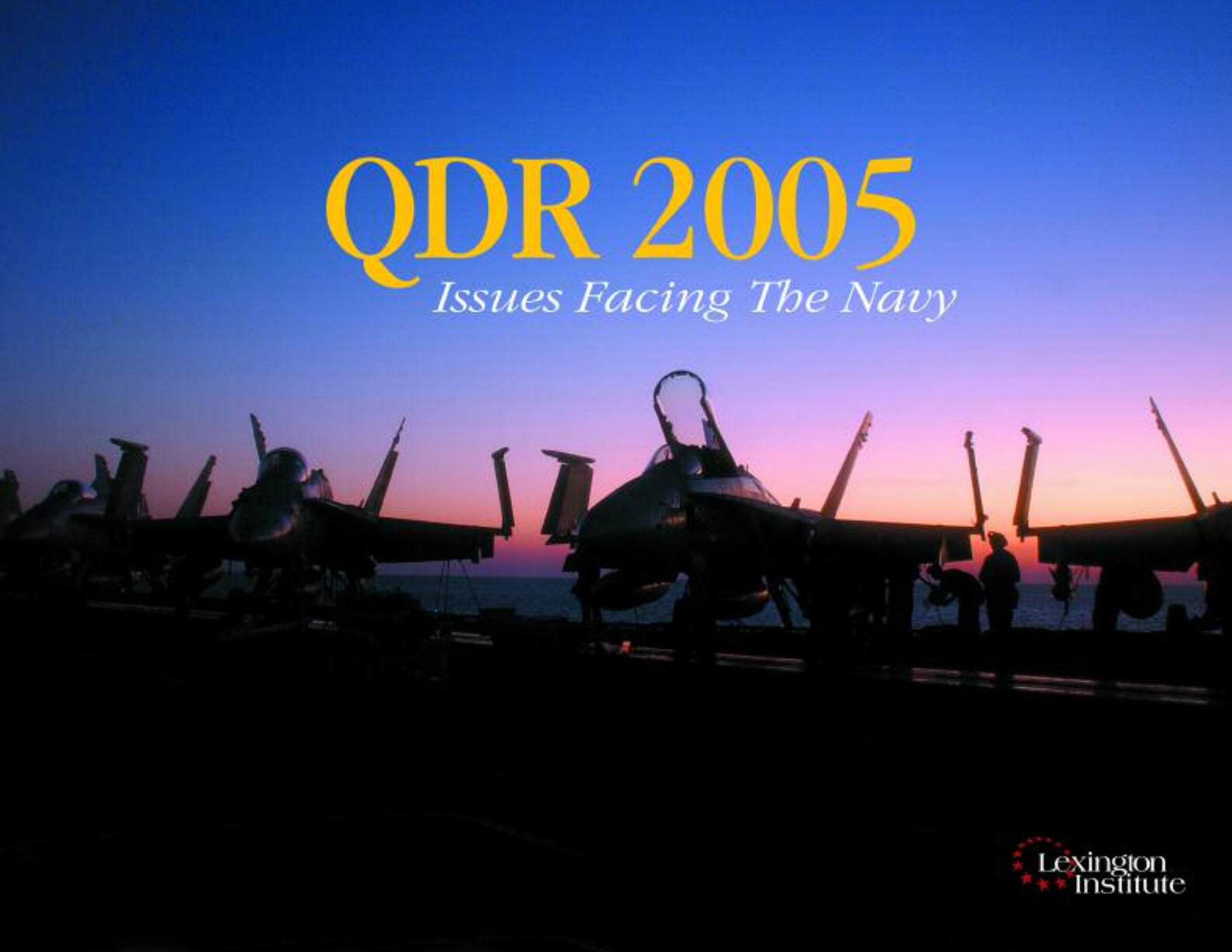
QDR 2005

Issues Facing The Navy



Lexington Institute

An Evolving Navy

From its fragile birth on the eve of American independence to its global reach at the dawn of the Third Millennium, the U.S. Navy has continuously adapted to new challenges and opportunities. The threat posed by imperialism gave way to fascism, and then to communism. The wind-powered man-of-war gave way to the steam-powered ironclad, and then to nuclear-powered aircraft carriers and submarines. The pace of progress at times may have seemed glacial, but looking backward it is clear America's Navy has seen more change in the last two hundred years than military forces saw in the previous two thousand.

Today, the military threats that most concern policymakers are terrorism and the spread of technologies enabling mass murder. The tools of warfare that most captivate them are wireless networks and ubiquitous computing. There is no way of knowing how long these preoccupations will persist, because the current era of human history is characterized by an uncommon degree of uncertainty about the future. But the Navy and other parts of the joint force must still plan to secure the nation and its interests, no matter how ill-defined future needs may be.

The Department of Defense is currently engaged in a congressionally-mandated Quadrennial Defense Review (QDR) that is the most comprehensive and far-reaching component of the military planning process. The purpose of this report is to concisely assess the biggest questions the Navy faces in the quadrennial review as it prepares for a future distinctly different from past experience:

1. What are the driving threats that the future Navy and joint force must counter?
2. What is the national defense strategy for addressing these threats?
3. What are the Navy's core missions in the emerging global landscape?
4. What is the Navy's plan for accomplishing its core missions?
5. What sort of information architecture will support these missions?
6. What is the optimum size and composition of the Navy's oceangoing fleet?
7. What is the optimum mix of aircraft and other weapons in the fleet?
8. What role does the Navy play in enabling the rest of the joint force?
9. What budgetary resources are required for the Navy to meet its emerging needs?

The answers that follow are based on the content of Defense Department strategic guidance, Navy planning documents, interviews with senior Navy officials, and discussion among the members of the Naval Strike Forum. This report was written by Dr. Loren Thompson of the Lexington Institute staff and reviewed by the members of the Naval Strike Forum.


NAVY

What Are The Driving Threats?

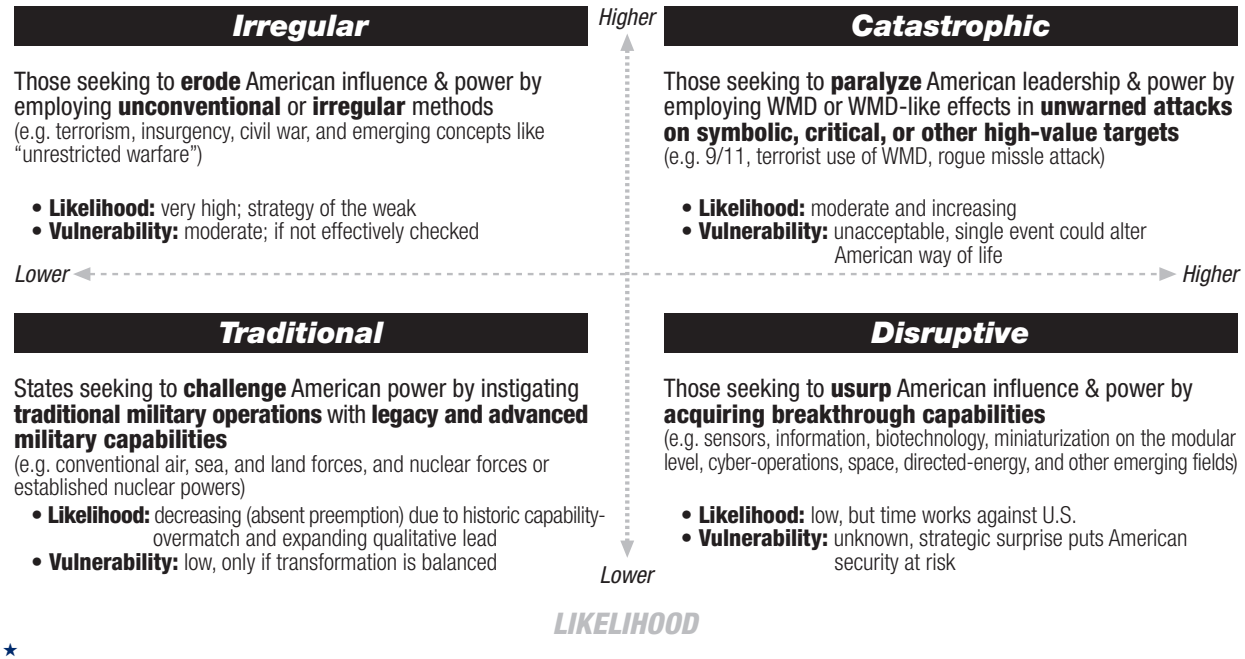
In the fifteen years since the Cold War ended with the collapse of the Soviet Union, a consensus has emerged about which threats are likely to be of greatest concern to the U.S. military in the early decades of the new millennium. In general, these threats fall into two categories: conventional challenges from major military powers such as those seen in the last century, and unconventional challenges such as terrorism, guerrilla insurgency and trafficking in technologies of mass murder. The likelihood of unconventional challenges is thought to be growing, while the danger of conventional military threats is thought to be receding due to the overwhelming conventional capabilities of the U.S. military.

The fiscal 2006 Strategic Planning Guidance of the Defense Department contained a four-quadrant chart (*reproduced below*) depicting the dynamics of the emerging threat environment. This scheme does not capture every conceivable military challenge. For example, there is no mention of the possible need to enforce access to Middle East oil. Nonetheless, it reflects the prevailing wisdom among experts concerning the most likely dangers within the planning period covered by the QDR. The strategic surprises of the last four years have tended to confirm the view that near-term challenges will be mainly unconventional and "asymmetric" — aimed at areas where America is weak rather than strong.

The Strategic Planning Guidance states that the military may need to reduce its investment in conventional warfighting capabilities in order to cope with unconventional challenges for which it is considered less well prepared. Reflecting this shift in priorities, the 2005 Quadrennial Defense Review is organized around four "core problems" that are very different from the concerns typically addressed in Cold War planning exercises: (1) building partnerships with foreign nations to defeat terrorism; (2) defending the homeland against an array of potential dangers; (3) shaping the behavior of emerging military powers such as China; and (4) preventing the spread of weapons of mass destruction to hostile states and non-state actors.

Each of these problems can be dealt with through some mix of deterrence, overseas assistance, defensive measures and offensive power. The challenge the Navy and other services face is developing the capabilities needed so that they can remain militarily relevant as the nation's security posture shifts to confront new dangers.

Security Environment: 4 Challenges



What Is The National Defense Strategy?

The Quadrennial Defense Review is essentially an effort to operationalize the National Defense Strategy. The latest version of that strategy was released in March of 2005, refining goals and guidelines that have been under development since the beginning of the new millennium. In broad terms, the National Defense Strategy seeks to explain how the United States should preserve and advance its interests in a world characterized by the challenges described in the preceding section. Even a cursory reading of the current strategy confirms that a modern and versatile Navy is indispensable to the nation's larger purposes.

The National Defense Strategy identifies four overarching objectives of the nation's military posture: to secure the United States from direct attack; to assure freedom of action and access around the globe; to strengthen alliances and other partnerships; and to establish security conditions favorable to U.S. interests. All of these objectives are tied directly or indirectly to the protection and extension of democratic values. The National Defense Strategy delineates four generic methods by which the overarching objectives can be accomplished:

- ★ Assuring allies and friends of U.S. resolve to protect common interests.
- ★ Dissuading potential adversaries from engaging in dangerous or destabilizing behavior.
- ★ Deterring aggression by demonstrating the resources and resolve to prevail.
- ★ Defeating aggression swiftly and, if necessary, decisively.

The strategy also presents several guidelines that should inform the sustainment of an effective military posture. First, the posture should be active rather than passive (or reactive), and organized in layers that provide defensive depth against any form of aggression. Second, the forces and infrastructure within the posture should be subject to continuous transformation as new challenges and opportunities arise. Third, the focus of military preparations should be on achieving an optimum mix of capabilities, rather than being driven by some particular threat or set of institutional arrangements. Finally, decisionmakers must be prepared to manage risks by making tradeoffs among competing capabilities, organizations, technologies and concerns.

Much of the National Defense Strategy is dedicated to a discussion of "desired capabilities and attributes." Among the desired capabilities listed are better intelligence, protection of critical bases of operation, utilization of the "global commons" (oceans, airspace, outer space and cyberspace), projection and sustainment of forces in hostile environments, conduct of network-centric operations, proficiency in irregular warfare and the ability to bolster capabilities of partners at home and abroad. Most of these desired capabilities were spelled out in the 2001 quadrennial review, and in somewhat different form trace their origins back to the Cold War. The most important desired attribute stated in the National Defense Strategy is to field a force capable of (**1**) defending the homeland, (**2**) operating forward in four key regions, (**3**) swiftly and/or decisively defeating adversaries, and (**4**) conducting lesser contingencies.

Clearly, the National Defense Strategy establishes an imposing array of demands on U.S. forces. Some of these demands cannot be met in the absence of a forward-deployed and highly capable Navy. Others can be met without naval support, but only at considerable cost to warfighters and the nation.

What Are The Navy's Core Missions?

The 2005 quadrennial review will force the Navy to think through what its core missions should be in the future in light of changing threats, national strategy, and Secretary Rumsfeld's insistence on a rational division of labor among the services. This is an inherently difficult task, because the future is unknowable and yet Navy leaders must make investment choices shaping the force for decades to come. It is impossible to say with certainty whether terrorism will still preoccupy policymakers ten years hence, or whether the world will witness the emergence of very different dangers. And while the Navy is less constrained today than ever before by the aquatic medium from which it operates, that reality still will shape how it thinks about its future responsibilities.

Some aspects of the roles and missions dilemma are already resolved. For example, it is clear that Navy ballistic-missile submarines will continue to provide the backbone of nuclear deterrence. No other weapons system has been identified that offers a similar combination of firepower and survivability. It is also unlikely that any other service can match or replace the Navy's capacity for assuring the safety of maritime transit in the world's oceans. But beyond these obvious roles, Navy leaders have had to think creatively about how their core competencies relate to the threat matrix contained in strategic planning guidance. They have identified four broad missions where the Navy can add greatest value to the future joint force:

- ★ Conducting an active and layered defense against aggression from forward locations not dependent on the land bases of other nations.
- ★ Ensuring the access of joint forces to contested areas where adversaries seek to exclude U.S. presence.
- ★ Enabling the success of joint forces ashore through the provision of firepower, mobility, intelligence and logistics support.
- ★ Defending the seaward approaches to the American homeland against an array of conventional and unconventional threats.

Each of these missions breaks down into a series of more specific functions in which the Navy offers unique capabilities not fully available to other services. Navy leaders recognize they will have to relinquish some traditional roles better performed today by other services. It is assumed that by operating in a networked warfighting environment, the component pieces of the joint force can be readily reconfigured as military necessity requires. The following compendium of missions reflects the views on a 2004 Naval War College panel sponsored by the Pentagon's Office of Force Transformation concerning which roles will be most important to the future Navy.

Naval War College Prioritized Missions

1. Extended deterrence and defense
2. Deter peer competitors and global war
3. Deter major theater contingencies
4. Fight and win major theater contingencies
5. Crisis response
6. Deter and defeat weapons of mass destruction
7. Homeland defense
8. Global engagement
9. Counter-terrorism operations
10. Intelligence collection
11. Stabilization operations
12. Counter-proliferation operations

What Is The Navy's Plan?

The Navy has made more progress than other services in adapting its posture and doctrine to the demands of a new security environment. That is somewhat surprising, since it is heavily invested in Cold War weapons that take a long time to replace. However, many of the key ideas driving military transformation such as network-centric warfare originated in the Navy long before 9-11, so service leaders have had some time to think through their implementation.

The basic framework for change was set forth by Chief of Naval Operations Admiral Vern Clark on June 12, 2002 in a speech at the Naval War College. He described a new posture called Sea Power 21 that he said would be based on the "asymmetric advantages" that the U.S. enjoyed, among which he included information superiority, sea control and global mobility. Admiral Clark stated that three capabilities lay at the heart of the new posture: Sea Strike, "the projection of offensive power;" Sea Shield, "the projection of defensive power;" and Sea Basing, "the projection of sovereignty." Clark said these capabilities would be integrated in a unified posture that meshed with the rest of the joint force through an information architecture called Forcenet.

In the Navy's vision, Sea Strike consists of the capacity to deliver decisive firepower in a prompt but precise fashion against any set of targets around the globe. The sources of this firepower include submarines equipped with ballistic missiles, cruise missiles and torpedoes; aircraft carriers hosting the most sophisticated fighter-bombers in the world; surface combatants capable of launching an array of antiship and land-attack missiles; a future generation of destroyers equipped to sustain high rates of gunfire against targets a hundred miles distant; and sea-based special operations forces trained to execute tailored attacks against targets within hostile nations.

Sea Shield is viewed in the Navy vision as all those capabilities contributing to the active protection of the joint force, coalition partners, and the homeland. A big part of this mission area consists of forward-deployed sensors that can detect enemy attacks long before they reach intended targets, but its centerpiece is the ability to flexibly deploy air and missile defenses at sea. Such defenses can be optimally positioned to intercept ballistic missiles and cruise missiles aimed at friendly forces or assets within the United States.

Sea Basing is an emergent concept that emphasizes the Navy's ability to provide forward logistics to the joint force in the absence of secure access to land bases. Recent wars in Afghanistan and Iraq have underscored uncertainties about access to overseas bases. Because the Navy operates at sea, it potentially can provide a secure alternative to land bases that is both less vulnerable and less dependent on the goodwill of foreign nations. Sea Basing is discussed in greater detail in the section about enabling the joint force.

The Navy has made other adjustments beyond Sea Power 21 to align its competencies with new missions. Perhaps the most important such innovation is a revised Fleet Response Plan that replaces routine rotations overseas with a culture of readiness aimed at surging in response to real threats. In the past the service was hard-pressed to deliver more than three aircraft carriers quickly to an area of operations, but under the new response plan, twice that number can arrive in 30 days and two more within 60 days after that. Flexibility has been further enhanced by a global concept of operations reorganizing the fleet into three dozen modular force packages that can be mixed and matched as circumstances require.

What Is The Navy's Information Architecture?

The Navy pioneered military thinking about how the information revolution might transform the conduct of war. Long before network-centric concepts gained currency in the joint community, Navy leaders were defining the features of a force posture that fully leveraged the agility and awareness afforded by new information technologies. For example, in the 1990's the service began a program called Copernicus that was designed, as Chief of Naval Operations Jeremy Boorda put it, "to make command, control, communications, computers and intelligence systems responsive to the warfighter; to field these systems quickly; to capitalize on advances in technology; and to shape our doctrine to reflect these changes."

The latest refinement in Navy thinking about networked warfare is an initiative called Forcenet ("FORCEnet" in naval parlance). Navy leaders describe Forcenet as the glue that will hold their scattered warfighting assets together in the information age — a resilient web of wireless links reaching from the seabed to geosynchronous orbit that can continuously connect the Navy's warfighting communities with each other, and with the rest of the joint force.

That may sound like a fairly straightforward task, but in fact it is one of the most challenging system-integration efforts ever undertaken by a government agency. The Navy describes six overarching goals of Forcenet: timely, comprehensive information for weapons and sensors; a "distributed and collaborative" command and control system; dynamic, resilient networks; automated and adaptive decision aids; "human-centric" technology and processes; and sophisticated information warfare tools.

The technical standards and specifications for achieving such goals are very complex. In simple terms, though, Forcenet seeks to leverage recent investments in what might be called the three "R's" of information-age warfare — the richness of advanced sensors, the reach of global networks, and the relevance of fused, multi-source intelligence. If the many cutting-edge programs currently funded by the Navy and other services in these areas can be integrated in a common architecture, the gains in military performance should be truly revolutionary.

The design philosophy underpinning Forcenet emphasizes flexibility and cooperation. Flexibility is afforded by open architectures, modular components, common standards and other features that mimic the user-friendly environment of the Internet. Cooperation is reflected in the Navy leadership's determination to fashion a network that seamlessly links to all organic, joint and national warfighting assets. That will enable the Navy to avoid duplicating the investments of other services while maximizing interoperability in wartime.

Because Forcenet is a realignment of existing efforts rather than a wholly new program, it is relatively inexpensive. Nonetheless, by tearing down barriers to communication between warfighting communities and efficiently leveraging all investments in new technology, it has the potential to transform the way in which war is waged. Among the existing Navy programs that offer some hint of what it can deliver are the Cooperative Engagement Capability for fusing and disseminating air defense information, the Distributed Common Ground System for integrating multisource intelligence, and the Advanced Hawkeye surveillance plane that coordinates defensive measures against hostile aircraft and missiles across vast volumes of airspace.

What Kind Of Fleet Is Required?

The Navy's fleet of warships and support vessels numbered 288 hulls at the beginning of 2005, about half of its size in the final decade of the Cold War. Despite the nearly continuous drawdown of ships since the collapse of the Soviet Union, though, today's fleet is the most capable ever fielded owing to a series of technological advances such as wireless networks, digital sensors and precision munitions. Critics of the fleet's shrinkage often warn that a warship can only be in one place at a time, but a single new warship today often can accomplish far more for the joint force than several legacy vessels.

The Navy does not currently have an official goal for what the optimum size and composition of the fleet should be, due mainly to uncertainties about future roles and missions. Not only is the strategic landscape changing, but the division of labor between the Navy and other services is in flux. The quadrennial review will need to clarify some of these issues before Navy leaders can settle on an agreed set of objectives for the future fleet. In addition, the service is internally pursuing a series of new programs and productivity initiatives that will materially influence how big the future fleet needs to be, and what kinds of warships it will contain.

Under a "Global Concept of Operations" unveiled in 2002, the Navy organizes its fleet in three dozen force packages designed to support the strategy of forward deterrence and flexible defense. Twelve of these packages — probably eleven in the future — will be Carrier Strike Groups consisting of a nuclear-powered aircraft carrier and supporting warships. Carrier Strike Groups are the most powerful force package that the Navy deploys, the centerpiece of modern naval warfare. Another twelve packages are Expeditionary Strike Groups centered on amphibious assault vessels carrying helicopters and Marine combat units. In the future, these smaller carriers will also host Marine F-35 Joint Strike Fighters and the MV-22 Osprey tiltrotor aircraft. The remaining force packages consist of surface combatants and converted Trident submarines equipped with an array of conventional antiship, antiair and land-attack missiles.

The force packages in the global concept of operations are self-contained, modular fighting units that can be combined or distributed according to military need. However, they do not subsume the full inventory of warships in the fleet. The service plans to sustain a separate force of fourteen Trident ballistic-missile submarines that will provide the core of the nation's nuclear deterrent force for the foreseeable future. Each Trident sub carries about 200 independently targetable nuclear warheads that must be maintained in silent undersea secrecy to assure the retaliatory might essential to deterrence. In addition, a portion of the Navy's 55 nuclear-powered attack submarines equipped with conventional weapons are operated separately from force packages, mainly on intelligence-gathering missions.

This section contains a chart reflecting the Navy's current plan for sizing the fleet over the next thirty years. While the basic categories of warship do not change much, each class currently in the fleet is due to be replaced by successor classes at some time during the period. The chart exhibits options for both larger and smaller fleets, depending on whether the service successfully implements productivity initiatives designed to make each warship more effective. Among the most important such initiatives are: (**1**) increased forward deployment of warships near likely areas of operation; (**2**) changing of crews at sea rather than in homeports; (**3**) streamlined maintenance practices expected to require less time out of service; and (**4**) surge-based deployment practices that stress fast response to military needs rather than routinized presence missions.

The composition of the future fleet will be substantially altered by the development of new warships better suited to the emerging threat environment. Six new classes of warship look likely to define the Navy of the future:

★ The CVN-21 nuclear-powered aircraft carrier will succeed the *Nimitz* class with a highly automated vessel requiring a thousand fewer personnel to operate the ship and support the on-board airwing. Greatly increased electrical-power generation on CVN-21 will allow elimination of all legacy steam-powered equipment while facilitating the transition of naval aviation to a fully networked warfighting environment.

★ The SSN-774 nuclear-powered attack submarine, called the *Virginia* class, will provide the Navy with a fully digitized, extremely survivable undersea warship suitable for a wide range of intelligence-gathering, sea control and expeditionary warfare missions. The nearly limitless range of nuclear-powered subs is likely to be increasingly important as overseas base access diminishes and threats grow in the Asian littoral.

★ The DDX land-attack destroyer will enable the Navy to sustain high rates of accurate gunfire against targets over a hundred miles distant while also accomplishing a range of other combat missions such as anti-aircraft and anti-submarine warfare. It is also expected to provide a common hull for the service's first missile-defense cruiser, dubbed CGX.

★ The Littoral Combat Ship will be a small, fast-moving warship designed to assure the access of friendly naval and ground forces into heavily contested coastal areas where mines and diesel submarines are a growing threat. The vessel will carry a range of modular combat suites optimized for various missions in support of both ships at sea and forces ashore.

★ The LPD-17 *San Antonio*-class amphibious assault ship will replace several legacy classes with a highly automated, more flexible vessel suited to support a wide range of expeditionary warfare missions. LPD-17 will greatly enhance the deployability and sustainment of Marine forces engaged in crisis response, forcible entry, and other facets of littoral warfare.

★ The LHA(R) amphibious warship, in combination with a future class of Maritime Prepositioning Ship, will probably form the core of the Navy's proposed sea basing concept. Sea basing is a way of assuring joint force presence and access when land bases in a combat zone are either too vulnerable or simply unavailable, necessitating reliance on assets at sea as the main source of support and sustainment.

Collectively, these and other construction initiatives reflect an evolution of the Navy's Cold War posture away from its traditional emphasis on maritime superiority to a more balanced combination of sea control and shaping outcomes ashore. Like the service's interest in network-centric warfare, this evolution has been underway since the early 1990's and is taking time to translate into focused programs. In its totality, though, the envisioned fleet of the future is far more versatile and capable than anything that has come before.

U.S. Naval Fleet Composition 2006-2035

			Low Option		High Option	
	2006	2014	2024	2035	2024	2035
Aircraft carriers	11	11	11	10	11	11
Surface combatants	102	126	156	130	176	174
Submarines (attack)	58	57	49	41	49	45
Submarines (ballistic)	14	14	14	14	14	14
Amphibious ships	35	32	31	17	31	24
Sea basing	0	5	19	19	25	25
Combat logistics force	34	30	25	24	26	26
Support vessels	18	16	8	5	9	6
TOTAL SHIPS	**272**	**291**	**313**	**260**	**341**	**325**

Source: U.S. Navy, Defense News

What Is The Best Mix Of Aircraft And Weapons?

Over the last ten years, the U.S. Navy has undergone what it calls a "revolution in strike warfare" that has greatly increased the precision and lethality of its weapons systems. This revolution reflects the convergence of several trends in weapons development: (**1**) the proliferation of low-cost, highly precise munitions guided by global positioning satellites or laser designation; (**2**) the acquisition of tactical aircraft with greater range, payload and survivability; (**3**) the connectivity afforded by wireless networks such as Link-16; (**4**) the development of more discriminate airborne and seaborne sensors; and (**5**) the removal of barriers to sharing information across the full breadth of the joint force. Collectively, these trends have made today's Navy far more capable than it was in the past, despite cuts in warships and planes.

Although the revolution in strike warfare is reshaping all of the Navy's warfighting communities, it has advanced furthest among the ranks of aviators. Carrier air wings that once could attack only a handful of targets successfully in a day can now destroy literally hundreds of remote targets with great accuracy, rapidly reducing the capacity of adversaries to resist while minimizing unintended harm to civilians. Five aircraft programs are at the center of this transformation:

- ★ The F-35 Joint Strike Fighter, which will be purchased in both carrier-based and vertical-ascent versions in order to support the widest range of sea control and expeditionary warfare missions. The carrier-based variant will afford greater striking range and survivability to air wings, while the short-takeoff/vertical-landing variant built for the Marine Corps will be able to deploy virtually anywhere owing to the minimal amount of space it requires to get airborne.
- ★ The F/A-18 Super Hornet will replace earlier versions of the same airframe (and other legacy aircraft) with a multirole fighter that has 40% greater unrefueled range, 25% greater payload, enhanced survivability and enhanced flexibility. Super Hornet will also provide an airframe for the Navy's next-generation electronic-warfare aircraft, which will deliver sophisticated jamming and deception support to the entire joint force.
- ★ The E-2C Hawkeye is a carrier-based early warning aircraft equipped with a rotating radar that will be upgraded to provide precise tracking of airborne threats over both land and water. Reflecting the increasing versatility of electronic aircraft in the information age, Hawkeye will be able to simultaneously track dozens of potentially hostile aircraft over vast areas of airspace while also managing defensive measures and acting as a communications node for the joint force.
- ★ The P-8A Multimission Maritime Aircraft will be a militarized version of the Boeing 737 commercial transport that replaces the venerable P-3 Orion in maritime patrol missions. Equipped with sophisticated sensors and weapons for detecting and destroying both surface and undersea threats, the land-based P-8A will have a minimal logistics footprint due to the availability of hundreds of commercial support sites worldwide.
- ★ The V-22 Osprey tiltrotor being acquired by the Navy, the Marine Corps and the Special Operations Command is the first military airframe to combine the vertical agility of a helicopter with the range and speed of a fixed-wing aircraft. The Osprey's unique performance characteristics will make it well suited to missions such as forcible entry, special operations, combat search and rescue, and logistical support of ground forces deep in the interior of littoral states.

The Navy plans to acquire an average of 215 new fixed-wing and rotary-wing aircraft per year across its 2006-2011 spending plan (see chart), in what amounts to the biggest aviation modernization effort of any military service since the Cold War. However, the Navy's revitalization of its aircraft and weapons inventory is only superficially similar to a Cold War buildup, because all of the service's investment choices are now made against the backdrop of a network-centric warfighting environment in

which joint capabilities are tightly integrated. That means key assets such as communications and intelligence-gathering systems that once would have seemed an indispensable part of the Navy's posture may in the future be accessed by exploiting the assets of other services. There also will be much greater sharing of reconnaissance, fire support, force protection and other capabilities across the Navy's traditional warfighting communities.

The increasing integration of operations and infrastructure across the joint force allows the Navy to focus its investments in areas where it is uniquely capable of adding value to the nation's overall defense posture, such as littoral warfare and sea basing. When these core competencies are related to trends in the threat, they produce a very different set of investment priorities from what might have existed in the past. For example, the Navy is investing heavily in unmanned aerial vehicles such as the Global Hawk for collecting intelligence, and in unmanned undersea vehicles for countering anti-access strategies and conducting reconnaissance. It also is spending more money on systems designed to assure that adversaries will have difficulty exploiting the electromagnetic spectrum in wartime, such as the Improved Capability (ICAP) Three system to be deployed on carrier-based electronic warfare planes.

One of the most important ongoing trends in Navy weapons investment is the shift to increasingly versatile, precision-guided munitions. Virtually all of the service's strike aircraft are now equipped with weapons such as the Joint Direct Attack Munition that utilize satellite guidance to achieve pinpoint accuracy, enabling destruction of multiple targets in a single sortie. Undersea and surface warships will be equipped with Tactical Tomahawk land-attack missiles that can be retargeted while in flight to targets and that can loiter over targets as they transmit video pictures to remote warfighters. Such innovations will radically transform the way in which war is waged from the sea.

Aircraft Procurement

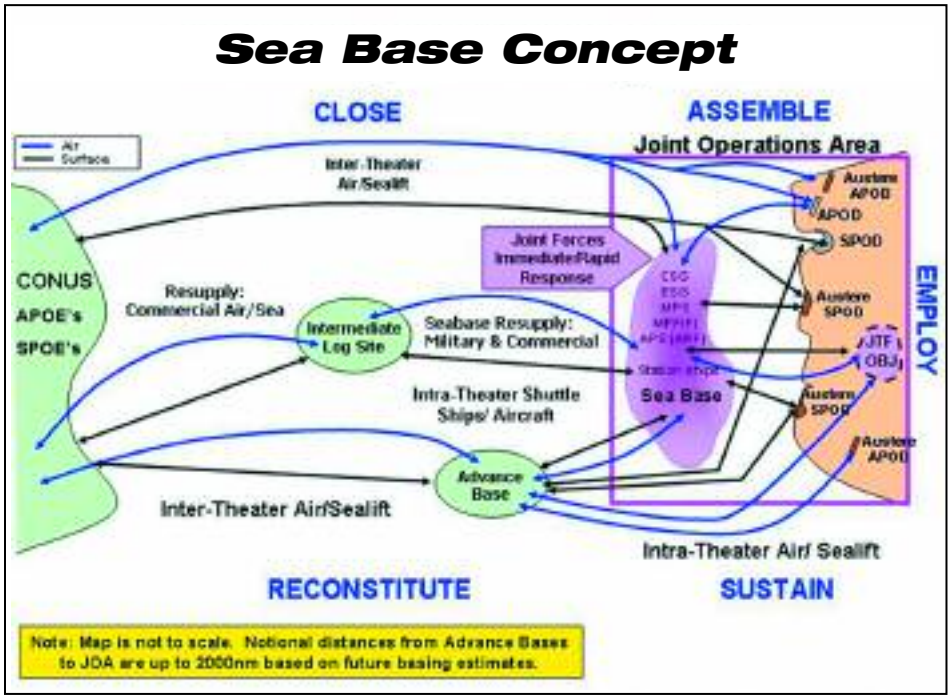
	FY06	FY07	FY08	FY09	FY10	FY11	Total 06-11
F-35 (JSF)	0	0	10	32	36	33	111
F/A-18E/F	38	30	24	20	22	14	148
EA-18G	4	12	18	22	20	14	90
MV-22	9	14	19	30	35	38	145
AH-1Z/UH-1Y	10	18	21	21	22	23	115
MH-60S	26	26	26	26	17	15	136
MH-60R	12	25	25	30	30	31	153
E-2C	2	2	4	4	4	4	20
KC-130J	12	0	0	0	0	0	12
T-45C	6	12	0	0	0	0	18
C-40A	0	1	2	1	1	1	6
UC-35	0	0	0	0	0	0	0
C-37A	0	0	0	0	0	1	1
T-6A (JPATS)	0	24	48	48	48	48	216
BAMS UAV	0	0	0	0	0	4	4
CH-53X	0	0	0	0	2	2	4
VH-XX	5	0	3	4	3	4	19
P-8A (MMA)	0	0	4	0	6	8	18
J-ACS	0	1	1	1	4	5	12
VTUAV	3	3	5	7	11	11	40
USMC UAV	2	1	2	3	0	0	8
F-5E	9	5	0	0	0	0	14
TOTAL	**138**	**174**	**212**	**249**	**261**	**256**	**1,290**

Source: U.S. Navy

What Is The Navy's Role In Enabling The Joint Force?

For most of the Navy's history, service roles and missions placed a premium on operational autonomy and self-reliance. Operating far from friendly military bases with fragile communications links to national command authorities, the Navy and Marine Corps learned to fend for themselves. That mode of operation persisted well into the Cold War, with each service embracing signature missions requiring a minimum of interservice coordination. Whatever the value of independence may have been, it produced a great deal of redundancy and waste while limiting the ability of the armed forces to collaborate effectively. Today, new information technologies make it much easier to integrate the capabilities of the services, while changing threats dictate more frequent cooperation across service lines.

Against that backdrop, the Navy has begun to place much more emphasis in its internal planning on how it can contribute to the overall effectiveness of the joint force. In particular, it seeks to identify which of its core competencies can most usefully serve as enablers of other services. There are many such enablers in the naval force posture, ranging from undersea sensors to forward-deployed firepower to special operators to sealift. Although the Navy can and must remain capable of operating autonomously in some contingencies, it increasingly defines its role in terms of providing such enablers to the joint force and coalition partners — much as the Air Force provides orbital surveillance and aerial refueling to the Navy.



The most promising new concept highlighting the Navy's role as a joint enabler is sea basing, one of the three pillars of the future Navy set forth by Chief of Naval Operations Admiral Vern Clark in his 2002 speech at the Naval War College. Admiral Clark described the sea base as a "projection of sovereignty," meaning that use of a logistics base at sea is not subject to the same political constraints as a land base in a host nation. This idea, essentially an extension of the forward-sovereignty features traditionally attributed to aircraft carriers, has great appeal in an era of waning overseas base access and adversaries determined to exclude the U.S. from strategic regions such as the Persian Gulf.

As shown in the diagram, the sea base would be a cluster of networked ships suitable for supporting air and ground forces so that they did not need to build up a logistics base ashore before going into action. The number of ships in the base could be scaled up or down depending on military need, but its key elements would be a new generation of amphibious assault ships and maritime prepositioning vessels, both of which would host a variety of fixed-wing and rotary-wing aircraft. The sea base would be reached from the United States by fast sealift ships, and forces would move ashore using a series of floating and airborne "connectors." While many aspects of the sea base concept remain to be worked out, there is little doubt that it could play a central role in enabling the success of a joint military campaign.

What Budgetary Resources Does The Navy Require?

The Department of the Navy traditionally has received the largest appropriation of any military department. There are three reasons for its disproportionate claim on federal resources. First, the Navy budget also covers the needs of the Marine Corps. Second, the Navy and the Marines deploy a larger portion of their forces forward in peacetime than the other services. Third, the Navy's investment accounts fund some of the most expensive military systems in the joint inventory, including nuclear-powered aircraft carriers and submarines.

The global war on terror has temporarily diminished the Navy's share of the defense budget, especially when supplemental appropriations to fund the stabilization campaign in Iraq are included in totals. Over the long run, though, the Navy is likely to recover its status as the leading recipient of defense funds, owing to the three factors cited above and the impracticality of permanently deploying large forces at overseas land bases in the years ahead. Even in its present, somewhat diminished, budgetary state, the Department of the Navy will receive over $125 billion in fiscal 2006 — more money than any other nation spends on its entire military establishment.

There is no magic formula for establishing definitively how much Navy funding is "enough." Some military needs will always be unmet, and the relative priority of missions shifts frequently in response to emerging threats and changes in national strategy. The fact that the Navy outspends other military forces around the world is no measure of adequacy, because the United States defines a much bigger role for its forces on the global landscape than any other nation, and the sea services are the leading edge of national military power. What matters is whether the Navy is successfully defending U.S. interests in concert with the rest of the joint force, and whether it is sustaining a force capable of serving that role in the future.

It is not clear that current spending patterns will sustain an adequate naval posture over the long run. Although the service is doing an adequate job of funding current operations and modernizing its aircraft inventory, it has consistently failed to fund ship construction at a rate that would arrest the decline in the size of the fleet. Not only is the number of aircraft carriers likely to dip below twelve for the first time in many years, but the service has failed to advance a credible plan for acquiring a sufficient number of submarines or major surface combatants. Some such plan is essential, not only because of the need to bring new capabilities and technologies to the fleet, but also because older ships are more expensive to man and maintain.

Navy leaders have taken steps to increase the productivity of each warship, but some of those steps have the effect of using the ships more intensively, and thus wearing them out faster. Over the long run, the service cannot hope to preserve an adequate fleet unless it doubles the current level of ship construction. Getting to that higher level of shipbuilding will require innovative funding mechanisms such as advanced appropriations that eliminate the distortions inherent in the practice of funding the full cost of a new ship in its first year of construction. It will also require management and design changes to slow the increase in the cost of new warships. But with the federal government currently devoting only two days of spending per year to sustaining the Navy's fleet, it is hard to escape the conclusion that more money will be needed.

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