

# 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 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.



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



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)

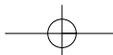
**Description:** The mission of both the Dock Landing Ship (LSD) classes is to transport and launch AAVs and landing craft with its crews and embarked personnel in an amphibious operation. The key difference between the LSD 49 class and the LSD 41 class is that the LSD 49 Class Cargo Variants have significantly 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.