

CRS Report for Congress

Navy-Marine Corps Amphibious and Maritime Prepositioning Ship Programs: Background and Oversight Issues for Congress

Updated April 12, 2007

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**Prepared for Members and
Committees of Congress**

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Summary

The Navy is proposing to maintain in coming years a Navy with 31 amphibious ships and an additional squadron of 14 Maritime Prepositioning Force (Future), or MPF(F), ships. The MPF(F) squadron is intended to implement a new operational concept called sea basing, under which forces would be staged at sea and used to conduct expeditionary operations ashore with little or no reliance on nearby land bases.

The Navy's proposed FY2008 budget requests \$1,398.3 million in procurement funding for a ninth San Antonio (LPD-17) amphibious ship to be procured in FY2008. The Navy estimates the total procurement cost of this ship at \$1,798.3 million. The ship received \$296.2 million in FY2008 advance procurement funding, and the Navy's proposed FY2008 budget calls for the final \$103.2 million of the ship's procurement cost to be provided in FY2009 as a "program closeout" cost. Although the Navy's proposed force of 31 amphibious ships includes ten LPD-17 class ships, the Navy is proposing in its FY2008 budget to end LPD-17 procurement with the ninth ship.

The Navy's proposed FY2008 budget also requests \$1,377.4 million in procurement funding to complete the procurement cost of LHA-6, a large-deck amphibious assault ship that was procured in FY2007 using split funding (a two-year form of incremental funding) in FY2007 and FY2008. The Navy estimates the total procurement cost of LHA-6 at \$2,806.2 million.

The Navy's FY2008 unfunded programs list (UPL) — a list of programs that the Navy desires but which are not funded in the Navy's proposed FY2008 budget — includes, as its top item, an additional LPD-17 at an estimated cost of about \$1,700 million, and, as its second item, two modified Lewis and Clark (TAKE-1) dry cargo ships for the MPF(F) squadron, at an estimated combined cost of about \$1,200 million. These two TAKES are currently scheduled for procurement in FY2009 and FY2010. (The FY2008 budget also requests \$456.1 million in the National Defense Sealift Fund (NDSF) for one "regular" TAKE-1 class ship intended for general Navy use, not for the MPF(F)).

One potential issue for Congress is whether to fund an additional LPD-17 and/or one or two additional TAKES in FY2008. Additional potential oversight issues for Congress include the estimated cost of the two TAKES in the Navy's FY2008 UPL, the adequacy of the 31-ship amphibious-ship force-level goal, the stability of the amphibious and MPF(F) force-level goals, the clarity of the sea basing concept, the potential affordability and cost-effectiveness of the sea basing concept, sea basing's relationship to the Navy's new Global Fleet Stations (GFS) concept, and Navy and Marine Corps coordination with other services in developing the sea basing concept.

This report will be updated as events warrant.

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Introduction

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The issue for Congress is whether to approve, modify, or reject the Navy's plans for procuring amphibious and MPF(F) ships. Decisions that Congress makes on this

issue could affect Navy and Marine Corps capabilities, Navy and Marine Corps funding requirements, and the shipbuilding industrial base.

Background

Current Amphibious and Maritime Prepositioning Ships

Amphibious Ships. Amphibious ships are one of four principal categories of combat ships that traditionally have helped define the size and structure of the U.S. Navy. The other three are aircraft carriers, surface combatants (e.g., cruisers, destroyers, frigates, and Littoral Combat Ships), and submarines.¹

The primary function of amphibious ships is to transport Marines and their equipment to distant operating areas, and enable Marines to conduct expeditionary operations ashore in those areas. Amphibious ships have berthing spaces for Marines, flight decks and hangar decks for their helicopters and vertical/short take-off and landing (VSTOL) fixed-wing aircraft, well decks for storing and launching their landing craft,² and storage space for their wheeled vehicles, their other combat equipment, and their supplies. Although amphibious ships are designed to support Marine landings against opposing military forces, they can also be used for Marine landings in so-called permissive or benign situations where there are no opposing forces.

U.S. amphibious ships are Navy ships operated by Navy crews, with the Marines as passengers. They are built to survivability standards similar to those of other U.S. Navy combat ships,³ and are included in the total number of battle force ships in the Navy, which is the commonly cited figure for the total number of ships in the fleet.⁴ Amphibious ships are procured in the Navy's shipbuilding budget, known as the Shipbuilding and Conversion, Navy (SCN) appropriation account. Designations of amphibious ship classes start with the letter L, as in amphibious *landing*.

Today's amphibious ships can be divided into two main groups — the so-called “big-deck” amphibious assault ships, designated LHA and LHD, which look like medium-sized aircraft carriers, and the smaller (but still sizeable) LSD- and LPD-

¹ The Navy also includes mine warfare ships and a variety of auxiliary and support ships.

² A well deck is a large, garage-like space in the stern of the ship. It can be flooded with water so that landing craft can leave or return to the ship. Access to the well deck is protected by a large stern gate that is somewhat like a garage door.

³ To enhance their survivability in battle — their ability to absorb damage from enemy weapons — U.S. Navy ships are built with features such as extensive interior compartmentalization and increased armor protection of certain critical interior spaces.

⁴ Battle force ships are ships that are readily deployable overseas and which contribute to the overseas combat capability of the Navy. They include both active duty and Naval Reserve Force combat ships as well Navy- and Military Sealift Command-operated auxiliaries — such as oilers, ammunition ships, dry cargo ships, and multiproduct resupply ships — that transport supplies from shore to Navy combat ships operating at sea.

type amphibious ships.⁵ The LHAs and LHDs have large flight decks and hangar decks for embarking and operating numerous helicopters and VSTOL fixed-wing aircraft, while the LSDs and LPDs have much smaller flight decks and hangar decks for embarking and operating smaller numbers of helicopters. The LHAs and LHDs, as bigger ships, in general can embark more Marines and equipment than the LSDs and LPDs. As of the end of FY2006, the Navy included 33 amphibious ships:

- **7 Wasp (LHD-1) class ships**, commissioned between 1989 and 2001, each displacing about 40,500 tons;⁶
- **4 Tarawa (LHA-1) class ships**, commissioned between 1976 and 1980, each displacing about 40,000 tons;
- **12 Whidbey Island/Harpers Ferry (LSD-41/49) class ships**, commissioned between 1985 and 1998, each displacing about 16,000 tons;
- **1 San Antonio (LPD-17) class ship**, commissioned in 2006, displacing about 26,000 tons; and
- **9 Austin (LPD-4) class ships**, commissioned between 1965 and 1971, each displacing about 17,000 tons.⁷

The Navy organizes its amphibious ships into expeditionary strike groups (ESGs). Each ESG notionally includes one LHA or LHD, one LSD, and one LPD. The amphibious ships in an ESG together can embark a Marine expeditionary unit (MEU) consisting of about 2,200 Marines, their aircraft, their landing craft, their combat equipment, and about 15 days worth of supplies. Each ESG also notionally includes three surface combatants (some or all armed with Tomahawk cruise missiles), one submarine, and perhaps one or more P-3 long-range, land-based maritime patrol aircraft. ESGs are designed to be independently deployable, strike-capable naval formations, but they can also operate in conjunction with carrier strike groups (CSGs) to form larger naval task forces. On average, two (or perhaps three) ESGs might be forward-deployed at any given time.

⁵ LHA can be translated as landing ship, helicopter-capable, assault. LHD can be translated as landing ship, helicopter-capable, well deck. LSD can be translated as landing ship, well deck. LPD can be translated as landing ship, helicopter platform, well deck. Whether noted in the designation or not, all these ships have well decks.

⁶ For comparison, a Nimitz-class nuclear-powered aircraft carrier displaces about 100,000 tons, and a cruiser or destroyer displaces about 9,000 tons.

⁷ The Navy also operates two Blue Ridge (LCC-19) class command ships. As their designation suggests, these ships were originally built as amphibious command ships. In recent years, they have evolved into general fleet command ships. Some listings of U.S. Navy ships include the two LCCs as amphibious ships, while others list them in a separate category of command ships, along with one other fleet command ship — the Coronado (AGF-11), which is a converted LPD.

Maritime Prepositioning Ships. Today's maritime prepositioning ships are large military cargo ships that are loaded with combat equipment and supplies and forward-located to sea areas that are close to potential U.S. military operating zones. They are essentially forward-located, floating warehouses. Most have a roll-on/roll-off (RO/RO) capability, which means that they are equipped with ramps that permit wheeled or tracked vehicles to quickly roll on or off the ship when the ship is at pier.

A total of 36 U.S. prepositioning ships, controlled by the Military Sealift Command (MSC), store equipment and supplies for various parts of DOD. The 16 ships used primarily for storing Marine Corps equipment and supplies are called Maritime Prepositioning Force (MPF) ships. The 10 ships used primarily for storing equipment and supplies for the Army are called the Combat Prepositioning Force. The remaining 10 ships used primarily for storing equipment and supplies for the Air Force, Navy, and Defense Logistics Agency are called Logistics Prepositioning Ships. This report focuses on the 16 MPF ships.

The 16-ship MPF fleet is organized into three squadrons of five or six ships each. Each squadron stores enough combat equipment and supplies to equip and support a MEB for a period of 30 days. One squadron is normally forward-located in the Atlantic or Mediterranean, one is normally forward-located in the Indian Ocean at Diego Garcia, and one is normally forward-located in the Western Pacific at Guam and Saipan.⁸

Today's MPF ships are designed to support Marine landings at friendly ports or ports that Marines or other U.S. or friendly forces have previously seized by force. Under the basic MPF concept of operations, the MPF ships would steam into such a port, while Marines would be flown into a nearby friendly or seized airbase. The Marines would then travel to the port, help unload the MPF ships, unpack and "marry up" with their equipment and supplies, and begin conducting their operations ashore. MPF operations can be used to reinforce an initial Marine presence ashore that was created by a Marine landing against opposing forces, or to establish an initial Marine presence ashore in a permissive or benign landing environment.

The MPF concept permits a MEB-sized Marine force to be established in a distant operating area more quickly than would be possible if the MEB's equipment and supplies had to be transported all the way from the United States. Unlike prepositioning of equipment and supplies on the soil of foreign countries, maritime prepositioning in international waters does not require permanent host nation access. The MPF concept also provides a degree of intertheater operational flexibility, since an MPF squadron can be moved from one theater (e.g., the Mediterranean) to an adjoining theater (e.g., the Indian Ocean) relatively quickly if needed to respond to a contingency. DOD used the Mediterranean and Western Pacific MPF squadrons to supplement the Indian Ocean MPF squadron in the 1991 Gulf War (Operation Desert Storm) and the more recent Iraq War (Operation Iraqi Freedom).

⁸ The maritime prepositioning ships serving the other military services are located principally at Diego Garcia.

Today's MPF ships are DOD sealift ships operated with civilian crews. They are built to survivability standards similar to those of commercial cargo ships, which are lower than those of U.S. Navy combat ships. They are not included in the total number of battle force ships in the Navy.⁹ Today's MPF ships are designated TAKs. The "T" means the ships are operated by the MSC; the "A" means auxiliary; and the "K" means cargo.

The MPF fleet was established in the mid-1980s. It includes 13 ships (TAK-3000 through TAK-3012) that entered service with the MPF in 1984-1986, and three ships (TAK-3015 through TAK-3017) that were added to the MPF fleet in 2000-2003 under the MPF Enhancement, or MPF(E), program, so as to increase the storage capacity of the MPF fleet in accordance with lessons learned during the 1991 Gulf War. One MPF(E) ship was added to each squadron.

The 13 earlier MPF ships, which each displace between about 44,000 and 49,000 tons, are owned and operated by private companies under 25-year charters (i.e., leases) to MSC. The three more recently added MPF(E) ships, which each displace between about 50,000 and 55,000 tons, are owned by the U.S. government and are operated by private companies under contract to MSC.

Since FY1993, new-construction DOD sealift ships similar to the MPF ships have been procured not in the SCN account, but rather in the National Defense Sealift Fund (NDSF), a DOD revolving fund that is outside both the Department of the Navy budget and the procurement title of the annual DOD appropriation act. NDSF funding is used for acquiring, operating, and maintaining DOD sealift ships and certain Navy auxiliary ships.

As of the end of FY2005, the MPF fleet included the following ships:

- **5 Cpl. Louis J. Hauge Jr. (TAK-3000) class ships**, which were originally built in Denmark in 1979-1980 as civilian cargo ships for Maersk Line Ltd. Their conversions into MPF ships began in 1983-1984. The ships are owned and operated by Maersk.
- **3 Sgt. Matej Kocak (TAK-3005) class ships**, which were originally built in the United States in 1981-1983 as civilian cargo ships for the Waterman Steamship Corporation. Their conversions into MPF ships began in 1982-1983. The ships are owned and operated by Waterman.
- **5 2nd Lt. John P. Bobo (TAK-3008) class ships**, which were built in the United States in 1985-1986 as new-construction ships for the MPF. They are owned and operated by American Overseas Marine.

⁹ In contrast to Navy auxiliaries that are counted as battle force ships because they transport supplies from land to Navy ships operating at sea, MPF ships, like most other DOD sealift ships, transport supplies from one land mass to another, primarily for the benefit of a service (in this case, the Marine Corps) other than the Navy.

- **1 1st Lt. Harry L. Martin (TAK-3015) class ship**, which was originally built in Germany in 1980 as a civilian cargo ship. Its conversion into an MPF ship began in 1999.
- **1 LCPL Roy M. Wheat (TAK-3016) class ship**, which was originally built in Ukraine as a Soviet auxiliary ship. It was acquired for conversion in 1997.¹⁰
- **1 Gunnery Sgt. Fred W. Stockham (TAK-3017) class ship**, which was originally built in Denmark in 1980 as a commercial cargo ship. In the early 1990s, it was acquired for conversion into a kind of DOD sealift ship called a large, medium-speed, roll-on/roll-off (LMSR) ship. It was used by MSC as an LMSR under the name Soderman (TAKR-299) until 2000, when it was converted into an MPF(E) ship, and renamed the Stockham.¹¹

Amphibious and MPF(F) Force-Level Goals

The Navy is proposing to maintain in coming years a fleet of 313 ships, including 31 amphibious ships and a 14-ship MPF(F) squadron.¹² The 31-ship amphibious force is to include the following:

- 9 LHD- or LHA-type large-deck amphibious assault ships;
- 10 LPD-17 class amphibious ships; and
- 12 LSD-41/49 class amphibious ships.

The 14-ship MPF(F) squadron is to include 3 additional new-construction amphibious ships, 9 new-construction sealift-type ships, and 2 existing, older-generation MPF ships. The 12 new-construction ships are as follows:

- 2 modified LHA Replacement, or LHA(R), ships equipped with Marine Expeditionary Brigade (MEB) command and control (C2) facilities;
- 1 modified LHD equipped with aviation C2 facilities;

¹⁰ The conversion of this ship took considerably longer than expected and was the subject of a lawsuit. For discussion, see Christopher J. Castelli, "MSC Names and Deploys MPF(E) Vessel, While Bender Pursues Lawsuit," *Inside the Navy*, Oct. 13, 2003; Christopher J. Castelli, "Finally, MSC Plans to Name Converted Cargo Ship This October," *Inside the Navy*, Aug. 25, 2003; Christopher J. Castelli, "MSC: Beleaguered Cargo Vessel to Make First Deployment This Year," *Inside the Navy*, June 2, 2003; Christopher J. Castelli, "MSC Postpones Wheat Christening, Citing Current Military Ops," *Inside the Navy*, Feb. 17, 2003; Christopher J. Castelli, "Cargo Ship Mired in Conversion Process to Reach Fleet In 2003," *Inside the Navy*, Jan. 6, 2003.

¹¹ Another LMSR was built as a new-construction LMSR and named the Soderman (TAKR-317).

¹² For additional discussion of the proposed 313-ship fleet, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

- 3 modified Large, Medium-Speed, Roll-on/Roll-off (LMSR) sealift ships;
- 3 ships modified Lewis and Clark (TAKE-1) class cargo and ammunition resupply ships; and
- 3 Mobile Landing Platform (MLP) ships.

The 2 existing MPF ships in the squadron are now referred to as “dense pack” ships. The 14-ship MPF(F) squadron is intended to help implement a new operational concept called sea basing, which is discussed in the next section.

Sea Basing Concept

The Concept in General. The Navy and Marine Corps are proposing to implement a new concept of operations for staging forces at sea and conducting expeditionary operations ashore with little or no reliance on nearby land bases. The concept is called enhanced networked sea basing, or sea basing for short.

Under the traditional concept of operations for conducting expeditionary operations ashore, the Navy and Marine Corps would establish a base ashore, and then use that base to conduct operations against the desired ashore objective. Under sea basing, the Navy and Marine Corps would launch, direct, and support expeditionary operations directly from a base at sea, with little or no reliance on a nearby land base.¹³

A key rationale for the sea basing concept is that in the future, fixed land bases ashore will become vulnerable to enemy attack from weapons such as cruise missiles or short-range ballistic missiles. Launching the operation directly from a base at sea, advocates of sea basing argue, will enhance the survivability of the attacking Navy-Marine Corps force by putting the base out of the range of shorter-range enemy weapons and targeting sensors, and by permitting the sea to be used as a medium of maneuver for evading detection and targeting by longer-range enemy weapons and sensors.

A second rationale for sea basing is that by eliminating the nearby base ashore — the logistical “middleman” — sea basing will permit the Marine Corps to initiate and maintain a higher pace of operations against the desired objective, thus enhancing the effectiveness of the operation. A third rationale for sea basing is that it could permit the Marine force, once the operation is completed, to reconstitute and redeploy — that is, get back aboard ship and be ready for conducting another operation somewhere else — more quickly than under the traditional concept of operations.

¹³ For an in-depth discussion of the sea basing concept, see *Defense Science Board Task Force on Sea Basing*, op. cit. See also Otto Kreisher, “Sea Basing,” *Air Force Magazine*, July 2004, p. 64; Scott C. Truver, “Sea Basing: More Than the Sum of Its Parts?” *Jane’s Navy International*, Mar. 2004, pp. 16-18, 20-21; Art Corbett and Vince Goulding, “Sea Basing: What’s New?” *U.S. Naval Institute Proceedings*, November 2002, pp. 34-39.

The sea base being referred to is not a single ship, but rather a collection of ships, including the MPF(F) squadron, other ships (such as an aircraft carrier strike group), and intertheater and sea base-to-shore connector ships. Under sea basing, certain functions previously carried out from the nearby base ashore, including command and control and logistics, would be transferred back to the ships at sea that collectively make up the sea base.

The Defense Science Board (DSB) in August 2003 issued a report on sea basing which concluded that “sea basing represents *a critical future joint military capability* for the United States.”¹⁴

In August 2005, the Joint Chiefs of Staff unanimously approved a Joint Integrating Concept (JIC) document for sea basing.¹⁵ Approval of the JIC gives seabasing DOD recognition as a key future U.S. military capability, and creates a more formal requirement for seabasing to be implemented in a way that satisfies joint requirements rather than those of the Navy and Marine Corps alone. The seabasing concept must still complete DOD’s Joint Capabilities Integration and Development System (JCIDS) process and obtain acquisition milestone approvals.¹⁶

MPF(F) Squadron for Implementing Sea Basing. In June 2005, the Navy submitted a report to Congress on the MPF(F) program¹⁷ that was required by the conference report (H.Rept. 108-622 of July 20, 2005) on the FY2005 defense appropriations bill (H.R. 4613/P.L. 108-287 of August 5, 2004).¹⁸ The Navy report outlined the 14-ship MPF(F) squadron.

The report states that operational requirements for an MPF(F) squadron include, among other things, an ability to employ two Marine battalions from the sea base — one by surface transportation and the other by air transportation (i.e., “vertically”) — in a period of 8 to 10 hours.

¹⁴ *Defense Science Board Task Force on Sea Basing*, op.cit., p. xi. Italics as in the original. Similar statements are made in two cover memos included at the front of the report, and on p. 87. For press reports about this study, see John T. Bennett, “Marine Corps Commandant, DSB Describe Visions of Seabasing Concept,” *Inside the Pentagon*, Oct. 30, 2004; Jason Ma, “DSB Study, Conference Examine Seabasing Needs and Challenges,” *Inside the Navy*, Oct. 27, 2003; Jason Sherman, “Pentagon Group Details Sea Base Concept,” *Defense News*, Oct. 27, 2003.

¹⁵ Christopher J. Castelli, “Joint Chiefs Endorse Pentagon’s Proposed Seabasing Concept,” *Inside the Navy*, Sept. 19, 2005. See also David W. Munns, “Forward Progress,” *Seapower*, September 2005: 14-16, 18.

¹⁶ Jason Ma, “Navy Weighted U.S. Shipbuilding Capabilities When Crafting MPF(F) Plan,” *Inside the Navy*, Sept. 19, 2005.

¹⁷ U.S., Department of Defense Department of the Navy, *Report to Congress, Maritime Prepositioning Force, Future, MPF(F)*, Washington, 2005, 8 pp. (Prepared by Program Executive Officer, Ships, Washington DC 20376, June 2005.) A 20-page appendix to the report provides supporting budget details. Letters of transmission to Congress accompanying the report are dated June 6, 2005.

¹⁸ The requirement for the report on the MPF(F) program is on page 360 of H.Rept. 108-622.

The report states that the composition of the 14-ship MPF(F) squadron “will take advantage of existing product lines where possible minimizing new ship design requirements and overall production risk for our shipbuilding industry. Additionally, this new squadron may offer considerable force structure flexibility, as ships assigned to perform the MPF(F) role might be used to augment or support ESG operations and perform other dual roles.”¹⁹

Industrial-base considerations reportedly played a role of some kind in the selection of the newly planned 14-ship squadron. An earlier press report suggested that the Navy rejected an alternative proposed combination of LHD/LHA(R)-type ships and modified San Antonio (LPD-17) class amphibious ships at least in part because all these ships are built by Northrop Grumman, leaving no role in the program for General Dynamics (GD).²⁰ In a later press report, DOD officials distanced themselves from the idea that the new squadron was selected to guarantee each firm a role in the program, and argued that the 14-ship squadron was selected to minimize development risk and cost, and because the earlier design for the MPF(F) ship was so large that it could not be built in a U.S. yard, or at least not in enough U.S. yards to permit competition between shipbuilding firms.²¹

Whatever the exact role of industrial-base considerations, the new 14-ship squadron will give both Northrop and GD a role in the program. Northrop would build the modified amphibious assault ships, and GD, which is currently building TAKEs for Navy use, would build the modified TAKEs. The two firms would compete for the LMSRs, which they have both built in the past, and could also compete, potentially with other U.S. shipbuilding firms, for the MLPs.²²

The report states that the MPF(F) squadron will be able to, among other things:

- accommodate the 2015 version of a Marine Expeditionary Brigade (MEB) consisting of three Marine battalions — two surface battalions and one vertical battalion;
- preposition the 2015 MEB at sea in the desired forward operating area within 10 to 14 days;
- permit that force to arrive and assemble itself at the sea base in 24 to 72 hours;
- employ the vertical battalion and one of the surface battalions in 8 to 10 hours;

¹⁹ *Report to Congress, Maritime Prepositioning Force, Future, MPF(F)*, op. cit., p. 6.

²⁰ Jason Ma, “Navy Aims To Balance Industrial Base Needs In New Seabasing Plan,” *Inside the Navy*, May 2, 2005.

²¹ Jason Ma, “Navy Weighed U.S. Shipbuilding Capabilities When Crafting MPF(F) Plan,” *Inside the Navy*, Sept. 19, 2005.

²² *Ibid.*

- provide accommodations and maintenance capability for vehicles and aircraft;
- sustain the forces ashore from the sea base;
- provide medical support, including resuscitative surgery;
- accommodate and operate surface connectors;
- provide MEB-level C2 capability; and
- operate in sea conditions up to Sea State 3 (a moderate sea with waves of 3 feet to 5 feet).

An August 1, 2005, press report stated that the Marine Corps, in a July 28, 2005, presentation to a conference of industry officials, explained that the planned 14-ship MPF(F) squadron would have an estimated combined procurement cost of about \$14.5 billion, as detailed in **Table 1**.

Table 1. Estimated Procurement Cost of MPF(F) Squadron
(billions of dollars)

Ship type	Qty	Unit procurement cost	Total procurement cost
Modified LHA(R)	2	\$2.35	\$4.7
Modified LHD	1	2.2	2.2
Modified LMSR	3	0.98	2.94
Modified TAKE	3	0.63	1.89
MLP	3	0.92	2.76
Existing MPF	2	0 ^a	0
TOTAL	14		\$14.49

Source: *Inside the Navy*, August 1, 2005.

a. These two ships already exist.

The press report stated:

The amphibious ships in the future MPF squadron would be built without their full complement of combat systems, said Magnus. The ships would have systems for self-defense, flight operations, communications with other elements of the squadron as well as command and control, he told *Inside the Navy* in a brief interview. But missing from the ships would be “basic point missile defense” systems, anti-surface ship weapons and undersea warfare systems, he added.

Carrier strike groups or expeditionary strike groups that deploy with MPF squadrons could provide protection, or the MPF ships would stay in safer waters at least 25 miles offshore, he said.

“These ships are going to stay in the protected commons of the sea,” he said.

The LMSR designs would be different too, enabling forces to arrive and prepare for operations while at sea, instead of at a port, Magnus said. But additional work remains in developing an automated cargo handling system for the interior, he noted. Commercial cargo handlers already use such systems, and the Office of Naval Research is developing a selective retrieval machine, which could be tested within the next year, he said.

The future MPF squadron also will carry about 12,000 Marines, including 800 humvees and 106 Expeditionary Fighting Vehicles. During the first day of an operation, about 4,000 Marines would go ashore, followed by another 4,000 over the next few days, he said. The rest would remain on the ships to perform command and control, intelligence, maintenance and logistics duties, he added.²³

Related Transport Ships. In addition to the MPF(F) squadron ships, the Navy and Army plan to procure several Joint High Speed Vessels (JHSVs) for high-speed intra-theater transport of Marine Corps and Army forces and equipment. The JHSV is to be a 35- to 45-knot, shallow-draft, intratheater transport ship similar to the leased commercial high-speed ferries that DOD has used experimentally in recent years. The Navy also plans to procure sea base-to-shore connector (SSC) ships for transporting personnel and equipment from the sea base to the shore area of operations. The SSCs would replace the Navy's current LCAC air-cushioned landing craft.

Global Fleet Station (GFS) Concept

In connection with the sea basing concept and the concept of adaptive force packaging (which refers to the ability of U.S. naval forces to be split apart and recombined into force packages of various sizes and mission orientations, so as to meet the needs of various contingencies), the Navy is proposing to establish what it calls **global fleet stations**, or GFSs. A 2006 Navy operations concept document states:

Providing operational maneuver and assured access to the joint force while significantly reducing our footprint ashore and minimizing the permissions required to operate from host nations. With a sustainable logistics tail safely at sea, sea basing leverages the ability to operate from international waters. We are exploring innovative operational concepts that combine sea basing with adaptive force packaging that will further support national security and the Combatant Commanders' objectives worldwide. One such concept is the Global Fleet Station (GFS). GFS is a persistent sea base of operations from which to coordinate and employ adaptive force packages within a regional area of interest. Focusing primarily on Phase 0 (shaping) operations, Theater Security Cooperation, Global Maritime Awareness, and tasks associated specifically with the War on Terror, GFS offers a means to increase regional maritime security through the cooperative efforts of joint, inter-agency, and multinational partners,

²³ Jason Ma, "Future MPF Squadron For Seabasing Expected To Cost \$14.5 Billion," *Inside the Navy*, Aug. 1, 2005. See also Christopher P. Cavas, "New U.S. Navy Sea Base Plan Includes Assault Ships," *DefenseNews.com*, July 14 2005; Christopher P. Cavas, "Big Changes For Sea Base," *Navy Times*, Aug. 1, 2005; and Geoff Fein, "Fleet of 14 MPF(F) Ships Provides Lower Cost/Schedule Risk, Navy Says," *Defense Daily*, July 12, 2005.

as well as Non-Governmental Organizations. Like all sea bases, the composition of a GFS depends on Combatant Commander requirements, the operating environment, and the mission. From its sea base, each GFS would serve as a self-contained headquarters for regional operations with the capacity to repair and service all ships, small craft, and aircraft assigned. Additionally, the GFS might provide classroom space, limited medical facilities, an information fusion center, and some combat service support capability. The GFS concept provides a leveraged, high-yield sea based option that achieves a persistent presence in support of national objectives. Additionally, it complements more traditional CSG/ESG training and deployment cycles.²⁴

The document describes a hypothetical scenario in which a future GFS is organized around an LPD-type ship that operates in the region for up to two years. In the scenario, the LPD-type ship acts as a host or support platform for sailors, Marines, Army personnel, Air Force personnel, and a Coast Guard small boat unit.²⁵

A March 20, 2006, Navy white paper on the GFS concept posted online by *InsideDefense.com* states that

The purpose of a GFS is to establish a base of operations from which to coordinate and launch a variety of missions within a regional area of interest, focusing primarily on Phase 0/Shaping and Stability operations, Theater Security Cooperation, Maritime Domain Awareness, and tasks associated specifically with the War on Terror.... These activities range from traditional counter piracy, MIO, and security patrols, to mobile training teams (MTTs), construction assistance, medical outreach, and information sharing....

By taking advantage of existing host nation basing arrangements, it is anticipated that five Fleet Stations could be developed within the next five to seven years, based upon the availability of trained personnel, ships, helicopters and equipment. Possible locations for these initial Global Fleet Stations include Guam or Singapore (GFS - SE Asia); Bahrain or UAE (GFS - East Africa, Arabian Gulf); Diego Garcia (GFS — South Asia); Rota (GFS - West Africa); and, Key West (GFS — South and Central America). These locations were selected due to the availability of facilities that could support a US military presence with dependents. As a pilot, Naval Station Key West could serve as the site for proof of concept....

Each GFS is a self-sustaining home base from which to conduct regional Phase 0 operations ranging from Theater Security Cooperation (TSC) activities to Maritime Interdiction and counter-piracy. It is a base from which tailored and adaptive force packages can be launched in response to humanitarian crises, natural disasters, and counter-terrorism tippers. It is a center for intelligence and information fusion in support of enhanced Maritime Domain Awareness, and when networked with other Fleet Stations, each GFS fusion center will serve as an intelligence feeder for Global Maritime Intelligence Integration. Most importantly, these information fusion centers will offer increased regional

²⁴ U.S. Department of the Navy, *Naval Operations Concept 2006*, Washington, 2006, pp. 30-31

²⁵ U.S. Department of the Navy, *Naval Operations Concept 2006*, op. cit., p. 32.

maritime domain awareness to host nation partners and will provide timely queuing to interdict illegal transnational activities.

Each GFS is a base from which to sustain and deploy riverine units throughout the region, whether in concert with Mobile Training Teams and other Phase 0 activities or to conduct missions in direct support of GWOT (surveillance, MIO [maritime intercept operations], combat insertion, etc). Each GFS will serve as the logistics and C2 HQ for regional expeditionary operations, to include the basing of Blue and Gold crews to sustain high OPTEMPO [operational tempo] throughout the region with a limited number of ships, small craft, helicopters and UAVs [unmanned aerial vehicles]. Each GFS is home base for regional NECC [Naval Expeditionary Combat Command] detachments consisting of Seabees [construction battalions, or CBs], salvage divers, EOD [explosive ordnance disposal], and security force personnel as well as small expeditionary medical and logistics teams. It is also the hub for FAOs [Foreign Area Officers] dedicated to supporting activities within the region, tailored to the needs of the host nations involved. Further, each GFS will leverage existing SOFA's [Status of Forces Agreements with other countries] and MOU's [Memoranda of Understanding] to manage bilateral and multi-lateral cooperation as well as IMET [International Military Education and Training] funds and other incentive programs, and will be the focal point for coordination with local representatives from the Inter-Agency, International Organizations, and NGOs [non-governmental organizations]....

At a minimum, each GFS must include at least one expeditionary warfare ship LPD/LSD/HSV [high-speed vessel] capable of serving as a mother/command ship to transport a variety of riverine craft and helicopters/UAVs, mobile training teams, Seabees and materiel, medical teams, and a limited security force. This ship should also provide sufficient C4I, limited medical facilities, and configurable classroom space to sustain Phase 0 operations throughout the region. Initially one or two FFGs [frigates] (to be replaced by LCSs [littoral combat ships]) would provide limited NSFS [naval surface fire support], MIO/VBSS [visit, board, search, and seizure], AAW [anti-air warfare] and ASW [anti-submarine warfare] support (as well as the ability to train with larger regional and coastal Navy's). Each GFS must serve as a self-contained Group HQ for regional operations, and should have the capacity to repair and service all ships, small craft, and aircraft assigned. Additionally, the GFS should have a limited combat service support capability. The GFS (and mother ship) must maintain robust and secure Joint C4I capabilities to support a JFMCC [Joint Force Maritime Component Commander] or JFLCC [Joint Force Land Component Commander] command structure. There should be a medical treatment facility at the GFS (and/or on the command ship assigned) to provide medical support/humanitarian assistance as well as sufficient combat construction equipment and material to support Phase 0 operations in remote locations. The intelligence fusion cell should be equipped with sufficiently robust and secure communications to handle the fusion of open source information as well as tactical and strategic intelligence (to include IMINT, SIGINT, HUMINT [imagery, signal, and human intelligence] and other sensitive intelligence sources). Each GFS would include at least two small boat units and eventually, perhaps, an entire riverine squadron. Additionally, at least one helicopter detachment (and eventually a UAV detachment) would be assigned to each GFS. The GFS would ideally have regular access to, and contact with, inter-agency, international community, and NGO representatives throughout the region. There would be sufficient language expertise on board the Station,

through FAO and other personnel, to provide direct interaction with indigenous populations throughout the region....

The most feasible place to test the Global Fleet Station concept would be Key West (Naval Station Annex and Truman Annex) serving Central and South America.²⁶

Ship Procurement Programs

Table 2 shows the Navy's plan for procuring amphibious and MPF(F) ships in FY2008-FY2013.

Table 2. FY2008-FY2013 Amphibious and MPF(F) Ship Procurement Plan

(Ships fully funded in FY2006 shown for reference)

	FY08	FY09	FY10	FY11	FY12	FY13
<i>For the 31-ship amphibious force</i>						
LPD-17	1					
LHA(R)	(0) ^a					
<i>For the 14-ship MPF(F) squadron</i>						
LHA(R)-MPF(F)			1			1
TAKE-MPF(F)	(1) ^b	1	1	1		
LMSR-MPF(F)			1	1	1	1
MLP-MPF(F)		1		1		1

Sources: Department of the Navy, *Highlights of the Department of the Navy FY 2007 Budget*, Chart 15 (p. 5-3), and *Draft Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2007*.

Key:

LPD-17	San Antonio (LPD-17) class amphibious ship
LHA(R)	LHA(R) class amphibious assault ship. Also known as the LHA-6 class.
LHA(R)-MPF(F)	Modified LHA(R) intended for MPF(F) squadron
TAKE-MPF(F)	Modified Lewis and Clark (TAKE-1) class resupply ship intended for MPF(F) squadron
LMSR-MPF(F)	Modified large, medium-speed, roll-on/roll-off (LMSR) sealift ship intended for MPF(F) squadron
MLP-MPF(F)	Mobile Landing Platform ship intended for MPF(F) squadron

a. FY2008 budget request includes funding for an LHA(R) procured in FY2007 using split funding in FY2007 and FY2008.

b. The Navy's s FY2008-FY2013 shipbuilding plan also includes a "regular" TAKE in FY2008 intended for general Navy use rather than the MPF(F) squadron.

LPD-17 Program. As a replacement for aging LPDs and other amphibious ships that have already been decommissioned, the Navy is currently procuring new San Antonio (LPD-17) class amphibious ships. The ships are built primarily at the

²⁶ "Navy White Paper on Global Fleet Stations," posted online at *InsideDefense.com* [subscription required].

Avondale shipyard near New Orleans, LA, that forms part of Northrop Grumman Ship Systems (NGSS).²⁷

A total procurement of 12 LPD-17s was originally planned. The Navy's proposed 31-ship amphibious fleet includes a total of 10 LPD-17s. In spite of this 10-ship goal, the Navy plans to end LPD-17 procurement with the ninth ship, which is to be procured in FY2008.

The first LPD-17, which was procured in FY1996, encountered a roughly two-year delay in design and construction. It was presented to the Navy for acceptance in late June 2005. A Navy inspection of the ship conducted June 27-July 1, 2005, found numerous construction deficiencies.²⁸ These deficiencies were addressed and the ship was commissioned into service on January 14, 2006.

Estimated procurement costs for LPD-17s have grown significantly. When LPD-17 procurement began, follow-on ships in the class were estimated to cost roughly \$750 million each. Estimated procurement costs for the follow-on ships subsequently grew to figures between about \$1,200 million and about \$1,500 million. The Navy estimates the procurement cost of the ninth ship at \$1,798.3 million.

The Navy's proposed FY2008 budget requests \$1,398.3 million in procurement funding for ninth ship. This ship received \$296.2 million in FY2008 advance procurement funding, and the Navy's proposed FY2008 budget calls for the final \$103.2 million of the ship's procurement cost to be provided in FY2009 as a "program closeout" cost.

The Navy's FY2008 unfunded programs list (UPL) — a list of programs that the Navy desires but which are not funded in the Navy's proposed FY2008 budget — includes, as its top item, an additional (i.e., tenth) LPD-17 at an estimated cost of about \$1,700 million.

LHD-8. To replace one of its five aging LHAs, the Navy in FY2002 procured LHD-8 — an eighth Wasp-class ship²⁹ — at a total budgeted cost of about \$2.06 billion. At the direction of the FY2000 and FY2001 defense appropriation bills, the ship was incrementally funded in the SCN account, with the final funding increment being provided in FY2006. The ship is being built by the Ingalls shipyard at Pascagoula, MS, that now forms part of NGSS. The Ingalls shipyard is the builder

²⁷ LPD-17-related work is also done at Northrop's Ingalls shipyard at Pascagoula, MS, and at a third Northrop facility at Gulfport, MS. The Avondale, Ingalls, and Gulfport facilities together make up Northrop Grumman Ship Systems (NGSS).

²⁸ Associated Press, "Shipbuilder: Navy Will Accept New Vessel," *NavyTimes.com*, July 21, 2005; Christopher J. Castelli, "Naval Inspection Report Finds Numerous Problems With LPD-17," *Inside the Navy*, July 18, 2005; Dale Eisman and Jack Dorsey, "Problems On New Ship A Bad Sign, Analyst Warns," *Norfolk Virginian-Pilot*, July 14, 2005; Nathan Hodge, "Navy Inspectors Flag 'Poor Construction' On LPD-17," *Defense Daily*, July 14, 2005. A copy of the Navy's inspection report, dated July 5, 2005, is posted online at [<http://www.coltoncompany.com/comment/lpd17insurv.htm>]

²⁹ LHD-8 will differ from the earlier LHDs in terms of propulsion plant and other respects.

of all previous LHAs and LHDs, and is scheduled to be delivered to the Navy in May 2008.

LHA(R)/LHA-6 Program. As a successor to the Wasp-class design, the Navy is procuring a new class of amphibious assault ships called the LHA Replacement (LHA[R]) or LHA-6 class. The Navy estimates the procurement cost of the first such ship, LHA-6, at \$2,806.2 million. The ship was procured in FY2007 using split funding (a two-year form of incremental funding) in FY2007 and FY2008. The ship received \$149.3 million in FY2005 advance procurement funding, \$148.4 million in FY2006 advance procurement funding, and \$1,131.1 million in FY2007 procurement funding. The Navy's proposed FY2008 budget requests \$1,377.4 million in procurement funding to complete the procurement cost of the ship. The ship is scheduled to be delivered to the Navy in December 2011.

As shown in **Table 2**, the Navy's FY2008-FY2013 shipbuilding plan does not include any additional "regular" LHA(R)s through FY2013, but does include two modified LHA(R)s for the MPF(F) squadron — one in FY2010 and the other in FY2013. The Navy's 30-year (FY2008-FY2037) shipbuilding plan shows the next "regular" LHA(R) being procured in FY2017. Both "regular" LHA(R)s and modified LHA(R)s built for the MPF(F) squadron will be built at the Ingalls shipyard that forms part of NGSS.

The LHA(R) design is to have enhanced aviation features compared to the basic Wasp-class design, but would lack a well deck, making it the first amphibious ship in decades built without a well deck. The sacrifice of the well deck appears to be, in part at least, a consequence of building enhanced aviation features and other improvements into the design while staying within the envelope of the Wasp-class hull.

MPF Lease Buyout. The Navy's FY2008 UPL includes, at the 17th of 20 items, a \$430-million proposal to buyout the leases of the nine ships in the existing MPS force still under lease. Buying out the leases means DOD would purchase the ships from the private companies that currently lease them to DOD. DOD estimated in 2005 that buying out the leases on all 13 MPS ships would save about \$840 million in payments between FY2006 and FY2020 (when the last of the 13 ships is to be phased out of service). Since five of these 13 ships (the TAK-3000 class ships) were built in a foreign country (Denmark), DOD requested legislative authority to spend NDSF funds to purchase these five ships.³⁰ The owners of some of these 13 ships reportedly believed in 2005 that the Navy underestimated the market value of their ships, and that buying out the leases on them would cost at least \$500 million more than the Navy has budgeted.³¹

³⁰ Christopher J. Castelli, "Pentagon Seeks Authority on Carl Vinson, LHA(R), Prepositioning Ships," *Inside the Navy*, May 2, 2005; Geoff Fein, "Navy Underestimated Cost to Buyout Leases on MSC Ships, Source Says," *Defense Daily*, May 10, 2005.

³¹ Geoff Fein, "Navy Underestimated Cost to Buyout Leases on MSC Ships, Source Says," *Defense Daily*, May 10, 2005.

Potential Issues for Congress

Navy plans for amphibious and maritime repositioning raises several potential issues for Congress.

Funding Additional Ships in FY2008

A potential key issue for Congress in marking up the Navy's proposed FY2008 budget is whether to procure an additional LPD-17 and/or one or two modified TAKEs in FY2008. As discussed earlier, the additional LPD-17 is not currently in the Navy's shipbuilding plan, and the two modified TAKEs are currently in the plan for FY2009 and FY2010.

Supporters of procuring an additional LPD-17 in FY2008 could argue that this is the top item on the Navy's FY2008 UPL, and that building this ship would give the Navy a force of ten LPD-17s, as called for in the Navy's 313-ship plan. Supporters could argue that if Congress decides that it has the funding available in FY2008, but perhaps not in a future year, to procure an additional LPD-17, it should procure the ship in FY2008, even if the shipyard is not able to start work on it right away, because the shipyard will eventually be able to build it, and because what will matter more in the long run is the presence of this additional ship in the force structure, not the fact that it took longer than average to build.

Opponents of procuring an additional LPD-17 in FY2008 could argue that unless the Navy's budget top line were increased, the \$1,700 million or so needed to procure the ship might have to come from other FY2008 Navy programs, disrupting these other programs and possibly creating operational risks for the Navy in other areas. Opponents could argue that the shipyard that would build this ship — the Avondale yard near New Orleans, LA, that forms part of NGSS — would not be able to start work right away on an additional LPD-17 procured in FY2008 due to disruption of the yard's workforce and work schedule caused by Hurricane Katrina. Consequently, opponents could argue, procuring this ship in FY2008 would amount to booking but not (immediately) building a ship. Such an action, they could argue, would tie up \$1,700 million in budget authority that would not result in immediate obligations and expenditures.

Supporters of procuring one or two modified TAKEs in FY2008 could argue that this is the second item on the Navy's FY2008 UPL, and that accelerating these two ships from FY2009 and FY2010, where they are currently planned, into FY2008, could release funding in the Navy's FY2009 and FY2010 budgets for additional ships or other programs. Supporters could argue that funding one or both of these TAKEs in FY2008 in addition to the "regular" TAKE for Navy use that is requested in the Navy's FY2008 budget could improve economies of scale for these ships, reducing their costs.

Opponents of procuring one or two modified TAKEs in FY2008 could argue that unless the Navy's budget top line were increased, the \$1,200 million or so needed to procure the ship might have to come from other FY2008 Navy programs, disrupting these other programs and possibly creating operational risks for the Navy

in other areas. Opponents could argue that the \$1,200 million cost listed in the FY2008 UPL for these two ships suggests that procuring one or two modified TAKEs in addition to the “regular” TAKE being procured in FY2008 will not significantly reduce their cost.

Estimated Cost of Two TAKEs in FY2008 UPL

As mentioned above, the Navy’s FY2008 UPL includes, as its second item, two modified TAKEs for the MPF(F) squadron at an estimated combined procurement cost of about \$1,200 million, implying a unit procurement cost of about \$600 million per ship. The “regular” TAKE that the Navy wants to procure in FY2008 has an estimated procurement cost of \$456.1 million. The difference in unit procurement cost between the “regular” TAKE and the two modified TAKEs raises a potential oversight question for Congress: Why does the Navy estimate that the two modified TAKEs in the Navy’s FY2008 UPL would be approximately one-third more expensive to procure than the “regular” TAKE that the Navy wants to procure in FY2008?

Adequacy of 31-Ship Amphibious Ship Force-Level Goal

Although the Navy’s 313-ship plan includes a total of 31 amphibious ships, the Marine Corps has testified that it would prefer a total of 33, so as to support a required total force of 30 *operationally available* ships (i.e., ships not in depot-level maintenance and repair) at any given point:

For forcible entry, the Marine Corps’ requirement is a single, simultaneously-employed two Marine Expeditionary Brigade (MEB) assault capability. One MEB requires seventeen amphibious warfare ships; however, given the fiscally constrained environment, the Navy and Marine Corps have agreed to assume risk by only using fifteen. Historical amphibious ship availability rates dictate a minimum of eleven ships of each of the current types of amphibious ship — a minimum of thirty-three total ships — resulting in a Battle Force that provides thirty *operationally available* amphibious warfare ships. In that Battle Force, ten aviation-capable big deck ships (LHA/LHD/LHA(R)) and ten LPD 17 class ships are required to accommodate the MEB’s aviation combat element.³²

Potential oversight questions for Congress include the following:

- Why does the Navy’s 313-ship plan call for a total of 31 amphibious ships rather than 33?
- What are the operational risks of having a force of 31 amphibious ships rather than 33?

³² See, for example, Statement of General James T. Conway, Commandant of the Marine Corps, Before the Senate Armed Services Committee on Marine Corps Posture, March 29, 2007, p. 24. Italics and underlining as in the original.

- If the Navy procures a total of nine LPD-17s, as currently planned, and consequently fields a force of 30 amphibious ships, rather than 31, how might this increase operational risk?
- What are the operational risks of having 15 operational amphibious ships for each MEB, rather than 17?

Stability of Amphibious and MPF(F) Force Level Goals

The Navy has suggested that it might change its required numbers of amphibious and MPF(F) ships. The Navy's February 2007 report on the 30-year (FY2008-FY2037) shipbuilding plan stated:

Future combat operations may require us to revisit many of the decisions reflected in this report, including those associated with amphibious lift. As the Navy embarks on production of the Maritime Prepositioning Force in this FYDP, the Navy will continue to analyze the utility of these ships in terms of their contribution to, and ability to substitute for, the assault echelon forces in the Navy's future battle-force inventory. The current force represents the best balance between these forces available today. However, changing world events and resulting operational risk associated with the various force structure elements that make up these two components of overall lift will be analyzed to ensure the Navy is not taking excessive risk in lift capability and capacity. While there needs to be a balance between expeditionary and prepositioning ships for meeting the overall lift requirement, future reports may adjust the level of support in one or both of these solutions. Any adjustments made in these capabilities will have to be accommodated in light of the resources available and could require the Navy to commit additional funding to this effort in order to support the overall balance of our shipbuilding program.³³

Potential oversight questions for Congress include the following:

- When might the Navy know whether it wants to change its required numbers of amphibious and MPF(F) ships?
- How might these numbers change?
- How much confidence can Congress have in the stability of the Navy's current stated requirements for amphibious and MPF(F) ships?
- Should Congress take actions to hedge against the possibility of the Navy changing its requirements for amphibious and MPF(F) ships, and if so, what actions?

³³ U.S. Navy, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2008*, p. 5.

Clarity of Sea Basing Concept

Some observers have expressed concern about a lack of clarity regarding the meaning of sea basing, and consequently about what kinds of shipbuilding and other programs are needed to implement it. For example, Robert Work, a naval analyst at the Center for Strategic and Budgetary Assessments (CSBA), an independent defense-policy research institute, states the following in a lengthy report on sea basing released in November 2006:

“Seabasing” is a new defense buzzword of growing importance and prominence in both joint and naval circles. Unfortunately, despite the increasingly common use of the term by both joint and naval planners alike, there still remains much mystery and misunderstanding about this important “new” concept. Indeed, one of the key problems that has hindered meaningful debate and discussion about seabasing — and especially the priorities revealed in its associated plans and programs — is that its contemporary definition and the important ideas that support it are poorly understood except among the relatively small group of officers and planners who have been intimately involved with their development.

To make matters worse, since its grand unveiling by the Department of the Navy (DoN) in 2002, the concept’s definition has constantly changed. For example, in August 2005, the Seabasing Joint Integrating Concept (JIC) defined seabasing as “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.” However, in the very month the Seabasing JIC was published, The DOD Dictionary of Military and Associated Terms, amended through August 31, 2005, defined seabasing as, “in amphibious operations, a technique of basing certain landing force support functions aboard ship which decreases shore-based presence.” Moreover, as is explained in this report, both of these definitions — and others like them — are unduly restrictive, incomplete, confusing, or all of these things.

Partly as a result, there remains much uncertainty over exactly what seabasing is, and over the current programmatic and budgetary direction of joint seabasing programs....

[T]he current definition for seabasing and the direction of its programs are narrowly focused on one thing: revitalizing the DoN’s seabased operational maneuver and seabased expeditionary power-projection capabilities which were allowed atrophy during the Cold War. The list of seabasing functions is much longer. ... Only if all of these seabasing functions are understood and compared can a rational prioritization of planned seabasing improvements occur...

[A]lthough seabasing concept development within both the Department of the Navy and the Department of Defense (DoD) is focused on seabased operational maneuver and expeditionary power-projection capabilities, its disjointed development since the end of the Cold War has only served to confuse an urgently needed open debate and discussion about the future of naval maneuver in general and amphibious operations in particular, and the best mix

of platforms to support both. Central to this debate is whether or not future forcible entry operations from the sea should be conducted from amphibious warships or commercial-standard MPF(F) ships, or a combination of both; and whether or not these operations should emphasize surface maneuver, aerial maneuver, or a combination of the two. The current understanding of both these issues need to be thoroughly questioned and reviewed.³⁴

Affordability and Cost-Effectiveness of Sea Basing

The Navy, in conjunction with the Marine Corps, examined plans for procuring one, two, or three MPF(F) squadrons. Many observers believed that the option of three MPF(F) squadrons was unlikely to be chosen due to affordability considerations, and that the Navy was therefore likely to choose either one or two squadrons. The Navy's choice to plan for one squadron makes the sea basing concept roughly half as expensive to implement as would have been the case had the Navy decided to plan for two.

One issue in assessing the cost of the sea basing concept concerns the accuracy of the Navy's procurement cost estimates for the new-construction sea basing ships (see **Table 1**). If these estimates turn out to be too low, the sea basing concept would be more difficult to afford. Navy ship construction costs in recent years have risen more quickly than some anticipated. Several recent Navy ships procured in recent years have turned out to be more expensive to build than the Navy originally projected,³⁵ and some analysts believe the Navy is currently underestimating the procurement cost of proposed ships.³⁶

In addition, as previously discussed, fully implementing the sea basing concept will involve procuring connector ships as well as research and development work to develop supporting sea basing technologies. The costs of these development and procurement efforts are currently unclear, making it difficult to assess the potential overall affordability of the sea basing concept.

The 2003 DSB report stated that "The funding challenges presented by the [efforts needed to implement sea basing] are significant."³⁷ A November 2004 Congressional Budget Office (CBO) report on the Navy's amphibious and maritime repositioning ship forces expressed concerns about the Navy prospective ability to expressed concerns about the Navy's potential ability to afford desired numbers of

³⁴ Robert Work, *Thinking About Seabasing: All Ahead, Slow*. Washington, CSBA, 2006. pp. iii-v.

³⁵ See, for example, Government Accountability Office, *Defense Acquisitions[:] Improved Management Practices Could Help Minimize Cost Growth in Navy Shipbuilding Programs*. (GAO-05-183, February 2005)

³⁶ See, for example, *CBO Testimony: Statement of J. Michael Gilmore, Assistant Director, and Eric J. Labs, Principal Analyst, [on] Potential Costs of the Navy's 2006 Shipbuilding Plan before the Subcommittee on Projection Forces, Committee on Armed Services, U.S. House of Representatives, March 30, 2006*.

³⁷ *Defense Science Board Task Force on Sea Basing*, op. cit., p. 85.

both MPF(F) ships and ships for the regular amphibious force.³⁸ Robert Work of CSBA characterized sea basing in 2004 as “a rich man’s approach to solving the [access denial] problem.”³⁹ In his November 2006 report on sea basing, Work states that seabasing programs

are being conceived of and pursued long before the full range of desired and possible joint seabasing capabilities have been adequately explored and debated. The end result: current seabasing plans are rather narrowly focused on two rather limited capabilities — landing a single brigade on a hostile shore in 11 to 17 days from the “go” order, and thereafter providing seabased logistical support for two early entry brigades until follow-on joint forces arrive.

It is true that these two key capabilities reflect the “top level requirements” identified in the aforementioned Seabasing JIC. However, these two capabilities reflect a view of seabasing that rests upon questionable assumptions and analysis.⁴⁰

Although sea basing offers potential advantages in terms of eliminating vulnerable intermediate land bases, enabling higher-paced operations ashore, and permitting more rapid reconstitution and redeployment of the expeditionary force, uncertainty regarding the total potential cost to implement sea basing makes it difficult to assess its potential cost-effectiveness compared to alternative concepts for conducting future expeditionary operations ashore or compared to programs for meeting other, unrelated defense priorities. Potential alternative concepts for conducting future expeditionary operations include making improvements to today’s capabilities for conducting amphibious operations and making improvements to Army capabilities for inserting airborne forces.⁴¹

Skeptics of the Navy’s plan for implementing the sea basing concept could argue that the capability to be provided by the MPF(F) squadron is more than what is needed for the Navy’s contribution to the global war on terrorism (GWOT), and of uncertain relevance to U.S. participation in a conflict with China in the Taiwan Strait area.⁴² Navy and Marine Corps officials argue in return that seabasing is relevant to a spectrum of potential future operations, ranging from humanitarian and disaster-relief operations to stability operations and major combat operations (MCOs). In support of this argument, they note the recent use of U.S. naval forces

³⁸ U.S. Congressional Budget Office, *The Future of the Navy’s Amphibious and Maritime Prepositioning Force*, Nov. 2004, pp. xiii-xv. See also Aarti Shah, “Unclear Seabasing Concept, High Costs Worry Military Officials,” *Inside the Navy*, Feb. 14, 2005.

³⁹ As quoted in Otto Kreisher, “Sea Basing,” *Air Force Magazine*, July 2004. Material in brackets as in the article.

⁴⁰ *Thinking About Seabasing: All Ahead, Slow*, op. cit., p. iv.

⁴¹ See also John P. Patch, “Sea Basing: Chasing the Dream,” *U.S. Naval Institute Proceedings*, May 2005: 38-43.

⁴² For more discussion of these two issues, see CRS Report RS22373, *Navy Role in Global War on Terrorism (GWOT) — Background and Issues for Congress*, by Ronald O’Rourke, and CRS Report RL33153, *China Naval Modernization: Implications for U.S. Navy Capabilities — Background and Issues for Congress*, by Ronald O’Rourke.

in providing disaster relief following the December 2004 tsunami in the Indian Ocean and Hurricane Katrina along the U.S. Gulf Coast.⁴³

Potential oversight and policy questions for Congress include the following:

- If the procurement costs of the new-construction ships in the proposed MPF(F) squadron turn out to be higher than the Navy estimates, how might this affect the affordability of the sea basing concept?
- When does DOD intend to present to Congress an estimate of the potential total cost to fully implement all aspects of the sea basing concept? How does the current absence of such an estimate affect Congress's ability to assess the potential affordability of sea basing or its potential cost effectiveness compared to potential alternatives for conducting future expeditionary operations ashore or compared to programs for meeting other defense priorities?
- What is the potential applicability of the capability to be provided by the MPF(F) squadron to the GWOT or to other potential conflict or non-conflict scenarios?
- Would an ability to employ one surface Marine battalion and one vertical Marine battalion from a sea base in a period of 8 to 10 hours be worth the cost to field this capability? What are the potential costs and merits of alternatives to sea basing for conducting future expeditionary operations ashore? How do land bases and sea bases compare in terms of vulnerability to attack and cost to defend against potential attacks of various kinds?
- What other defense programs might need to be reduced to finance the implementation of sea basing?
- What are the potential operational risks of not implementing sea basing?

Relationship to Global Fleet Station (GFS) Concept

Another potential oversight issue for Congress concerns the Global Fleet Station (GFS) concept and its relationship to the form of sea basing to be implemented with the planned MPF(F) squadron. Potential oversight questions for Congress include the following:

⁴³ See, for example, Geoff Fein, "Relief Efforts In Gulf Demonstrate Sea Basing Capability, CNO Says," *Inside the Navy*, Oct. 7, 2005; Nathan Hodge, "Marine Corps Commandant Stumps For 'Sea Basing' Capability," *Defense Daily*, Aug. 19, 2005; John Liang, "Hagee: Seabasing Can Contribute To More Than Just Combat Ops," *Inside the Navy*, Aug. 15, 2005.

- Since the Navy has stated that each of a potential total of five GFSs might be built around an LPD- or LSD-type amphibious ship, or around a high-speed vessel (HSV), how might implementing the GFS concept affect planned deployments and force-structure requirements for these kinds of ships?
- What is the relationship between the GFS concept and the form of sea basing to be implemented with the MPF(F) squadron? Can the GFS concept be viewed as “sea basing light”? How might the existence of up to five GFSs in various regions affect requirements for the planned MPF(F) squadron, or for the ships that are to make up that squadron? Is the Navy proposing the GFS with the partial aim or hope that the concept will eventually take the place in Navy planning of the MPF(F)-based notion of sea basing?

Coordination with Other Services on Sea Basing

Regarding interservice coordination in the development of sea basing, a January 2007 Government Accountability Office (GAO) report states:

While DOD has taken action to establish a joint seabasing capability, it has not developed a comprehensive management approach to guide and assess joint seabasing. GAO’s prior work showed that sound management practices for developing capabilities include involving top leadership, dedicating an implementation team, and establishing a communications strategy. DOD is developing a joint seabasing concept and various DOD organizations are sponsoring seabasing initiatives. However, DOD has not provided sufficient leadership to guide joint seabasing development and service initiatives are outpacing DOD’s analysis of joint requirements. DOD also has not established an implementation team to provide day-to-day management to ensure joint seabasing receives the focused attention needed so that efforts are effective and coordinated. Also, DOD has not fully developed a communications strategy that shares information among the organizations involved in seabasing. Without a comprehensive management approach containing these elements, DOD may be unable to coordinate activities and minimize redundancy among service initiatives.

DOD has not developed a joint experimentation campaign plan, although many seabasing experimentation activities — including war games, modeling and simulation, and live demonstrations — have taken place across the services, combatant commands, and other defense entities. No overarching joint seabasing experimentation plan exists to guide these efforts because the U.S. Joint Forces Command has not taken the lead in coordinating joint seabasing experimentation, although it has been tasked with developing a biennial joint experimentation campaign plan for future joint concepts. While the U.S. Joint Forces Command is in the process of developing the plan, it is unclear the extent to which this plan will address joint seabasing or will be able to guide joint seabasing experimentation efforts. Without a plan to direct experimentation, DOD and the services’ ability to evaluate solutions, coordinate efforts, and disseminate results could be compromised.

While service development efforts tied to seabasing are approaching milestones for investment decisions, it is unclear when DOD will complete development of total ownership cost estimates for a range of joint seabasing options. Joint seabasing is going through a capabilities-based assessment process that is intended to produce preliminary cost estimates for seabasing options. However, DOD has not yet begun the specific study that will identify potential approaches, including changes to doctrine and training as well as material solutions, and produce preliminary cost estimates. DOD officials expect the study will not be complete for a year or more. Meanwhile, the services are actively pursuing a variety of seabasing initiatives, some of which are approaching milestones which will guide future program investments. Until total ownership cost estimates for joint seabasing options are developed and made transparent to DOD and Congress, decision makers will not be able to evaluate the cost-effectiveness of individual service initiatives.⁴⁴

Robert Work's November 2006 report on sea basing states that

under no circumstances should seabasing be viewed as a naval concept that "enables" joint operations. As a maritime concept and key component of emerging forms of joint littoral warfare marked by the widespread use of guided weapons, seabasing initiatives should be prioritized and pursued by a joint organization. Therefore, the 2004 decision by the Office of the Secretary of Defense (OSD) not to stand up a Joint Project Office for Seabasing and to instead consign the concept to the new Joint Concept Integration and Development System process was a serious mistake — one only compounded by assigning the Navy to be the lead agent for the Seabasing [Joint Integrating Concept]....

[Observations developed throughout this report] suggest that OSD should order a thorough zero baseline review of the joint seabasing concept. This review should take its basic guidance from the 2005 National Defense Strategy and the 2005/06 Quadrennial Defense Review. These two documents provide guidance that is broad enough to facilitate a thorough and independent zero baseline seabasing review that is free of any preconceived notions or concepts. In this regard, while such a review should consider all concept work and program definitions to date, it is important that the review be in no way constrained by them. In this regard, OSD should not make the same mistake it made in 2002, when it directed the Defense Science Task Force on Seabasing to use an existing naval seabasing concept as its start point. It should instead direct the group conducting the review — either a newly formed Joint Project Office on Seabasing or a group composed of retired Combatant Commanders — to start from a clean sheet of paper, and to recommend the seabasing program with the highest joint payoff in the 21st century.⁴⁵

An October 2005 press article stated:

⁴⁴ Government Accountability Office, *Force Structure[:] Joint Seabasing Would Benefit from a Comprehensive Management Approach and Rigorous Experimentation before Services Spend Billions on New Capabilities*, GAO-07-211, January 2007.

⁴⁵ *Thinking About Seabasing: All Ahead, Slow*, op. cit., p. iv-v, vi.

Cultural differences between the services are one of the stumbling blocks holding up development of the U.S. Navy's new Sea Basing concept, a former officer told a group of industry representatives here last week.

Greg Cook, a U.S. Air Force colonel who retired in August after working to develop Sea Basing plans and concepts for the Joint Chiefs of Staff, said the "roles-and-missions debate" centered on how different services and commands viewed the idea of a squadron of large ships gathered as an operating base about 100 miles off an enemy shore.

"If the Army operates from the sea, isn't that what the Marines do?" Cook asked an audience gathered here Oct. 26 to discuss future naval planning. "If the Air Force operates from the sea, isn't that what the Navy does?"

Cook said the services view the Sea Basing concept in light of their own traditional missions. The Army looks at the idea as allowing for faster and greater strategic access via the high-speed, shallow-draft connectors to transfer troops, vehicles and gear between the ships and shore.

The Air Force doesn't see the concept as supporting its core competencies and is concerned about costs, said Cook, a former pilot for that service's Air Mobility Command.

"The Air Force is not that excited" about the idea, he said.

The Navy, he said, looks at Sea Basing as "a foundation of strategic access and power projection," but the Marine Corps is looking at it simply as a faster means to deliver a Marine Expeditionary Brigade to the fight.

Special Operations Command sees it as a "high-speed mothership for rapid access," while joint commanders have a wider view, regarding it as a mobile base that provides options and flexibility that increases global presence and provides strategic access.

"These things have to be worked out," Cook said. The question of who should operate the ships is another issue, he said.⁴⁶

Potential oversight questions for Congress include the following:

- To what degree, if any, does the Navy-Marine Corps concept for sea basing conflict with emerging Army or Air Force concepts of operation for conducting future expeditionary operations? Are the Navy and Marine Corps taking potential Army, Air Force, and Special Operations Command requirements sufficiently into account in developing the sea basing concept?

⁴⁶ Christopher P. Cavas, "Cultural Differences' Slow USN Sea Basing Progress," *DefenseNews.com*, Oct. 31, 2005.

- How might the Army's new plan for reorganizing itself into modular, brigade-sized entities called units of action (UAs)⁴⁷ affect, or be affected by, the sea basing concept? How might the Army's plans for procuring its own next-generation sealift ships affect, or be affected by, the sea basing concept?
- Should OSD order a review of the seabasing concept by a newly formed joint project office on seabasing or a group composed of retired combatant commanders, as suggested by the 2006 CSBA report?

Legislative Activity for FY2008

The Navy's proposed FY2008 budget requests \$1,398.3 million in procurement funding a ninth San Antonio (LPD-17) amphibious ship to be procured in FY2008. The Navy estimates the total procurement cost of this ship at \$1,798.3 million. The ship received \$296.2 million in FY2008 advance procurement funding, and the Navy's proposed FY2008 budget calls for the final \$103.2 million of the ship's procurement cost to be provided in FY2009 as a "program closeout" cost. Although the Navy's proposed force of 31 amphibious ships includes 10 LPD-17 class ships, the Navy is proposing in its FY2008 budget to end LPD-17 procurement with the ninth ship.

The Navy's proposed FY2008 budget also requests \$1,377.4 million in procurement funding to complete the procurement cost of LHA-6, a large-deck amphibious assault ship that was procured in FY2007 using split funding (a two-year form of incremental funding) in FY2007 and FY2008. The Navy estimates the total procurement cost of LHA-6 at \$2,806.2 million.

The Navy's FY2008 unfunded programs list (UPL) — a list of programs that the Navy desires but which are not funded in the Navy's proposed FY2008 budget — includes, as its top item, an additional LPD-17 at an estimated cost of about \$1,700 million, and, as its second item, two modified Lewis and Clark (TAKE-1) dry cargo ships for the MPF(F) squadron, at an estimated combined cost of about \$1,200 million. These two TAKES are currently scheduled for procurement in FY2009 and FY2010.

⁴⁷ For more on this plan, see CRS Report RL32476, *U.S. Army's Modular Redesign: Issues for Congress*, by Andrew Feickert.