NECC units act as a



*The Expeditionary Warfare Pin Earned by Expeditionary Sailors*

Force multiplier by delivering substantial Navy SFA capability consistent with the CNO's Maritime Strategy and the 2010 QDR.





NECC delivers core capabilities through expeditionary forces made up of both Active and Reserve Components. Reserve Component Sailors make up 53% of the NECC force and are employed as an "operational reserve" - reserve units are manned, trained and equipped as operational units that deploy just like their active duty counterparts. In several NECC component commands, the operational reserve enables NECC to satisfy CCDR demand for forces. All NECC Active Component forces can produce an initial surge capability within 48 hours. NECC expeditionary capabilities are summarized in the following paragraphs.

### Naval Construction Force (Seabees)

Navy Seabees, with a motto of, "We build, We fight," are the Navy's deployable engineer and construction force. In support of maneuvering forces, Seabees provide a wide range of responsive military construction including roads, bridges, bunkers, airfields and logistics bases. Seabee units are adaptive to mission requirements, scalable and agile. Seabees are a force of choice for disaster preparation and recovery operations, to include furnishing assistance to civilian agencies. Additionally, Seabees complete civic action projects that complement nation-building programs and are known for their worldwide humanitarian efforts. A robust, organic self-defense capability ensures Seabees can protect themselves and their projects wherever they go. Seabees provide a wide variety of capabilities and assistance in times of peace and war, such as:

- Runway repair and Expeditionary Airfield construction
- Construction of aircraft parking aprons; munitions storage areas; large scale camps sites; border outposts; expeditionary camps; community outreach centers; and medical clinics
- Waterfront and underwater construction and demolition
- Schools and municipal facilities renovation.

First Naval Construction Division (1NCD) oversees approximately 15,000 active and reserve Seabees. Nine Active Component Naval Mobile Construction Battalions (NMCB) are based in Gulfport, MS and Port Hueneme, CA. Twelve reserve battalions are geographically dispersed throughout the U.S. and enable Navy Reservists to organize and train for possible mobilization. Seabee Readiness Groups (SRG) are located at

### Naval Construction Force

#### 1NCD (Virginia Beach, VA.):

20th SRG Gulfport, MS

3rd NCR Atlanta, GA  
 NMCB 14 Jacksonville, FL  
 NMCB 23 Fort Belvoir, VA  
 NMCB 24 Huntsville, AL

7th NCR Newport, RI  
 NCMB 21 Lakehurst, NJ  
 NMCB 26 Mount Clemens, MI  
 NMCB 27 Brunswick, ME

22nd NCR Gulfport, MS  
 NMCB 1 Gulfport, MS  
 NMCB 11 Gulfport, MS  
 NMCB 74 Gulfport, MS

25 NCR Gulfport, MS  
 NMCB 7 Gulfport, MS  
 NMCB 133 Gulfport, MS  
 CBMU 202 Virginia Beach, VA  
 UCT 1 Virginia Beach, VA

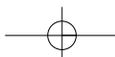
#### 1NCD FWD (Pearl Harbor, HI):

31st SRG Port Hueneme, CA

1st NCR Port Hueneme, CA  
 NMCB 17 Fort Carson, CO  
 NMCB 18 Tacoma, WA  
 NMCB 22 Ft Worth, TX

9th NCR Dallas, TX  
 NCMB 15 Belton, MO  
 NMCB 25 Fort McCoy, WI  
 NMCB 28 Shreveport, LA

30 NCR Port Hueneme, CA  
 NMCB 3 Port Hueneme, CA  
 NMCB 4 Port Hueneme, CA  
 NMCB 5 Port Hueneme, CA  
 NMCB 40 Port Hueneme, CA  
 CBMU 303 San Diego, CA  
 UCT 2 Port Hueneme, CA





Gulfport and Port Hueneme to provide training and mobilization capability. Seven Naval Construction Regiments (NCR) exercise command and control over the 21 battalions and other specialized units, including two Underwater Construction Teams (UCT), and two Construction Battalion Maintenance Units (CBMU). Seabees deploy regularly around the globe to support combatant commanders. Additionally, more than 15% of deployed Seabees are in direct support of SOF.



NMCB 74 Seabees Preparing Hesco Barriers in Afghanistan



UCT 1 and Ukrainian Divers in Sea Breeze 2010

- Underwater Construction Team** - UCT divers are dive qualified Seabees who construct, inspect, repair, and maintain ocean facilities in support of Navy and Marine Corps operations, including repair of battle damage to waterfront facilities. They also maintain capability to support an amphibious assault, subsequent combat service support ashore, and self-defense for camp and facilities under construction, and in time of emergency or disaster, conduct disaster control and recovery operations. UCT forces include more than 140 divers assigned to UCT 1 and 2 homeported in Virginia Beach, VA and Port Hueneme, CA, respectively.

In addition to the Underwater Construction Teams, Expeditionary Combat Camera, detachment Atlanta was recently realigned to the Naval Construction Force and administratively tied to the 20th SRG in Gulfport, MS.

- Expeditionary Combat Camera** - Originating in the World War II era, Expeditionary Combat Camera (ECC) based in Norfolk, VA is one of two Navy Combat Camera units whose mission is to provide video and still documentation of combat operations, contingencies, exercises and events of historical significance. ECC capabilities include:

- Still photo and video
- Post production (video)
- Audio services
- Underwater photography and video.



ECC Sailors Capturing History





ECC has a fully qualified underwater photo team, operating scuba equipment to a depth of 190 feet. Using state-of-the-art multimedia equipment, they acquire high quality still and video imagery digitally, and then deliver that imagery to on-scene commanders or transmit to command authorities directly from the field. With 49 active duty and 36 reserve Sailors, ECC provides world-class imaging services anytime, anywhere.

### Explosive Ordnance Disposal

U.S. Navy EOD is a combat support force for countering IEDs, weapons of mass destruction (WMD), and hazardous ordnance. An elite team of warriors qualified to parachute and dive deep, EOD operates in every environment around the world. EOD is the force of choice to enable Special Operations and conventional forces access to denied areas. Over 20% of deployed Navy EOD forces are in direct support to SOF. EOD forces:

- Render safe all types of explosive hazards, including conventional ordnance, underwater mines, IEDs, and WMDs (chemical, biological, nuclear and radiological weapons)
- Conduct clandestine operations either independently or in support of a larger combatant force



Force Protection Dive Umm Qasr

Support the units of USSOCOM, to include direct action support of Navy SEALs and Army Special Forces

- Conduct demolition of hazardous munitions, pyrotechnics, and retrograde explosives using detonation and burning techniques
- Support military and civilian law enforcement agencies with foreign and domestic explosives analysis and processing including the Department of Homeland Security, the Customs Office, the Federal Bureau of Investigation, and state and local authorities
- Work with the U.S. Secret Service and State Department, helping to protect the President and Vice President of the United States as well as foreign officials and dignitaries.

### Navy Explosive Ordnance Disposal

#### EOD Group 1 San Diego, CA:

- EODMU 1 San Diego, CA
- EODMU 3 San Diego, CA
- EODMU 5 Agana, Guam
- EODMU 11 Imperial Beach, CA
- EODTEU 1 San Diego, CA
- EODESU 1 San Diego, CA

#### EOD Group 2 Virginia Beach, VA:

- EODMU 2 Virginia Beach, VA
- EODMU 6 Virginia Beach, VA
- EODMU 8 Sigonella, Italy
- EODMU 12 Virginia Beach, VA
- EODTEU 2 Virginia Beach, VA
- EODESU 2 Virginia Beach, VA





NECC's EOD forces are homported in Virginia Beach, VA and San Diego, CA. Navy EOD has approximately 2,300 active duty and 70 reserve EOD Sailors. Although all the services have highly trained and skilled EOD professionals, Navy EOD is the only service EOD component that conducts underwater EOD operations.

**Mobile Diving and Salvage Unit (MDSU)** forces conduct operations to defend against threats in the near coast, inshore, and harbor/port environments. They conduct combat salvage diving and underwater battle damage repair to both sunken and damaged ships, as well as the recovery of ship wrecks and aircraft. They maintain the capability to either work from the shore, or embark on a vessel of opportunity. MDSU forces include more than 320 divers attached to MDSU 2 and 1 homeported in Virginia Beach, VA and Pearl Harbor, HI respectively.

### Riverine

The Riverine force is a combat arms force developed to establish and maintain control of rivers and waterways for military and civil purposes; deny their use to hostile forces; and destroy waterborne hostile forces as necessary. The Riverine force combats sea-based terrorism and other illegal activities, such as transporting components of WMD, hijacking, piracy and human trafficking. The Riverine force:

**Riverine Forces**

**Riverine Group**  
Virginia Beach, VA:

- Riverine Squadron (RIVRON 1)  
Virginia Beach, VA
- Riverine Squadron (RIVRON 2)  
Virginia Beach, VA
- Riverine Squadron (RIVRON 3)  
Yorktown, VA



RIVRON 3,  
Anbar Province Iraq

- Increasingly are requested to support partner military and law enforcement offices in counter IED training in support of CCDR shaping operations
- Provides a persistent Navy presence to meet combatant commanders' requirements
- Participates in Theater Security Cooperation and SFA through joint or multi-lateral exercises, personnel exchanges, and humanitarian assistance projects
- Conducts Maritime Security Operations providing riverine area control and denial; protecting critical infrastructure; preventing the flow of contraband; and disrupting movement of enemy forces or supplies on rivers and waterways
- Enables power projection by providing fire support through direct fire or coordinating supporting fire, and insertion/extraction of ground forces.





The Riverine Force is homeported in Virginia Beach, VA and is made up of more than 700 Active Component Sailors in three Riverine Squadrons (RIVRONs) and the headquarters. Dedicated to closing gaps in the maritime environment, the Riverine force is scalable, agile, and adaptive to mission requirements. Due to their ability to operate with boats in brown river environment, Riverine forces have a unique capability to build partnerships with littoral nation inhabitants and military forces, some of whom may be daunted by the presence of larger Navy ships or large scale operations. This is one reason why Riverine forces will remain in high demand even after ongoing combat operations are concluded. Of note, the QDR Report of February 2010 states that beginning in FY 2011, the Navy will add a fourth RIVRON to its force structure.

### Maritime Expeditionary Security

The Maritime Expeditionary Security Force (MESF) provides maritime security forces to combatant commanders and numbered fleet commanders. Primary MESF disciplines include command and control, waterborne security, landward security, and embarked security operations. Missions in support of the maritime strategy include:

- Harbor and port security
- Coastal surveillance
- Critical maritime infrastructure protection
- High value asset escort and protection
- Theater security cooperation
- Special missions as assigned.

MESF is concentrated in Portsmouth, VA and San Diego, CA with reserve units throughout the United States. Forces are also permanently stationed in 7th Fleet and 5th Fleet areas of operation. MESF deploys to conduct operations in areas such as Africa, Europe, the Northern Arabian Gulf, Southern Arabian Gulf, Caribbean Sea, and Western Pacific. MESF fully integrates Active and Reserve Components to produce immediate response capability and sustainability. With approximately 2,500 active and 3,700 reserve Sailors, MESF stands ready to protect our nation's assets at sea or ashore. The MESF is comprised of Maritime Expeditionary Security Squadrons (MSRON) that which conduct routine deployments in support of ongoing combat operations overseas. A typical MSRON consists of:

### Maritime Expeditionary Security Force

#### Maritime Expeditionary Security Group 1:

- Maritime Expeditionary Security Squadron (MSRON) 1  
San Diego, CA
- MSRON 3 San Diego, CA
- MSRON 5 San Diego, CA
- MSRON 7 Agana, Guam
- MSRON 9 Whidbey Island, WA
- MSRON 11 Seal Beach, CA

#### Maritime Expeditionary Security Group 2:

- MSRON 2 Portsmouth, VA
- MSRON 4 Portsmouth, VA
- MSRON 6 Portsmouth, VA
- MSRON 8 Newport, RI
- MSRON 10 Jacksonville, FL
- MSRON 12 Williamsburg, VA
- MSRON 14 Toledo, OH





- Headquarters staff capable of exercising command and control via communications and sensor support. Sensor systems (e.g., various ground sensors, unmanned vehicles, etc.); communications; and other associated support equipment provide capabilities for an integrated command, control, communication, computers, intelligence, surveillance, and reconnaissance asset capable of self sustained support to the units. Headquarters C2 personnel operate the Mobile Ashore Support Terminal (MAST III) and the Radar Sonar Surveillance Center (RSSC). Both the MAST and RSSC are discussed in **Annex D**. Headquarters staff also provide logistics support, consolidated maintenance, and support services.



*MSRON BOATDIV Forces Providing Waterborne Security*

- Boat Division (BOATDIV) provides waterborne defense equipped with armed patrol craft including the Force Protection - Small (FP-S) and Force Protection - Large (FP-L) boats discussed further in **Annex D**. Working with other MESF Divisions to provide enhanced force package for conducting small craft security and support for MESF operations in harbors, harbor approaches and near shore littoral areas, a BOATDIV consists of at least two maritime expeditionary boat detachments.
- Security Division (SECDIV) providing ground defense and embarked vessel security teams, high-end security, interdiction, and point defense of designated assets. SECDIVs provide afloat security as embarked security teams; and security ashore for entry control points, convoys and military air assets. A SECDIV consists of at least two maritime expeditionary security detachments.



*MSRON Ground Security*

### Expeditionary Logistics

The Navy Expeditionary Logistics Support Group (NAVELSG) is responsible for providing expeditionary logistics capabilities for the Navy or joint services customers, primarily within the maritime domain of the littorals. NAVELSG conducts surface and air cargo handling missions, cargo terminal and warehouse



operations, fuels distribution, ordnance reporting and handling, and expeditionary communications. The Navy Expeditionary Logistics Force:

- Delivers world-wide expeditionary logistic capabilities with Active and Reserve Component Sailors and equipment to theater commanders in support of military strategy, port and air cargo handling missions, ordnance handling and reporting services, and combat service support to forces deployed ashore
- Responds to humanitarian relief efforts and builds allies through humanitarian efforts among host nations.

NAVELSG is homeported in Williamsburg, VA, and has reserve units across the United States. Comprised of more than 3,600 Sailors (3,240 Reserve and 390 Active Component), NAVELSG delivers expeditionary logistics capabilities "Anytime, and Anywhere."

### Expeditionary Intelligence

Navy Expeditionary Intelligence Command (NEIC) provides tactical maritime intelligence capability and capacity through the provision, support and sustainment of a standing force of ready expeditionary intelligence Sailors fully task-organized, manned, trained and equipped to support NECC operating forces and respective theater NCCs/joint force maritime component commanders. NEIC exercises administrative control of the Navy Human Intelligence (HUMINT) Teams (NHT), Maritime Interception Operations - Intelligence Exploitation Teams (MIO-IET), Expeditionary Intelligence Support Elements (EISE), and NEIC Expeditionary Tactical Information Operations Support (ETIOS). Expeditionary Intelligence Forces:



MIO-IET Prepares to Board a Dhow

- Conduct full-spectrum military source operations, interrogation, Force Military Intelligence Collection Activities (FORMICA), and document/media exploitation providing force protection/indications and warning during all phases of military operations

### Navy Expeditionary Logistics Support Force

#### Navy Expeditionary Logistics Support Group:

- NAVELSG HQ Staff
- NAVELSG Training and Evaluation Unit (TEU)
- 1st Navy Expeditionary Logistics Regiment (NELR)
  - Navy Cargo Handling Battalion (NCHB) 1
- 2nd NELR
  - NCHB 4
  - NCHB 10
- 3rd NELR
  - NCHB 7
  - NCHB 8
- 4th NELR
  - NCHB 11
  - NCHB 12
  - NCHB 13
- 5th NELR
  - NCHB 3
  - NCHB 5





- Provide on-scene commanders with VBSS technical expertise and mission specific equipment to acquire and exploit information in support of maritime security operations
- Provide trained and equipped Sailors who deploy in support of all NECC missions including major combat operations, maritime security operations, maritime homeland defense operations, and peace-keeping operations
- Offer real-time early warning/force protection and computer network operations capability tailored to support tactical and ground irregular warfare missions.

NEIC is homeported in Dam Neck, VA, with reserve forces located throughout the United States. NEIC intelligence capabilities are comprised of approximately 200 Active Component and 70 Reserve Component mission-trained Sailors and material assets with sufficient network capability and capacity to meet requirements while maintaining a solid foundation of core capabilities that can respond rapidly to evolving irregular warfare missions.

### Maritime Civil Affairs Team

- The MCAT is the principle unit of action to conduct civil-military operations and civil affairs operations at the tactical level.
- Normally comprised of five highly trained, regionally aligned personnel organized in a "Five-C" concept (officer-in-charge, coxswain, corpsman, constructionman and communicator).
- There are active and reserve MCATs.
- MCATs have two senior CA operators (team leader O3-O4 and team chief E7-E9) and three CA operators (E4-E6).

### Maritime Civil Affairs and Security Training

Maritime Civil Affairs and Security Training Command (MCAST) Command was established in October 2009 from the merger of the Maritime Civil Affairs Group and Expeditionary Training Command. MCAST provides Maritime Civil Affairs (MCA) and SFA core competencies to enhance international partnerships. Headquartered at Virginia Beach, VA, this command of approximately 250 Active Component and 170 Reserve Component Sailors focuses on enhancing peace and contributes to preventing future conflicts through international partnerships enabling our partner nations to establish and exercise their own maritime security and regional stability.

Maritime Civil Affairs Teams, (MCAT) deploy globally and engage on the front lines of American diplomacy. MCATs are comprised of highly trained Sailors who possess unique language expertise and cultural skills, which enable them to quickly and systematically identify the critical needs of local citizens in the most vulnerable regions of the world.

MCA regionally aligned planners, specialists, and teams provide effective, flexible and responsive liaison between the operational commander, U.S. country team, host nation civil and military entities, and other key governmental and non-governmental organization (NGO) partners to facilitate the collaboration of diplomacy, defense, and development. MCA forces:





- Provide expertise in maritime-specific functional specialties of port operations; harbor/channel construction and maintenance; and marine and fisheries resources
- Have reach back capabilities to address areas and answer questions concerning the rule of law, economic stability, governance, public health and welfare, infrastructure and public education.



MCAT 104 Sailors in Djibouti

SFA Mobile Training Teams (MTT) support CCDR and Navy component commanders' security cooperation efforts by delivering timely, focused and customized training to designated host nations. MCAST Command draws training expertise from across NECC and the Department of Navy to assist in training delivery. Host nation training supports critical regional stability by helping improve the recipient nation's capabilities in exercising maritime sovereignty. SFA MTTs provide training in foreign locations and give local nationals the capability to govern and protect themselves and their areas of responsibility. The training core curricula are targeted at the global audience of foreign country military, civil and security personnel includes basic to intermediate level:



2010 APS West SFA MTT Conducts Training for Partner Nation Sailors and Coast Guardsmen

- Small Boat Operations and Tactics
- Maritime Combat Operations
- Weapons Handling
- Anti-Terrorism / Force Protection
- Maintenance and Construction
- Leadership / Professional Development
- Other NECC skill sets.

### Expeditionary Combat Readiness

Expeditionary Combat Readiness Center (ECRC) provides coordination and supervision of all administrative processing, equipping, training and deployment of combat trained Navy Individual Augmentee (IA) forces deployed around the world. ECRC coordinates IA training instruction with the Army in the areas of combat skills and specialized missions. ECRC:



IA Sailors Participate in Live Fire Training Exercises at the Expeditionary Combat Readiness Center on Fort Lewis, Washington Prior to Deploying to Iraq.





- Assigns action officers (AO) to IA Sailors and Ad Hoc units grouped by mission. AOs review missions and training pipelines and communicate directly with IA Sailors throughout the mobilization process to ensure IAs are fully ready to deploy both medically and administratively
- Provides Navy Liaison Officer (LNO) teams to assist Sailors at their pre-deployment training sites. LNOs assist with berthing, pay issues, communications, scheduling, uniforms, transportation, documentation, surveys, database update and information archives
- Provides IA reach back via Navy Forces Central Command country detachments in Kuwait, Iraq and Afghanistan providing a clear window of visibility through every phase of the IA Sailor's mission
- Supervises the Warrior Transition Program in Kuwait, providing logistical and administrative support in addition to the preliminary steps of the medical and mental health continuum for returning IA Sailors
- Coordinates logistic support for IA Sailors going through the redeployment/demobilization process
- Helps Sailors get home as quickly and safely.

Located in Virginia Beach, VA, ECRC is represented by 260 Active and Reserve Component Sailors, all of whom are dedicated to supporting Sailors and their families.

### Expeditionary Guard Battalion

Established in 2005, the Navy Expeditionary Guard Battalion (NEGB) mans, trains and equips a guard force to support the Joint Detention Group (JDG) at Joint Task Force (JTF) Guantanamo. NEGB includes a force of 600 guards who are fully trained in JTF detention procedures, cultural awareness, legal, self defense, first



*Sailor Guarding Detainees in Guantanamo Bay.*

aid, non-lethal weapons, and weapons employment (for external security). All guards are trained at Gulfport, MS, and then at Fort Lewis, WA, with training facilities modeled after those at the JDG. Before arriving, they learn the skills essential to undertake the demanding work associated with guarding detainees removed from the battlefield. Upon completion of training in Fort Lewis, the prospective guards arrive at Naval Station Guantanamo Bay and complete a two-week, "right-seat, left-seat" training session, where incoming guards train with their outgoing counterparts before assuming their duties.





## Expeditionary Training

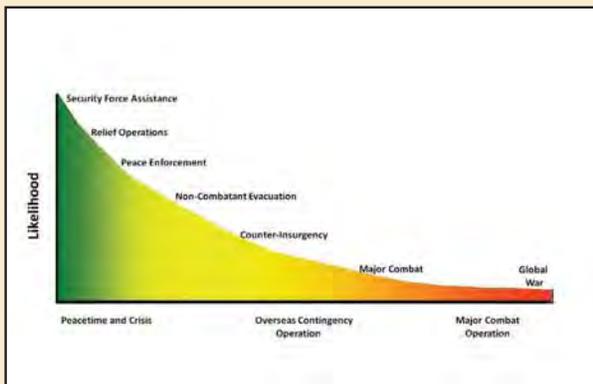
Established in March 2010, the Expeditionary Training Group (ETG) based at Virginia Beach, VA is responsible for assessing the readiness and training NECC subordinate command units as they complete the integrated phase of the Fleet Response Training Plan (FRTP). Upon training completion, ETG provides the recommendation to certify and designate the unit as FRTP Maritime Security Surge or Maritime Security Operations-Ready.

## Seabasing Integration

The Seabasing Integration Branch (N85V) is the warfare sponsor for the Sea Base Pillar of *Sea Power 21*. The Branch is responsible for concept, concept of operations, and capabilities development, as well as refining road maps and material options for developing a capable, executable Seabasing platform.

Seabasing is a national capability that applies throughout the range of military operations. Seabasing supports and enhances the core capabilities enumerated in the Maritime Strategy and is particularly vital as the military and political landscape continues to change in the early 21st century. Sea-based, as opposed to garrison forces, are able to poise offshore exerting influence and potentially preventing a crisis from evolving into a conflict. If the situation merits, Seabasing enables assembling the right force package offshore and employing them at precisely the right time to "get in, do the job, and get out" when and where required.

The US can no longer be assured of access to seaports of debarkation (SPOD)



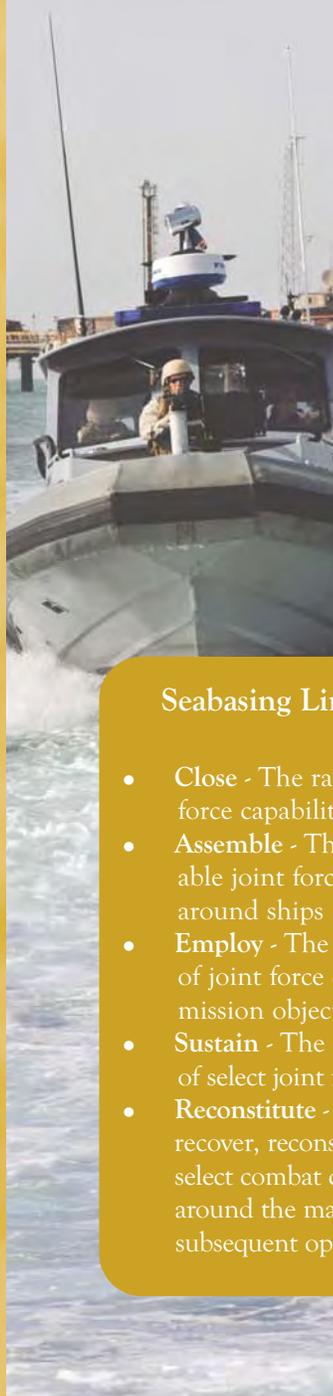
Range of Military Operations Supported by Seabasing

*"Seabasing is the rapid deployment, assembly, command, projection, reconstitution, and re-employment of joint combat power from the sea, while providing continuous support, sustainment, and force protection to select expeditionary joint forces without reliance on land bases within the Joint Operations Area (JOA). These capabilities expand operational maneuver options, and facilitate assured access and entry from the sea."*

*Seabasing Joint Integrating Concept (JIC)*

and aerial ports of debarkation ashore from which to prepare, launch, execute, and sustain military operations. Seabasing provides an ideal solution in this era of diminishing, or perhaps absent, access enhancing the ability of naval forces to use the sea as maneuver space.





*"The imperative to build and sustain partnerships that measurably contribute to maritime security, deterrence and combat effectiveness comes at a time when sensitivity to U.S. bases overseas is rising and the overall number of U.S. forces stationed on foreign soil is much lower..."*

*NOC 10*

As stated in *Seabasing Concept of Operations Low to Mid Intensity Operations* released in February 2010, "...the U.S. and partner nations will confront a highly dynamic security environment with complex threats that will require innovative means of harnessing and integrating all investments of national power, as well as close coordination with a wide range of allies, friends, and partners.

Seabasing is one such innovative means that reduces or eliminates the requirement for a large "footprint" ashore, host nation support, and regional political acceptance. This also allows host nations to maintain transparency in their support of U.S. operations."

Sea-based forces may vary in size and mission. To execute major combat operations, for example, the sea-base may be huge and comprised of one or more Carrier Strike Group, ARG/MEU, ESG, an amphibious force, MSC MPF and Naval Fleet Auxiliary Force (NFAF), and/or joint and coalition naval platforms, and may include ground forces such as the U.S. Army, the Marine Corps, coalition, or interagency personnel. In support of smaller operations, the sea-base may be comprised of only a single ship with its crew and any embarked elements as in the example of a ship conducting Global Fleet Station or partnership operations such as Africa Partnership Station (APS), Pacific Partnership, Southern Partnership Station, and other recurring naval engagement activities.

### Seabasing Lines of Operation

- **Close** - The rapid closure of joint force capabilities
- **Assemble** - The integration of scalable joint force capabilities on and around ships
- **Employ** - The flexible employment of joint force capabilities to meet mission objectives
- **Sustain** - The persistent sustainment of select joint forces afloat and ashore
- **Reconstitute** - The capability to recover, reconstitute, and redeploy select combat capabilities within and around the maneuverable sea base for subsequent operations.

Close, Assemble, Employ, Sustain, and Reconstitute (CAESR) are Seabasing's five lines of operation. "CAESR" is normally conducted sequentially, but can also be conducted concurrently as various units arrive, prepare for operations, conduct operations are re-deployed overlapping with other units of the sea base.

Naval forces have a rich tradition and history of Seabasing. Since the earliest years in our Nation's history, our naval forces have recognized and exploited the advantages of Seabasing. Moreover, technological developments and new platforms have further enhanced the capabilities of modern naval forces to conduct the CAESR lines of operation. Seabasing technological initiatives are discussed further in **Annex E**.





## Chapter Summary

The N85 Expeditionary Warfare Directorate is comprised of five major branches: Naval Special Warfare, Mine Warfare, Amphibious Warfare, Navy Expeditionary Combat Command, and Seabasing Integration.

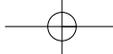
This chapter has provided an overview of each branch, to include organizations and missions, equipment and capabilities, operations, training, and programs for which they are responsible. The characteristics and responsibilities are of course different for each branch, but the Directorate combines the experience and expertise of its personnel to provide the glue that enables United States Navy expeditionary forces to stand at the forefront of those called upon first when flexibility, ingenuity, and adaptability of forces are required anywhere in the world. The chapter describes how, and with what assets, our expeditionary forces are meeting those challenges and supporting the Maritime Strategy and the NOC 10.



*Cobra Gold Participant USS San Antonio (LPD 17)*







## CHAPTER 2

# Recent Naval Expeditionary Operations

*"We are always the away team; we are always forward deployed. We are always ready for whatever mission comes along. We have got to be flexible; we have to be quick; we have got to be able to change missions."*

*The Honorable Ray Mabus, Secretary of the Navy*

The purpose of this chapter is to paint a picture of recent naval expeditionary operations. The operations and exercises summarized are by no means all-inclusive, but are intended to show examples of the significant contributions naval expeditionary forces have made in executing the core capabilities and accomplishing the strategic imperatives of the Maritime Strategy.

### Forward Presence

Rotationally deployed and FDNF provided persistent forward presence and supported the full spectrum of military operations including:

- Operations IRAQI FREEDOM and ENDURING FREEDOM - ARG/MEUs, NSWROns, MCMROns, RIVROns, MSROns, NMCBs, EODMUs maintained a consistent presence during ongoing operations in Iraq and Afghanistan.

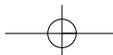


*USS Mesa Verde (LPD 19) in Bahrain*

- Among the many accomplishments of rotationally deployed EODMUs, EODMU 6 Platoon 621 provided mission-essential EOD skills to enable combat success for U.S. Army Special Operations Forces. The platoon rendered safe improvised explosive devices, disposed of more than 1,500 pounds of high explosives, and has been involved in a large number of combat engagements with the enemy. In Iraq, EODMU 12 had oversight for 30 EOD teams in U.S. Division North and played a key role partnering with Iraqi Army and Police EOD companies.

- Expeditionary Strike Group FIVE - In November 2009, ESG FIVE was established to provide command and control afloat or ashore of assigned forces in the conduct of contingency, maritime security, and theater security cooperation operations in support of USCENTCOM and COMFIFTHFLT. As CTF 51 and 59, ESG FIVE is responsible for contingency response and humanitarian and disaster relief missions, as well as all amphibious forces in the COMFIFTHFLT AOR.

- In 2009, two NMCB battalions were on the ground in Afghanistan primarily assisting Marines in Helmand province. Seabees were among the first U.S. troops to arrive in country at the start of Operation Enduring Freedom to upgrade and repair airfields. In 2010, two additional NMCBs were deployed in support of the 30,000 troop surge ordered in December 2009 by the President.





NMCB 133 Seabees Drilling Water Well in Afghanistan

The additional forces and engineering expertise were required to build forward operating bases; pave, repair, and construct roads, airfields, bridges, and buildings; and continue to provide force protection and quality of life upgrades for the increased numbers of U.S. and coalition forces. For the near-term, the four NMCBs will be comprised of two Active and two Reserve battalions. In addition to the mission in Afghanistan, Seabees operated in 20 countries around the world to support a variety of humanitarian, security and community-building operations.

- Exercise Bright Star 2010 - For the first time in four years the U.S., represented by the Bataan ARG, participated in bilateral exercises with the Egyptian Navy. This biennial training exercise is conducted by USCENTCOM and designed to improve readiness, interoperability, and strengthen military and professional relationships among U.S., Egyptian and several other coalition forces. During the exercise, all aspects of the Bataan ARG warfighting capabilities were demonstrated, including an offload of a portion of the 22nd MEU by LCACs (ACU-4) to participate in an amphibious demonstration.

- Naval Special Warfare - NSW forces continued to globally deploy in support of CCDRs' requirements. In 2009-2010, NSW began the initial overseas deployment under its new "NSW Anchor Team" (NSWAT) program, one of several significant NSW events to reach fruition over the past year. NSWAT's are small elements of SEALs and SWCCs who focus on the culture, tactical issues, and the strategic picture of a particular country for at least four years. This organizational structure will enhance and secure a continuity of relationships and create more effective training among NSW, interagency and the host nation force.

- Africa Partnership Station 2010 (APS 10) is the fourth year of the series of global maritime partnership deployments to the USAFRICOM AOR. APS West and East units are deployed to Central/West and East African littoral nations, respectively. USS Gunston Hall (LSD 44) served as the flagship for APS West conduct-

ing the mission to improve maritime safety and security with African Coastal nations including conducting small boat operations; maritime domain awareness; fisheries management; and VBSS tactics training with maritime forces



APS West Sailors Offloading Project Handclast Materials





from Nigeria, Ghana, and Sao Tome and Principe. Embarked Seabees constructed a breakwater jetty, installed floating piers, constructed additions and renovated barracks side-by-side with host-nation military engineers in Cameroon and Liberia.

- Southern Partnership Station 2010 (SPS 10) is the fourth year of the series of global maritime partnership deployments of various specialty platforms to the USSOUTHCOM AOR. SPS 10 was comprised of four phases: Oceanographic-SPS, High Speed Vessel-SPS (HSV 2 Swift with NECC SFA MTT and Marine Corps Training and Advisory Group personnel embarked), Navy Diver-SPS (USNS Grasp (T-ARS 51) with MDSU 2 divers embarked), and Amphibious-SPS (USS New Orleans (LPD 18) with PHIBRON FIVE, ACU ONE, BMU ONE, Special Purpose MAGTF 24, and other units embarked).

• Expeditionary forces significantly contributed to multinational naval exercises Cobra Gold 2010 (USS Essex (LHD 2), USS Denver (LPD 9), USS Harpers Ferry (LSD 49) and 31st MEU) and UNITAS Gold 2009 (USS Ashland (LSD 48), USS Mesa Verde (LPD 19), ACU FOUR). These exercises provide training, and enhance interoperability to counter asymmetric threats and promote regional peace and security.



*Cobra Gold 2010*

- In September and October 2009, at the request of Peruvian, Guatemalan, and Moroccan embassy and military leadership, SFA MTTs from NECC's MCAST conducted tailored training in a number of core maritime expeditionary topics for selected members of these countries' Navy, Coast Guard, Marine Corps, and Special Forces. Following pre-training site visits conducted earlier in the year to ascertain training needs and align training goals, the foreign military members were provided courses of instruction in small boat operations and tactics, anti-terrorism/force protection, and weapons handling. These MTTs were non-intrusive comprised of about six MCAST members each and conducted at host nation training sites and in the host nation's language. SFA MTTs such as these enhance maritime security and the stability of our global partners.

## Deterrence

The ability of amphibious forces to rapidly deploy and poise offshore, with combat and soft power expeditionary forces embarked and ready, provided an enduring signal of U.S. intent and resolve:

- In April 2009, three Navy SEAL snipers ended in seconds what had been nearly a week-long standoff after an unsuccessful attempt by Somali





pirates to hijack the MV Maersk Alabama. Assessing that the life of the Alabama's master, held hostage for four days in an Alabama lifeboat presently towed astern USS Bainbridge (DDG 96) due to rough seas, was in immediate danger, each SEAL fired one shot from the DDG's fantail killing the three pirates in the lifeboat. Dozens of SEALs had embarked in Bainbridge to coordinate hostage rescue operations after clandestinely inserting in the vicinity of the DDG.

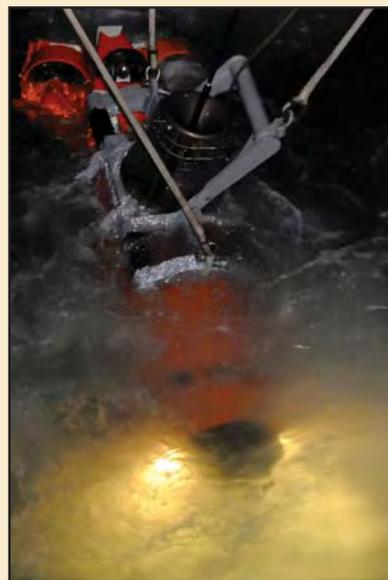


Team From USS Boxer LHD 4 Tows the Maersk Alabama Lifeboat

- In Afghanistan, special operations teams including Navy SEALs conducted raids with the aim of capturing and persuading militants to turn against the Taliban-led insurgency. The number of raids targeted against Taliban leaders and leadership of other insurgent groups and militant groups has increased dramatically in recent months. The SOF teams carried out more than 90 raids in November 2009, compared with only 20 in May.

## Sea Control

Sea control operations to enable freedom of navigation and global maritime commerce included:



USS Defender (MCM 2) Remote-controlled Mine Neutralization Vehicle

- In November 2009, USS Defender (MCM 2), USS Guardian (MCM 5), USS Patriot (MCM 7) and Helicopter Mine Countermeasures Squadron 14 participated in Exercise Clear Horizon, an annual exercise conducted with the Republic of Korea to practice clearing routes for shipping as well as conducting training surveys for clearing operational areas.
- During Operation VIGILANT MARINER, Maritime Expeditionary Security Squadron Three detachment Bahrain (MSRON 3 Det Bahrain) operating within COMFIFTHFLT AOR provided teams of sailors trained in point defense of defenseless replenishment and supply ships deployed to the Red Sea, Arabian Sea, and off the Horn of Africa.





## Power Projection

In this "expeditionary era" when access to overseas bases is uncertain, sea-based power projection provides the U.S. an asymmetrical advantage over our adversaries.

- In June 2010, amphibious ships and naval expeditionary forces from COMTHIRDFLT and I MEF conducted Exercise Dawn Blitz, a MEB-level landing exercise involving approximately 4,500 Sailors and Marines which highlighted the blue/green partnership, and honed the skills needed to maintain operational readiness for amphibious joint forcible entry. This exercise was the first of its size in over a decade and supported Navy and Marine Corps initiatives to reinvigorate both Services' amphibious core competencies which have stagnated somewhat due to the requirements imposed by ongoing ground operations overseas.



LCAC CH46 Dawn Blitz 10



Bataan ARG Provides First MV22B Ospreys for Afghanistan Operations

- In December 2009, the Bataan ARG/22nd MEU completed a seven-month deployment to the COMFIFTHFLT and COM-SIXTHFLT AORs. The Marine Corps' MV-22B Osprey tilt rotor aircraft successfully made its debut during this deployment.

## Maritime Security

Naval expeditionary forces supported operations to protect sovereignty and maritime resources, support free and open seaborne commerce, and to counter maritime-related activities which impede safety and security on the global commons.

- In January 2009, Coalition Task Force (CTF) 151 was established as a multinational counter-piracy task force. The mission of CTF 151 is coordinating and deconflicting the efforts of coalition and non-coalition ships and aircraft to effectively deter, disrupt, and suppress pirate activity in the Gulf of Aden and off the coast of Somalia. Amphibious ships including the USS San Antonio (LPD 17) and USS Boxer (LHD 4), both of which have served as flagship, are platforms of choice for this important task force. CTFs 150 and 152, other coalition





task forces responsible for theater security cooperation activities and maritime security operations throughout this and other regions, have also been supported by amphibious ships and expeditionary forces. CTF 151 and other cooperating naval forces have encountered more than 1129 pirates, disarming more than 630 and turning over more than 470 for prosecution since 2008.

- NECC MESF units provided SPOD security at various ports in CENT-



*Waterborne Security at Al Basrah Oil Terminal ABOT*

COM. MESF offers critical infrastructure protection on Iraqi oil platforms in the Northern Arabian Gulf, the source of more than 95% of the Iraqi gross national product. Maritime Expeditionary Security Detachment 622 provided force protection training onboard the Khawr Al Amaya Oil Terminal and Al Basrah Oil Terminal with Iraqi Marines. MSRON 5 deployed to Kuwait Naval Base and the Kuwaiti port of Ash Shuaybah to provide harbor security, port protection, and high value asset shipping escort within the ports as well as anti-terrorism protection on selected oil platforms in the Northern Arabian Gulf.

- NSW built partner capacity and consistently enhanced global maritime security. The SWCC professionals at NAVSCIATTS were successful in training partner nation security forces in high-level riverine and coastal craft operations to increase mutual security and alliances in waterways around the globe. NAVSCIATTS instructors have provided training to more than 6,000 international students from over 55 countries.

## Humanitarian Assistance / Disaster Response

Expeditionary forces were often the instrument to implement the nation's Maritime Strategy and demonstrate sincerity as "a global force for good" including:

- Pacific Partnership 2010 (PP10) is the fifth in the series of annual humanitarian and civic assistance partnership missions sponsored by the U.S. Pacific Fleet. In addition to the significant level of general medicine, optometry, dental, and pediatric care provided via medical civic action programs executed by medical personnel embarked in USNS Comfort (T-AH 20), MSRON 7 Sailors and Seabees from NMCB 11 and ACB 1 were also vital participants in PP10. PP10 includes 8 partner nations and 15 non-governmental organizations who conduct visits to Vietnam, Cambodia, Indonesia, Timor-Leste, Palau, and Papua New Guinea. During the first portion of PP10 alone, engineering civic action programs were completed by the Seabees, and Australian Defense Force Army





NMCB 11 Seabees Installing Solar Power

and host nation engineers for the people of Vietnam, Cambodia, and Indonesia and included water wells; water towers; and various renovations to schools, children's centers, and medical clinics.

- During April-July 2009, Seabees from Construction Maintenance Battalion embarked in USNS Comfort (T-AH 20) completed 13 projects during Continuing Promise (CP09). Seven Latin American and Caribbean nations benefited from these projects which included building repairs and improvements; small construction projects; utility system repairs and construction/technical assistance; pier repair; drainage projects; and trenching. In 2008, Amphibious Assault Ships USS Boxer (LHD 4) and USS

Kearsarge (LHD 3) with embarked Seabees made similar CP deployments.

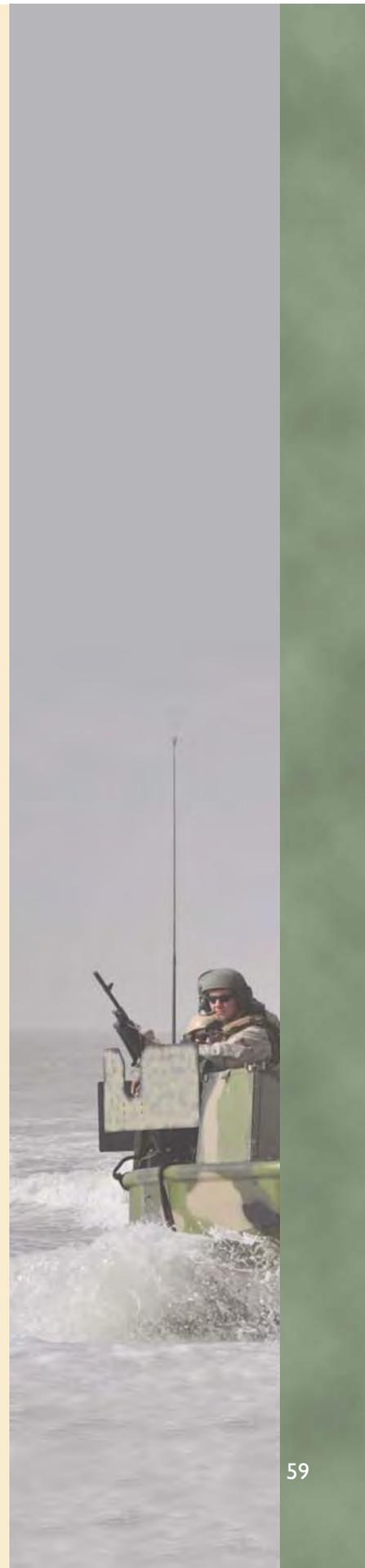
- In November 2009, divers, dolphin MMS, and support personnel from EODMU 1 and Space and Naval Warfare Systems Center Pacific participated in Lagoon Mine Exercise 2009 in New Caledonia. The operation sought to remove defensive mines laid during WWII by Australian



MMS in C17 Enroute Lagoon MINEX 2009

forces to protect thousands of U.S. troops on the island against predicted enemy attack and to prevent enemy access to New Caledonian ports.

- Between 14 and 18 January 2010, following the devastating 12 January earthquake which savaged the island nation of Haiti, seven amphibious ships, including two complete ARGs, were deployed, along with their associated MEUs. These forces included the Bataan ARG/22nd MEU, which was surged to participate in the Haiti relief effort; the amphibious dock landing ship USS Gunston Hall (LSD 44), which was en route for a deployment to Africa Partnership Station, but was ordered to proceed to Haiti, and the Nassau ARG/24th MEU, which deployed from Norfolk for a regularly-scheduled deployment, and was reassigned to support the relief effort. A summary of expeditionary force contributions to the Haiti relief effort is provided separately on the next page.





# OPERATION UNIFIED RESPONSE

## Expeditionary Warfare Forces Launch Haiti Earthquake Relief

The 7.0 magnitude earthquake of January 12, 2010 prompted the United States to mobilize massive humanitarian relief efforts through Operation Unified Response. With agility and flexibility, the U.S. Navy's Expeditionary Warfare forces were the key enablers and among the first responders to arrive with critically needed capabilities to deliver humanitarian assistance and disaster relief to the areas that the Government of Haiti deemed most necessary.

Following initial disaster relief, Naval Expeditionary forces remained on the ground in Haiti, improving roads and other infrastructure in preparation for the pending rainy season. The engineering efforts from the Seabees saved many lives.



Amphibious ships offer the versatility and adaptability that made them ideal for supporting relief operations in Haiti. Amphibious ships were ready to sail within days of the disaster. In addition to carrying a large number of crew members, these ships employed amphibious craft to assist with the evacuation of casualties, and facilitate the movement of troops, equipment and supplies over the beach. Sailors also selflessly participated in Sailors Ashore Missions to further relieve the suffering of Haitians.

The amphibious assault, dock landing, and amphibious transport dock ships of the Bataan and Nassau ARG/MEUs, were among the first Navy ships to arrive off the coast of Haiti. The ship-to-shore movement versatility and the LHD/LHA medical facilities,

*"There is no other force other than ours, no other capability that can arrive in an unimproved area and... get this close to shore and then move from ships to the objective the way our Blue Green Team can do so."*

Captain Sam Howard, USN  
Commanding Officer,  
USS Bataan

second only to the hospital ship, made amphibious ships ideal for the mission in Haiti. They provided flight decks, well decks, critical medical services afloat and ashore; supply distribution; helicopter refueling; crane operations; and

landing craft to transport humanitarian and relief supplies ashore.



Crew members from USS Carter Hall (LSD 50) prepare food stores for transport ashore.



**USS Carter Hall (LSD 50)**  
 Sailors worked around the clock to transport critical supplies from Naval Base Guantanamo Bay, Cuba, delivering more than 1,100 pallets of food rations and water, 5,000 cots, and 338 tents to Haiti during their six weeks on station.



Sailors assigned to the amphibious dock landing ship USS Gunston Hall (LSD 44) unload water from a landing craft for distribution in Killick, Haiti



Sailors assigned to ACU 2, ACB 2, and the amphibious dock landing ship USS Gunston Hall (LSD 44) move an injured Haitian woman after treatment aboard the hospital ship USNS Comfort (TAH 20)

**Beachmaster Unit Two**  
 Members of BMU-2, embarked aboard USS Bataan (LHD 5), went ashore daily to man the beaches of Grand Goave to keep disaster relief supplies packed aboard LCAC moving from ship to shore.



A traffic control member of BMU 2, embarked aboard USS Bataan (LHD 5), directs an LCAC carrying food, water, and supplies onto the beach in Grand Goave

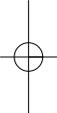


An LCAC assigned to ACU 4 exits the well deck of the multi-purpose amphibious assault ship USS Bataan (LHD 5) while transporting equipment and personnel off the coast of Haiti



USS Fort McHenry (LSD 43) VBSS team members help load an injured Haitian man into a truck for transport.

*"Our mission at Killick was ship-to-shore transport. We provided a means of transporting aid that other ships out here weren't equipped for."*  
 Engineman 3rd Class Jarrell Ray, USN  
 Assault Craft Unit 2





Assessed as unsafe and unserviceable, the damage to piers in the Haitian port of Port-au-Prince impacted the initial aid arrival from the sea. Navy and Marine Corps forces used the waters surrounding Port-au-Prince as a secure operating space for providing humanitarian assistance/disaster relief support. Through use of air and amphibious craft, naval ships operating from a sea base delivered much needed supplies ashore and transported victims in need of medical care to units at sea. A joint logistics hub and Task Force 48 established at Guantanamo Bay facilitated the throughput of aid and other supplies and ensured the sea base comprised of shipping from the U.S. Navy, MSC, and Allied navies was able to remain on station performing the vital mission.

Operations in Haiti demonstrated the flexibility and effectiveness of JLOTS capabilities. JLOTS used a floating causeway, small vessels and other equipment to move cargo containers and other stores to the shore. With much of the port area of Port-au-Prince either destroyed or rendered inoperable by the earthquake, JLOTS provided a temporary pier facility, allowing relief supplies to be shuttled from ship to shore.

Also operating from the sea base, the MSC hospital ship, USNS Comfort, was essential in treating injured earthquake survivors. During the first 10 days on station, Comfort ran 10 operating rooms at full capacity to care for injured Haitian, American, and other foreign earthquake victims requiring surgical care, while working closely with Haiti's Ministry of Health and health

care professionals from the U.S. Agency for International Development, international relief organizations and NGOs to secure follow-on care for patients in recovery.

*"As we look back on this operation in the future, I'd like the historians to know that Task Force 48, any of the joint log hubs that the Navy puts forward, can support operations anywhere in the world. That we do this on a regular basis, that we can expand our capability at locations like Guantanamo Bay where our forward presence is so very, very important, and that the Navy seabase support is here to support military and joint and international operations of the future."*

*Rear Admiral Patricia Wolfe, USN  
Commander, Task Force 48  
Guantanamo Bay, Cuba*



An MH-60S Sea Hawk helicopter from Helicopter Sea Combat Squadron (HSC) 22 delivers pallets of supplies to the multi-purpose amphibious assault ship USS Bataan (LHD 5) as the amphibious dock landing ship USS Carter Hall (LSD 50) completes a vertical replenishment evolution



A Sailor assigned to Task Force 48 moves pallets of relief supplies destined for Haiti at the joint logistics hub airfield at Naval Station Guantanamo Bay



### Amphibious Construction Battalion 2

The INLS provided the capability of moving equipment from ships based in the waters of Port-au-Prince ashore. By using the causeway ferry, sailors were able to bypass the damaged piers and provide the equipment to continue relief operations.

*"The capabilities that the Navy has to support JLOTS operations have been around and they are designed for major combat operations, where ship-to-shore movement of equipment and supplies in support of the warfighter has been the focus. What we did in Haiti was a natural expansion of applying our capabilities to that specific problem set. I think what Haiti has illuminated are how these systems can be employed."*

*Captain Paul Webb, USN  
Commanding Officer,  
Amphibious Construction Battalion Two*

The expeditionary character of NECC forces uniquely positioned them to quickly support our nation's response to the tragedy in Haiti. NECC forces possess the agility and flexibility needed to provide humanitarian assistance and disaster relief to the Haitian people.

Sailors from Navy Expeditionary Combat Command's Combat Camera, Maritime Civil Affairs, Maritime Security, Expeditionary Logistic Support, Diving and Salvage, and Seabee units supported disaster relief efforts and provided a diverse capability including assessment, construction, security, civil affairs and logistical support.

### Naval Construction Battalion Maintenance Unit 202

Embarked on USNS PFC Dewayne T. Williams, CMBU 202 provided debris clearing, equipment operations, and tent camp construction and maintenance



Sailors assigned to the air detachment of NMCB 7 cut rebar during a search and recovery mission at the Hotel Montana in Port-au-Prince



22 MEU Marines Tent City, Haiti



## Mobile Diving and Salvage Unit 2

MDSU 2, Company 2-1 used an unmanned underwater vehicle equipped with marine sonic scan sonar to map the waterways of Port-au-Prince for major obstructions to navigation, clearing the seaport of all hazards and increasing the passage of relief supplies into the port.



MDSU 2 divers inspect a submerged container box while conducting salvage and repair operations in the main seaport of Port-au-Prince



Seabees assigned to JTF Haiti unload a 3500kw mobile generator to support Operation Unified Response relief.



Maritime Civil Affairs Team 203, along with Sailors from the USS Gunston Hall (LSD 44) and the Mexican Navy, deliver donated goods from Mexico to more than a thousand Haitians in a school yard in Killick

"We are deploying an experienced Maritime Civil Affairs Planner and MCAT team to support the needs of the Haitian people. MCAST is able to address a unique need in planning and conducting maritime security operations, humanitarian assistance and disaster relief."

Captain Claudia Risner, USN  
Commodore, Maritime Civil Affairs and Security Training Command



Equipment operators assigned to NMCB 7 offload equipment from naval vessels anchored near Port-au-Prince



**Naval Mobile Construction Battalion 7  
Air Detachment**

Seabees from NMCB 7 provided flood control and drainage, landslide prevention and shoring, and safety and egress at Camp Petionville, a 50,000-man internally displaced persons camp in Port-au-Prince. The camp began when small bands of survivors displaced by the earthquake settled in and around the spacious land in the Petionville suburb. Mitigations made by NMCB 7 reduced the overall number of Haitians requiring relocation by over 17,000.



NMCB 7, Air Detachment, Equipment Operator supervises a Haitian worker who is improving a road that runs through Camp Petionville



A Hospital Corpsman assigned to ACB 2 treats a Haitian boy's foot during a community service event at an orphanage in Port-au-Prince

A Seabee assigned to ACB 2 fills in a water hole at the New Mission Beach compound in Nonel, Haiti

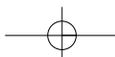


**Naval Beach Group 2  
Naval Mobile Construction Battalion 7  
Naval Construction Battalion  
Maintenance Unit 202**

NBG 2 personnel, in conjunction with sailors from NMCB 7 and CMBU 202, constructed a portion of a life support activity facility, serving as the new location for Joint Task Force Haiti. These sailors also provided an alternate route of travel for residents to the Toussaint Louverture International Airport in Port-au-Prince.

*"I hope we helped to relieve the suffering after the earthquake. We can't restore the full infrastructure, but we provided the means to help deliver millions of meals and tons of water to those most in need."*

*Captain Clay Saunders, USN  
Commodore, Naval Beach Group 2*





A Seabee assigned to ACB 2 removes rubble near Toussaint Louverture International Airport in Port-au-Prince



Builder 2nd Class Andrej Paskevic, assigned to UCT 1, drills guide holes into a damaged section of pier at the port in Port-au-Prince



A security boat from MSRON 6 patrols the waters around Port-au-Prince while a landing craft utility departs the amphibious dock landing ship USS Fort McHenry (LSD 43)



Logistics and Support Unit 2 Construction Electrician prepares an electrical box for wiring during an improvement project at a local orphanage in Cap-Haitien



A temporary pier erected by Naval Beach Group 2 is a mooring point for utility boats at the port in Port-au-Prince

*"The work the Seabees did for us will enable our NGOs to help more people. Literally, instead of helping a thousand people, we can help ten thousand people. We are extremely grateful for the hard work the military is putting in here in Haiti."*

Steve Hersey  
School Administrator, Quisqueya School

## ANNEX A

# Naval Special Warfare Platforms, Programs and Systems

OPNAV N851 is the resource sponsor for all NSW service common requirements, and the coordinator/advocate for Navy programs that support or involve NSW including ScanEagle Unmanned Aircraft System (UAS) in support of NSW and USCENTCOM; SOF support attributes of future Navy ships; and Navy policy for Premeditated Personnel Parachuting operations. N851 responsibilities also include small arms, tactical vehicles, night vision/electro-optical (EO) equipment, unmanned systems, and training support craft for NSW as well as Navy Riverine forces.

### ScanEagle UAS



*ScanEagle Unmanned Aerial Vehicle Launching from MK V Special Operations Craft*

**Description:** Procured in response to NSW and Joint SOF urgent needs, ScanEagle provides an interim capability to address ISRT requirements for deployed warfighters. Over 1000 sorties and 5000 flight hours have been logged supporting NSW and Joint SOF OIF and OEF operators since November 2009. Thousands of flight hours have been flown supporting other Navy and Marine Corps organizations utilizing ScanEagle services as well. Equipment associated with the ScanEagle UAS includes air vehicles; ground control stations; launch/recovery components; pack-up and maintenance kits; and operations/maintenance shelters. ScanEagle UAS provides enhanced situational awareness via persistent real time full-motion video ISRT support for tactical users. UAS characteristics:

Weight: 44 lbs maximum take-off weight with a maximum payload of 5 lbs

Wingspan: 10 ft

Operating Altitude: 200 ft Above Ground Level to 19,000 ft Mean Sea Level

Range: >100 km

Speed: 55 kts cruise, 75 kts dash

Endurance: 20+ hrs

Launch: pneumatic launcher

Recovery: arrested in-air

Navigation Guidance: Global Positioning System (GPS)

Sensor: real-time electro-optical/infrared (IR) video

Propulsion: 1.9 horsepower (hp) (1.4 kw), 2-stroke engine burning fuel gasoline (100 octane unleaded non-oxygenated gas) or Heavy fuel (JP5, JP8, Jet-A)

System highlights:

- Dry Deck Shelter stowed
- Capable of Guided Missile Submarine deck launch and recovery
- Highly reliable, combat proven with over 100,000 combat flight hours of ISRT support to defense users
- Long Endurance of 20+ hours flight time
- Quiet operations, emits low audible signature at altitude
- Night / Day Capable, air vehicle carries either EO or IR cameras (or both in dual bay configuration). The gimballed camera allows the operator to easily track both stationary and moving targets, providing real-time actionable intelligence.
- Compatibility with other payloads including Automatic Identification System, communications relay, and NanoSAR synthetic aperture array.

**Status:** Navy intends to extend the existing ScanEagle services contract to continue support for deployed forces while also opening up competition for follow-on UAS services to other bidders. Funding is provided for urgent payload development in President's budget for FY 2011. The Rapid Development and Deployment (RDD) program develops and tests prototype solutions, such as ScanEagle payloads, for employment by naval forces involved in OIF/OEF/Overseas Contingency Operations. The RDD program goal is to respond to urgent operational needs within 30 days and provide for rapid development and fielding of prototype solutions within 270 days.

The next generation of expeditionary ISR capabilities will be provided via the Small Tactical Unmanned Aircraft System (STUAS). N85 outlined the system operational requirements for Navy expeditionary forces, and OPNAV N2N6 is the resource sponsor for the STUAS. The STUAS contract was awarded to Insitu in July 2010 and Initial Operational Capability (IOC) of the Integrator UAV, the selected STUAS, is anticipated in FY 2013.



## Riverine Forces

OPNAV N851 is the resource sponsor for the Navy Riverine Force (procurement funding only) component of NECC. It has provided procurement resources for initial outfitting, capability improvements and phased replacement for Riverine Group 1 and component RIVRONs 1, 2 and 3.

**Description:** The Riverine force was formally established in May 2006, and since then NECC has stood up Riverine Group 1 in Norfolk, VA, and the three RIVRONs: Squadrons 1 and 2 in Norfolk and Squadron 3 in Yorktown, VA. All three have conducted operations in Iraq. RIVRONs ensure the continuance of legitimate trade, keep lines of communication open, establish and maintain control of rivers and waterways for military and civil purposes and deny their use to hostile forces and destroy waterborne hostile forces as necessary. They combat sea-based terrorism and other illegal activities such as transporting components of weapons of mass destruction, hijacking, piracy and human trafficking. They also conduct shaping and stability operations and train coalition partners in operations, surveillance and intelligence. The RIVRONs primarily use three boats: the Riverine Patrol Boat, the Riverine Assault Boat, and the Riverine Command Boat.

**Status:** Build up and replenishment of the Riverine Table of Allowance (TOA) continues. Per the QDR, beginning in FY 2011, the Navy will add a fourth RIVRON to its force structure.

### Riverine Patrol Boat



*Riverine Patrol Boat*

**Description:** NECC Riverine forces employ the Riverine Patrol Boat (RPB) to conduct inland waterway patrol and interdiction to preserve the rivers for friendly use as lines of communications and to deny their use to the enemy. The RPB is based on the in-service USMC Small Unit Riverine Craft (SURC). Key characteristics of the RPB are:

Hull Material: Aluminum 508x series plating with beaching reinforcement doubler

Length: 38'

Beam: 10' 2"





Draft: 2'  
 Speed; 30+ kts  
 Range: 200+ nm  
 Propulsion: Twin inboard Yanmar diesel engines with water jets  
 Accommodations: 5 crew; 10-13 passengers  
 Weapons: Cabin/coxswain station/propulsion system against 7.62mm x 39mm ball;  
 personnel/weapon station protection kits

**Status:** 23 RPB have been delivered. Combatant craft replacements will provide second generation Riverine multi-mission craft that will replace in-service RPBs. Selection of replacement craft for production is anticipated in FY 2015 following prototype delivery and a comprehensive test and evaluation period.

### Riverine Assault Boat



Riverine Assault Boat

**Description:** NECC Riverine forces employ the Riverine Assault Boat (RAB) to deny use of rivers/waterways to waterborne and shore hostile forces, and with augmentation forces, to destroy hostile forces within a riparian area. Key characteristics of the RAB are:

Hull Material: Aluminum w/Ballistic Protection  
 Length: 33'  
 Beam: 9'  
 Draft: 27"  
 Speed: 35+ kts  
 Range: 200+ nm  
 Propulsion: Twin inboard Yanmar diesel engines with water jets  
 Accommodations: 5-7 crew  
 Weapons: .50 cal weapons, provisions for Remote Operated Small Arms Mount (ROSAM) and  
 Smoke Grenade Countermeasures





**Status:** A total inventory of 16 RAB (12 operational, 4 training craft) is planned. Combatant craft replacements will provide second generation Riverine multi-mission craft that will replace in-service RABs. Selection of replacement craft for production is anticipated in FY 2015 following prototype delivery and a comprehensive test and evaluation period.

## Riverine Command Boat



*Riverine Command Boat*

**Description:** NECC Riverine forces employ the Riverine Command Boat (RCB) to provide Riverine commanders with mobile liaison, communications, and command and control capabilities. Key characteristics of the RCB are:

Hull Material: Aluminum w/Ballistic Protection

Length: 49'

Beam: 12.42'

Draft: 36"

Speed: 35+ kts

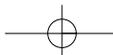
Range: 200+ nm

Propulsion: Twin inboard Scania diesel engines with water jets

Accommodations: 5 crew with 18 passengers

Weapons: Forward and aft gun mounts, provision for ROSAM and Smoke Grenade Launchers

**Status:** A total inventory of 7 RCB (6 RCB, 1 RCB-X) is planned.



# ANNEX B

## Mine Warfare

### Platforms, Programs and Systems

#### MH-53E Sea Dragon Airborne Mine Countermeasures Helicopter



*MH-53E Sea Dragon AMCM Helicopter*

**Description:** The MH-53E Sea Dragon helicopter is capable of minehunting and minesweeping operations in the deep to shallow water region. 25 of the total 29 airframes that are currently in the MH-53E fleet are configured for AMCM. Of these 25 aircraft, 6 are currently forward-deployed in two detachments, a 4-aircraft air detachment to Bahrain, and a 2-aircraft air detachment to Korea. As a result of developmental delays in critical organic technologies, and integration delays of the towed OAMCM systems on the MH-60S helicopter and unmanned systems from the LCS, the Navy has been required to extend the lives of its dedicated mine-warfare assets. Accordingly, an MH-53E Fatigue Life Extension program has been completed which allows the Navy to retain required AMCM capability through 2024.

**Status:** In FY 2011-13, the MH-53E AQS-24A sonar will be updated with a technology refresh integrating a synthetic aperture sonar to significantly improve performance and reduce operator workload. Two additional Mk-105 sweep sleds are notionally planned to be budgeted in FY 2012 to sustain minesweeping capacity requirements until future sweep systems are delivered to the Fleet. MH-53E inventory will start to drop in 2015. AMCM HM squadron manpower is aligned to meet the AMCM requirements through 2024.

## Avenger-Class Mine Countermeasures Ship

**Description:** The Avenger (MCM 1)-class SMCM ships are capable of the complete detect-to-engage sequence to include minehunting and minesweeping in deep to shallow water. A total of 14 Avenger-class ships were built and remain in active service. An SMCM modernization package and other major hull, mechanical and electrical (HM&E) alterations correct the most significant maintenance and obsolescence issues in order to maintain the ships through their full 30-year service lives. Developed in FY 2006, the MCM-1 modernization package includes:



*USS Pioneer (MCM 9)*

- Upgrading the existing SQQ-32 sonar with high-frequency wideband capabilities
- Replacing the existing acoustic sweep system with the Advanced Acoustic Generator and the Infrasonic Advanced Acoustic Generator
- Replacement of the obsolete Mine Neutralization Vehicle with the smaller, more reliable, and user-friendly Expendable Mine Neutralization System (EMNS).
- Communications suite and navigation modernization including Electronic Charting and Display System
- Battle Space Profiler

Other major HM&E alterations included in Navy planning for the FY 2011 President's Budget are:

- Replacement of diesel generator analog voltage regulators with digital voltage regulators
- Static Frequency Converter upgrade
- Bow Thruster upgrades
- Replacement of aft deck hydraulic equipment with electric equipment.

**Status:** The MCM 1 class modernization package commenced in FY 2004 and was originally scheduled for completion in 2010.

EMNS has been installed in USS Sentry (MCM 3) to support initial shipboard testing. Testing was intended to complete in 2011 but testing completion has been delayed due to an unintended, but correctable consequence of software programming discovered during testing which could result in the EMNS swimming underneath the MCM ship that launched the device. The EMNS program has a remedy for this behavior and a plan of action for implementation using FY 2011 budget funding.

MCM 1-class drawdown is scheduled to commence in 2017 with the final MCM 1-class ship decommissioning in 2025. The MCM 1-class drawdown will occur concurrently with the buildup in numbers of Littoral Combat Ships and MCM MPs.

## Underwater Mine Countermeasures Unmanned Underwater Vehicles

**Description:** Current UUV operations are built upon Hydroid Remote Environmental Monitoring Unit System UUV bodies. The Mk 18 Mod 1 (Swordfish UUV) provides current operational capability. An enhancement to that system is the Mk 18 Mod 2, which provides a test bed for advanced sensors (e.g. dual frequency Small Synthetic Aperture Minehunter, LFBB), navigation, and processing.

The Mk 18 Mod 1 Swordfish UUV is capable of performing low-visible exploration and reconnaissance in support of amphibious landing; MCM operations (including search, classification and mapping; and reacquire and identification); and hydrographic mapping in the VSW zone (10 to 40 feet depth) and the seaward approaches. It is capable of navigating via acoustic transponders in long-baseline or ultra-short-baseline mode or via P-coded GPS.

Upward- and downward looking acoustic digital velocity log improves dead-reckoning accuracy. Onboard sensors include water turbidity, water temperature and conductivity, side-scan sonar, and downward-looking camera.



*Mk 18 Mod 1 Swordfish Unmanned Underwater Vehicle*

**Status:** The Mk 18 Mod 1 Swordfish UUV achieved full operational capabilities (FOC) in 2008. Follow-on block upgrades will combine two separate UUV programs into the Mk 18 family of systems to deliver improved detection capability against buried mines in high clutter environments and are planned to deliver from FY 2014 through FY 2018.

Additionally, a program to deliver neutralization capability in the VSW region from a UUV is under consideration for start in FY 2012. Current efforts to prototype neutralization capability are being carried out under the Defense Conversion Assistance Program with the Archerfish system and Office of Naval Research (ONR) funding. Current neutralization programs are planning to initially experiment with a tethered neutralization system as an incremental approach to delivering autonomous neutralization capability.

## Organic Mine Countermeasures Systems



MCM Mission Package

**Description:** Organic mine countermeasures systems (OMCM) will be assembled into the Littoral Combat Ship MCM mission package (MP). The MCM MP will include multiple systems contained within mission modules and provide surface, near surface, in volume, close-tethered and proud mine detection, classification, identification, neutralization and influence sweep capabilities in the deep to shallow water regions. Five of these systems will be carried by MH-60S Seahawk helicopters configured for AMCM missions. Additionally a VTUAV payload will provide an MCM SZ and beach reconnaissance capability. Ultimately, the baseline MCM MP will contain the following OMCM systems with the planned quantities of systems indicated:

- AN/AQS-20A Minehunting Sonar (3)
- AMNS (1)
- ALMDS (1)
- OASIS (1)
- RAMICS (1)
- COBRA (1)
- USV with US3 (1)
- RMS (2)
- Support equipment and computing environment

**Status:** The first MCM MP (Spiral Alpha MP) was delivered in September 2007. One MCM MP per year is planned for procurement in FY 2011-14 in order to align with LCS delivery, and a total inventory of 24 MCM MPs planned. MCM MP IOT&E is planned for FY 2011 in USS Independence (LCS 2). MCM Spiral Alpha MP is expected to IOC in FY 2013 when the first LCS with an MCM MP embarked is a deployable asset ready for assignment to an operational commander. The baseline MCM MP is expected to deliver in FY 2017.

The Navy is aligning MCM MP procurement with manpower to ensure availability of the MCM MP DET one year ahead of delivery of the MCM MP. The specific ratio of MCM DETs to MCM MPs is being reviewed.



MH-60S Configured with AQS-20A Minehunting Sonar

### AN/AQS-20A Minehunting Sonar

**Description:** AQS-20A is a mine-detection sonar that also employs an electro-optical identification (EOID) sensor. AQS-20A is capable of detecting, localizing, and classifying bottom, close-tethered and moored sea mines. The EOID sensor also provides bottom mine identification capability. The AQS-20A mine-hunting system will be deployed, towed, and operated from the MH-60S Seahawk AMCM helicopter, and will also serve

as the mine sensor towed by the RMS' remote multi-mission vehicle (RMMV). A procurement goal of 72 systems is planned.

**Status:** Milestone C and low rate initial production (LRIP) occurred in FY 2005. Improvements to Computer Aided Detection/Computer Aided Classification and Environmental Data Collection capabilities are being implemented via enhanced research and development efforts, and developmental testing is ongoing. Technical evaluation on MH-60S was completed in 2009, and IOT&E is planned in FY 2011. AQS-20A IOC is estimated in FY 2012.

### AN/ASQ-235 Airborne Mine Neutralization System (AMNS)

**Description:** AMNS is an expendable, remotely operated mine-neutralization device that leverages non-developmental integration and commercial-off-the-shelf technologies. Deployed from MH-60S helicopters, AMNS reacquires and explosively neutralizes proud bottom and in-volume moored mines.

**Status:** Beginning in FY 2003, AMNS systems have been procured for the MH-53E to provide a near-term contingency airborne neutralization capability. Follow-on AMNS system integration work for the MH-60S began in FY 2003 and Milestone C and LRIP was achieved in 2008. IOC is estimated in FY 2012.



AMNS in MH-60S Seahawk

## AN/ALQ-220 Organic Airborne and Surface Influence Sweep (OASIS)

**Description:**

The OASIS system will provide an organic, high-speed, magnetic/acoustic influence minesweeping capability in the deep to shallow water regions. The sweep is designed to be deployed from and towed by the MH-60S Seahawk AMCM helicopter. OASIS is subdivided into six major components: the Towed Body, the Magnetic Influence Subsystem, the Acoustic Influence Subsystem, the Control/Monitoring and Power Subsystem, the OASIS Software, and the Tow Cable/Helicopter Interface.



*Graphic Illustration of OASIS Towed by MH-60S Seahawk*

**Status:** The program was restructured in Program Objective Memorandum for FY 2010-2015 in order to test a redesigned sensor head. IOC is estimated in FY 2014.

## AN/AES-1 Airborne Laser Mine Detection System (ALMDS)



*ALMDS in MH-60S Seahawk*

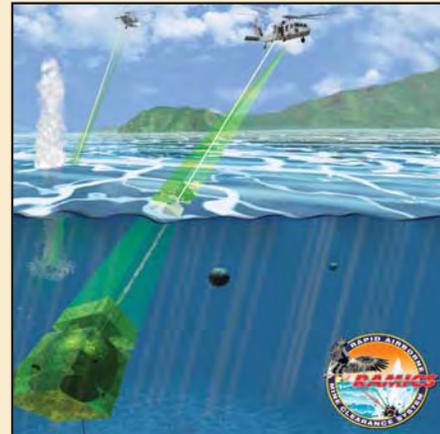
**Description:** ALMDS is an organic, laser-based high-area coverage system that uses streak tube imaging Light Detection and Ranging (LIDAR) to detect, classify, and localize floating surface and near-surface moored sea mines in the deep to shallow water regions. Deployed from the MH-60S Seahawk helicopter configured for AMCM, ALMDS will rapidly detect and classify mine-like contacts for subsequent prosecution.

**Status:** Milestone C and LRIP occurred in FY 2005. Through January 2010, a total of 5 ALMDS systems have been delivered under the LRIP Phase 1 and Phase 2 contracts. ALMDS recently completed a software upgrade focused on improving mine detection and classification performance, as well as to decrease false contacts. Pending successful flight testing which commenced in FY 2010, developmental testing and operational evaluation OPEVAL are planned in FY 2011. ALMDS IOC is anticipated in FY 2013.



## AN/AWS-2 Rapid Airborne Mine Clearance System (RAMICS)

**Description:** RAMICS will be a non-towed system hosted on board the MH-60S Seahawk helicopter. It will be capable of reacquiring and neutralizing surface and near-surface moored mines. A rapid firing Mk 44 Bushmaster II chain gun is controlled by a LIDAR fire-control system coupled with targeting algorithms. The LIDAR reacquires and targets mines, providing aiming coordinates to the gun's fire control system. Firing a burst of Mk 258 Mod 1 30mm supercavitating tungsten projectile munitions specially designed for traveling tactical distances in air and water and through a casing, RAMICS will cause a low-order deflagration of the mine, causing immediate and positive mine neutralization. RAMICS is one of the systems in the LCS MCM Mission Package.



Graphic Illustration of RAMICS in MH-60S Seahawk

**Status:** The RAMICS program was restructured in FY 2008. Procurement of systems begins upon successful aircraft integration, scheduled for FY 2017. IOC is anticipated in FY 2017.

## AN/WLD-1 Remote Minehunting System (RMS)



Remote Minehunting Vehicle with AN/AQS-20A Sonar Stowed

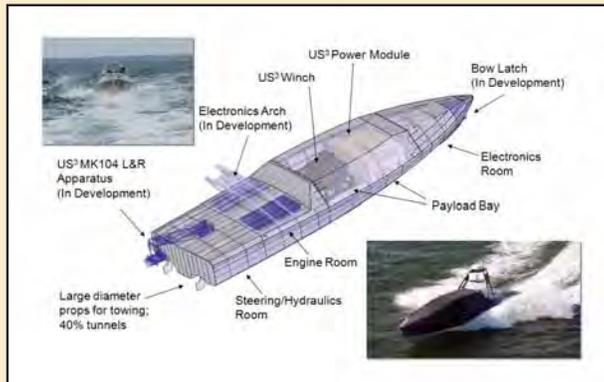
**Description:** RMS consists of a 23' long, 4' diameter, semi-submersible, unmanned RMMV weighing in excess of 7 tons designed to tow the AN/AQS-20A minehunting sonar. RMS is launched with a pre-programmed search pattern, and the system is capable of over-the-horizon minehunting. Once the mission is completed, RMS returns to the ship and data will be downloaded for post-mission analysis. RMS will be operated from the LCS.

**Status:** Milestone C occurred in FY 2005 and supported an LRIP decision that procured three systems. A second LRIP decision in FY 2006 acquired four more systems. RMS was tested on USS Bainbridge (DDG 96) and operated during deployment. RMS failed Operational Assessment due to RMV reliability on board Bainbridge and is currently undergoing an aggressive Reliability Growth Program to improve its capability. Following a Nunn-McCurdy breach reported in 2010 due to program issues associated with system reliability, but which do not reflect an inability to meet the critical warfighting thresholds assigned to the program, RMS Nunn-McCurdy certification was received from USD(AT&L) in May 2010. IOC is estimated in FY 2017. Procurement of 54 RMS systems is planned.





## Unmanned Surface Sweep System (US3)



*Unmanned Surface Sweep System*

**Description:** US3 will provide a long endurance, wide area magnetic and acoustic influence sweep capability via an 11-meter USV. US3 is a magnetic/acoustic influence sweep deployed from an unmanned eleven meter surface craft. It is designed to sweep underwater influence mines and is composed of a control computer, power supply, winch, magnetic influence cable, and acoustic source. The cable and acoustic source can be deployed and operated under remote control and towed at high speed. The USV can operate at a significant range from the LCS or other host ship in both day and night operations.

**Status:** US3 IOC is planned in FY 2015.

## Surface Mine Countermeasures UUV with Low Frequency Broad Band Sonar (SMCM UUV with LFBB)



*SMCM UUV Ready for Launch*

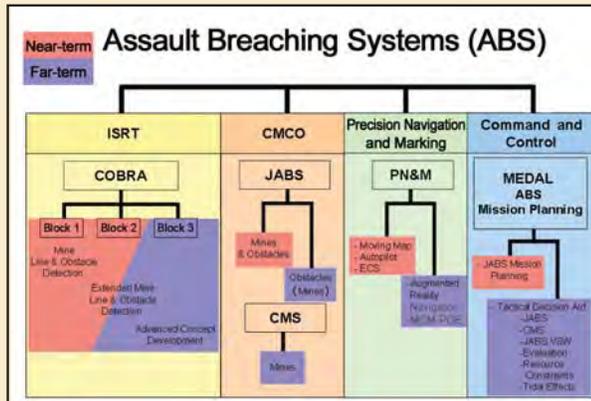
**Description:** SMCM UUV with LFBB is a surface-launched MCM UUV that will employ a new low frequency broad band sonar from a large diameter, 19.5 inch heavyweight UUV. This system provides buried mine detection capability, the ability to hunt mines in high clutter environments, low false alarm rates, and single-pass detection and identification.

**Status:** The Navy is evaluating this capability for the MCM MP. IOC is planned in FY 2015.





## Assault Breaching Systems (ABS)



The ABS program focuses on development of standoff weapons systems to counter mine and obstacle threats in the surf and beach zones. The program uses a "system-of-systems" approach that includes development and fielding of the COBRA mine/obstacle detection system as the ISRT component; JDAM Assault Breaching System (JABS) and Countermine System (CMS) as the CMCO component; and various technological developments providing a PN&M component; all of which are linked together through the Mine Warfare and Environmental Decision Aids Library (MEDAL) and the global information grid, the ABS C2 component. A near-term ABS capability using JABS was fielded in FY 2007.

## Coastal Battlefield Reconnaissance and Analysis System

**Description:** COBRA is a payload for the Fire Scout VTUAV and will be capable of conducting standoff reconnaissance to detect minefields and obstacles in the SZ, on the beach, and through the beach exit. COBRA incremental development is planned to deliver the following capabilities:

- COBRA Block I
  - Daytime operations
  - Surface-laid mine-line and obstacle detection
  - Detection on the beach and limited capability in SZ
  - Offboard processing
  
- COBRA Block II
  - Day and night operations
  - Surface-laid mine-line and obstacle detection
  - Detection on the beach and in SZ
  - Offboard processing



Graphic Illustration of COBRA



- COBRA Block III
  - Day and night operations
  - Mine-line and obstacle detection
  - Detection on the beach and in SZ
  - Near real-time onboard processing
  - Proud and buried mines

**Status:** The COBRA Block I system achieved Milestone C in 2009. IOC is estimated in FY 2012. COBRA Block II, which will expand the capability to include the SZ and provide both a day and night detection capability, achieved Milestone B in FY 2010 transitioning the Block II technology to Naval Sea Systems Command (NAVSEA) Mine Warfare Program Office (PMS495). IOC is estimated in FY 2017. COBRA Block III, which will provide a buried detection capability in the SZ and on the beach with near real-time processing, is scheduled to commence acquisition in FY 2017 with IOC estimated in 2020.

### JDAM Assault Breaching System and Countermine System

**Description:** JABS uses existing MK-84 "dumb" bombs with JDAM tail kits to provide a near-term counter-mine and counter-obstacle capability in the SZ and on the beach. A validated Naval non-nuclear ordnance requirement to support JABS mission requirements in the beach and SZs has been derived from CCDRs and the Joint Staff. With accurate targeting information, JABS is the SZ and beach breaching capability of today. In the far-term, CMS will provide a more effective clearance capability against mines located in the SZ and on the beach. A single CMS all up round is planned to consist of over 5000 darts tightly packaged and designed to precisely dispense in a large pattern.

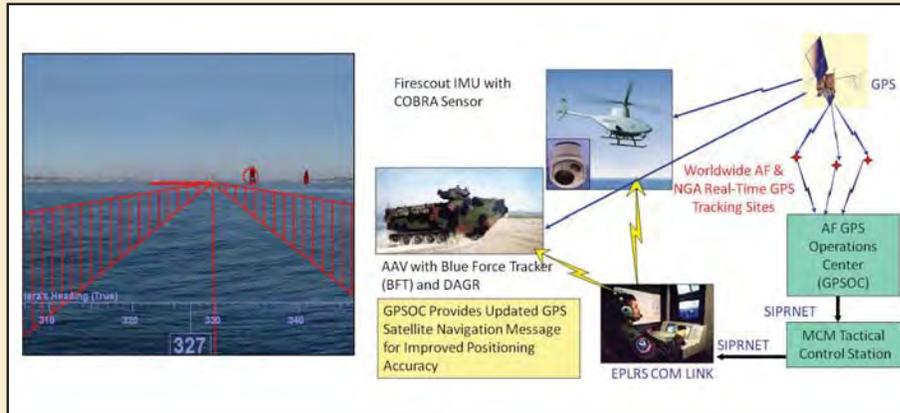


*Countermine System Dart Dispense Testing*

**Status:** Already fielded to support breaching requirements in the SZ and on the beach, testing of JABS in the very shallow water region has had promising results to date. CMS IOC is planned in FY 2017.



## Precision Navigation and Marking



Potential Technological Solutions to Enhance Precision Navigation and Marking

**Description:** Enhancing the capabilities of landing craft and amphibious assault vehicles to more precisely navigate is the objective of the ABS PN&M component. Ultimately, with a narrower transit and/or assault lane requirement, breaching those lanes will require fewer munitions. Initiatives to enhance the navigation capabilities of LCAC, LCUs, and Amphibious Assault Vehicles (AAVs) are in progress.

**Status:** LCAC and LCUs continue to be upgraded with an autopilot capability and Voyage Management System, respectively. As a preliminary step to enhance AAV navigation, an upgrade providing a moving map capability to enhance situational awareness for the vehicle's driver has been developed. To further enhance AAV driver situational awareness, the Augmented Reality Visualization of the Common Operational Picture (ARVCOP) system depicted above will virtually mark assault lanes and obstacles. ARVCOP transitioned from ONR to PMS495 in FY 2010.

In FY 2010, ONR also continued its MCM Precision GPS Ephemeris (PGE) Data Distribution effort depicted above. The objective of this initiative is to provide updated GPS satellite navigation data at a much greater frequency than currently provided to improve the systems' positioning accuracy. Instead of twice per day, updates from the GPS Operations Center can be provided every 15 or 5 minutes. Following additional FY 2010 testing, the MCM PGE Data Distribution capability is planned to transition to PMS495 in late 2010.



## Quickstrike Mine



*Quickstrike Mines*

**Description:** Quickstrike mines utilize a target detection device (TDD) Mk 57, a magnetic/seismic-sensing device designed specifically for Cold War targets such as large combatants and submarines on or near the surface. Mk 65 Quickstrike mines can also use the TDD Mk 58, which is a magnetic/seismic/pressure-sensing device.

**Status:** Developments in the Quickstrike mine family pertain to TDD upgrades and remote control implementation. Quickstrike mines are being upgraded with the TDD Mk71, a state-of-the-art firing mechanism that can sense magnetic, seismic, and pressure signatures, and can be programmed with sophisticated target-processing algorithms and counter-countermeasures. TDD Mk 71 is designed for use in all Quickstrike-series mines and will sense magnetic/seismic/pressure stimuli similar to the current TDD Mk 58. While the TDD Mk 58 uses hard wired algorithms with programmable sensitivities, the new TDD Mk 71 will be fully programmable for different algorithms and different sensitivities. Its improvements are centered around TDD development in target influence sensors; sensor signal processing and target logic; and timing and control logic. The TDD Mk 71 will enable Navy's miners to optimize performance against different target classes and to counter future threats. Engineering development efforts include advanced algorithms for ship detection, classification and localization against likely and emerging threats including quiet diesel-electric submarines, mini-submarines, fast patrol boats, high speed vessels, shallow water twin hull vessels, and air-cushioned vehicles.

A research and development effort designed to provide one-way remote control (RECO) of Quickstrike mine MK 65 is progressing. RECO commands will be Arm, Sterilize, and Self Destruct. RECO mines can be planted before a conflict begins and armed later, if required. Sterilize or self destruct commands will neutralize the minefield as soon as hostilities are over. Work includes development of transmitters to communicate with the mines.

# ANNEX C

## Amphibious Warfare

### Platforms, Programs and Systems

#### Amphibious Assault Ship, Multipurpose (LHD)

**Description:** The assigned mission of the Amphibious Assault Ship, Multipurpose (LHD) is to embark, deploy, and land elements of a Marine landing force in an amphibious assault by rotary wing and tilt-rotor aircraft, landing craft, amphibious vehicles, and by combinations of these methods.

The LHD features include a full length flight deck, a well deck, large storage areas for vehicles and cargo, and troop berthing for a reinforced battalion. The flag spaces are designed to support the staff of the embarked Navy PHIBRON or ESG and the Marine landing force staff of the MEU/MEU(SOC), MEB, or MEF and provide the commanders with command and control capabilities for sea-based maneuver/assault operations.



*USS Bonhomme Richard (LHD 6) Arrives Pearl Harbor HI*

The LHD provides an optimum operational environment for ship's company, embarked staffs, troops, and support personnel prior to, during, and after an amphibious operation. The Wasp-class also has several secondary missions, including power projection and sea control and can support vertical and/or short takeoff and landing (V/STOL) aircraft, such as the AV-8B Harriers. When augmented with a FST employing the ship's operating rooms; post operative/intensive care beds; isolation ward; primary care ward; medical overflow beds; blood bank; dental facilities; and orthopedics, trauma, general surgery, and x-ray capabilities the LHD functions as a primary casualty receiving and treatment ship.

LHD 8 differs from earlier ships of the class in that it is the first amphibious assault ship powered by gas turbine engines rather than steam turbines. In the interest of fuel efficiency, LHD 8 is configured with an auxiliary propulsion system (APS) that uses two induction-type auxiliary propulsion motors powered from the ship's electrical grid instead of using main propulsion engines to power the ship's shaft. Instead of using its gas turbines which are less efficient at lower speeds, the ship will be able to use the APS for roughly 75 percent of the time the ship is underway. Over the course of Makin Island's lifecycle, the Navy expects to save more than \$250 million on maintenance and lifecycle costs.

Additional LHD characteristics are:

<b>Staff Accommodations:</b>	35
<b>Crew:</b>	1100
<b>Landing Force Officer/Enlisted (E-7)/E-6 and Below/Surge Accommodations:</b>	173/64/1656/211
<b>Vehicle Area Capacity:</b>	26,000 square feet
<b>Cargo Volume Capacity:</b>	149, 000 cubic feet
<b>Helicopter Landing Spots:</b>	9
<b>Operational CH-46 Equivalents:</b>	42
<b>Well Deck LCAC:</b>	3
<b>Well Deck LCU:</b>	2
<b>Displacement:</b>	40,600 tons
<b>Length:</b>	844 ft
<b>Beam:</b>	107 ft
<b>Draft:</b>	27 ft
<b>Ships of the Class:</b>	USS Wasp (LHD 1) USS Essex (LHD 2) USS Kearsarge (LHD 3) USS Boxer (LHD 4) USS Bataan (LHD 5) USS Bonhomme Richard (LHD 6) USS Iwo Jima (LHD 7) USS Makin Island (LHD 8)

**Status:** Eight of eight LHDs have been delivered to the fleet. The newest LHD, the USS Makin Island (LHD-8), was commissioned in October 2009.

### Amphibious Assault Ship, General Purpose (LHA)



USS Peleliu (LHA 5)

**Description:** The assigned mission of the Amphibious Assault Ship, General Purpose (LHA) is to embark, deploy, and land elements of a Marine landing force in an amphibious assault by rotary wing and tilt-rotor aircraft, landing craft, amphibious vehicles, and by combinations of these methods. The LHA features include a full length flight deck, a well deck, large storage areas for vehicles and cargo, and troop berthing for a reinforced battalion. The flag spaces are

designed to support the staff of the embarked Navy PHIBRON or ESG and the Marine landing force staff of the MEU/MEU(SOC), MEB, or MEF and provide the commanders with command and control capabilities for sea-based maneuver/assault operations. The LHA provides an optimum operational environment for ship's company, embarked staffs, troops, and support personnel prior to, during, and after an amphibious operation. The Tarawa-class also has several secondary missions, including power projection and sea control. The LHAs can also support V/STOL aircraft, such as the AV-8B Harriers. When augmented with a FST employing the ship's operating rooms; post operative/intensive care beds; isolation ward; primary care ward; medical overflow beds; blood bank; dental facilities; and orthopedics, trauma, general surgery, and x-ray capabilities the LHA functions as a primary casualty receiving and treatment ship. Additional LHA characteristics are:



<b>Staff Accommodations:</b>	87
<b>Crew:</b>	956
<b>Landing Force Officer/Enlisted (E-7)/E-6 and Below/Surge Accommodations:</b>	172/59/1672/NA
<b>Vehicle Area Capacity:</b>	28,700 square feet
<b>Cargo Volume Capacity:</b>	156,000 cubic feet
<b>Helicopter Landing Spots:</b>	9
<b>Operational CH-46 Equivalents:</b>	43
<b>Well Deck LCAC:</b>	1
<b>Well Deck LCU:</b>	4
<b>Displacement:</b>	38,900 tons
<b>Length:</b>	820 ft
<b>Beam:</b>	106 ft
<b>Draft:</b>	26 ft
<b>Ships of the Class:</b>	USS Nassau (LHA 4) USS Peleliu (LHA 5)

**Status:** USS Nassau is scheduled to decommission in FY 2011, and USS Peleliu is scheduled to decommission in FY 2014. These decommissioned LHAs will be maintained in the inactive inventory in an Out of Commission/In Reserve (OCIR) status to support potential future mobilization requirements. There will be a potential lift capability gap until the eleventh LPD 17 class landing transport dock is delivered in FY 2017 and an aviation lift gap until the amphibious assault ship is delivered in FY 2021.

## Amphibious Transport Dock (LPD)

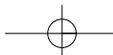
### San Antonio-Class LPD

**Description:** The San Antonio-class (LPD 17) is designed to embark, deploy, and land elements of a landing force during an assault by rotary and tilt-rotor aircraft, landing craft, and amphibious vehicles. It is routinely deployed as one of the three amphibious ships of a forward deployed ARG. Additionally, LPD 17 is equipped to function as a casualty receiving and treatment ship with twenty-four hospital beds and two medical



USS San Antonio (LPD 17) Underway in the Gulf of Oman

and two dental operating rooms. LPD 17 contains enhanced C2 features and a robust communications suite that greatly improves its ability to support embarked landing forces. It is the first Navy ship to be equipped with a comprehensive fiber-optic shipboard wide area network connecting all combat; C4I; engineering; and administrative systems to provide the essential real-time decision making information required for operating and fighting the ship effectively. LPD 17 has a highly capable combat systems suite with air and surface search radar systems; cooperative engagement capability; rolling airframe missiles; 30-mm MK 46 gun weapon systems; MK 53 Nulka decoy launching system; and an integrated Ship's Self Defense System to correlate sensor information, provide threat identification and evaluation, assess own-ship defense readiness, and recommend or automatically employ optimal tactical defense responses against anti-ship missile and aircraft attacks. The LPD 17-class has a reduced radar cross section achieved by its streamlined topside design and an advanced enclosed mast/sensor system.



Additional LPD 17-class characteristics are:

<b>Crew:</b>	364
<b>Landing Force Officer/Enlisted (E-7)/E-6 and Below/Surge Accommodations:</b>	66/42/599/101
<b>Vehicle Area Capacity:</b>	25,000 square feet
<b>Cargo Volume Capacity:</b>	34,000 cubic feet
<b>Helicopter Landing Spots:</b>	2
<b>Operational CH-46 Equivalents:</b>	4
<b>Well Deck LCAC:</b>	2
<b>Well Deck LCU:</b>	1
<b>Displacement:</b>	25,300 tons
<b>Length:</b>	684 ft
<b>Beam:</b>	105 ft
<b>Draft:</b>	23 ft
<b>Ships of the Class:</b>	USS San Antonio (LPD 17) USS New Orleans (LPD 18) USS Mesa Verde (LPD 19) USS Green Bay (LPD 20) USS New York (LPD 21) USS San Diego (LPD 22) LPD 23 USS Anchorage (under construction) LPD 24 USS Arlington (under construction) LPD 25 USS Somerset (under construction) LPD 26 USS John P. Murtha (construction to commence in 2011) LPD 27 (unnamed, procurement planned in 2012)

**Status:** Originally a twelve ship program, the current plan is for eleven LPD-17s. As of April 2010, five ships are in commission, four ships are under construction; procurement of long lead material for a tenth ship has been initiated; and procurement of the 11th LPD 17 is planned for 2012. The next and sixth ship of the class, USS San Diego (LPD 22), is expected to be commissioned in 2011. The San Antonio class will begin reaching its forty-year end of service life in 2045.

### Austin-Class LPD

**Description:** The assigned mission of the Amphibious Transport Dock Austin (LPD 4) Class is to embark, deploy, transport, and land Marine landing force troops and their supplies in an amphibious assault by means of embarked landing craft and amphibious vehicles augmented by rotary wing and tilt-rotor aircraft lift. The Austin Class LPD is a general purpose amphibious ship with substantial lift capacities for troops, vehicles, landing craft, cargo, and bulk fuel. All remaining LPDs, with the exception of USS Ponce (LPD 15) are flag configured for MEU and PHIBRON size staffs. Additional LPD 4-class characteristics are:



USS Dubuque (LPD 8) Underway

<b>Staff Accommodations (if flag-configured):</b>	32
<b>Crew:</b>	542
<b>Landing Force Officer/Enlisted (E-7)/E-6 and Below/Surge Accommodations:</b>	79/27/548/134
<b>Vehicle Area Capacity:</b>	13,800 square feet
<b>Cargo Volume Capacity:</b>	56,000 cubic feet
<b>Helicopter Landing Spots:</b>	2
<b>Operational CH-46 Equivalents:</b>	4
<b>Well Deck LCAC:</b>	1



<b>Well Deck LCU:</b>	1
<b>Displacement:</b>	16,900 tons
<b>Length:</b>	570 ft
<b>Beam:</b>	84 ft
<b>Draft:</b>	23 ft
<b>Ships of the Class:</b>	USS Cleveland (LPD 7) USS Dubuque (LPD 8) USS Denver (LPD 9) USS Ponce (LPD 15)

**Status:** All LPD 4 ships are scheduled to be decommissioned by 2013 as follows: USS Cleveland and USS Dubuque in FY 2011, USS Ponce in FY 2012, and USS Denver in FY 2013. These decommissioned LPDs will be maintained in the inactive inventory in an OCIR status to support potential future mobilization requirements.

### Dock Landing Ship (LSD)

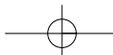
**Description:** The mission of both the Dock Landing Ship (LSD) classes is to transport and launch AAVs and landing craft with its crews and embarked personnel in an amphibious operation. The key difference between the LSD 49 class and the LSD 41 class is that the LSD 49 Class Cargo Variants have significantly expanded cargo and ammunition stowage facilities over those of the LSD 41 Class. The Whidbey Island-class is the primary support and operating platform for LCAC and can also provide limited docking and repair services as a boat haven for small ships and craft. Both LSD classes have two primary helicopter spots, and can handle Navy and Marine Corps helicopters currently in the inventory. Neither class is configured with a helicopter hangar, with aircraft fueling and rearming conducted on the flight deck. LSDs are equipped with a vehicle turning area (turntable) and tactical logistics communication spaces to facilitate and coordinate troop/vehicle movement and logistics. These ships have a doctor and dentist assigned as ship's company, two dental examination rooms, and one medical operating room. Additional LSD 41 and LSD 49-class characteristics are:



USS Tortuga (LSD 46) Conducting HA/DR Operations in the Philippines

### Whidbey Island Class (LSD 41)

<b>Crew:</b>	418
<b>Landing Force Officer/Enlisted (E-7)/E-6 and Below/Surge Accommodations:</b>	28/18/361/101
<b>Vehicle Area Capacity:</b>	11,800 square feet
<b>Cargo Volume Capacity:</b>	8,900 cubic feet
<b>Helicopter Landing Spots:</b>	2
<b>Operational CH-46 Equivalents:</b>	No
<b>Well Deck LCAC:</b>	4 (5 with prttable vehicle ramp removed)
<b>Well Deck LCU:</b>	3
<b>Displacement:</b>	15,900 tons
<b>Length:</b>	609 ft
<b>Beam:</b>	84 ft
<b>Draft:</b>	20 ft
<b>Ships of the LSD 41 Class:</b>	USS Whidbey Island (LSD 41) USS Germantown (LSD 42) USS Fort McHenry (LSD 43) USS Gunston Hall (LSD 44) USS Comstock (LSD 45) USS Tortuga (LSD 46) USS Rushmore (LSD 47) USS Ashland (LSD 48)





## Harpers Ferry Class (LSD 49)

Crew:	413
Landing Force Officer/Enlisted (E-7)/E-6 and Below/ Surge Accommodations:	27/18/362/101
Vehicle Area Capacity:	15,400 square feet
Cargo Volume Capacity:	64,500 cubic feet
Helicopter Landing Spots:	2
Operational CH-46 Equivalents:	No
Well Deck LCAC:	2
Well Deck LCU:	1
Displacement:	16,700 tons
Length:	609 ft
Beam:	84 ft
Draft:	20 ft
Ships of the LSD 49 Class:	USS Harpers Ferry (LSD 49) USS Carter Hall (LSD 50) USS Oak Hill (LSD 51) USS Pearl Harbor (LSD 52)

**Status:** Mid life programs are expected to be completed via a 36-week maintenance availability for five of the eight LSD 41-class ships in 2011. The LSD mid life program will enable both the Whidbey Island and Harpers Ferry classes to meet amphibious mission requirements and a 40-year expected service life through 2038. The mid life program objective is to improve material condition and readiness; replace obsolete equipment; provide hull, mechanical, and electrical system upgrades:

- Fuel and engine maintenance savings system
- All electric and distribution upgrade
- Power management platform
- Additional air conditioning plant
- Chilled water distribution modifications
- Diesel generator lube oil polisher and canned lube oil pump
- Low pressure air compressor replacement
- Advanced Engineering Control System.



USS Pearl Harbor (LSD 52)





## Amphibious Shipbuilding and Future Platforms

### General-Purpose Amphibious Assault Ship (Replacement) LHA(R)

**Description:** The LHA(R) class will provide forward-presence and power-projection capabilities as elements of U.S. expeditionary strike groups and strike forces. With elements of a Marine landing force, the LHA(R) will embark, deploy, land, control, support and operate helicopters, landing craft and amphibious vehicles for sustained periods. The LHA(R) will also support contingency-response, forcible-entry and power-projection operations as an integral part of naval, joint, interagency and multinational maritime expeditionary forces. The LHA replacement is being designed as a variant of the LHD 8. This ship will include space for a MEU, Expeditionary Strike Group, or small-scale JTF staff; substantial survivability upgrades, and many of the enhancements in LHD 8, e.g., a gas turbine propulsion plant and all-electric auxiliaries. The first two ships of the class will not be configured with a well deck, thus they will deliver a significant increase in aviation lift, sustainment, maintenance, and service life allowances for new-generation Marine Corps aircraft systems (MV-22, JSF).

**Status:** Milestone B was reached in January 2006. The first LHA(R) was designated LHA 6 in August 2005. LHA 6 detail design and construction contract was awarded in FY 2007, and delivery of USS America (LHA 6) is planned in 2013. LHA 7, LHA 8, and LHA 9 are planned for procurement in FY 2011, FY 2016, and FY 2021, respectively.



*Graphic Illustration of USS America (LHA 6)*

### Maritime Prepositioning Force

**Description:** The legacy Maritime Prepositioning Force is comprised of vessels managed by MSC. MSC's Prepositioning Program is an essential element in the U.S. military's readiness strategy. Afloat prepositioning strategically places military equipment and supplies onboard ships located in key ocean areas to ensure rapid availability during a major theater war, a humanitarian operation or other contingency. Most of MSC's prepositioning ships are able to discharge cargo pierside or while anchored offshore by using shallow-draft barges, called lighterage, that are carried aboard. This allows cargo to be ferried to shore in areas where ports are non-existent or in poor condition, and gives the nation's military forces the ability to operate in both developed and undeveloped areas of the world.

MSC performs Type Commander functions, and provides ships loaded with military stores for forward, at-sea staging around the world. Prepositioning ships carry cargo owned by the U.S. Army, Air Force, Navy, Marine Corps and the Defense Logistics Agency. Prepositioning ships include a combination of U.S. Government-owned ships, chartered U.S.-flagged ships, and ships activated from the Maritime Administration's Ready Reserve Force. All prepositioning ships are crewed by U.S. civilian mariners under contract to the federal Government. Maritime Prepositioning Force ships are on 24-hour notice - every ship is able to leave port and sail literally anywhere in the world to deliver combat support and equipment that our ground forces need to accomplish their missions. Maritime Prepositioning Force and selected other MSC ships are strategically located in three geographic areas and assigned to one of three MPSRONS:



- MPSRON ONE, operational since 1984, consists of USNS 2nd LT John P. Bobo, USNS Sisler, USNS LCPL Roy M. Wheat, and USNS PFC Eugene A. Obregon (squadron's current flagship). MPSRON ONE does not have a permanent homeport. MPSRON ONE is an operational asset of the U.S. Navy 6th Fleet. The squadron's operational commander is Commander, Sealift Logistics Command Europe located in Naples, Italy.
- Established in 1985, the ship composition of MPSRON TWO homeported in Diego Garcia British Indian Ocean Territory, at present, includes MV MAJ Bernard F. Fisher, USNS SGT Matej Kocak, USNS 1st LT Baldomero Lopez, USNS GYSGT Fred W. Stockham, and USNS SGT William R. Button (current flagship). MV SSG Edward A. Carter, Jr. and MV LTC John U. D. Page are Army Container ships; and MV CAPT Steven L. Bennett is an Air Force Container ship assigned to MPSRON TWO. USNS Seay is anticipated to be transferred from the MSC Sealift program and join MPSRON TWO in 2010. MPSRON TWO is an operational asset of the U.S. Navy 7th Fleet. The squadron's operational commander is Commander, Sealift Logistics Command Far East located in Singapore.
- Established in 1986, the ship composition of MPSRON THREE homeported in Guam, at present, includes USNS Dahl, USNS 1st LT Jack Lummus, USNS 1st LT Harry L. Martin, SS Cape Jacob, MV VADM K. R. Wheeler, USNS PFC Dewayne T. Williams, and USNS MAJ Stephen W. Pless (current flagship). USNS Pomeroy is an Army LMSR and MV TSGT John A. Chapman is an Air Force Container ship assigned to MPSRON THREE. MPSRON THREE is an operational asset of the U.S. Navy 7th Fleet. The squadron's operational commander is Commander, Sealift Logistics Command Far East located in Singapore.

The mission of the MPSRON is to provide at-sea prepositioning for the equipment and supplies needed to sustain more than 15,000 MEB personnel for up to 30 days. The MPF MEB includes significant combat power consisting of tanks, artillery, amphibious assault vehicles, light-armored reconnaissance vehicles, a very robust aviation combat element, a logistics combat element, and a Naval Mobile Construction Battalion. Together, the total MPS force (three MPSRONs) can provide for a MEF-sized MAGTF.

**Status:** Early in the development of the QDR Report and as part of the process of completing DoD's budget submission for FY 2010, the Secretary of Defense took action to direct resources away from lower-priority programs and activities so that more pressing needs could be addressed, both within that budget and in the years that follow it. Those decisions included deferring production of new maritime prepositioning ships for MPF(F). Instead of developing a single MPF(F) squadron of 14 ships, many of them new construction, the Navy's 30-Year Shipbuilding Plan reflects the decision to enhance the existing MPSRONs. Specifically, the current MPF will be enhanced with the addition of:

- 3 x TAKEs previously destined for the MSC's NFAF (all under construction)
- 3 x MLP, lower cost variants of the clean sheet MPF(F) MLP to be based on the ALASKA class crude oil carrier modified to be a float-on/float-off vessel
- 3 x LMSR cargo ships (transferred from the Army)
- 1 x fleet tanker (T-AOT) and 1 x container ship maintained to support the three MPSRONs
- A support program to enable development of the tactics, techniques and procedures required to fully exploit this mission area in the future.



The above MPF enhancement will improve operational efficiency. For example, converting select MPSRON containerized supplies/equipment to pallet/quadruple container (QUADCON) level and loading them aboard the T-AKE's will provide immediate selective offload capabilities across a wide range of MPF sustainment stocks. Moreover, the addition of the three LMSRs to today's MPSRONs will provide a net increase of over 400,000 square feet, or 18%. LMSRs will facilitate reconfigured loads across the MPSRON enabling selective offload of some items. Combined with the MLP, the LMSR provides for accelerated in-stream vehicle and equipment offload rates. An incremental operational capability enhancement will be provided in each MPSRON to better provide in-theater capability to support resupplying a MEB. Ship descriptions for current MPSRON vessels are provided below.

### Container and Roll-On/Roll-Off (T-AK)

Provides equipment to sustain a Marine Corps Air Ground Task Force for up to 30 days. Discharges cargo in port or at sea using organic lighterage.

#### AMSEA Class

##### Characteristics:

Length: 673 ft  
 Beam: 106 ft  
 Draft: 33 ft  
 Disp: 46,111 tons  
 Speed: 18 kts  
 Civilian: 25  
 Military: 11 (Flagship only)  
 Gov owned/chartered

##### Cargo Capacity:

162,500 sq ft vehicle  
 1.6M gallons petroleum  
 81,700 gallons water  
 522 twenty-foot equivalent units (TEU)  
 Lighterage-2; LCM-8  
 Helicopter platform supports up to CH-53 E



USNS 2ND LT JOHN P. BOBO (T-AK 3008)  
 USNS PFC DEWAYNE T. WILLIAMS (T-AK 3009)  
 USNS 1ST LT BALDOMERO LOPEZ (T-AK 3010)  
 USNS 1ST LT JACK LUMMUS (T-AK 3011)  
 MV SGT WILLIAM R. BUTTON (T-AK 3012) (chartered)

#### Waterman Class

##### Characteristics:

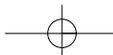
Length: 821 ft  
 Beam: 106 ft  
 Draft: 34 ft  
 Disp: 51,612 tons  
 Speed: 20 kts  
 Civilian: 25  
 Chartered

##### Cargo Capacity:

152,524 sq ft vehicle  
 1.5M gallons petroleum  
 94,780 gallons water  
 540 TEU  
 Lighterage-2; LCM-8  
 Helicopter platform only



SS SGT MATEJ KOCAK (T-AK 3005)  
 SS PFC EUGENE A. OBREGON (T-AK 3006)  
 SS MAJ STEPHEN W. PLESS (T-AK 3007)



**Container Class**

**Characteristics:**

Length: 652-686 ft  
 Beam: 87-106 ft  
 Draft: 34 ft  
 Disp: 41,000-52,878 tons  
 Speed: 19 kts  
 Civilian: 24  
 Chartered

**Cargo Capacity:**

1,800/1,417 TEUs



MV MAJ BERNARD F. FISHER (T-AK 4396)

**MPF Enhancement**

**Characteristics:**

Length: 754/863 ft  
 Beam: 106/98 ft  
 Draft: 36/35 ft  
 Disp: 51,531/50,570 tons  
 Speed: 17/22 kts  
 Civilian: 25/29  
 Gov owned

**Enhanced capabilities:**

- Fleet Hospital
- Navy Mobile Construction Battalion
- 6 Lighterage Sections
- RRDF



USNS 1ST LT HARRY L. MARTIN (T-AK 3015)  
 USNS LCPL ROY M. WHEAT (T-AK 3016)

**Characteristics:**

Length: 906 ft  
 Beam: 105 ft  
 Draft: 34 ft  
 Disp: 55,123 tons  
 Speed: 24 kts  
 Civilian: 26  
 Gov owned

**AFSB modifications:**

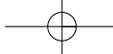
- Hangar facilities and JP-5 storage, service, and filtering to support extended ops for 2 H60 S/F/B/H Helos
- Ops center and upgraded C4I suite
- Storage, refueling and deployment of 2-4 RHIBs
- UAV
- Additional berthing (172 personnel)



USNS GYSGT FRED W. STOCKHAM (T-AK 3017)

**Large Medium Speed Roll-On/Roll-Off (T-AKR)**

Provides equipment to sustain a Marine Corps Air Ground Task Force for up to 30 days. Transports containerized cargo and rolling stock between developed ports. Required systems in recent operations are heavier and larger than previous systems. The LMSR provides significantly more capacity to accommodate this growth. One LMSR was added to each MPSRON commencing in 2008. Anticipated to complete in 2010 with the addition of the Bob Hope Class LMSR, USNS Seay, to MPSRON TWO, the LMSRs size, speed, and less restrictive embarkation space will provide the capability to conduct advanced MPF and Seabasing exercises and experimentation.



### Watson/Bob Hope Class

**Characteristics:**

Length: 950 ft  
 Beam: 106 ft  
 Draft: 34 ft  
 Disp: 59,460-62,644 tons  
 Speed: 24 kts  
 Civilian: 30  
 Gov owned

**Cargo Capacity:**

380,000 sq ft



USNS SISLER (T-AKR 311)  
 USNS DAHL (T-AKR 312)  
 USNS SEAY (T-AKR 302)

### Common Use Tanker (T-AOT)

Primary cargo will be Jet Fuel Propellant (JP) for use in tactical aircraft and equipment.

**Characteristics:**

Length: 615 ft  
 Beam: 90 ft  
 Draft: 36 ft  
 Disp: 39,624 tons  
 Speed: 16 kts  
 Civilian: 24  
 Gov owned

**Cargo Capacity:**

237,766 barrels of fuel oil



USNS LAWRENCE H. GIANELLA (T-AOT 1125)

### Break-Bulk

Provides Navy and Marine Corps with prepositioned ammunition stocks and delivers break-bulk cargo to customers equipped with dry cargo replenishment stations.

**Characteristics:**

Length: 687 ft  
 Beam: 100 ft  
 Draft: 31 ft  
 Disp: 52,878 tons  
 Speed: 17 kts  
 Civilian: 38  
 Gov owned

**Cargo Capacity:**

174 TEUs

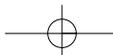


SS CAPE JACOB (T-AK 5029)

### Other Prepositioning Ships

While most active ships in MSC's Prepositioning Program strategically place combat gear at sea, other ships include:

- Two high-speed vessels
- Two aviation logistics support ships that are activated as needed from reduced operating status to provide at-sea intermediate maintenance activity for Marine Corps forward-deployed fixed- and rotary-wing aircraft, and embarkation of Marine Aviation Logistics Squadron (MALS) with over 300 Marines, containerized shop vans, and containerized spare parts.
- A chartered offshore petroleum distribution system ship that can pump fuel to shore from a tanker anchored up to eight miles offshore.





### High Speed Vessel (HSV)

**Characteristics:**

Length: 331 ft  
 Beam: 88 ft  
 Draft: 14 ft  
 Disp: 1,464 tons  
 Speed: 33 kts  
 Civilian: 14  
 Chartered

**Cargo Capacity:**

950 pax  
 16 vehicles  
 Bareboat charter



WESTPAC EXPRESS (HSV 4676)

**Characteristics:**

Length: 319 ft  
 Beam: 87 ft  
 Draft: 11 ft  
 Disp: 1,173 tons  
 Speed: 42 kts  
 Civilian: 19  
 Military: 20  
 Chartered

**Cargo Capacity:**

950 pax  
 16 vehicles  
 Bareboat charter



SWIFT (HSV 2)

### Aviation Logistics Support Ship (T-AVB)

**Characteristics:**

Length: 604 ft  
 Beam: 90 ft  
 Draft: 34 ft  
 Disp: 12,409 tons  
 Speed: 19 kts (23 kts maximum)  
 Civilian: 40  
 Gov owned

**Cargo Capacity:**

684 TEUs or Mobile Maintenance Facilities  
 Berthing for a Marine Aviation Logistics  
 Squadron 350+



SS WRIGHT (T-AVB 3)  
 SS CURTISS (T-AVB 4)

### Offshore Petroleum Distribution System (OPDS)

**Characteristics:**

Length: 349 ft  
 Beam: 70 ft  
 Draft: 27 ft  
 Disp: 10,668 tons  
 Speed: 16 kts  
 Civilian: 26  
 Chartered

**Cargo Capacity:**

2M gal/day pumping capacity from up to 8  
 miles offshore.  
 Tended by separate craft to assist with  
 station keeping during pumping  
 operations (fast tempo)



MV VADM K.R. WHEELER (T-AG 5001)





## Seabasing and Maritime Prepositioning Force Enhancement

### Mobile Landing Platform (MLP)

**Description:** The MLP will enable access to LMSR and JHSV vehicles when ports are not available or the threat precludes pier side off-load. It will provide improved capability for at-sea selective offload of vehicles and equipment compared to today's lighterage offload systems. Characteristics of the MLP will be:



Graphic Illustration of Mobile Landing Platform (MLP) based on modified Alaska-class Crude Oil Carrier

**Length:** 837 ft  
**Beam:** 164 ft  
**Speed:** 15 knots  
**Range:** 9,500 nm  
**Berths:** 34  
**Maneuverability:** Bow thruster equipped

**Status:** The MLP shipbuilding procurement plan through the Future Years Defense Program (FYDP) is:

FY	11	12	13	14	15	Total
No.	1		1		1	3

### Lewis and Clark-Class Dry Cargo and Ammunition Ship (T-AKE)



USNS Lewis and Clark (T-AKE 1) Underway

**Description:** The Lewis and Clark-class T-AKE-1 ships are operated by MSC and in the NFAF role they provide multi-product combat logistics lift to deliver cargo (ammunition; food; limited quantities of fuel, repair parts, and ship store items) to the Navy fleet. T-AKEs are built to commercial standards and crewed by 124 civil service mariners working for MSC and 11 sailors who provide operational support and supply coordination. When needed, a Navy helicopter detachment or its equivalent, provides vertical underway replenishment (VERTREP) capability.

The MPS enhancement strategy envisions converting selected MPSRON containerized supplies/equipment to pallet/QUADCON level and loading them aboard the T-AKE in each MPSRON. This will enable immediate selective offload capabilities across a wide range of MPS sustainment stocks. The T-AKE along with the other ships in the MPSRON will be able to sustain a MEB size unit for 1 month. If the T-AKE acted as a station ship for combat logistics force shuttle ships, it could support a MEB indefinitely. T-AKEs are being built in San Diego by General Dynamics, National Steel and Shipbuilding Company. Additional characteristics of the T-AKEs are:

**Crew:** 124 civil service mariners / 11 Navy Tactical Detachment  
**Dry Cargo Capacity:** 6675 tons/886,963 cuft  
**Cargo Fuel Capacity:** 24,959 barrels



**Displacement:** 40,539 tons  
**Length:** 689 ft  
**Beam:** 106 ft  
**Draft:** 30 ft  
**Ships of the Class:** USNS Lewis and Clark (T-AKE 1)  
 USNS Sacagawea (T-AKE 2)  
 USNS Alan Shepard (T-AKE 3)  
 USNS Richard E. Byrd (T-AKE 4)  
 USNS Robert E. Peary (T-AKE 5)  
 USNS Amelia Earhart (T-AKE 6)  
 USNS Carl Brashear (T-AKE 7)  
 USNS Wally Schirra (T-AKE 8)  
 USNS Matthew Perry (T-AKE 9)  
 USNS Charles Drew (T-AKE 10)  
 USNS Washington Chambers (T-AKE 11) (under construction)  
 USNS William McLean (T-AKE 12) (under construction)  
 USNS Medgar Evers (T-AKE 13) (under construction)  
 T-AKE 14 (unnamed, under construction)

**Status:** The program achieved initial operational capability in May 2007, when T-AKE 1 completed Post-Shakedown Availability. The tenth T-AKE, USNS Charles Drew (T-AKE 10), was commissioned in July 2010, and fourteen ships of the class are planned. T-AKEs 12 through 14 will enhance the MPSRON capabilities. The three MPSRON T-AKEs are expected to deliver as follows:

FY	11	12	13	14	15	Total
No.	T-AKE 12	T-AKE 13		T-AKE 14		3

## Joint High Speed Vessel

**Description:** JHSV is a joint acquisition program led by the Navy that will provide intra-theater maneuver and logistic capability to the Army and the Navy. Leased high-speed vessels such as Joint Venture (HSV X1), Swift (HSV 2) and WestPac Express (HSV 4676) have demonstrated the ability to rapidly embark and transport combat forces during advanced concept technology demonstration testing. JHSV is not an assault platform, but provides intra-theater lift capability for cohesive company-sized units and personnel with associated equipment and supplies, in support of global crisis-response, combat operations, and theater security cooperation plans. JHSV will be capable of carrying 600 short tons of cargo either as RO/RO military vehicles, or mixed palletized and containerized cargo, as well as combat equipped troops at a speed of 35 knots across a range of 1,200 nautical miles fully loaded. In addition, the shallow-draft characteristics will enable the JHSV to operate effectively in littoral areas and access small, austere ports. JHSV will augment fleet operations by executing theater security cooperation plans; conducting humanitarian assistance and disaster relief, noncombatant evacuation, and maritime interdiction operations; and may also function as an afloat forward staging base to support special operations forces. These



Graphic Illustration of Army Vessel Spearhead (JHSV 1)



ships have been designed and are being built to American Bureau of Shipping for Commercial Craft rules by Austal USA in Mobile, AL. JHSV will be capable of operations in sea state 3 and survivable in sea state 7. The ships will be equipped with a flight deck to support day and night air vehicle launch and recovery operations, 312 airline-style seats for its passengers, and fixed berthing for approximately 104 in addition to the crew.

The Navy vessels will be operated by civilian crews, either civilian mariners employed by MSC, or by contracted mariners similar to other leased vessels such as Swift and WestPac Express. MSC will serve as Navy Type Commander for JHSV and exercise administrative control. The Army will own and operate the Army-funded vessels after delivery and will be responsible for crew training and vessel maintenance.

**Status:** In October 2009 the Navy received approval to begin construction of the first JHSV, an Army vessel. JHSV has a projected 20-year service life and the Navy plans to procure a total of 21 JHSVs through 2040 to meet CCDRs' demands for intra-theater lift and Theater Security Cooperation support. Scheduled for delivery in 2012; construction on Spearhead (JHSV 1) started in December 2009, and a keel-laying ceremony was conducted in July 2010 to formally recognize the start of the ship's module erection process. The JHSV shipbuilding procurement plan through the FYDP is:

FY	11	12	13	14	15	Total
Navy	1	1	2	2	2	8
Army	1	1				2

## Connectors, Landing Craft and Lighterage

### Landing Craft, Air Cushion (LCAC)

**Description:** This high-speed, fully amphibious landing craft is capable of carrying a 60-ton payload (75 tons in overload) at speeds in excess of 40 knots and a nominal range of 200 nautical



Landing Craft, Air Cushion (LCAC)

miles. Its ability to ride on a cushion of air allows it to operate directly from the well decks of amphibious warships to inland objectives ashore. Carrying equipment, troops and supplies, the LCAC launches from the well deck, transits at high speed, traverses the SZ and lands at a suitable place ashore, where it quickly offloads and returns to amphibious shipping for follow-on sorties. LCACs provide flexibility in selecting landing sites, permitting access to

more than 70 percent of the world's shores, as compared with only 17 percent for conventional landing craft. LCACs deliver vehicles and cargo directly onto dry land rather than in the SZ and





have proved invaluable in support of HA/DR missions including the 2010 Haiti earthquake relief effort. A Service Life Extension Program (SLEP) to extend hull life from 20 to 30 years for 72 LCACs will be accomplished through FY 2019. Additionally, some of the craft have been outfitted with C4I (radar and radios) system upgrades prior to entry into SLEP. As part of SLEP, the Navy will incorporate the following life-cycle enhancements:

- Open-architecture employing commercial-off-the-shelf equipment that will allow much easier incorporation of later technology changes, such as the precision navigation system and communications systems, fully interoperable with in-service and near-term future joint systems.
- Engine upgrades (ETF-40B configuration) to provide reduced fuel consumption, reduced maintenance needs, reduced lift footprint, and additional power and lift particularly in hot environments.
- Refurbishment of the buoyancy box and selected rotating machinery targeted to resolve corrosion control issues, incorporate hull improvements and reset the fatigue-limit clock.
- Incorporation of a deep skirt to reduce drag, increase performance envelope over water and land, and reduce maintenance requirements.

**Status:** LCAC SLEP began in 2000 and four SLEPs are planned each year through FY 2016. As of March 2010, approximately 25 LCAC of the 72 planned SLEPs have been completed.

### Landing Craft, Utility (LCU)

**Description:** The LCU 1600 Class entered service in the 1960s and 1970s. The 32 active craft average 37 years of service, with the oldest craft exceeding 50 years. With a capacity of over 144 Short tons and an independent endurance exceeding 1 week (~ 1,500 nm range), the LCU remains an important part of the Navy's ship to shore connector portfolio and the premier mass people mover able to carry over 400 combat ready Marines, or the same number of evacuees in a Noncombatant Evacuation.



*Landing Craft Utility (LCU) at the Stern Gate*

**Status:** There are 32 active LCU. The Navy is evaluating the recapitalization/replacement of this capability.

### Ship-to-Shore Connector

**Description:** The ship-to-shore connector (SSC) is the envisioned replacement for the LCAC and will provide high-speed, heavy-lift for over-the-horizon maneuver, surface lift, and shipping. The SSC is intended to address the gap in heavy sea-to-shore lift that will emerge as the LCAC SLEP craft reach their end of service life and retire beginning in 2014. The SSC will have an increased payload and performance in higher sea states than the legacy LCAC. An inventory requirement of 72 SSC is anticipated to support 2.0 MEB lift.



*Graphic Illustration of Ship-to-Shore Connector*





**Status:** Delivery of the first SSC is anticipated in FY 2016. The SSC shipbuilding procurement plan through the FYDP is:

FY	11	12	13	14	15	Total
No.	1*			1	2	4

\*FY 2011 procurement of a test and training craft with first production craft procurement in FY 2014.

## Maritime Prepositioning and Amphibious Construction Battalion Lighterage

### Improved Navy Lighterage System

**Description:** INLS is a new-generation modular monohull barge system used to offload rolling stock and cargo from MPF and Strategic Sealift Ships over the beach or to an unimproved pier in the event more robust port facilities are denied, degraded or unavailable. INLS is composed of 80-foot-long barge sections that lock together like building blocks to create a variety of floating structures and is the replacement for the aging legacy Navy Lighterage (NL) system. INLS consists of



*Improved Navy Lighterage System Configured as Causeway Ferry*

powered and non-powered sections, and can be configured for a variety of functions. INLS can support both lift-on/lift-off (LO/LO) and RO/RO operations in near-shore regions. INLS provides improved sea-keeping, water-jet propulsion, and cargo movement capabilities that surpass NL in terms of speed, maneuverability, cargo throughput, and crew safety. Major variations and components include warping tugs, causeway ferries, a floating causeway pier, and a RRDF. Lighterage and other systems employed by Amphibious Construction Battalions are described below:



*RRDF, Swift (HSV 2), Causeway Ferry and Warping Tugs*

#### Roll-On/Roll-Off Discharge Facility

- Used for in-stream rolling stock discharge RO/RO operations
- Comprised of 9 connected INLS combination modules
- Assembled in less than 12 hours.



### Causeway Ferry

- Used for discharge of rolling stock and TEU/International Organization for Standardization (ISO)/military van containers
- Comprised of 3 modules flexed together: Powered, Intermediate, Bow
- 300-ton load capacity
- 12 knots max speed
- Sea state 3 operable; sea state 5 survivable.



### Amphibious Bulk Liquid Transfer System



- Bulk liquid delivery system
- 10,000 ft of fuel and water hose
- Installed in less than 12 hours
- 720,000 gallons/day capacity
- Operated from a causeway ferry.

### Elevated Causeway System - Modular

- System designed to establish a pier head beyond the active SZ with sufficient area for two-way vehicular traffic as well as dual cargo load and off-load operations
- Employs up to two air-driven turntable assemblies and up to two 175-ton cranes
- Up to 3000 ft in length
- Installed and operable in up to sea state 3; sea state 5 survivable.



### Warping Tug



- Used to maneuver other INLS modules into place for assembling RRDF, causeway ferry, or other facilities. Also supports salvage and assist operations.
- Forward and Aft winches with 68,000 lbs capacity
- 12 knots max speed
- Sea state 3 operable; sea state 5 survivable.

### Maritime Prepositioning Force Utility Boat

- Used for passenger transfer and as medical boat
- 40 kts maximum speed
- 35 passengers capacity.



**Status:** INLS is in full rate production with last article expected to be delivered in 2010.



# ANNEX D

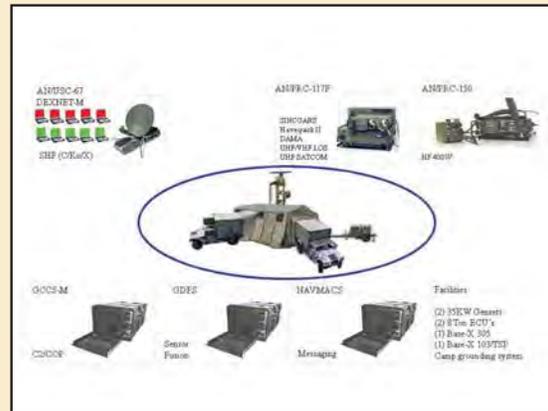
## Navy Expeditionary Combat Platforms, Programs and Systems

### Maritime Expeditionary Security Force

MESF stood up in 2007 and combines legacy Naval Coastal Warfare forces and mobile security forces. It is organized into capability-based divisions and detachments ready to deploy at any time to supply highly trained, scalable, flexible, responsive and sustainable security teams capable of defending mission-critical assets in the near-coast environment. MESF provides worldwide maritime, coastal and inshore surveillance; security and antiterrorism force protection; ground defense; VBSS support; command, control, communications system and intelligence support; and security for aircraft, airfields, campsites, convoys and convoy routes, ports, harbors, anchorages, approaches, roadsteads and other inshore or coastal areas of importance. The force also performs secondary tasks including detention operations, law enforcement, oil platform security, embarking security teams aboard Navy and merchant vessels for in-transit security protection and cross-training with foreign national military and police forces.

### AN/TSQ-108A (V)4 Radar Sonar Surveillance Center (RSSC)

**Description:** MESF forces employ the Radar Sonar Surveillance Center (RSSC) as their primary combat system element in the coastal and littoral areas. The RSSC can be located on land, piers, or aboard ships and supports operations such as force protection, port area security, high value asset escort, and JLOTS in the expeditionary, littoral, and ashore environmental operational areas. The system provides detailed tactical situational awareness and common tactical picture functionality to the tactical area commander. System components provide radar, visual, thermal, electronic, and underwater acoustic sensor information. The RSSC's Graphical Data Fusion System (GDFS) processes the sensor information and provides real-time, multi-sensor correlation and graphical display to the RSSC team. The GDFS displays standard symbology to the operator who can control and calibrate organic RSSC sensor systems and record/replay data with permanent archive capabilities and automatic system recording. The RSSC is the only land-based rapidly deployable mobile Navy system that provides both surface and subsurface surveillance.



*Radar Sonar Surveillance Center Increment II*



**Status:** RSSC upgrades occur when approved based on production Engineering Change Packages (ECP) for the purposes of technology refresh. Typically, the ECPs either mitigate the impact of obsolescent components or ensure the RSSC remains interoperable based on emerging requirements. In FY 2010, the plan provided an internet protocol (IP) connectivity path for the RSSC using very small aperture terminal satellite communications for short duration operations requiring rapid set up and using commercial satellite communications (SATCOM), and USC-67 (triband super high frequency) for longer duration using military SATCOM. The RSSC requires IP capability in order to remain interoperable as Navy legacy circuits transition to IP circuits. The Global Command and Control System - Maritime (GCCS-M) component will be upgraded in order to maintain interoperability in accordance with Navy's C4I Master Plan and Joint requirements.

### Mobile Ashore Support Terminal (MAST)

**Description:** MESF employ the Mobile Ashore Support Terminal (MAST) as their primary combat C4I system in the coastal and littoral areas. The MAST consists of a self-contained, modular-design, transportable C4I system that can be rapidly deployed to theater via C-130 or other transport. A MAST provides an initial C4I capability for a naval task force commander or MESF detachment operating ashore. MAST capabilities include a comprehensive communications suite including ultra /very high frequency, SATCOM and associated crypto gear; a command, control, and intelligence capability; GCCS-M; GPS; and an integrated briefing system.



Mobile Ashore Support Terminal (MAST) III

**Status:** MAST upgrades occur when approved based on production of ECPs for the purposes of technology refresh. Typically the ECPs either mitigate the impact of obsolescent components or ensure the MAST remains interoperable with joint, agency, and coalition partners in accordance with the Navy's C4I master plan. In FY 2010, the plan provided for the development and testing of the ECP kits, initial kits for testing of AN/USC-60 baseband equipment upgrades and GCCS-M upgrades to ensure interoperability. As obsolescence mitigation strategy, timeplex components will be replaced with appropriate multiplexers.



Force Protection - Small Boat

### 25' Force Protection - Small (FP-S) Boat

**Description:** The Force Protection - Small (FP-S) boat is employed by MESF Sailors to maintain security measures to meet force protection requirements. FP-S boats support MESF detecting, identifying, warning, disabling, and defeating potential threats in the vicinity of vulnerable naval assets. Key characteristics of the FP-S are:

- Hull Material Aluminum
- Length 25'
- Beam 8.7'
- Draft 2.4"



- Speed 35+ kts
- Range 150+ nm
- Propulsion Twin Mercury 225 hp Optimax outboards
- Accommodations 10 Personnel (max)
- Weapons Foundations for .50 cal fore and aft; 7.62 mm port and stbd
- Air transportable - C130 with prime mover

**Status:** 43 boats have been delivered to MESF forces.



*Force Protection - Large Boat*

### 34' Force Protection - Large (FP-L) Boat

**Description:** The Force Protection - Large (FP-L) boat is employed by MESF Sailors to provide waterborne security for USN ships and ports to detect, identify, warn, disable or defeat potential threats in vicinity of naval assets. Key characteristics of the FP-L are:

- Hull Material Aluminum with cabin
- Length 34'
- Beam 12'
- Draft 3.2'
- Speed 30+ kts
- Range 100+ nm
- Propulsion Twin Cummins 420 brake horsepower diesel engines with waterjets
- Accommodations 3 crew; 16 personnel
- Air Transportable C5, C17
- Weapons .50 cal weapons (3 aft; 1 gun tub forward)

**Status:** A total inventory of 118 FP-L boats is planned.

### Escalation of Force Mission Module (Navy Variant)

**Description:** The Navy variant of the Escalation of Force-Mission Module (EoF-MM) will provide Sailors with a wide spectrum of non-lethal capabilities for protecting ports; airfields; buildings; and other important maritime infrastructure. The EoF-MM will be comprised of a number of counter-personnel and counter-material tool sets tailored to support the following missions:

- Vehicle Control Point
- Entry Control Point
- Perimeter Security
- Crowd Control
- Personnel Detention
- Non-Lethal Training.



*Sailors Evaluate an Optical Distraction Device, a Non-lethal Weapon in the Navy's Escalation of Force Mission Module*



**Status:** Future test and evaluation is planned to assess the Navy EoF-MM. EoF-MM capability sets may include the following non-lethal tools:

- Shields, batons, other personnel protective gear
- Vehicle arresting devices
- Acoustic hailing devices and voice translators
- Non-lethal munitions (40mm, 12-gauge, and grenades)
- Optical warning and distraction devices

## Integrated Swimmer Defense

**Description:** Integrated Swimmer Defense (ISD) will provide an end-to-end detect-to-engage anti-swimmer capability for the MESF community based on current commercial technology. ISD will be designed to detect, track, classify, warn, deter and neutralize divers and swimmers threats. It will include:



*Integrated Swimmer Defense System Detection Sonar and Configuration*

- Compact underwater surveillance sonar to automatically detect, track, and classify underwater targets including swimmers, divers, and vehicles providing underwater domain awareness, intelligence, and warning to protect vessels, ports and harbors, critical infrastructure, and high value assets
- Subsurface underwater hailer and warning device
- Non lethal air gun.

**Status:** A user operational evaluation system trial was conducted in FY 2010 and IOT&E is planned for FY 2011. ISD Increment 1 IOC is estimated in FY 2012, with FOC in FY 2015.

## Man Transportable Robotic System (MTRS)



*Man Transportable Robotic System at Work*

**Description:** More than 3000 MTRS have been deployed to Iraq and Afghanistan to provide EOD and counter-improvised explosive devices support. The majority of these robots are either the iRobot PackBot EOD Mk 1 or the Foster-Miller Talon Mk 2, both of which have proprietary architecture interfaces, and corresponding maintenance and upgrade challenges.

**Status:** The MTRS system is being upgraded through a Continuous Improvement Program (CIP), but end of service life issues and advances in robotic systems necessitates development of the next generation of EOD ground robots. The Advanced Explosive Ordnance Disposal Robot System (AEODRS) will be a family of systems to address Dismounted, Tactical, and Base/Infrastructure Operations. Notional descriptions of the capabilities required for these operations are provided in the table on the next page:

Dismounted Operations	Tactical Operations	Base/Infrastructure Operations
Back-packable, 35 lbs including backpack <ul style="list-style-type: none"> <li>• 100 meter range</li> <li>• 6 hour endurance</li> <li>• Low-degree of freedom manipulator, 5 lbs lift at full extension</li> <li>• 8 mph vehicle speed</li> <li>• Able to travel through 18 inch culvert</li> <li>• No stair climbing</li> </ul>	Vehicle two-man transportable for short distances - no greater than 164 lbs <ul style="list-style-type: none"> <li>• Vehicle fits within aisle of tactical vehicle</li> <li>• 1000 meter range</li> <li>• 6 hour endurance</li> <li>• Two manipulators, with at least one anthropomorphic</li> <li>• Manipulator lift - TBD</li> <li>• 8 mph vehicle speed</li> <li>• Stair climbing</li> </ul>	<ul style="list-style-type: none"> <li>• Vehicle weight - TBD</li> <li>• Vehicle able to travel through 36" wide doorway</li> <li>• 1200 meter range</li> <li>• 6 hour endurance</li> <li>• Two manipulators, with at least one anthropomorphic</li> <li>• Manipulator lift - 75 lbs at full extension, 300 lbs close-up</li> <li>• 8 mph vehicle speed</li> <li>• Stair climbing</li> </ul>

### Transmitting Set, Countermeasure (TSC) AN/PLT-5

AN/PLT-5 is a man portable TSC system used during travel downrange to and from the threat item and during operations at the incident site. Threats include the entire spectrum of conventional, special and unconventional explosive ordnance using radio controlled fusing or triggering methods.

### Radiac Set AN/PDX-2

The Navy's responsibility to develop equipment for high-fidelity investigation of WMD for use in threat determination and initial forensic analysis by Joint EOD response forces was identified in QDR. The AN/PDX-2 is a lightweight kit comprised of radiation monitors and handheld electronic explosive detection equipment to provide the warfighter the ability to rapidly assess threat level and appropriate response to WMD.

### EOD 7-Meter Rigid Inflatable Boat

**Description:** The Explosive Ordnance Disposal 7-Meter Rigid Inflatable Boat (EOD 7M RIB) is employed in Mobile Diving and Salvage and EOD applications. Key characteristics of the EOD 7M RIB are:

- Hull Material Fiberglass hull with center console
- Length 24'
- Beam 9'
- Draft 2'
- Speed 25+ kts
- Range 100+ nm
- Propulsion Twin Honda 130 hp diesel engine
- Accommodations 3 crew; 18 personnel max
- Weapons .50 cal capable weapons foundation
- Twin fuel tanks/185 gallon capacity

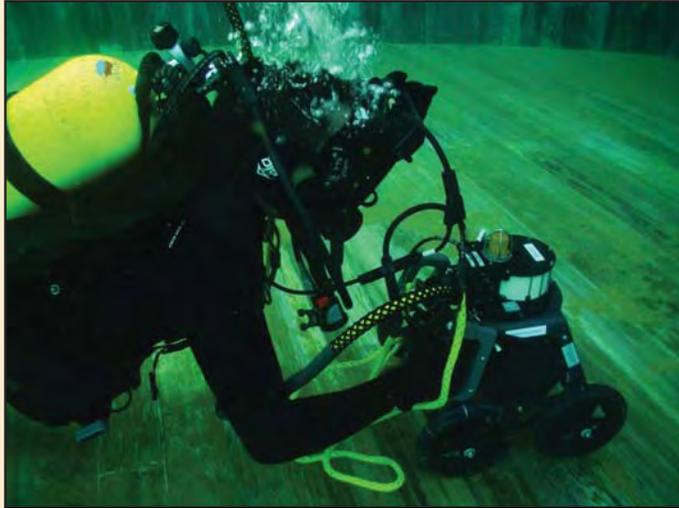


*Explosive Ordnance Disposal 7-Meter Rigid Inflatable Boat*

**Status:** 72 7-meter RIBs have been delivered to MDSU, UCT, and EOD forces.

## Diver Hull Imaging and Navigation System

**Description:** The Diver Hull Imaging and Navigation System (DHINS) improves the capabilities of multiple EOD divers to rapidly reconnoiter ship hull and berthing areas, and to investigate and localize unexploded ordnance objects. The system allows a Navy dive team to inspect a ship hull simultaneously to enable the accurate detection and mapping of targets that present a potential threat to high value assets, while sharing voice communication, visual positional data and sonar imagery, with each other as well as top-side operators. All sensor data including imagery and sonar is recorded and synchronized with diver track information supporting expeditious data retrieval and viewing. Major system components include:



*Diver Hull Imaging and Navigation System (DHINS)*

- Target detection and imaging sensor(s)
- Precise navigation sub-system
- Voice communication sub-system to enable the accurate detection and mapping of targets
- Top-side display and command and control equipment.

**Status:** System integration and testing of the DHINS final production configuration is expected to be completed in FY 2010. In FY 2011 and beyond, development and insertion of mature technologies as part of a CIP to enhance performance in harsh environments is planned. DHINS will be interoperable with the Hull Unmanned Undersea Vehicle (UUV) Localization System (HULS), a low cost two person portable UUV. HULS is designed to decrease the operational timeline and reduce personnel hazards associated with searching ship hulls, piers, pilings, and other underwater structures (IOC anticipated in FY 2012).

# ANNEX E

## Seabasing Integration Platforms, Programs and Systems

Significant improvements will be provided with the addition of the MLP, T-AKE, LMSR and other platforms to the MPF as detailed in **Chapter One** and **Annex C**. Science and technology investments are intended to further enhance the CAESR lines of operation, and enable the Nation to fully realize the transformational naval, joint, and inter-agency Seabasing capability as envisioned in the below excerpt from the Seabasing JIC.

**CLOSE** joint sea-based capabilities, including elements of joint command and control, to a joint operations area (JOA) to support major combat operations within 10-14 days of execution order.

**ASSEMBLE** and integrate joint capabilities from the sea base to support major combat operations within 24-72 hours of arrival within the JOA.

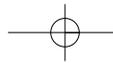
**EMPLOY** over-the-horizon from the sea base at least one (1) brigade for Joint Forcible Entry Operations within a period of darkness (8-10 hrs).

**SUSTAIN** joint sea-based operations, including up to at least two (2) joint brigades operating ashore, for an indefinite period using secure advanced bases up to 2000 nm away; also support selected joint maintenance and provide level III medical within the sea base.

**RECONSTITUTE** one (1) brigade from ashore to the sea base and reemploy within 10-14 days of execution order.

*Seabasing JIC Top-Level Measures of Performance (Threshold)*

**Description:** Per NOC 10, "...ongoing initiatives are focused on enhancing the Naval Service's capabilities to project task-organized forces at and from the sea. These capabilities include additional high-speed intra-theater lift, improved connectors that can transfer people and materiel at-sea, enhanced maritime prepositioning, and integrated naval logistics. These and other emerging initiatives will be employed in combination to reduce the joint force's reliance on ports in the operational area." These include internal ship cargo handling; ship-to-ship cargo transfer; and connector technologies enabling capability initiatives from ONR's Future Naval Capability program amplified below.



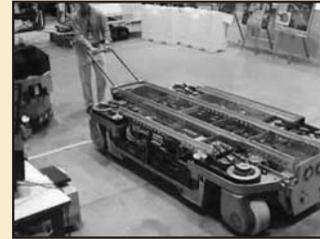
## Internal Ship Cargo Handling Technologies

### SYSTEM

### DESCRIPTION

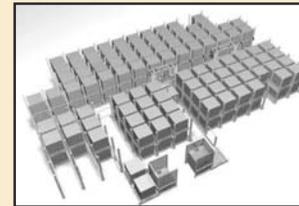
**Compact/Agile Material Mover**

Enables efficient weapons/cargo transport in high sea states by providing the capability to move very large payloads of approximately 10,000 lbs using minimal manpower (human amplification technology).



**Automated Warehouse**

Enables automated storage and retrieval of cargo/munitions onboard ship at rates of over 250 pallets (standard pallet or joint modular intermodal container) per hour.



**High Rate Vertical/Horizontal Material Movement**

Enables the automatic transition from the horizontal to vertical plane and vertical to horizontal plane during cargo/munitions movement in sea state 5. Enabling technology for strike-down to occur at the rate of underway replenishment reception to achieve required sortie generation rate, and reduce overall manning.



## Ship-to-Ship Cargo Transfer Technologies

### SYSTEM

### DESCRIPTION

**Large Vessel Interface Lift-On/Lift-Off (LVI LO/LO)**

Advanced positive-control crane that enables the rapid and safe at-sea transfer of standard ISO 20 ft containers from military or commercial vessels onto the sea base in sea state 4.



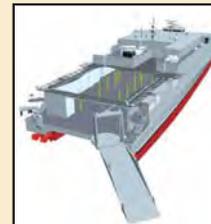
**Small-to-Large Vessel At-Sea Transfer**

Enables efficient combined MLP, LCAC/SSC, and MPF/LMSR on-load/off-load operations through the high end of sea state 4 through the development of close-in precision dynamic positioning systems, and advanced fender interface systems.



**Interface Ramp Technologies**

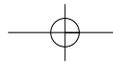
Enables vehicle transfer via an advanced side port ramp system consisting of a lightweight ramp section, integrated advanced connections, and an active, motion mitigation ramp foot. Current product focus is sea state capable ramp for JHSV.



**Advanced Mooring System**

Enables automated mooring/positioning of connectors and ships alongside MLP and JLOTS assets in higher sea states.





## Connector Technologies

### SYSTEM

### DESCRIPTION

#### High Speed Ship-to-Shore Connector

Lift fans and advanced skirts enables SSC by providing the connector with the capability to carry greater payload or have increased range, operate at higher speeds in sea state 4 conditions, and still allow for well deck and beaching operations.



#### 38 Megawatt Axial Flow Waterjet

Enables rapid closure of equipment, materials, and personnel to the sea base via high speed surface connectors. Addresses the need to develop high levels of propulsive thrust in a constrained propulsor diameter.



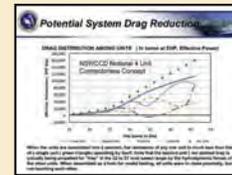
#### Intra-Connector Material Handling

Enables the rapid tensioning and instant release of vehicular cargo onboard current and future surface connectors.



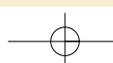
#### Skin-Friction Drag Reduction

Enables rapid closure by providing a means of reducing the hydrodynamic drag of the ship moving through the water which will enable greater speed, range, and/or payload.



**Status:** Testing of Seabasing enabling technologies continued during 2010 with promising results. During the Vehicle Transfer At-Sea Test (VTAST) conducted in January and February 2010, the US Navy demonstrated the transfer of vehicles between the surrogate MLP, Motor Vessel Mighty Servant 3, and the LMSR, USNS Soderman (TAKR 317). The test demonstrated a self-deploying vehicle transfer system ramp installed on the surrogate MLP; a new self-deploying sideport platform installed on the LMSR; LMSR enhanced heading control system; and surrogate MLP dynamic positioning thruster operations. Deployment and retrieval of the ramp was controllable by one person. In case of failure, the vehicle transfer system could safely continue to support vertical and horizontal design loads and allow emergency ship separation while carrying a vehicle weighing up to 80 tons anywhere along the length of the ramp. Personnel and vehicles were successfully transferred between the ships in high sea state 3 and low sea state 4 during several days of testing in the Gulf of Mexico. 87 USMC and U.S. Army wheeled and tracked vehicles conducted round trip transfers including high mobility multi-purpose wheeled vehicles (HMMWVs), HMMWVs with trailers, medium tactical vehicle replacements, logistics vehicle system wreckers, AAVs, M88 tank recovery vehicles, and M1A1 main battle tanks.

In May 2010, ONR's LVI LO/LO successfully completed sea trials off the coast of Panama City, FL moving 128 20-foot containers aboard the U.S. Maritime Administration's auxiliary crane ship SS Flickertail State (TACS 5). To perform its duties and safely move cargo between two vessels while both were underway on a rolling sea, the LVI LO/LO crane temporarily installed on Flickertail State relied on inputs from sensors, cameras and motion-adjusting software to calculate the ships' motion relative to each other to a high degree of accuracy, and compensated for pitch, roll and yaw of both vessels. LVI LO/LO may ultimately enable the Navy to conduct replenishment or logistics operations transferring large commercial shipping containers in support of the sea base when a sheltered harbor or port is unavailable.



# ANNEX F

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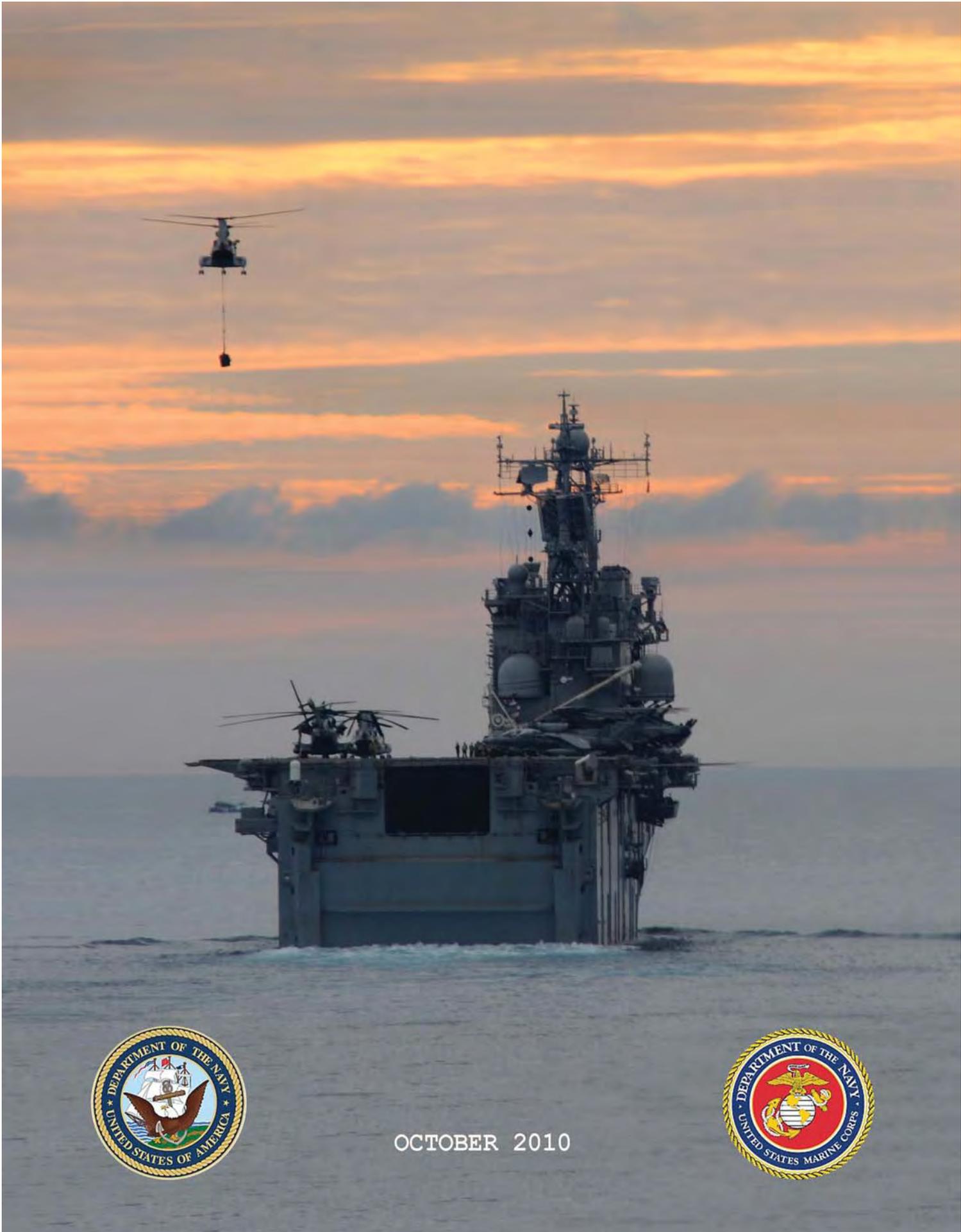
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N857B	Deputy, Navy Expeditionary Combat Branch	695-9594







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