Naval Transformation: Background and Issues for Congress

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Summary

The Department of the Navy (DON) has several efforts underway to transform U.S. naval forces to prepare them for future military challenges. Key elements of naval transformation include a focus on operating in littoral waters, increasing the Navy's capabilities for participating in the global war on terrorism (GWOT), network-centric operations, use of unmanned vehicles, directly launching and supporting expeditionary operations ashore from sea bases, new kinds of naval formations, new ship-deployment approaches, reducing personnel requirements, and streamlined and reformed business practices. This report will be updated as events warrant.

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Background

This report focuses on the transformation of U.S. naval forces—the Navy and the Marine Corps, which are both contained in the Department of the Navy (DON). For an overview of defense transformation in general, see CRS Report RL32238, *Defense Transformation: Background and Oversight Issues for Congress*, by Ronald O'Rourke.

Key Elements of Naval Transformation

Table 1 summarizes several key elements of U.S. naval transformation. Each of these elements is discussed below.[1]

Table 1. Key Elements of U.S. Naval Transformation

Previous U.S. Naval forces	Transformed U.S. Naval forces
Plan for stand-alone, mid-ocean operations against Soviet naval forces	Plan for joint and combined operations in littoral waters against regional adversaries
Primary focus on major combat operations	Increased focus on global war on terrorism (GWOT)
Platform-centric operations	Network-centric operations
Manned platforms only	Significant use of unmanned vehicles
Intermediate land bases established to support expeditionary operations ashore	Sea basing concept for staging forces at sea and conducting expeditionary operations ashore with little or no reliance on nearby land bases
Primary formations are carrier battle groups and amphibious ready groups	Use of new naval formations, such as expeditionary strike groups
Traditional ship-deployment approaches	New approaches, such as the Fleet Response Plan (FRP) and Sea Swap
Manpower-intensive ships and shore operations; people treated as a "free good"	Ships and shore operations with fewer people; cost of personnel fully recognized
Traditional business practices	Streamlined, reformed practices

Source: Table prepared by CRS.

[1] Up through 2006, DON organized its transformation efforts under its overall vision for the future, called Sea Power 21. The Sea Power 21 framework remains in place, but the Navy in 2007 appears to be emphasizing it less in discussing DON transformation. The Sea Power 21 framework is built around three main components: Sea Strike, which refers to the ability of naval forces to project precise and persistent offensive power from the sea; Sea Shield, which refers to the ability of naval forces to not only defend themselves at sea, but to contribute to homeland defense, project an overland defensive shield to help protect overseas U.S. allies and friends, and provide a sea-based theater and strategic defense against ballistic missiles; and Sea Basing, which refers to the ability of naval forces to operate at sea, as sovereign entities, free from concerns of access and political constraints associated with using land bases in other countries. (This use of the term sea basing is more general than sea basing concept discussed elsewhere in this report.) These three components are to be supported and bound together by FORCEnet, which is the Navy's overarching concept for combining the various computer networks that U.S. naval forces are now fielding into a master computer network for tying together U.S. naval personnel, ships, aircraft, and installations. For a description of the Sea Power 21 framework, see Vern Clark, "Sea Power 21, Projecting Decisive Joint Capabilities," *U.S. Naval Institute Proceedings*, Oct. 2002, pp. 32-41.

Littoral Operations

In late 1992, with the publication of a Navy document entitled ...*From the Sea*, the Navy formally shifted the focus of its planning away from the Cold War scenario of countering Soviet naval forces in mid-ocean waters and toward the post-Cold War scenario of operating in littoral (near-shore) waters to counter the land- and sea-based forces of potential regional aggressors. This shift in planning focus has led to numerous changes for the Navy in concepts of operation, training, and equipment over the last 12 years. Among other things, it moved the focus of Navy planning from a geographic environment where it could expect to operate primarily by itself to one where it would need to be able to operate effectively in a joint manner, alongside other U.S. forces, and in a combined manner, alongside military forces of other countries. It also led to an increased emphasis on amphibious warfare, mine warfare, and defense against diesel-electric submarines and small surface craft. The Littoral Combat Ship (LCS) and the DDG-1000 (formerly DD(X)) destroyer are key current Navy efforts intended to improve the Navy's ability to operate in heavily defended littoral waters.[2]

Global War On Terrorism (GWOT)

The Navy in mid-2005 began implementing several initiatives intended to increase its ability to participate in what the administration refers to as the global war on terrorism (GWOT). These initiatives include the establishment of the following: a Navy Expeditionary Combat Command (ECC); a riverine force; a reserve civil affairs battalion; a maritime intercept operations (MIO) intelligence exploitation pilot program; an intelligence data-mining capability at the National Maritime Intelligence Center (NMIC); and a Navy Foreign Area Officer (FAO) community consisting of officers with specialized knowledge of foreign countries and regions.[3]

Network-Centric Operations

The concept of network-centric operations, also called network-centric warfare (NCW), is a key feature of transformation for all U.S. military services. The concept, which emerged in the late 1990s, involves using computer networking technology to tie together personnel, ships, aircraft, and installations in a series of local and wide-area networks capable of rapidly transmitting critical information. Many in DON believe that NCW will lead to changes in naval concepts of operation and significantly increase U.S. naval capabilities and operational efficiency. Key NCW efforts include the Navy's Cooperative Engagement Capability (CEC) network, the Naval Fires Network (NFN), the IT-21 investment strategy, and ForceNet, which is the Navy's overarching concept for combining the various computer networks that U.S. naval forces are now fielding into a master computer network for tying together U.S. naval personnel, ships, aircraft, and installations. A related program is the Navy-Marine Corps Intranet (NMCI).[4]

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[2] For more on the LCS and DDG-1000 programs, see CRS Report RL33741, *Navy Littoral Combat Ship (LCS) Program: Background, Oversight Issues, and Options for Congress*, by (name redacted), and CRS Report RL32109, *Navy DDG-1000 and DDG-51 Destroyer Programs: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke.

[3] For more on the Navy's role in the GWOT, see CRS Report RS22373, *Navy Role in Irregular Warfare and Counterterrorism: Background and Issues for Congress*, by Ronald O'Rourke.

[4] For a discussion of NCW, CEC, NFN, IT-21, ForceNet, and NMCI, see CRS Report RS20557, *Navy Network-Centric Warfare Concept: Key Programs and Issues for Congress*, by Ronald O'Rourke.

Unmanned Vehicles

Many analysts believe that unmanned vehicles (UVs) will be another central feature of U.S. military transformation. Perhaps uniquely among the military departments, DON in coming years will likely acquire UVs of every major kind—air, surface, underwater, and ground. Widespread use of UVs could lead to significant changes in the numbers and types of crewed ships and piloted aircraft that the Navy procures in the future, in naval concepts of operation, and in measurements of naval power. The LCS is to deploy various kinds of UVs. Unmanned air vehicles (UAVs) and unmanned combat air vehicles, or UCAVs (which are armed UAVs), if implemented widely, could change the shape naval aviation. Unmanned underwater vehicles (UUVs) and UAVs could significantly expand the capabilities of Navy submarines.[5]

Sea Basing For Expeditionary Operations

Naval forces are inherently sea-based, but the Navy is currently using the term sea basing in a more specific way, to refer a new operational concept under which forces would be staged at sea and then used to conduct expeditionary operations ashore with little or no reliance on a nearby land base. Under the sea basing concept, functions previously conducted from the nearby land base, including command and control, fire support, and logistics support, would be relocated to the sea base, which is to be formed by a combination of amphibious and sealift-type ships. The sea basing concept responds to a central concern of transformation advocates—that fixed overseas land bases in the future will become increasingly vulnerable to enemy anti-access/area-denial weapons such as cruise missiles and theater-range ballistic missiles. Although the sea basing concept originated with the Navy and Marine Corps, the concept can be applied to joint operations involving the Army and Air Force.

To implement the sea basing concept, the Navy wants to field a 14-ship squadron, called the **Maritime Prepositioning Force (Future), or MPF(F)** squadron, that would include three new-construction large-deck amphibious ships, nine new-construction sealift-type ships, and two existing sealift-type ships. Additional "connector" ships would be used to move equipment to the MPF(F) ships, and from the MPF(F) ships to the operational area ashore. Some analysts have questioned the potential affordability and cost effectiveness of the sea basing concept.[6]

New Kinds of Naval Formations

The Navy in the past relied on carrier battle groups (CVBGs) (now called carrier strike groups, or CSGs) and amphibious ready groups (ARGs) as its standard ship formations. In recent years, the Navy has begun to use new kinds of naval formations—such as **expeditionary strike groups, or ESGs** (i.e., amphibious ships combined with surface combatants, attack submarines, and land-based P-3 maritime patrol aircraft), surface strike groups (SSGs), and modified Trident SSGN submarines carrying cruise missiles and special operations forces[7]—for forward presence, crisis response, and warfighting operations. A key Navy objective in moving to these new formation is

[5] For more on naval unmanned vehicle programs, see CRS Report RS21294, *Unmanned Vehicles for U.S. Naval Forces: Background and Issues for Congress*, by Ronald O'Rourke.

[6] For more on the seabasing concept, see CRS Report RL32513, *Navy-Marine Corps Amphibious and Maritime Prepositioning Ship Programs: Background and Oversight Issues for Congress*, by Ronald O'Rourke.

[7] For more on the modified Trident submarines, see CRS Report RS21007, *Navy Trident Submarine Conversion (SSGN) Program: Background and Issues for Congress*, by Ronald O'Rourke.

to significantly increase the number of independently deployable, strike-capable naval formations. ESGs, for example, are considered to be formations of this kind, while ARGs generally were not.

The Navy in 2006 also proposed establishing what it calls **global fleet stations, or GFSs**. The Navy says that a 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, 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.[8]

New Ship-Deployment Approaches

The Navy is implementing or experimenting with new ship-deployment approaches that are intended to improve the Navy's ability to respond to emergencies and increase the amount of time that ships spend on station in forward deployment areas. Key efforts in this area include the **Fleet Response Plan (FRP)** for emergency surge deployments and the **Sea Swap** concept for long-duration forward deployments with crew rotation. The FRP, Navy officials say, permits the Navy to deploy up to 6 of its 11 planned CSGs within 30 days, and an additional CSG within another 60 days after that (which is called "6+1"). Navy officials believe Sea Swap can reduce the stationkeeping multiplier—the number of ships of a given kind needed to maintain one ship of that kind on continuously station in an overseas operating area—by 20% or more.[9]

Reduced Personnel Requirements

The Navy is implementing a variety of steps to substantially reduce the number of uniformed Navy personnel required to carry out functions both at sea and ashore. DON officials state that these actions are aimed at moving the Navy away from an outdated "conscript mentality," under which Navy personnel were treated as a free good, and toward a more up-to-date approach under which the high and rising costs of personnel are fully recognized. Under the DOD's proposed FY2008 budget and FY2008-FY2013 Future Years Defense Plan (FYDP), active Navy end strength, which was 365,900 in FY2005, is to decline to less than 325,000 by FY2010. Reductions in personnel requirements ashore are to be accomplished through organizational streamlining and reforms, and the transfer of jobs from uniformed personnel to civilian DON employees. Reductions in personnel requirements at sea are to be accomplished by introducing

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

[9] For more on new naval formations and new ship-deployment approaches, see CRS Report RS21338, *Navy Ship Deployments: New Approaches—Background and Issues for Congress*, by Ronald O'Rourke.

new-design ships that can be operated with substantially smaller crews—a shift that could lead to significant changes in Navy practices for recruiting, training, and otherwise managing its personnel. Current ship-acquisition programs related to this goal include the LCS, the DDG-1000, and the Ford (CVN-78) class aircraft carrier (also known as the CVN-21 class).[10]

Improved Business Practices

DON is pursuing a variety of initiatives to improve its processes and business practices so as to generate savings that can be used to help finance Navy transformation. These efforts are referred to collectively as Sea Enterprise.

DON Transformation Centers, Exercises, and Experiments

Many DON transformation activities efforts take place at the Navy Warfare Development Command (NWDC), which is located at the Naval War College at Newport, RI, and the Marine Corps Warfighting Laboratory (MCWL), which is located at the Marine Corps Base at Quantico, VA.[11] These two organizations generate ideas for naval transformation and act as clearinghouses and evaluators of transformation ideas generated in other parts of DON. NWDC and MCWL oversee major exercises, known as Fleet Battle Experiments (FBEs) and Advanced Warfighting Experiments (AWEs), that are intended to explore new naval concepts of operation. The Navy and Marine Corps also participate with the Army and Air Force in joint exercises aimed at testing transformation ideas.

Issues for Congress

Potential oversight questions for Congress include the following:

- Are current DON transformation efforts inadequate, excessive, or about right? Are DON transformation efforts adequately coordinated with those of the Army and Air Force?
- Is DON striking the proper balance between transformation initiatives for participating in the global war on terrorism (GWOT) and those for preparing for a potential challenge from improved Chinese maritime military forces?[12]
- Is DON achieving a proper balance between transformation and maintaining near-term readiness and near-term equipment procurement?

[10] For more on the CVN-21, see CRS Report RS20643, *Navy Ford (CVN-78) Class Aircraft Carrier Program: Background and Issues for Congress*, by Ronald O'Rourke.

[11] Additional information about NWDC and MCWL is available online at http://www.nwdc.navy.mil/ and http://www.mcwl.usmc.mil/, respectively.

[12] For discussions of these two issues, see CRS Report RS22373, *Navy Role in Irregular Warfare and Counterterrorism: 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.

- How might naval transformation affect Navy force-structure requirements?[13]
- Will the need to fund Army and Marine Corps reset costs in coming years reduce funding available for Navy transformation?[14]

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[13] For more on Navy force-structure planning, see CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke.

[14] For a discussion of Army and Marine Corps reset costs, see CRS Report RL33110, *The Cost of Iraq, Afghanistan, and Other Global War on Terror Operations Since 9/11*, by (name redacted).