Unified Commands
The Navy operates 24/7 around the globe, ready to counter the next enemy threat or provide humanitarian aid during disasters.

Bases
Take a look at Navy bases worldwide.

Enlisted Ratings
From Intelligence Specialist to Quartermaster, Navy enlisted ratings offer diverse professional career opportunities.

Warfare Pins & Badges
Today’s Sailors are more qualified and specialized than ever before. This chart will help you identify them.

Ships
From bow to stern, take a look at the Navy fleet that controls the seas with an impressive display of power.

Military Sealift Command Ships
Pre-positioned and forward deployed, these lifeline vessels supply the fleet with everything from ammunition to fuel and fresh food too.

Expeditionary Warfare
The newly established Navy Expeditionary Combat Command (NECC) serves as a single functional command to centrally manage the Navy’s expeditionary forces.

Aircraft Carriers
These “floating cities” project U.S. power, ready to execute war and diplomacy worldwide.

Aircraft
Whether launched from a Navy carrier or shore air station, U.S. Navy aircraft remain the best in the world.

Special Warfare
Special warfare Sailors, the unseen warriors, continue to contribute to the Navy’s global mission.

Weapons
Today’s Sailors are using state-of-the-art technology to put ordnance on target.
Welcome to the 2007 edition of the All Hands “Owner’s and Operator’s Manual.” As always, you’ll find a wealth of information about your Navy right inside. From base pay to base installations, ship classes to aircraft types, it’s all here in one easy-to-use format. There’s simply no better one-stop shop for information about our Navy than this single issue of All Hands.

I urge you to read it, save it, and share it with your shipmates. Now is the time to stay up to speed. With so much happening in the world today, we simply can’t afford to take our eyes off the horizon for even a moment.

Consider just a few of the things we witnessed since the last “Owner’s and Operator’s” went to press: Iran moved forward with plans to enrich uranium; North Korea tested a nuclear device; the Taliban continued its resurgence in Afghanistan; Israel and Lebanon battled one another; pirates stepped up attacks off Africa; and our nation remained at war – not just in Iraq – but around the world.

We’ve been a big part of that war, a big part of this rapidly changing world. We didn’t just watch things happen. We helped shape them.

As one Sailor serving in Iraq, Electronics Technician 1st Class (SW) Brian Pintello, put it: “You see and hear about service members doing their part out here in harm’s way. I wanted to make a difference. I wanted to play my part.”

We have all played our part.

The Navy took command of the detainee mission in Guantanamo Bay and the Joint Task Force in the Horn of Africa. We helped provide security for Iraqi oil platforms in the Persian Gulf, completed a series of successful sea-based anti-ballistic missile tests, and sent the hospital ship USNS Mercy (T-AH 19) on a five-month humanitarian mission to Indonesia, Bangladesh and the Philippines.

We helped chase down pirates and build up communities at home and abroad that were devastated by natural disaster. Navy officers commanded six of 12 U.S.-led Provincial Reconstruction Teams in Afghanistan, and, alongside the Marines, we evacuated some 14,000 American citizens from Lebanon.

Even as this issue goes to press, more than 30,000 Sailors remain deployed. Thirteen thousand of them are on the ground in the Central Command AOR, which is more by a thousand than those serving at sea in the same theater. A good many are Individual Augmentees, Sailors like Pintello, who we send forward to fill critical billets in joint and coalition units.

Their is a special contribution, requiring a special sacrifice by families and loved ones. We are grateful for the many who have answered the call to duty, and we are grateful for all that they do.

As you continue to operate this Navy you own — the Navy you can read about in this issue — please remember how much your talent remains in demand and for whom and for what you’re really striving.

“I have four daughters back home,” added Pintello. “I hope my actions here will ultimately make the world a better place for them.”

His actions will. Your actions will. It’s all about the future, yours and your family’s ... ours and the world’s. With our eyes firmly on the horizon, we must shape it together.
NAVAL COMPONENT COMMANDS AND NUMBERED FLEETS

The map depicts the Unified Commands having geographic areas of operation (AO). The Navy supports those regional Unified Commands with component and numbered fleets.

U.S. NORTHERN COMMAND (NORTHCOM)

U.S. Fleet Forces Command

Headquarters: Norfolk
Mission: Fleet Forces Command (FFC) organizes, mans, trains and equips Navy forces and provides planning support to combatant commanders; deters, detects and defends against homeland maritime threats; and articulates fleet war-fighting and readiness capabilities to the Chief of Naval Operations (CNO). Fleet Forces Command strives to have an effectively prepared total Navy force, ready to win in combat; to authoritatively define consistently accepted fleet readiness and war-fighting capabilities; and to provide transformational change through Concept of Operations and doctrine development, and agile, powerful and persistent Navy forces and operational planning from combatant commanders to the Chief of Naval Operations.

U.S. 2nd Fleet

Headquarters: Norfolk
Mission: Commander, U.S. 2nd Fleet is responsible for U.S. Navy operations and defense of U.S. interests in the North Atlantic Ocean, and is also responsible for the training/certification of East Coast Carrier and Expeditionary Strike Groups.

AO: The North Atlantic Ocean
Flagship: Rotational

U.S. PACIFIC COMMAND (PACOM)

U.S. Pacific Fleet

Headquarters: Pearl Harbor
Mission: U.S. Pacific Fleet (PACFLT), operates in support of the PACOM Theater Security Strategy, and provides interoperable, trained and combat-ready naval forces to Commander, PACOM and other U.S. combatant commanders, as required. In addition to these traditional Title X responsibilities, PACFLT has an increasing operational role as Commander, Joint Task Force 519. This mission requires PACFLT to not only maintain the training and readiness of the Joint Task Force headquarters staff, but also command the joint force during times of conflict, crisis or war. Joint Task Force 519 is a standing joint task force headquarters that trains throughout the year and is ready to deploy at any time. It gives the combatant commander, U.S. Pacific Command, a standing joint task force built around its service component command headquarters that can come together very quickly to deal with a peacetime contingency or wartime threat. Joint Task Force 519 has a core headquarters element, distributed manning, frequent training opportunities and interactions.

U.S. 3rd Fleet

Headquarters: San Diego
Mission: U.S. 3rd Fleet is responsible for U.S. Navy operations and defense of U.S. interests in the Pacific Ocean from the North Pole to the South Pole and from the continental West Coast to the international date line.

AO: The Pacific Ocean from CONUS West Coast to the International Date Line.

U.S. 7th Fleet

Headquarters: Yokosuka, Japan
Mission: U.S. 7th Fleet’s responsibility is to defend and protect the territory, citizens, commerce, sea lanes, allies and other vital interests of the United States; deter aggression with capable, flexible and mobile U.S. naval forces, cooperating closely with other U.S. military services and the forces of allied and friendly nations; if deterrence fails, conduct prompt and sustained combat operations to terminate hostilities on terms favorable to the United States and allies. Commander, U.S. 7th Fleet wears three hats: as operational commander for all naval forces in the region; as a Joint Task Force commander in the event of natural disaster or joint military operation; and as the Combined Naval Component Commander for the defense of the Korean

Maps courtesy of the National Geographic Society.
Mission: Naval Forces Southern Command (NAVSO) is the naval component for Southern Command (SOUTHCOM), which is headquartered in Miami. NAVSO directs U.S. naval forces operating in the region and interacts with Caribbean, Central and South American civil forces and navies to shape the maritime environment within SOUTHCOM’s AOR. With a focus on Theater Security Cooperation (TSC), NAVSO works to build and strengthen relations, develop partner nation capabilities and maintain maritime access to defend the United States. TSC encompasses a robust strategy that includes military-to-military exchanges, multi-national exercises and training, diplomatic port visits and community relations activities. NAVSO maintains a strong presence in the region through participation in a variety of maritime exercises including UNITAS, PANAMAX, Teamwork South, Silent Forces Exercises and others. Through annual meetings such as Operational Naval Committees, NAVSO fosters a continuous dialogue between regional partner nations. NAVSO also provides operational control for U.S. Navy units supporting joint and inter-agency efforts in counter-narcotics terrorism (CNT) operations, and efforts to stem the flow of illegal migration.

AO: Fifty-two million square miles of the Pacific and Indian Oceans, from the international date line to the waters east of Africa, and from the Kuril Islands in the north to the Antarctic in the south.

Flagship: USS Blue Ridge (LCC 19)

U.S. SOUTHERN COMMAND (SOUTHCOM)

U.S. Naval Forces Southern Command
Headquarters: Mayport, Fla.

U.S. CENTRAL COMMAND (CENTCOM)

U.S. Naval Forces Central Command/ U.S. 5th Fleet/Combined Forces Maritime Component Commander
Headquarters: Manama, Bahrain
Mission: U.S. and coalition forces operating in this region conduct maritime security operations (MSO). MSO help set the conditions for security and stability in the maritime environment. These operations deny international terrorists use of the maritime environment as a venue for attack or to transport personnel, weapons or other material. Coalition naval forces complement the counter-terrorism and security efforts of regional nations, and together work toward a common goal against a common enemy – an enemy of peace, an enemy of stability, an enemy of prosperity.

AO: Covering approximately 7.5 million square miles, the area of operations includes the Persian Gulf, Red Sea, Gulf of Oman and parts of the Indian Ocean. This expanse, comprised of 27 countries, includes three critical chokepoints at the Strait of Hormuz, the Suez Canal and the Strait of Bab al Mandeb at the southern tip of Yemen.

U.S. EUROPEAN COMMAND (EUCOM)

Commander, U.S. Naval Forces Europe-Commander, U.S. 6th Fleet
Headquarters: Naples, Italy.
Mission: U.S. Naval Forces Europe-Commander, U.S. 6th Fleet (CNE-C6F) is the maritime arm of EUCOM responsible for supporting National Military Strategy and the strategic objectives of EUCOM and the Chief of Naval Operations. CNE-C6F provides overall, command, operational control, and coordination of U.S. Naval forces in the EUCOM area of responsibility. Depending on regional necessity, 6th Fleet’s force structure could consist of an aircraft carrier strike group, an expeditionary strike group with an embarked Marine Expeditionary Unit, and various support ships, land-based patrol aircraft and nuclear-powered attack submarines. Providing presence with a purpose, CNE-C6F follows a peacetime engagement plan centering on exercises and operations that improve interoperability and increase regional maritime security among European and African nations. U.S. naval forces in Europe and Africa remain committed to building emerging partnerships’ maritime capacity and capability while positively shaping the environment “south and east” to deny maritime criminals, terrorists or any other destabilizing element freedom of action.

AO: More than 21 million square miles including 91 countries and territories. This territory extends from the Cape of Norway through the waters of the Baltic and Mediterranean Seas, most of Europe, parts of the Middle East to the Cape of Good Hope in South Africa.

Flagship: USS Mount Whitney (LCC/JCC 20)
**UNITED STATES**

**California**
- Naval Air Weapons Station (NAWS) China Lake
- Naval Air Facility (NAF) El Centro
- Naval Air Station (NAS) Lemoore
- Naval Base (NB) Coronado
- NB Ventura County
- Naval Station (NAVSTA) San Diego
- Naval Support Activity (NSA) Monterey
- Naval Weapons Station (NWS)
  - Seal Beach
  - Naval Submarine Base (SUBASE) San Diego

**Connecticut**
- Naval SUBASE New London

**District of Columbia**
- Naval District Washington

**Florida**
- NAS Jacksonville
- NAS Key West
- NAS Whiting Field
- NAS Pensacola
- NAVSTA Mayport
- NSA Panama City
- Naval Air Weapons Center (NAWC)
  - Orlando

**Georgia**
- NAS Atlanta
- NSA Athens
- Naval SUBASE Kings Bay

**Hawaii**
- Navy Region Hawaii, Pearl Harbor
- NAVSTA Pearl Harbor
- Pacific Missile Range Facility, Kekaha

**Illinois**
- NAVSTA Great Lakes

**Indiana**
- NSA Crane

**Louisiana**
- NAS Joint Reserve Base (JRB)
  - New Orleans
- NSA New Orleans

**Maine**
- NAS Brunswick

**Maryland**
- NAS Patuxent River

**Mississippi**
- Naval Construction Battalion Center Gulfport
- NAS Meridian

**Nevada**
- NAS Fallon

**New Hampshire**
- NSA Portsmouth Shipyard

**New Jersey**
- Naval Air Engineering Station, Lakehurst
- NWS Earle

**New York**
- Naval Support Unit (NSU)
  - Saratoga Springs

**Pennsylvania**
- NAS JRB Willow Grove
- NSA Mechanicsburg

**Rhode Island**
- NAVSTA Newport

**South Carolina**
- NWS Charleston

**Tennessee**
- NSA Mid-South, Millington

**Texas**
- NAS Corpus Christi
- NAS JRB Fort Worth
- NAS Kingsville
- NAVSTA Ingleside

*Photo by Ethan C. Macnow*
### WorldWide

<table>
<thead>
<tr>
<th>Country</th>
<th>Locations</th>
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| **Virginia** | Naval Amphibious Base (NAB)  
|            | Little Creek            |
|            | NAS Oceana              |
|            | NAVSTA Norfolk           |
|            | NSA Norfolk              |
|            | NWS Yorktown             |
|            | NSA Norfolk Naval Shipyard |
| **Washington** | NAS Whidbey Island      |
|            | NB Kitsap               |
|            | NAVSTA Everett           |
|            | Naval Magazine Indian Island |
| **West Virginia** | Naval Security Group, Activity  
|            | (NSGA) Sugar Grove       |
| **Italy**  | NAS Sigonella            |
|            | NSA Gaeta                |
|            | NSA La Maddalena         |
|            | NSA Naples               |
| **Bahrain** | NSA Bahrain             |
| **Cuba**   | NAVSTA Guantanamo Bay    |
| **Diego Garcia** | NSF Diego Garcia Indian Ocean |
| **Greece** | NSA Souda Bay            |
| **Guam**   | NB Guam                  |
| **Japan**  | NAF Atsugi               |
|            | NAF Misawa               |
|            | Commander Fleet Activities (CFA)  
|            | Yokosuka                 |
|            | CFA Sasebo               |
|            | CFA Kadena Okinawa       |
| **Korea**  | CFA Chinhae              |
| **Singapore** | Naval Regional Contracting Center, Singapore |
| **Spain**  | NAVSTA Rota              |
| **United Kingdom** | NAF Mildenhall       |
|            | NAVACT London            |
|            | Joint Military Facility (JMF) St. Mawgan |

(Source: CNI)
Enlisted Sailors wear their job specialty in plain sight. Rating badges, worn on the left sleeve, consist of an eagle (called a crow); chevrons indicating the wearer’s rate; and a specialty mark indicating rating. While some of these ratings have historical significance (such as the boatswain’s mate), others show the evolution of naval technology in modern times, such as the GS (gas turbine system technician).
Source: NAVPERSCOM
Cruisers

Modern U.S. Navy guided-missile cruisers perform primarily in a battle force role. These ships are multi-mission, anti-air warfare (AAW), anti-submarine warfare (ASW), long-range strike and anti-surface warfare (ASUW) surface combatants capable of supporting carrier and expeditionary strike groups (ESG), amphibious forces, or of operating independently and as flagships of surface action groups.

Ticonderoga-class

Power Plant: Four General Electric LM 2500 gas turbine engines; Two shafts, 80,000 shaft horsepower total.
Length: 567 feet
Beam: 55 feet
Displacement: 9,600 tons full load
Speed: 30 plus knots (34.5 plus mph)
Aircraft: Two SH-60 Sea Hawk (LAMPS III)
Crew: 364 (24 officers, 340 enlisted)
Armament: MK 26 missile launcher (CG 51); Standard Missile (MR) or MK-41 vertical launching system (CG 52 through CG 73); Standard Missile (MR); Vertical Launch ASROC (VLA) Missile; Tomahawk Cruise Missile; Six MK-46 torpedoes (from two triple mounts); Two MK-45 5-inch/54 caliber lightweight guns; Two Phalanx CIWS.

Destroyers

Guided-missile destroyers are multi-mission [anti-air warfare (AAW), anti-submarine warfare (ASW) and anti-surface warfare (ASUW)] surface combatants. They operate in support of carrier and expeditionary strike groups, surface action groups, amphibious groups and replenishment groups.

Arleigh Burke-class

Power Plant: Four General Electric LM 2500-30 gas turbines; Two shafts, 100,000 total shaft horsepower, SPY-1 Radar and Combat System Integrator.
Length: Flights I and II (DDG 51-78): 505 feet; Flight IIA (DDG 79-98): 509 feet
Beam: 59 feet
Displacement: DDG 51 through 71: 8,315 tons full load; DDG 72 through 78: 8,400 tons full load; DDG 79 and on: 9,200 tons full load.
Speed: 30 plus knots (34.5 plus mph)
Aircraft: Hangar on later units. LAMPS III electronics installed on landing deck for coordinated DDG 51/helo ASW operations.
Crew: 323 (23 officers, 300 enlisted)
Armament: Standard missile; Harpoon; Vertical Launch ASROC (VLA) missiles; Tomahawk; Six MK-46 torpedoes (from two triple tube mounts); One 5-inch/54 caliber MK-45 lightweight gun; Two 20mm Phalanx CIWS.

Ships:

Cruisers:
- USS Bunker Hill (CG 52)
- USS Mobile Bay (CG 53)
- USS Antietam (CG 54)
- USS Leyte Gulf (CG 55)
- USS San Jacinto (CG 56)
- USS Lake Champlain (CG 57)
- USS Philippine Sea (CG 58)
- USS Princeton (CG 59)
- USS Normandy (CG 60)
- USS Monterey (CG 61)
- USS Chancellorsville (CG 62)
- USS Cowpens (CG 63)
- USS Gettysburg (CG 64)
- USS Chosin (CG 65)
- USS Hue City (CG 66)
- USS Shiloh (CG 67)
- USS Anzio (CG 68)
- USS Vicksburg (CG 69)
- USS Lake Erie (CG 70)
- USS Cape St. George (CG 71)
- USS Vella Gulf (CG 72)
- USS Port Royal (CG 73)

Destroyers:
- USS Arleigh Burke (DDG 51)
- USS Barry (DDG 52)
- USS John Paul Jones (DDG 53)
- USS Curtis Wilbur (DDG 54)
- USS Stout (DDG 55)
- USS John S. McCain (DDG 56)
- USS Mitscher (DDG 57)
- USS Laboon (DDG 58)
- USS Russell (DDG 59)
- USS Paul Hamilton (DDG 60)
- USS Ramage (DDG 61)
- USS Fitzgerald (DDG 62)
USS Stethem (DDG 63)
USS Carney (DDG 64)
USS Benfold (DDG 65)
USS Gonzalez (DDG 66)
USS Cole (DDG 67)
USS The Sullivans (DDG 68)
USS Milius (DDG 69)
USS Gonzalez (DDG 70)
USS Ross (DDG 71)
USS Mahan (DDG 72)
USS Decatur (DDG 73)
USS McFaul (DDG 74)
USS Donald Cook (DDG 75)
USS Higgins (DDG 76)
USS O’Kane (DDG 77)
USS Porter (DDG 78)
USS Oscar Austin (DDG 79)
USS Roosevelt (DDG 80)
USS Winston S. Churchill (DDG 81)
USS Lassen (DDG 82)
USS Howard (DDG 83)
USS Bulkeley (DDG 84)
USS McCampbell (DDG 85)

USS Shoup (DDG 86)
USS Mason (DDG 87)
USS Preble (DDG 88)
USS Mustin (DDG 89)
USS Chafee (DDG 90)
USS Pinckney (DDG 91)
USS Momsen (DDG 92)
USS Chung-Hoon (DDG 93)
USS Nitze (DDG 94)
Ships

USS James E. Williams (DDG 95)
USS Bainbridge (DDG 96)
USS Halsey (DDG 97)
USS Forrest Sherman (DDG 98)
USS Farragut (DDG 99)
Kidd (DDG 100)*
Gridley (DDG 101)*
Sampson (DDG 102)*
Truxton (DDG 103)*
Sterett (DDG 104)*
Dewey (DDG 105)*
Stockdale (DDG 106)*
Gravely (DDG 107)*
Wayne E. Meyer (DDG 108)*

Frigates fulfill a protection of shipping (POS) mission as anti-submarine warfare (ASW) combatants for amphibious expeditionary forces, underway replenishment groups and merchant convoys.

Oliver Hazard Perry-class

Power Plant: Two General Electric LM 2500 gas turbine engines; 1 shaft, 41,000 shaft horsepower total.
Length: 445 feet; 453 feet with LAMPS III modification.
Beam: 45 feet
Displacement: 4,100 tons full load
Speed: 29 plus knots (33.4 plus mph)
Aircraft: Two SH-60 (LAMPS III) in FFG 8, 28, 29, 32, 33, 36-61; One SH-2 (Lamps MK-I) in FFG 30, 31.
Crew: 215 (17 officers, 198 enlisted)
Armament: Harpoon (from Standard Missile Launcher); Six MK-46 torpedoes (from two triple mounts); One 3-inch/62 caliber MK-75 rapid fire gun; One Phalanx CIWS.

Ships:
USS McInerney (FFG 8)
USS Boone (FFG 28)**
USS Stephen W. Groves (FFG 29)**
USS John L. Hall (FFG 32)
USS Jarrett (FFG 33)
USS Underwood (FFG 36)**
USS Crommelin (FFG 37)**
USS Curts (FFG 38)**
USS Doyle (FFG 39)**
USS Halyburton (FFG 40)
USS McClusky (FFG 41)**
USS Klakring (FFG 42)**
USS Thach (FFG 43)
USS DeWert (FFG 45)
USS Rentz (FFG 46)
USS Nicholas (FFG 47)
USS Vandegrift (FFG 48)
USS Robert G. Bradley (FFG 49)
USS Taylor (FFG 50)
USS Gary (FFG 51)
USS Carr (FFG 52)
USS Hawes (FFG 53)
USS Ford (FFG 54)
USS Elrod (FFG 55)
USS Simpson (FFG 56)**

Tarawa-class

Power Plant: Two boilers, two geared steam turbines, two shafts, 70,000 total shaft horsepower
Length: 820 feet
Beam: 106 feet
Displacement: 39,400 tons full load
Speed: 24 knots (27.6 mph)
Aircraft, depending on mission: 12 CH-46 Sea Knight helicopters; Four CH-53E Sea Stallion helicopters; Six AV-8B Harrier attack aircraft; Three UH-1N Huey helicopters; Four AH-1W Cobra helicopters.
Crew: 964 (82 officers, 882 enlisted)
Marine detachment: 1,900 plus
Armament: Two RAM launchers; Two Phalanx 20 mm CIWS mount; Three .50 cal. machine guns; Four 25 mm MK-38 machine guns.

Ships:
- USS Tarawa (LHA 1)
- USS Saipan (LHA 2)
- USS Nassau (LHA 4)
- USS Peleliu (LHA 5)

Wasp-class
Power Plant: Two boilers, two geared steam turbines, two shafts, 70,000 shaft horsepower; LHD 8-two gas turbines, 70,000 shaft horsepower, two auxiliary propulsion motors (5,000 hp each).
Length: 844 feet
Beam: 106 feet
Displacement: LHD 5 1-4: 40,650 tons full load; LHD 5 5-7: 40,358 tons full load; LHD 8: 41,772 tons full load.
Speed: 20 plus knots (23.5 plus mph).
Aircraft, depending on mission: 12 CH-46 Sea Knight helicopters; Four CH-53E Sea Stallion helicopters; Six AH-1W Super Cobra helicopters.
Crew: 1,108 (104 officers, 1,004 enlisted)
Marine detachment: 1,894
Armament: Two 25mm MK 38 guns; Two Phalanx CIWS; Eight .50-caliber machine guns.

Ships:
- USS Wasp (LHD 1)
- USS Essex (LHD 2)
- USS Kearsarge (LHD 3)
- USS Boxer (LHD 4)
- USS Bataan (LHD 5)
- USS Bonhomme Richard (LHD 6)
- USS Iwo Jima (LHD 7)
- Makin Island (LHD 8)*

AMPHIBIOUS TRANSPORT DOCK
Amphibious transports are used to transport and land Marines, their equipment and supplies by embarked air cushion or conventional landing craft or amphibious vehicles, augmented by helicopters or vertical take off and landing aircraft in amphibious assault, special operations, or expeditionary warfare missions.

Austin-class
Power plant: Two boilers, two steam turbines, two shafts, 24,000 shaft horsepower.
Length: 570 feet
Beam: 84 feet
Displacement: Approximately 17,000 tons (full load)
Speed: 21 knots (24.2 mph)
Aircraft: Up to six CH-46 Sea Knight helicopters
Crew: 420 (24 officers, 396 enlisted)
Marine detachment: 900
Armament: Two 25mm MK 38 guns; Two Phalanx CIWS; Eight .50-caliber machine guns.

Ships:
- USS Cleveland (LPD 7)
- USS Dubuque (LPD 8)
- USS Denver (LPD 9)
- USS Juneau (LPD 10)
- USS Nashville (LPD 13)
- USS Ponce (LPD 15)

* Under construction or authorized for construction
** Navy Reserve Force
**San Antonio-class**

**Power Plant:** Four sequentially turbocharged marine Colt-Pielstick diesels, two shafts, 41,600 shaft horsepower.

**Length:** 684 feet

**Beam:** 105 feet

**Displacement:** Approximately 24,900 tons (full load)

**Speed:** 22 plus knots (24.2 mph)

**Aircraft:** Launch or land two CH-53E Super Stallion helicopters or up to four CH-46 Sea Knight helicopters, MV-22 Osprey tilt rotor aircraft, AH-1 or UH-1 helicopters.

**Armament:** Two Bushmaster II 30mm Close in Guns, fore and aft; Two Rolling Airframe Missile launchers, fore and aft.

**Landing Craft/Assault Vehicles:** Two LCACs or one LCU; and 14 Advanced Amphibious Assault Vehicles.

**Crew:** 361 (28 officers, 333 enlisted)

**Embarked Landing Force:** 699 (66 officers, 633 enlisted); surge capacity to 800

**AMPHIBIOUS DOCK LANDING**

Dock Landing Ships support amphibious operations including landings via Air Cushion Landing Craft (LCAC), conventional landing craft and helicopters, onto hostile shores.

**Whidbey Island-class**

**Power Plant:** Four Colt Industries, 16 cylinder diesels, two shafts, 33,000 shaft horsepower.

**Length:** 609 feet

**Beam:** 84 feet

**Displacement:** 15,939 tons (full load)

**Speed:** 20 plus knots (23.5 plus mph)

**Landing Craft:** Four Air Cushion Landing Craft

**Crew:** 413 (22 officers, 391 enlisted)

**Marine Detachment:** 402 plus 102 surge

**Armament:** Two 25mm MK-38 Machine Guns; Two 20mm Phalanx CIWS mounts; Six .50 cal. machine guns.
Ships:
USS Whidbey Island (LSD 41)
USS Germantown (LSD 42)
USS Fort McHenry (LSD 43)
USS Gunston Hall (LSD 44)
USS Comstock (LSD 45)
USS Tortuga (LSD 46)
USS Rushmore (LSD 47)
USS Ashland (LSD 48)

Harpers Ferry-class
Power Plant: Four Colt Industries, 16 cylinder diesels, two shafts, 33,000 shaft horsepower.
Length: 609 feet
Beam: 84 feet
Displacement: 16,708 tons (full load)
Speed: 20 plus knots (23.5 plus mph)
Landing Craft: Two Air Cushion Landing Craft
Crew: 419 (22 officers, 397 enlisted)
Marine detachment: 402 plus 102 surge
Armament: Two 25mm MK-38 machine guns; Two 20mm Phalanx CIWS mounts; Six .50 cal. machine guns.

Ships:
USS Harpers Ferry (LSD 49)
USS Carter Hall (LSD 50)
USS Oak Hill (LSD 51)
USS Pearl Harbor (LSD 52)

Blue Ridge-class
Power Plant: Two boilers, one geared turbine, one shaft; 22,000 horsepower.
Length overall: 634 feet
Beam: 108 feet
Displacement: 18,874 tons (full load)
Speed: 23 knots (26.5 mph)
Aircraft: All helicopters except the CH-53 Sea Stallion can be carried.

Crew: 842 (52 officers, 790 enlisted)

Ships:
USS Blue Ridge (LCC 19)
USS Mount Whitney (LCC/JCC 20)

* Under construction or authorized for construction
MINE WARFARE

Avenger-class ships are designed as mine hunter-killers capable of finding, classifying and destroying moored and bottom mines. The last three MCM ships were purchased in 1990, bringing the total to 14 fully deployable, oceangoing Avenger-class ships.

These ships use sonar and video systems, cable cutters and a mine detonating device that can be released and detonated by remote control. They are also capable of conventional sweeping measures. Osprey class (MHC 51) is also designed as mine hunter-killers. MHC 51 has a 15-day endurance and depends on a support ship, or shore-based facilities for re-supply.

Avenger-class

Power Plant: Four diesels (600 horsepower each), two shafts with controllable pitch propellers.
Length: 224 feet
Beam: 39 feet
Displacement: 1,312 tons (full load)
Speed: 14 knots
Crew: 84 (8 officers, 76 enlisted)
Armament: Mine neutralization system; Two .50 caliber machine guns.

Osprey-class

Power Plant: Two diesels (800 hp each); two VoithSchneider (cycloidal) propulsion systems.
Length: 188 feet
Beam: 36 feet
Displacement: 893 ton (full load)
Speed: 10 knots
Crew: 51 (5 officers, 46 enlisted)
Armament: Two .50 caliber machine guns, nine neutralization systems and other mine countermeasures systems.

Ships:
USS Avenger (MCM 1)**
USS Defender (MCM 2)**
USS Sentry (MCM 3)**
USS Champion (MCM 4)**
USS Guardian (MCM 5)
USS Devastator (MCM 6)
USS Patriot (MCM 7)
USS Scout (MCM 8)
USS Pioneer (MCM 9)
USS Warrior (MCM 10)
USS Gladiator (MCM 11)**
USS Ardent (MCM 12)
USS Dextrous (MCM 13)
USS Chief (MCM 14)

COASTAL PATROL SHIPS (PC)

The primary mission of these ships is coastal patrol and interdiction surveillance, an important aspect of littoral operations outlined in the Navy’s Sea Power. The Cyclone-class PCs are particularly suited for the maritime homeland security mission and have been employed jointly with the U.S. Coast Guard to help protect our nation’s coastline, ports and waterways from terrorist attack. These ships provide the U.S. Navy with a fast, reliable platform that can respond to emergent requirements in a shallow water environment.

The lead ship of the class, Cyclone (PC 1), was decommissioned and turned over to the U.S. Coast Guard in 2000 and five more were turned over to the Coast Guard in 2004.

Cyclone-class (Coastal Patrol)

Propulsion: Four Paxman diesels; Four shafts; 3,350 shaft horsepower.
Length: 170 feet
LITTORAL COMBAT SHIP (LCS)

Littoral Combat Ship is a fast craft designed to operate in hostile near-shore environments. Two different designs are being built for Flight Zero, a monohull and a trimaran. Both have reconfigurable payloads for interchangeable mission packages that focus on anti-submarine, mine and surface warfare.

Lockheed Martin is building the first ship, Freedom (LCS 1), with delivery scheduled for FY07. General Dynamics is building Independence (LCS 2), with delivery scheduled for FY08.

Ships:
- Freedom (LCS 1)*
- Independence (LCS 2)*

SUBMARINE TENDERS

Submarine tenders furnish maintenance and logistic support for nuclear-powered attack submarines and are the largest of the active auxiliaries. Their crews are made up mostly of technicians and repair personnel.

Emory S. Land-class

- **Power Plant:** Two boilers, geared turbines, one shaft, 20,000 shaft horsepower.
- **Length:** 644 feet
- **Beam:** 85 feet
- **Displacement:** Approximately 23,493 tons (full load)
- **Speed:** 20 knots (23 mph)
- **Aircraft:** None
- **Crew:** 1,363 (97 officers, 1,266 enlisted)
- **Armament:** Two 40mm guns; Four 20mm guns.

Ships:
- USS Emory S. Land (AS 39)
- USS Frank Cable (AS 40)

OTHER SHIPS IN COMMISSION

- USS Constitution
- USS Pueblo (AGER 2)
- Self Defense Test Ship (EDDG 31)

* Under construction or authorized for construction
** Navy Reserve Force
(Source: OPNAV N8F)
NAVAL FLEET AUXILIARY FORCE (NFAF)

Ammunition Ships T-AE
- USNS Kilauea (T-AE 26)
- USNS Flint (T-AE 32)
- USNS Shasta (T-AE 33)
- USNS Mount Baker (T-AE 34)
- USNS Kiska (T-AE 35)

Combat Stores Ships T-AFS
- USNS Niagara Falls (T-AFS 3)
- USNS Concord (T-AFS 5)
- USNS San Jose (T-AFS 7)
- USNS Spica (T-AFS 9)
- USNS Saturn (T-AFS 10)

Fast Combat Support Ships T-AOE
- USNS Supply (T-AOE 6)
- USNS Rainer (T-AOE 7)
- USNS Arctic (T-AOE 8)
- USNS Bridge (T-AOE 10)

Hospital Ships T-AH
- USNS Mercy (T-AH 19)
- USNS Comfort (T-AH 20)

Dry Cargo/Ammunition Ships T-AKE
- USNS Lewis and Clark (T-AKE 1)
- USNS Sacagawea (T-AKE 2)*
- USNS Alan Shepard (T-AKE 3)*

Fleet Replenishment Oilers T-AO
- USNS Henry J. Kaiser (T-AO 187)
- USNS John Lenthall (T-AO 189)
- USNS Walter S. Diehl (T-AO 193)
- USNS John Ericsson (T-AO 194)
- USNS Leroy Grumman (T-AO 195)
- USNS Kanawha (T-AO 196)
- USNS Pecos (T-AO 197)
- USNS Big Horn (T-AO 198)
- USNS Tipppecanoe (T-AO 199)
- USNS Guadalupe (T-AO 200)
- USNS Patuxent (T-AO 201)
- USNS Yukon (T-AO 202)
- USNS Laramie (T-AO 203)
- USNS Rappahannock (T-AO 204)

Fleet Ocean Tugs T-ATF
- USNS Catawba (T-ATF 168)
- USNS Navajo (T-ATF 169)
- USNS Sioux (T-ATF 171)
- USNS Apache (T-ATF 172)

Rescue and Salvage Ships T-ARS
- USNS Grasp (ARS 51)
- USNS Grapple (ARS 53)
- USS Safeguard (T-ARS 50)*
- USS Salvor (ARS 52)*

SPECIAL MISSION SHIPS

Acoustic Survey Ship T-AG
- USNS Hayes (T-AG 195)

Cable Laying/Repair Ship T-ARC
- USNS Zeus (T-ARC 7)

Command Ship LCC
- USS Mount Whitney (LCC/JCC 20)

Missile Range Instrumentation/Navigation Test Support Ships T-AGM
- USNS Observation Island (T-AGM 23)
- USNS Invincible (T-AGM 24)

Navigation Test Support Ships T-AGS
- USNS Waters (T-AGS 45)

Ocean Surveillance Ships T-AGOS
- USNS Victorious (T-AGOS 19)
- USNS Effective (T-AGOS 21)
- USNS Loyal (T-AGOS 22)
- USNS Impeccable (T-AGOS 23)
- MV Cory Chouest

Oceanographic Survey Ships T-AGS
- USNS John McDonnell (T-AGS 51)
- USNS Pathfinder (T-AGS 60)
- USNS Summer (T-AGS 61)
- USNS Bowditch (T-AGS 62)
- USNS Henson (T-AGS 63)
- USNS Bruce C. Heezen (T-AGS 64)
- USNS Mary Sears (T-AGS 65)

Special Mission Chartered Ships
- SSV C-Commando
- MV Dolores Chouest
- MV Kellie Chouest
- MV Caro1yn Chouest

High Speed Vessels (HSV)
- HSV Swift (HSV 2)

PREPOSITIONING PROGRAM/MARITIME PREPOSITIONING PROGRAM

Container Ships T-AK
- MV Capt. Steven L. Bennett (T-AK 4296)
- MV Maj. Bernard F. Fisher (T-AK 4396)
- MV A1C William A. Pitsenbarger (T-AK 4638)
- MV TSgt. John A. Chapman (T-AK 323)
- MV LTC John U.D. Page (T-AK 4496)
- MV SSG Edward A. Carter, Jr. (T-AK 4544)
Maritime Prepositioning Ships T-AK
MV Cpl. Louis J. Hauge, Jr. (T-AK 3000)
MV PFC William B. Baugh (T-AK 3001)
MV PFC James Anderson, Jr. (T-AK 3002)
MV 1st Lt. Alex Bonnyman (T-AK 3003)
MV Pvt. Franklin J. Phillips (T-AK 3004)
MV Sgt. Matej Kocak (T-AK 3005)
MV 1st Lt. Alex Bonnyman (T-AK 3003)
MV Pvt. Franklin J. Phillips (T-AK 3004)
MV Sgt. Matej Kocak (T-AK 3005)
MV 1st Lt. Baldomero Lopez (T-AK 3010)
MV 1st Lt. Jack Lummus (T-AK 3011)
MV Sgt. William R. Button (T-AK 3012)

Transport Tankers T-AOT
SS Chesapeake (T-AOT 5084)
SS Petersburg (T-AOT 9101)

Aviation Logistics Ships T-AVB
SS Wright (T-AVB 3)
SS Curtiss (T-AVB 4)

Large, Medium-speed Roll-on/Roll-off Ships T-AKR
USNS Watson (T-AKR 310)
USNS Sister (T-AKR 311)
USNS Dahl (T-AKR 312)
USNS Red Cloud (T-AKR 313)
USNS Charlton (T-AKR 314)
USNS Watkins (T-AKR 315)
USNS Pomeroy (T-AKR 316)
USNS Soderman (T-AKR 317)

High-Speed Vessel (HSV)
MV WestPac Express (HSV 4676)

Modular Cargo Distribution System T-AK
MV Cape Jacob (T-AK 5029)

Large, Medium-speed Roll-on/Roll-off Ships T-AKR
USNS Gordon (T-AKR 296)
USNS Gilliland (T-AKR 298)
USNS Shughart (T-AKR 295)
USNS Yano (T-AKR 297)
USNS Bob Hope (T-AKR 300)
USNS Fisher (T-AKR 301)
USNS Seay (T-AKR 302)

SEALIFT FORCE
Fast Sealift Ships T-AKR
USNS Algo (T-AKR 287)
USNS Bellatrix (T-AKR 288)
USNS Denebola (T-AKR 289)
USNS Pollux (T-AKR 290)
USNS Altair (T-AKR 291)
USNS Regulus (T-AKR 292)
USNS Capella (T-AKR 293)
USNS Antares (T-AKR 294)

Large, Medium-speed Roll-on/Roll-off Ships T-AKR
USNS Gordon (T-AKR 296)
USNS Gilliland (T-AKR 298)
USNS Shughart (T-AKR 295)
USNS Yano (T-AKR 297)
USNS Bob Hope (T-AKR 300)
USNS Fisher (T-AKR 301)
USNS Seay (T-AKR 302)

Long-term Chartered Container Ships
MV Baffin Strait

Ice-strengthened Container Ships
MV American Tern

Tug Barge
T/B Sea Mark III/MOBRO 1210

* To be delivered to MSC in 2007
(Source: Military Sealift Command)
In January 2006, the Navy established the Navy Expeditionary Combat Command (NECC) to train, man and equip the Navy’s expeditionary forces and to provide the full spectrum of expeditionary capabilities to extend the joint operational force maritime component commander’s tactical and operational reach near coastlines, inshore and in the riparian environment. NECC is a force multiplier that merged Explosive Ordnance Disposal (EOD), Expeditionary Logistics Support, Naval Coastal Warfare (NCW), Mobile Diving and Salvage, Seabees, Riverine Forces, the Maritime Civil Affairs Group (MCAG), Combat Camera Atlantic, the Expeditionary Combat Readiness Center (ECRC) and the Expeditionary Training Command (ETC) under one umbrella.

Naval Coastal Warfare provides worldwide maritime and in-shore surveillance, security and anti-terrorism force protection (ATFP) in bays and harbors, on airfields and piers, and onboard Navy vessels. NCW Squadrons man radar encampments and provide surveillance information to units guarding high-value assets. Mobile Security Forces provide ATFP onboard Navy vessels and for critical airfields and foreign assets.

NCW Group 1, San Diego
NCW Squadron 5, San Diego
NCW Squadron 30, San Diego
NCW Squadron 33, Seattle
NCW Squadron 34, San Pedro, Calif.
Mobile Security Squadron 3, San Diego
Mobile Security Squadron 7, Guam

NCW Group 2, Portsmouth, Va.
NCW Squadron 4, Portsmouth, Va.
NCW Squadron 21, Newport, R.I.
NCW Squadron 25, Yorktown, Va.
NCW Squadron 26, Jacksonville, Fla.
Mobile Security Squadron 6, Portsmouth, Va.

Mobile Security Squadron 2, Portsmouth, Va.

EXPLOSIVE ORDNANCE DISPOSAL
EOD conducts counter improvised explosive device (IED) operations, renders safe explosive hazards and disarms underwater explosives such as mines. EOD specialists can handle chemical, biological and radiological threats and are the only military EOD force that can both parachute from the air to reach distant targets or dive under the sea to disarm weapons. EOD’s Mobile Diving and Salvage Units (MDSU) clear harbors of navigation hazards, engage in underwater search and recovery operations, and perform limited underwater repairs on ships.

EOD Group 1, San Diego
EOD Training and Evaluation Unit (TEU) 1, San Diego
Navy Special Clearance Team (NSCT) 1, San Diego
Mobile Dive Salvage Unit (MDSU) 1, Pearl Harbor
EOD Mobile Unit (EODMU) 3, San Diego
EODMU 5, Guam
EODMU 11, Whidbey Island
EOD Operational Support Unit 7, San Diego
EOD Group 2, Norfolk
EOD TEU 2, Virginia Beach, Va.
MDSU 2, Little Creek, Va.
EODMU 2, Little Creek, Va.
EODMU 4, Bahrain
EODMU 6, Charleston, S.C.
EODMU 8, Sigonella, Italy
EOD Operational Support Unit 10, Virginia Beach, Va.

EOD Air Cargo Handling Battalion (NACHB), Williamsburg, Va.
Navy Supply Support Battalions (NSSB)
NSSB 1, Phoenix
NSSB 2, Quincy, Mass.

Navy Ordinance Reporting Handling Battalion (NORHB) Yorktown, Va.

Navy Expeditionary Logistics Response Center (NELRC) Williamsburg, Va.

NAVELSG Forward, Kuwait

Naval Cargo Handling Battalions (NCHB)
NCHB 1, Williamsburg, Va.
NCHB 3, Alameda, Calif.
NCHB 4, Charleston, S.C.
NCHB 5, Tacoma, Wash.
NCHB 6, Orange, Texas
NCHB 7, Great Lakes, Ill.
NCHB 8, Fort Dix, N.J.
NCHB 9, Columbus, Ohio
NCHB 10, Norfolk
NCHB 11, Jacksonville, Fla.
NCHB 12, Bessemer, Ala.
NCHB 13, Gulfport, Miss.
NCHB 14, Port Hueneme, Calif

Navy Air Cargo Handling Battalion (NACHB), Williamsburg, Va.

Navy Supply Support Battalions (NSSB)

Navy Ordnance Reporting Handling Battalion (NORHB) Yorktown, Va.

Navy Expeditionary Logistics Response Center (NELRC) Williamsburg, Va.

NAVELSG Forward, Kuwait

Customs Detachment, Williamsburg, Va.

NAVAL CONSTRUCTION FORCE LITTLE CREEK, VA.
Naval Construction Force (Seabees) provide a wide range of construction in support of operating forces, including roads, bridges, bunkers, airfields and logistics bases; provide responsive support disaster recovery operations; perform civic action projects to improve relations with other nations; and provide anti-terrorism and force protection for personnel and construction projects. “We Build, We Fight.”

1 Naval Construction Division
1 Naval Construction Division Forward, Hawaii
Naval Construction Battalions
1 NCR, Port Hueneme, Calif.
3 NCR, Atlanta
7 NCR, Newport, R.I.
9 NCR, Ft Worth, Texas
22 NCR, Gulfport, Miss.
30 NCR, Port Hueneme, Calif.

Seabee Readiness Groups
20th SRG, Gulfport, Miss.
31st SRG, Port Hueneme, Calif.

RIVERINE FORCE LITTLE CREEK, VA.
The Riverine Force establishes and maintains control of rivers and waterways for military and civil purposes, denies their use to hostile forces, and destroys waterborne hostile forces as necessary. The Riverine Force combats sea-based terrorism and other illegal activities, such as transporting components of weapons of mass destruction, hijacking, piracy and human trafficking.

Riverine Group 1, Little Creek, Va.
Riverine Squadron 1, Little Creek, Va.
Riverine Squadron 2, Little Creek, Va.

MARITIME CIVIL AFFAIRS GROUP LITTLE CREEK, VA.
Maritime Civil Affairs is an enabling force working directly with the civil authorities and civilian populations within a combatant commander’s maritime area of operations to lessen the impact of military operations imposed during peace time, contingency operations and periods of declared war.

Maritime Civil Affairs Squadron 1, San Diego
Maritime Civil Affairs Squadron 2, Yorktown, Va.

EXPEDITIONARY TRAINING COMMAND LITTLE CREEK, VA.
ETC supports Combatant Commanders’ Theater Security Cooperation (TSC) efforts by delivering timely, focused and customiz-
### Pay Grade Table

#### Enlisted Members

<table>
<thead>
<tr>
<th>Grade</th>
<th>Years of Service</th>
<th>Pay</th>
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<td>E-8</td>
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#### Warrant Officers

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<th>Pay</th>
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<td>W-5</td>
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<td>W-1</td>
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<td>5,180.40</td>
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#### Commissioned Officers

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<th>Grade</th>
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<td>O-10</td>
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<td>O-9</td>
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<td>O-1E</td>
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</table>

*The rate of basic pay for an enlisted member serving in this grade as the Master Chief Petty Officer of the Navy is $6,642.60, regardless of cumulative years of service computed under Sect. 235, Title 37, U.S. Code. Source: National Defense Authorization Act of 2007.
**GOLD STAR**
Denotes subsequent awards of the same Navy decoration.

**SILVER STAR**
Worn in lieu of five gold stars.

**BRONZE STAR**
Represents participation in campaigns or operations, multiple qualification or an additional award to any of the various ribbons on which it is authorized. Also worn to denote first award of the single-mission Air Medal after Nov. 22, 1989.

**SILVER SERVICE STAR**
Worn in lieu of five bronze stars.

**BRONZE OAK LEAF CLUSTER**
Represents participation in campaigns or operations, multiple qualification or an additional award to any of the various ribbons on which it is authorized. Also worn to denote first award of the single-mission Air Medal after Nov. 22, 1989.

**SILVER OAK LEAF CLUSTER**
Worn for the 6th, 11th, or in lieu of five bronze oak leaf clusters.

**WINTERED OVER**
For wintering over on Antarctica continent—a clasp for Antarctica Service Medal; a suspension ribbon and a disc for the service ribbon; bronze for the first winter; gold for the second winter; and silver for the third.

**“V” DEVICE**
Authorized for acts or service involving direct participation in combat operations.

**HOURGLASS**
Issued for each succeeding award of the Army Reserve Medal.

**EUROPE AND ASIA CLASPS**
Worn on the suspension ribbon of the Navy Occupation Service Medal.

**FLEET MARINE FORCE COMBAT OPERATIONS INSIGNIA**
For Navy personnel attached to Fleet Marine Force units participating in combat operations.

**SILVER “E”**
Denotes Expert Marksman qualification.

**BATTLE “E” DEVICE**

**BRONZE “S”**
Denotes Sharpshooter Marksman qualification.

**“M” DEVICE**
Denotes Naval Reserve mobilization in support of certain operations.

**STRIKE/FLIGHT DEVICE**
Bronze Arabic numeral denotes the total number of strike/flight awards of the Air Medal earned subsequent to April 9, 1962.

**“3/16” PALM**
Worn on the Republic of Vietnam Gallantry Cross Unit Citation and Republic of Vietnam Civil Actions Unit Citation ribbons.

**“E” DEVICE**
Denotes four or more Battle “E” Awards.

**KUWAIT LIBERATION CLUSTER**

**REPUBLIC OF VIETNAM CAMPAIGN CLASP**
<table>
<thead>
<tr>
<th>Rank</th>
<th>Army</th>
<th>Air Force</th>
<th>Marine Corps</th>
<th>Navy &amp; Coast Guard</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9</td>
<td>Chief Master Sergeant of the Army</td>
<td>Sergeant Major of the Air Force</td>
<td>Sergeant Major of the Marine Corps</td>
<td>Master Chief Petty Officer of the Navy / Coast Guard</td>
</tr>
<tr>
<td></td>
<td>Sergeant Major, Command Sergeant Major</td>
<td>Sergeant Major, Master Gunnery Sergeant</td>
<td>Sergeant Major, Master Gunnery Sergeant</td>
<td>Master Chief Petty Officer, Fleet/Force/Command Master Chief Petty Officer</td>
</tr>
<tr>
<td>E-8</td>
<td>Senior Master Sergeant, First Sergeant</td>
<td>Master Sergeant, First Sergeant</td>
<td>First Sergeant, Master Sergeant</td>
<td>Senior Chief Petty Officer</td>
</tr>
<tr>
<td>E-7</td>
<td>Master Sergeant, First Sergeant</td>
<td>Sergeant First Class</td>
<td>Gunnery Sergeant</td>
<td>Chief Petty Officer</td>
</tr>
<tr>
<td>E-6</td>
<td>Technical Sergeant</td>
<td>Staff Sergeant</td>
<td>Staff Sergeant</td>
<td>Petty Officer First Class</td>
</tr>
<tr>
<td>E-5</td>
<td>Staff Sergeant</td>
<td>Sergeant</td>
<td>Sergeant</td>
<td>Petty Officer Second Class</td>
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<td>Senior Airman</td>
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<td>Corporal</td>
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<td>Airman First Class</td>
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<td>Airman</td>
<td>Private</td>
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### Officers

**Officer Ranks**

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<tr>
<th>Rank</th>
<th>Air Force</th>
<th>Army</th>
<th>Navy</th>
<th>Coast Guard</th>
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<tbody>
<tr>
<td>O-10</td>
<td>General of the Air Force / Army (Reserved for Wartime)</td>
<td>General</td>
<td>Fleet Admiral (Reserved for Wartime)</td>
<td>Fleet Admiral</td>
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<tr>
<td>O-9</td>
<td>Lieutenant General</td>
<td>Vice Admiral</td>
<td>Rear Admiral</td>
<td>Rear Admiral (Lower Half)</td>
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<tr>
<td>O-8</td>
<td>Major General</td>
<td>Rear Admiral</td>
<td>Rear Admiral</td>
<td>Rear Admiral (Lower Half)</td>
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<tr>
<td>O-7</td>
<td>Brigadier General</td>
<td>Rear Admiral (Lower Half)</td>
<td>Rear Admiral</td>
<td>Rear Admiral (Lower Half)</td>
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<tr>
<td>O-6</td>
<td>Colonel</td>
<td>Captain</td>
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**Warrant Officers**

<table>
<thead>
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<th>Rank</th>
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<th>Army</th>
<th>Marine Corps</th>
<th>Navy &amp; Coast Guard</th>
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<td>No Warrant</td>
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<td>Chief Warrant Officer 5</td>
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The following display represents the correct order of precedence for medals and/or ribbons most likely to be worn today on the Navy uniform. Additional information on the proper display, placement or additional devices is found in SECNAVINST 1650.1G and the U.S. Navy Uniform Regulations (NAVPERS 15565I).
Navy Reserve Force – U.S. Regional Alignment

SYMBOLS LEGEND

HQ Reserve Readiness Command
Navy Operational Support Center
BRAC '05 Stated for Closure or Relocation
ATTACK SUBMARINES

Attack submarines are designed to seek and destroy enemy submarines and surface ships. A number of Third World countries are acquiring modern, state-of-the-art, non-nuclear submarines. Countering this threat is the primary mission of U.S. nuclear-powered attack submarines. Other missions range from intelligence collection and special forces delivery to anti-ship and strike warfare. The Seawolf-class submarine is designed to be exceptionally quiet, fast and well-armed, with advanced sensors. It is a multi-mission vessel, capable of deploying to forward ocean areas to search out and destroy enemy submarines and surface ships and to fire missiles in support of other forces.

Los Angeles-class

Power Plant: One nuclear reactor, one shaft
Length: 360 feet
Beam: 33 feet
Displacement: Approx. 6,900 tons submerged
Speed: 20 plus knots (23 plus mph)
Crew: 134 (13 officers, 121 enlisted)
Armament: Tomahawk missiles; VLS tubes (SSN 719 and later), MK-48 torpedoes; Four torpedo tubes.

Ships:
- USS Los Angeles (SSN 688)
- USS Philadelphia (SSN 690)
- USS Memphis (SSN 691)
- USS Bremerton (SSN 698)
- USS Jacksonville (SSN 699)
- USS Dallas (SSN 700)
- USS La Jolla (SSN 701)
- USS City of Corpus Christi (SSN 705)
- USS Albuquerque (SSN 706)
- USS Minneapolis–St. Paul (SSN 708)
- USS Hyman G. Rickover (SSN 709)
- USS Augusta (SSN 710)
- USS San Francisco (SSN 711)
- USS Houston (SSN 713)
- USS Norfolk (SSN 714)
- USS Buffalo (SSN 715)
- USS Olympia (SSN 717)
- USS Providence (SSN 719)
- USS Pittsburgh (SSN 720)
- USS Chicago (SSN 721)
- USS Key West (SSN 722)
- USS Oklahoma City (SSN 723)
- USS Louisville (SSN 724)
- USS Helena (SSN 725)
- USS Newport News (SSN 750)
- USS San Juan (SSN 751)
- USS Pasadena (SSN 752)
- USS Albany (SSN 753)
- USS Topeka (SSN 754)
- USS Miami (SSN 755)
- USS Scranton (SSN 756)
- USS Alexandria (SSN 757)
Seawolf-class

Power Plant: One nuclear reactor, one shaft
Length: 353 feet
Draft: 35 feet
Beam: 40 feet
Displacement: 8,060 tons surfaced; 9,150 tons submerged
Speed: 25 plus knots (28 plus mph)
Crew: 134 (13 officers; 121 enlisted)

Ships:
- USS Seawolf (SSN 21)
- USS Connecticut (SSN 22)
- USS Jimmy Carter (SSN 23)

Virginia-class

Power Plant: One nuclear reactor, one shaft
Length: 377 feet
Beam: 34 feet
Displacement: Approx. 7,800 tons
Speed: 25 plus knots (28 plus mph)
Crew: 134 officers and enlisted

Ohio-class

Power Plant: One nuclear reactor, one shaft
Length: 560 feet
Beam: 42 feet
Displacement: 16,764 tons surfaced; 18,750 tons submerged
Speed: 20 plus knots (23 plus mph)

Armament: Tomahawk missiles; VLS tubes, MK-48 torpedoes; Four torpedo tubes; Advanced mobile mines, and unmanned undersea vehicles.

Ships:
- USS Virginia (SSN 774)
- USS Texas (SSN 775)
- Hawaii (SSN 776)*
- North Carolina (SSN 777)*
- New Hampshire (SSN 778)*
- New Mexico (SSN 779)*

BALLISTIC MISSILE/GUIDED MISSILE SUBMARINES

Strategic deterrence has been the sole mission of the fleet ballistic missile submarine (SSBN) since its inception in 1960. The SSBN provides the nation’s most survivable and enduring nuclear strike capability. The Ohio-class submarine replaced aging fleet ballistic missile submarines built in the 1960s and is far more capable.

Ohio-class/Trident ballistic missile submarines provide the sea-based “leg” of the triad of U.S. strategic deterrent forces. The first four Ohio-class submarines are converting to guided missile submarines (SSGN) with an additional capability to transport and support Navy special operations forces.

Ohio-class

Power Plant: One nuclear reactor, one shaft
Length: 560 feet
Beam: 42 feet
Displacement: 16,764 tons surfaced; 18,750 tons submerged
Speed: 20 plus knots (23 plus mph)

Armament: 24 tubes for Trident II, D-5 Intercontinental Ballistic Missiles, MK-48 torpedoes, four torpedo tubes.

Ships:
- USS Henry M. Jackson (SSBN 730)
- USS Alabama (SSBN 731)
- USS Alaska (SSBN 732)
- USS Nevada (SSBN 733)
- USS Tennessee (SSBN 734)
- USS Pennsylvania (SSBN 735)
- USS West Virginia (SSBN 736)
- USS Kentucky (SSBN 737)
- USS Maryland (SSBN 738)
- USS Nebraska (SSBN 739)
- USS Rhode Island (SSBN 740)
- USS Maine (SSBN 741)
- USS Wyoming (SSBN 742)
- USS Louisiana (SSBN 743)

Ships Converted to SSGN:
- USS Ohio (SSGN 726)
- USS Michigan (SSGN 727)
- USS Florida (SSGN 728)
- USS Georgia (SSGN 729)**

DEEP SUBMERGENCE RESCUE VEHICLES

Deep Submergence Rescue Vehicles (DSRV) perform rescue operations on submerged, disabled submarines of the U.S. Navy or foreign navies. DSRVs can embark up to 24 personnel for transfer to another vessel. The DSRV also has an arm to clear hatches on a disabled submarine and a combined gripper and cable cutter. The gripper is able to lift 1,000 pounds.

Power Plant: Electric motors, silver/zinc batteries, one shaft, 15 shaft horsepower, four thrusters, 7.5 horsepower.
Length: 49 feet
Beam: 8 feet
Displacement: 38 tons

* Under construction or authorized for construction
** Undergoing conversion
Submarines

**DEEP SUBMERGENCE CRAFT**

NR 1, a nuclear–powered ocean engineering and research submarine, is the first deep submergence vessel using nuclear power. NR 1’s missions have included search, object recovery, geological survey, oceanographic research, and installation and maintenance of underwater equipment. NR 1 is generally towed to and from remote mission locations by an accompanying surface tender, which is also capable of conducting research in conjunction with the submarine.

**Power Plant:** One nuclear reactor, one turbo-alternator; Two external motors, two propellers, four ducted thrusters (two horizontal, two vertical).

**Length:** 150 feet
**Displacement:** 400 tons
**Diameter:** 12 feet
**Maximum Operating Depth:** 2,375 feet
**Crew:** 7 (2 officer, 3 enlisted, 2 scientists)
**Armament:** None

**Ships:**
- DSRV Mystic
- DSRV Avalon

**LARGE SCALE VEHICLE 2 (LSV 2)**

LSV 2 Cutthroat, the world’s largest unmanned autonomous submarine, offers the capability to conduct a wide variety of studies dramatically improving the acoustic and operational performance of future submarines. Cutthroat, a 205-ton, large scale submarine test vehicle, is used to affordably explore and test emerging technologies and to conduct physics—based experiments. Specific emphasis will be on stealth, hydrodynamics, hydro-acoustics and propulsion designs to permit technology insertion into current and future submarines.

**General Characteristics**

**Propulsion:** Electric drive (3,000 shaft horsepower (shp) plant coupled with electric motor controller, expandable to 6,000 shp with additional motor controlled modules).

**Length:** 111 feet
**Diameter:** 10 feet
**Weight:** 205 tons
**Crew:** None
**Armament:** None

**Ships:**
- Cutthroat (LSV 2)

(Source: OPNAV N8F)

⇒ USS Asheville (SSN 758)
The aircraft carrier continues to be the centerpiece of the forces necessary for forward presence. Whenever there has been a crisis, the first question has been: "Where are the carriers?" Carriers support and operate aircraft that engage in attacks on airborne, afloat, and ashore targets that threaten free use of the sea; and engage in sustained operations in support of other forces.

Aircraft carriers are deployed worldwide in support of U.S. interests and commitments. They can respond to global crises in ways ranging from peacetime presence to full-scale war. Together with their on-board air wings, the carriers have vital roles across the full spectrum of conflict.

**Nimitz-class**

- Length, overall: 1,092 feet
- Flight Deck Width: 252 feet
- Beam: 134 feet
- Displacement: Approx. 97,000 tons
- Aircraft: 70
- Speed: 30 plus knots (34.5 plus mph)
- Crew: 3,200; Air Wing: 2,480
- Armament: Two or three (depending on modification) NATO Sea Sparrow launchers, 20mm Phalanx CIWS mounts: (three on Nimitz and Dwight D. Eisenhower and four on Carl Vinson and later ships of the class).

**Carriers**

- USS Nimitz (CVN 68)
- USS Dwight D. Eisenhower (CVN 69)
- USS Carl Vinson (CVN 70)
- USS Theodore Roosevelt (CVN 71)
- USS Abraham Lincoln (CVN 72)
- USS George Washington (CVN 73)
- USS John C. Stennis (CVN 74)
- USS Harry S. Truman (CVN 75)
- USS Ronald Reagan (CVN 76)
- PCU George H.W. Bush (CVN 77)*

**John F. Kennedy-class**

- Length, overall: 1052 feet
- Flight Deck Width: 252 feet
- Beam: 130 feet
- Displacement: 82,000 tons
- Speed: 30 plus knots (34.5 mph)
- Aircraft: 70
- Crew: 3,117; Air Wing: 2,480
- Armament: Sea Sparrow missiles with box launchers; Three 20mm Phalanx CIWS mounts.

**Carriers**

- USS John F. Kennedy (CV 67)
- USS John F. Kennedy (CVN 65)
- USS Enterprise (CVN 65)
- USS Kitty Hawk (CV 63)
- USS Kitty Hawk (CVN 63)

**Kitty Hawk-class**

- Length, overall: 1062.5 feet
- Flight Deck Width: 252 feet
- Beam: 130 feet
- Displacement: Approx. 80,800 tons
- Speed: 30+ knots (34.5+ mph)
- Aircraft: 70
- Crew: 3,150, Air Wing: 2,480
- Armament: Sea Sparrow launchers; Three 20mm Phalanx CIWS mounts.

**Carriers**

- USS Kitty Hawk (CV 63)
- USS Kitty Hawk (CVN 63)

* Under construction or authorized for construction (Source: OPNAV N-8F)
CARRIER BASED

F/A-18E/F Super Hornet

The F/A-18E/F provides the carrier strike group with a strike fighter that has significant growth potential and increased range, endurance and ordnance-carrying capabilities.

- **Wingspan:** 44 ft., 8.5 in.
- **Length:** 60 ft., 1.25 in.
- **Height:** 16 ft.
- **Weight:** 66,000 lbs. maximum takeoff
- **Speed:** Mach 1.8 plus
- **Ceiling:** 50,000 ft.
- **Range:** 462 nm
- **Armament:** 20mm MK-61 Vulcan cannon; Sidewinder, Sparrow and AMRAAM air-to-air missiles; Maverick, Harpoon, HARM, SLAM-ER and Joint Direct Attack Munition (JDAM); and other bombs and rockets.
- **Crew:** 1(E) or 2(F), depending on model

SQUADRONS

VFA-2 Bounty Hunters
VFA-11 Red Rippers
VFA-14 Tophatters
VFA-22 Fighting Redcocks
VFA-27 Royal Maces
VFA-31 Tomcatters
VFA-32 Swordsmen
VFA-41 Black Aces
VFA-102 Diamondbacks
VFA-103 Jolly Rogers
VFA-105 Gunslingers
VFA-115 Eagles
VFA-122 Flying Eagles
VFA-137 Kestrels
VFA-143 Puking Dogs
VFA-154 Black Knights
VFA-211 Fighting Checkmates
VFA-213 Black Lions

F/A-18 Hornet

The F/A-18 is an all-weather, attack aircraft that can also be used as a fighter. In its fighter mode, the F/A-18 is used primarily as an escort and for fleet air defense. In its attack mode, it is used for force projection, interdiction and close-air support.

- **Wingspan:** 37.5 ft.
- **Length:** 56 ft.
- **Height:** 15 ft., 3.5 in.
- **Speed:** Mach 1.8 plus
- **Range:** 290 nm
- **Armament:** 20mm MK-61 cannon; Sidewinder, Sparrow and AMRAAM air-to-air missiles; Maverick, Harpoon, HARM, SLAM-ER, Joint Direct Attack Munitions (JDAM); laser-guided and general purpose bombs and rockets.
- **Crew:** 1(A,C) or 2(B,D), depending on model

SQUADRONS

Blue Angels
VFA-15 Valions
VFA-25 Fist of the Fleet
VFA-34 Blue Blasters
VFA-37 Bulls
VFA-81 Sunliners
VFA-83 Rampagers
VFA-86 Sidewinders
VFA-87 Golden Warriors
VFA-94 Mighty Shrikes
VFA-97 Warhawks
VFA-106 Gladiators
VFA-113 Stingers

**F/A-18E/F Super Hornets**

**F/A-18 Hornet**

**Squadrions**
VFA-125 Rough Raiders
VFA-131 Wildcats
VFA-136 Knighthawks
VFA-146 Blue Diamonds
VFA-147 Argonauts
VFA-151 Fighting Vigilantes
VFA-192 Golden Dragons
VFA-195 Dambusters
VFA-201(USNR) Hunters
VFA-204(USNR) River Rattlers
VFC-12(USNR) Fighting Omars

VFA-192 Golden Dragons
VFA-195 Dambusters
VFA-201(USNR) Hunters
VFA-204(USNR) River Rattlers
VFC-12(USNR) Fighting Omars

EA-6B Prowler
The EA-6B, a twin-engine, mid-wing aircraft designed for carrier and advanced base operations, is used to provide an umbrella of protection for strike aircraft by jamming enemy radar, electronic data links and communications. The EA-6B is a fully integrated electronic warfare system, combining long-range, all-weather capabilities with advanced electronic countermeasures.

Wingspan: 53 ft.
Length: 59 ft., 10 in.
Height: 16 ft., 3 in.
Weight: 65,000 lbs. maximum takeoff
Speed: 622 mph
Ceiling: 41,200 ft.
Range: 955 nm
Armament: HARM
Crew: 4 (1 pilot, 3 electronic warfare officers)

SQUADRONS
VAQ-129 Vikings
VAQ-130 Zappers
VAQ-131 Lancers
VAQ-132 Scorpions
VAQ-133 Wizards
VAQ-134 Garudas
VAQ-135 Black Ravens
VAQ-136 Gauntlets
VAQ-137 Rooks
VAQ-138 Yellowjackets
VAQ-139 Cougars
VAQ-140 Patriots
VAQ-141 Shadowhawks
VAQ-142 Gray Wolves
VAQ-209(USNR) Star Warriors

S-3B Viking
The S-3B, a jet aircraft used for anti-submarine and anti-surface warfare, is extremely versatile and can be equipped for tanking, mining and limited electronic surveillance.

Wingspan: 68 ft., 8 in.
Length: 53 ft., 4 in.
Height: 22 ft., 9 in.
Weight: 52,539 lbs. maximum design gross weight
Speed: 518 mph
Ceiling: more than 35,000 ft.
Range: more than 2,000 nm (combat)
Armament: torpedoes, bombs, Harpoon and Maverick.
Crew: 4 (1 pilot, 2 flight officers and 1 sensor operator)

SQUADRONS
VS-22 Checkmates
VS-24 Scouts
VS-29 Dragonfires
VS-31 Top Cats
VS-32 Maulers
VS-33 Screwbirds
VS-35 Blue Wolves
VS-38 Red Griffins
VS-41 Shamrock

E-2C Hawkeye
The E-2C is the Navy’s all-weather, carrier-based tactical warning and control system aircraft. It provides airborne early warning and command and control functions for the battle group. Additional missions include: surface surveillance coordination, strike and interceptor control, search and rescue guidance and communications relay.

Wingspan: 80 ft., 7 in.
Length: 57 ft., 8.75 in.
Height: 18 ft., 3.75 in.
Weight: 53,288 lbs. maximum takeoff
Speed: 389 mph
Ceiling: 37,000 ft.
Range: 1,541 nm (ferry range)
Crew: 5 (2 pilots, 3 mission systems operators)

SQUADRONS
VAW-77(USNR) Night Wolves
C-2A Greyhound
The C-2A is the principal aircraft used for COD (carrier on-board delivery) of personnel and materiel. It can deliver a payload of up to 10,000 lbs.

Wingspan: 80.5 ft.
Length: 57 ft., 10 in.

Height: 15 ft., 10.5 in.
Weight: 57,000 lbs. maximum takeoff
Speed: 310 mph
Ceiling: 33,500 ft.
Range: more than 1,040 nm (with freight)
Crew: 3 (1 pilot, 1 co-pilot, 1 flight engineer)

SHORE-BASED
E-6B Mercury
The E-6B Mercury aircraft provides a survivable communications link between national decision makers and the country’s arsenal of strategic nuclear weapons. The E-6B enables the President of the United States and the Secretary of Defense to directly contact submarines, bombers and missile silos protecting our national security through deterrence.

Wingspan: 148 feet, 2 inches
Length: 152 feet, 11 inches
Height: 42 feet 5 inches
Weight: 341,000 lbs. maximum take-off
Speed: 523 mph
Ceiling: 42,000 feet
Range: more than 5,500 nm
Crew: 23

SQUADRONS
VQ-3 Ironman
VQ-4 Shadows
VQ-7 Roughnecks

P-3C Orion/EP-3E Aries II
The P-3C and EP-3E, land-based, long-range patrol aircraft, have been in the Navy since the 1960s. The P-3C’s primary mission is anti-submarine warfare (ASW). Both the EP-3E and P-3C provide multi-mission intelligence, surveillance, reconnaissance and combat capability to theater commanders worldwide.

Wingspan: 99 ft., 8 in.
Length: 116 ft., 10 in.
Height: 33 ft., 8.5 in.
Weight: 142,000 lbs. maximum permissible
Speed: 466 mph
Ceiling: 28,300 ft.
Range: 1,346 nm mission radius with three hours on station
Armament: Harpoon, Maverick, SLAM-ER; torpedoes; bombs; mines. The EP-3E has no armament capability.
Crew (PC-3): 11 (3 pilots, 1 tactical coordinator, 1 navigator/communicator, 2 flight engineers, 3 sensor operators, 1 in-flight technician)
Crew (EP-3E): 24 (3 pilots, 3 naval flight officers, 2 flight engineers, 1
communications evaluator, 1 in-flight technician, 14 signals intelligence operators)

**SQUADRONS**

VP-1 Screaming Eagles  
VP-4 Skinny Dragons  
VP-5 Mad Foxes  
VP-8 Tigers  
VP-9 Golden Eagles  
VP-10 Red Lancers  
VP-16 War Eagles  
VP-26 Tridents  
VP-30 Pro’s Nest  
VP-40 Fighting Marlins  
VP-45 Pelicans  
VP-46 Grey Knights  
VP-47 Golden Swordsmen  
VP-62(USNR) Broad Arrows  
VP-69(USNR) T otoms  
VP-92(USNR) Minutemen  
VQ-1 World Watchers  
VP-1 Old Buzzards  
VP-2 Wizards

**C-130T Hercules**

The C-130T provides airlift for high priority over- and out-sized cargo.  
**Wingspan:** 132 ft., 7 in.  
**Length:** 97 ft., 9 in.  
**Height:** 38 ft., 10 in.  
**Weight:** 175,000 lbs. maximum takeoff  
**Speed:** 400 mph maximum  
**Ceiling:** 28,000 ft.  
**Range:** 4,460 nm  
**Crew:** 4 (2 pilots, 1 flight engineer, and 1 loadmaster)

**SQUADRONS**

VR-53 (USNR) Capital Express  
VR-54 (USNR) Revelers  
VR-55 (USNR) Minutemen  
VR-64 (USNR) Condors

**C-9B/DC-9 Skytrain II**

The C-9B is used for fleet logistics support and military sealift.  
**Wingspan:** 93 ft., 5 in.  
**Length:** 119 ft., 3.5 in.  
**Height:** 27.5 ft.  
**Weight:** 111,000 lbs. maximum takeoff  
**Speed:** .84 Mach maximum  
**Range:** 1,450 nm with 90 passengers or 20,000 lbs. of cargo  
**Crew:** 5 (2 pilots, 1 crew chief, 1 loadmaster, 1 transport safety specialist)

**SQUADRONS**

VR-46(USNR) Eagles  
VR-52(USNR) Taskmasters  
VR-56(USNR) Globemasters  
VR-61(USNR) Islanders

**C-40A Clipper**

The C-40A Clipper provides critical logistics support to the Navy. Its flight deck features a flight management computer system with an integrated GPS.  

The U.S. Navy Reserve, which operates and maintains the aircraft, is the first customer for the newest member of the Boeing Next-Generation 737 family. The Clipper was ordered by the Navy to replace its fleet of aging C-9B Skytrains. The C-40A is the first new logistics aircraft in 18 years to join the Navy Reserve. Currently, the Navy Reserve provides 100 percent of the Navy’s worldwide in-theater medium and heavy airlift.

**Wingspan:** 112 ft., 12 in.  
**Length:** 110 ft., 4 in.  
**Height:** 41 ft., 2 in.  
**Weight:** 171,000 lbs. maximum take-off  
**Speed:** .82 Mach maximum  
**Ceiling:** 41,000 ft.
Range: 3,000 nm with 121 passengers or 36,000 lbs. of cargo.
Crew: 6 (2 pilots, 1 crew chief, 1 loadmaster, 2 transport safety specialist)

SQUADRONS
VR-57 (USNR) Conquistadors
VR-58 (USNR) Sunseekers
VR-59 (USNR) Lonestar Express

C-12 Huron
The UC-12B/F/M Huron is a utility transport, equipped with high floatation landing gear and tip tanks. The UC-12F and UC-12M models also have hydraulically retractable landing gear.

Wingspan: 54 ft., 6 in.
Length: 43 ft., 9 in.
Height: 15 ft.
Weight: 12,500 lbs. maximum takeoff
Speed: 298 mph maximum
Ceiling: more than 35,000 ft.
Range: 1,965 nm
Crew: 3 (2 pilots or 1 pilot/1 naval flight officer and 1 loadmaster)

C-20A/D
The C-20A and C-20D are Gulfstream III variant used for executive transport.

Wingspan: 77 ft., 10 in.
Length: 83 ft., 2 in.
Height: 24 ft., 6 in.

C-20G
The C-20G is a Gulfstream IV variant with a cargo door providing long-range, medium lift capability.

Wingspan: 77 ft., 10 in.
Length: 88 ft., 4 in.
Height: 24 ft., 6 in.
Weight: 73,200 lbs. maximum takeoff
Speed: .88 Mach
Ceiling: 45,000 ft.
Range: 4,400 nm
Crew: 4 (2 pilots, 1 crew chief and 1 loadmaster)

SQUADRONS
ETD Sigonella (USNR) (C-20A)
VR-1 (USNR) Starlifters (C-20D)

C-37
The C-37A/B is a Gulfstream 5/550 respectively, providing executive transport to SECNAV, CNO, CMC, VCNO, ACMC, CFFC and DNPP.

Wingspan: 93 ft., 6 in.
Length: 96 ft., 5 in.
Height: 25 ft., 11 in.
Weight: 90,500 lbs. (C-37A)/91,000 lbs (C-37B) maximum takeoff
Speed: .885 Mach
Ceiling: 51,000 ft.
Range: 6,500 nm (C-37A)/6,750 nm (C-37B)
Crew: 4/5 (2 pilots, 1 crew chief, 1 transport safety specialist and 1 optional communications system operator-depending upon the JEMPRS system in use)

SQUADRONS
ETD Pacific (USNR) (C-37A)
VR-1 (USNR) Starlifters (C-37B)

HELICOPTERS
SH-60F/HH-60H Seahawk
The Seahawk is a twin-engine helicopter used for anti-submarine warfare, search and rescue, anti-surface warfare, cargo lift and special operations. The SH-60F is a carrier-based ASW platform. The HH-60H conducts combat search and rescue and SOF support missions. Some HH-60Hs...
have been modified for the air ambulance and air assault roles in support of Operation Iraqi Freedom.

**Length:** 40 ft., 11 in. (rotors and tail pylon folded)
**Height:** 17 ft.
**Weight:** 21,884 lbs. maximum takeoff

**Speed:** 169 mph
**Range:** 380 nm
**Crew:** 3-4

**SQUADRONS**
HS-2 Golden Falcons
HS-3 Tridents

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**SH-60B/MH-60R**

The HSL community is transitioning to the HSM community and has achieved IOC for the new aircraft in December 2005. The MH-60R will continue the legacy SH-60B mission of conducting ASW and ASUW from the decks of cruisers, destroyers and frigates and also deploy as a carrier-based squadron. The MH-60R adds a dipping sonar, multi-mode ISAR radar, enhanced ESM, EO/IR, self-defense suite digital torpedos and air-to-ground weapons.

**Length:** 40 ft., 11 in. (rotors and tail pylon folded)
**Height:** 17 ft.
**Weight:** 22,500 lbs. maximum takeoff
**Speed:** 200 mph
**Range:** 380 nm

**Crew:** Three

**SQUADRONS**
HSL-37 Easy Riders
HSL-40 Airwolves
HSL-41 Seahawks (MH-60R)
HSL-42 Proud Warriors
HSL-43 Battle Cats

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**MH-60S Knighthawk**

The MH-60S is a twin-engine helicopter used for logistics support, vertical replenishment, search and rescue, naval special warfare support and future missions to include organic airborne mine countermeasures and combat search and rescue.

**Length:** 41 ft., 4 in.
**Height:** 17 ft.
**Weight:** 22,500 lbs. maximum takeoff
**Speed:** 200 mph
**Range:** 250 nm
**Ceiling:** 13,000 ft.
**Crew:** Four

**SQUADRONS**
HSC-2 Fleet Angels
HSC-3 Pack-Rats
HSC-25 Island Knights
HSC-26 Chargers
HSC-28 Dragon Whales
HSC-21 Blackjacks

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**H-3 Sea King**

The first version of this workhorse anti-submarine warfare helicopter was flown more than 38 years ago. The H-3’s versatility was emphasized during Operation Desert Shield/Desert Storm when 36 Sea Kings, flying from carriers,
logged more than 5,000 hours conducting combat SAR, special operations, maritime interdiction operations, logistics support and mine hunting. The SH-3H has been replaced in the fleet by SH-60F and HH-60H aircraft. The UH-3Hs are programmed to be replaced by the CH-60 version of the Sikorsky Blackhawk/Seahawk.

MH-53E Sea Dragon
The MH-53E, a mine-countermeasures derivative of the CH-53E Super Stallion, is heavier and has a greater fuel capacity than the Super Stallion. Capable of transporting up to 55 troops, the MH-53E can carry a 16-ton payload 50 nautical miles, or a 10-ton payload 500 nautical miles. In its primary mission of airborne mine countermeasures, the MH-53E is capable of towing a variety of mine-countermeasures systems.

Length: 99 ft. (rotors turning)
Height: 29 ft., 5 in. (tail rotor turning)
Weight: 73,500 lbs. maximum takeoff
Speed: 196 mph
Ceiling: 18,500 ft.
Range: 1,120 nm
Crew: 3 to 8 (2 pilots, 1 to 6 crewmen)

SQUADRONS
HC-4 Black Stallions
HM-14 (USNR) Vanguard
HM-15 (USNR) Blackhawks

UNMANNED AIRCRAFT SYSTEMS
RQ-2A Pioneer Unmanned Aerial Vehicle (UAV)
The Pioneer UAV system performs a wide variety of reconnaissance, surveillance, target acquisition and battle damage assessment missions. The UAV’s low radar cross section, low infrared signature and remote control versatility provides a degree of cover for the aircraft. Pioneer provides the tactical commander with real-time images of the battlefield or target. Since first deployed as a land-based system in 1986, Pioneer is currently configured for operations on five LPD-class ships with a sixth ship under modifications.

The documented success of Pioneer in supporting combat operations and providing the battlefield commander critical intelligence information established the utility and importance of UAVs in combat.

Wingspan: 16.9 ft
Length: 14.0 ft

TRAINERS
T-6A Texan II
The T-6A Texan II is a tandem-seat, turboprop trainer whose mission is to train Navy and Marine Corps pilots and Naval Flight Officers.

The aircraft is one component of the Joint Primary Aircraft Training System (JPATS) along with simulators, computer-aided academics, and a Training Integration Management System (TIMS). The joint program, that will replace Navy T-34C aircraft, uses commercial-off-the-shelf (COTS) subsystems to the maximum extent possible. The Navy’s total T-6A requirement is 315 aircraft. The Navy
aircraft and ground-based training systems will be completely supported and maintained by commercial vendors with intermediate maintenance provided for selected systems at the operating site.

**Wingspan:** 33.4 feet  
**Length:** 33.3 feet  
**Height:** 10.8 feet  
**Weight:** 6,500 lbs. maximum takeoff weight  
**Speed:** 270 knots  
**Range:** 850 nm (max)  
**Ceiling:** 31,000 feet  
**Crew:** 2 (instructor pilot, student pilot)

### SQUADRONS
VT-4 Mighty Warbucks  
VT-10 Wildcats

#### T-34C Turbomentor
The T-34C is used to provide primary flight training for student pilots. As a secondary mission, approximately 10 percent of the aircraft provide pilot proficiency and other aircraft support services to Commander, Naval Air Force, U.S. Atlantic Fleet; Commander, Naval Air Force, U.S. Pacific Fleet; and Naval Air Systems Command’s “satellite sites” operated throughout CONUS. The T-34C was procured as a commercial-derivative aircraft certified under an FAA Type Certificate. Throughout its life, the aircraft has been operated and commercially supported by the Navy using FAA processes, procedures and certifications.

**Wingspan:** 33 ft., 5 in.  
**Length:** 28 ft., 8 in.  
**Height:** 9 ft., 11 in.  
**Weight:** 4,425 lbs.  
**Speed:** 322 mph  
**Range:** Approx. 600 nm  
**Ceiling:** 25,000 ft.  
**Crew:** 2 (instructor, student)

### SQUADRONS
VT-27 Boomers  
VT-28 Rangers

#### T-45A/C Goshawk
The T-45A, the Navy version of the British Aerospace Hawk aircraft, is used for intermediate and advanced portions of the Navy/Marine Corps pilot training program for jet carrier aviation and tactical strike missions. The T-45 includes an integrated training system that includes the aircraft, operations and instrument fighter simulators, academics and training integration system. There are two versions of T-45 aircraft currently in operational use at this time, the T-45A and T-45C derivatives. The T-45A which became operational in 1991, contains an analog design cockpit while the new T-45C (delivery began in 1997) is built around a new digital “glass cockpit” design.

**Wingspan:** 30 ft., 9.75 in.  
**Length:** 39 ft., 4 in.  
**Height:** 14 ft.  
**Weight:** 14,081 lbs. maximum takeoff  
**Speed:** 625 mph  
**Range:** 826 nm  
**Ceiling:** 40,000 ft.  
**Crew:** 2 (instructor, student)

### SQUADRONS
VT-7 Eagles  
VT-9 Tigers  
VT-21 Redhawks  
VT-22 Golden Eagles

#### T-2 Buckeye
The T-2 is a tandem two-seat, carrier capable, all purpose jet whose mission is to train Navy and Marine Corps flight officers in advanced tactical maneuvering phase of training.
Aircraft

**Wingspan:** 38 ft., 1.5 in.
**Length:** 38 ft., 3.5 in.
**Height:** 14 ft., 9.5 in.
**Weight:** 13,179 lbs. maximum takeoff
**Speed:** 522 mph
**Range:** 909 nm
**Ceiling:** 40,400 ft.
**Crew:** 2 (1 instructor, 1 student)

**SQUADRONS**
VT-86 Sabre Hawks

**T-44A Pegasus**
The T-44A is used to train Navy and Air Force pilots to fly multi-engine, turbo-prop aircraft such as the P-3 and the C-130.

**Wingspan:** 45 ft., 10.75 in.
**Length:** 39 ft., 9.5 in.
**Height:** 15 ft., 1.75 in.
**Weight:** 10,950 lbs. maximum takeoff
**Speed:** 267 mph
**Range:** 960 nm
**Ceiling:** 31,000 ft.
**Crew:** 2 (1 instructor, 1 student)

**SQUADRON**
VT-4 Mighty Warbucks
VT-10 Wildcats
VT-86 Sabre Hawks

**TH-57 Sea Ranger**
The TH-57 Sea Ranger is a derivative of the commercial Bell Jet Ranger 206 and its primary mission is to provide advanced rotary-wing training to Navy and Marine Corps pilots. The TH-57 has two variants – TH-57B and TH-57C models. The TH-57B is used for primary visual flight rules training and the TH-57C is used for advanced instrument flight rules training.

**Length:** 39 ft.
**Height:** 10 ft.
**Weight:** 3,200 lbs. maximum takeoff
**Speed:** 138 mph
**Range:** 368 nm

**SQUADRON**
HT-8 Eightballers
HT-18 Vigilant Eagles

**SPECIAL SQUADRONS**
VC-6 Firebees
VX-1 Pioneers
VX-9 Vampires
TACRON-11 Dirigimi

(Source: OPNAV N-88)
**COMMANDER NAVAL SPECIAL WARFARE COMMAND, CORONADO, CALIF.**

Commander, Naval Special Warfare Group (NSWG) 1, Coronado, Calif.
- SEAL Teams 1/3/5/7
- Logistics Support Unit, Coronado, Calif.
- Naval Special Warfare Unit (NSWU) 1, Guam
- Naval Special Warfare Unit (NSWU) 3, Bahrain

Commander, Naval Special Warfare Group (NSWG) 2, Little Creek, Va.
- SEAL Teams 2/4/8/10
- Logistics Support Unit, Little Creek, Va.
- Naval Special Warfare Unit (NSWU) 2, Germany
- Naval Special Warfare Unit (NSWU) 10, Spain

Commander, Naval Special Warfare Group (NSWG) 3, Coronado, Calif.
- SEAL Delivery Vehicle Team (SDVT) 1, Pearl City, Hawaii
- SEAL Delivery Vehicle Team (SDVT) 2, Little Creek, Va.

Commander, Naval Special Warfare Group (NSWG) 4, Little Creek, Va.
- Special Boat Team (SBT) 12, Coronado, Calif.
- Special Boat Team (SBT) 20, Little Creek, Va.
- Special Boat Team (SBT) 22, Stennis, Miss.

**Naval Special Warfare Center (NSWC), Coronado, Calif.**
- Naval Small Craft Instruction and Technical Training School (NAVSCIATTS), Stennis, Miss.
- Naval Special Warfare Advanced Training Command, Coronado, Ca.
- Navy Parachute Team “Leap Frogs,” Coronado, Ca.
- Naval Special Warfare Recruiting Directorate, Coronado, Ca.

**Commander, Naval Special Warfare Operational Support Group (Reserve Force)**
- Operational Support Team (OST) 1, Coronado, Calif.
- Operational Support Team (OST) 2, Little Creek, Va.
- 59 Operational Support Units throughout the U.S.

**Commander, Naval Special Warfare Development Group, Dam Neck, Va.**

(Source: Naval Special Warfare Command Active-duty Force as of Jan. 1, 2007)

▲ Sailors assigned to Naval Small Craft Instruction and Technical Training School (NAVSCIATTS) train personnel from the Iraqi Riverine Police Force on special boat maneuvers and weapon handling during a six-week patrol craft course at Stennis Space Center, Miss.
STRATEGIC STRIKE

Trident II (D-5)

Larger and with longer range than the Trident I, the Trident II was first tested aboard a submarine in March 1989 and deployed in 1990.

Dimensions: 83 x 528 in.

Weight: 130,000 lbs.

Warhead: Designed to carry 12 W76/MK 4 or eight W88/MK 5

Propulsion: Solid-fuel rocket

Range: 4,000 nm.

GENERAL-PURPOSE BOMBS

The MK-80 series general-purpose bomb family was created in the late 1940s and has been the standard air-launched bomb for the services ever since. The general-purpose bomb family is designed to provide blast and fragmentation effects and is used extensively in a number of configurations including laser-guided bombs (LGBs), joint direct attack munitions (JDAM) and air-delivered mining applications. The unguided versions of the general-purpose bomb can also be delivered in freefall or retarded modes depending upon mission requirements.

There were four basic versions of these bombs in inventory for many years:

- 250 pound MK-81,
- 500 pound MK-82/BLU 111
- 1,000 pound MK-83/BLU 110 and
- 2,000 pound MK-84/BLU 117.

Production of the 250-pound general-purpose bomb has been discontinued and it is no longer carried in the active inventory. The remaining versions of the MK-80 series bombs are being converted from the MK designation to the bomb-loaded unit (BLU) designation during new production. The Navy’s MK-80 series bombs remaining in inventory are filled with H-6 high explosive; the newer BLU series bombs incorporate a PBXN-109 explosive that provides less sensitive characteristics and is considered safer to handle and stow.

Laser-Guided Bomb (LGB) Kits

Laser-guided bomb kits were developed to enhance the terminal accuracy of air-launched, general-purpose bombs and entered the fleet’s inventory in 1968. An LGB kit consists of a Computer Control Group and Air Foil Group. The kit is normally attached to a general-purpose bomb to form an LGB.

Joint Direct Attack Munition (JDAM)

Joint direct attack munitions kits were jointly developed with the U.S. Air Force to provide increased accuracy for air-launched bombs. The JDAM kit consists of a tail kit and mid-body strakes attached to a general purpose or penetrator bomb body. Guidance and control is provided by global positioning system aided inertial navigation system.

Dimensions: (JDAM and warhead)

GBU-31 (v) 2/B: 152.7 inches; GBU-31 (v) 3/B: 148.6 inches; GBU-32 (v) 2/B: 119.5 inches

Weight: (JDAM and warhead) GBU-31 (v) 2/B: 2,036 pounds; GBU-31 (v) 3/B: 2,115 pounds; GBU-32 (v) 2/B:
Joint Stand-off Weapon (JSOW)

The joint standoff weapon is an air-launched “drop-and-forget” weapon that is capable of approximately 40 nautical mile stand-off ranges. JSOW provides the fleet with a strike interdiction capability against soft targets such as fixed and relocatable air defense elements, parked aircraft command and control facilities, light combat vehicles, industrial elements and enemy troops. Currently, two variants of JSOW are planned: AGM-154A, that uses general-purpose submunitions and JSOW C that employs a unitary type warhead.

Dimensions: 160 inches; box shaped diameter 13 inches on a side; 106 inches wingspan
Weight: From 1,065 pounds to 1,500 pounds
Range: Low altitude launch - 15 nautical miles, High altitude launch – 65 nautical miles
Warhead(s): BLU-97 – Combined effects bomblets, BLU-108 – Sensor fused weapon, Broach multi-stage warhead

HARM (High-Speed Anti-Radar Missile)

HARM is the standard anti-radar missile in the U.S. inventory. It’s used as both a strike-protection and anti-ship weapon. First deployed aboard USS Kitty Hawk (CV 63) in January 1984. First used in combat in April 1986 during raids on Libya.

Dimensions: 13 ft., 8 in.
Diameter: 10 in.
Wingspan: 3 ft., 8 in.
Weight: 800 lbs.
Speed: 760 plus mph.
Warhead: 146 lbs.
Range: Depends on launch speed/altitude
Propulsion: Dual-thrust rocket motor (Mach 2+)

HARPOON/SLAM-ER

The Harpoon and Stand-Off Land Attack Missile – Expanded Response (SLAM-ER) missiles are derivatives from the original Harpoon, which was conceived in 1965.

Harpoon

Air, surface-launched, anti-ship, all-weather cruise missile. Originally designed as an air-to-surface missile for the P-3 Orion, the Harpoon, which entered service in 1977, can now be carried by virtually all naval platforms.

Dimensions: 12.6 ft. long-air launched; 15.2 ft. long-surface launched.
Weight: 1,160 lbs. (air launch), 1,459 lbs. (ASROC launcher), 1,520 lbs. (SAM launcher), 1,523 lbs. (capsule/canister launch)

SLAM-ER

SLAM-ER is an upgrade to the SLAM and is currently in production. SLAM-ER has a greater range (150+ miles), a titanium warhead for increased penetration and software improvements which allow the pilot to retarget the impact point during the terminal phase of attack. It is also the first land-attack missile equipped with automatic target acquisition for precision targeting.

Dimensions: 8.2 ft. long; 12 in. diameter; 2.4 ft. wing span
Weight: 635 lbs.
Warhead: 300 lbs.
Propulsion: Two-stage, solid-fuel rocket motor
Speed: Supersonic
Range: Approx. 14 nm.

Tomahawk Cruise Missile

An all-weather, ship- or submarine-launched, cruise missile. Tomahawks have proven to be highly survivable weapons due to their low radar detectability and terrain/wave-skimming flight. First deployed in 1986.

Dimensions: 18.3 ft. long (20.6 ft. with booster); 20.4 in. diameter; 8.9 ft.

Tomahawks have proven to be highly survivable weapons due to their low radar detectability and terrain/wave-skimming flight. First deployed in 1986.
Penguin Anti-ship Missile
The Norwegian-designed and built Penguin anti-ship missile is carried aboard Lamps III helicopters. First deployed in 1993.

- **Dimensions:** 10 ft long; 11.2 in. diameter; 39 in. wingspan
- **Weight:** 847 lbs.
- **Propulsion:** Solid-fuel rocket motor/solid-fuel booster
- **Warhead:** 265 lbs., semi-armor piercing
- **Range:** 25 nm.
- **Speed:** Mach 1.2

ANTI-AIR WARFARE (AAW)

**AIRCRAFT GUNS**

M61A1
This 20mm Gatling gun, which also forms the basis for the Phalanx Close-In Weapons System (see “Anti-aircraft Warfare” section), is mounted aboard the F/A-18 Hornet.

- **Caliber:** 20mm/62
- **Muzzle Velocity:** 3,400 ft./sec.
- **Rate of Fire:** 4,000 or 6,000 rounds/min.
- **Weight:** 841 lbs. total (gun, feed system, ammunition)

SURFACE-TO-AIR MISSILES

**Rolling Airframe Missile (RAM)**
Developed jointly with the Federal Republic of Germany, RAM provides ships with a low-cost, self-defense system against anti-ship missiles.

- **Dimensions:** 9.25 ft. long; 5 in. diameter; 1.5 ft. wingspan
- **Weight:** 162 lbs.
- **Warhead:** 25 lbs.
- **Propulsion:** Solid-fuel rocket
- **Range:** 5 nm.
- **Speed:** Supersonic

**STANDARD MISSILE-2 (SM-2)**
Designed as a surface-to-air and surface-to-surface missile, the Standard missile is currently employed in two variations: SM-2 MR (medium range) and SM-2 ER (Extended Range).

- **Dimensions:** 14.7 ft. long; 13.5 in. diameter; 3.6 ft. wingspan
- **Weight:** 1,380 lbs.
- **Warhead:** Proximity fuse/high-explosive
- **Propulsion:** Dual thrust/solid-fuel rocket
- **Range:** 40 to 90 nm.

**SM-2 ER**

- **Dimensions:** 26.2 ft long; 13.5 in. diameter; 5.2 ft. wingspan
- **Weight:** 2,980 lbs.
- **Warhead:** Proximity fuse/high-explosive
- **Propulsion:** Two-stage/solid-fuel rocket; sustainer motor and booster motor
- **Range:** 65 to 100 nm.

**AIM-54 Phoenix Missile**
The Phoenix missile is the Navy’s

AIR-TO-AIR MISSILES

**Advanced, Medium-Range, Air-to-Air Missile (AMRAAM)**
An all-weather, all-environment, radar guided missile developed as a follow-on to the Sparrow missile series. AMRAAM is smaller, faster, lighter and has improved capabilities against very low-altitude and high-altitude targets in an electronic countermeasure environment. Its active radar, in conjunction with an inertial reference unit and microcomputer system makes the missile less dependent on the aircraft fire control system enabling the pilot to aim and fire several missiles at multiple targets. The AMRAAM is a result of a joint U.S. Navy and U.S. Air Force development effort and is in service with numerous NATO and Allied countries. The AMRAAM was deployed in September 1991 and is carried on the F/A-18 Hornet.

- **Dimensions:** 12 ft. (long); 7 in. diameter; 21 in. wingspan
- **Weight:** 335 lbs.
- **Propulsion:** High performance, solid fuel rocket motor
- **Warhead:** Blast fragmentation; high explosive
- **Speed:** Supersonic
only long-range, air-to-air missile. The missile is designed for use in all-weather and heavy jamming environments. The improved *Phoenix*, the AIM-54C, can better counter projected threats from tactical aircraft and cruise missiles.

**Dimensions:** 13 ft. long; 15 in. diameter; 36 in. wingspan  
**Weight:** 1,024 pounds  
**Propulsion:** Solid propellant rocket motor

**Warhead:** 135 lb., proximity fuse, high explosive  
**Range:** In excess of 100 nm.  
**Speed:** In excess of 3,000 mph

**Sparrow**

A highly-maneuverable, all-weather, beyond-visual-range, semi-active radar homing air-to-air missile used by the United States, NATO and other allied forces. A shipboard version, the *Sea Sparrow*, provides U.S. Navy and NATO ships with an effective, anti-air weapon. First deployed in 1958, numerous models and upgrades have occurred to the *Sparrow* missile family. Current air-to-air versions are carried on the F-14 and F/A-18 aircraft.

**Dimensions:** 12 ft. long; 8 in. diameter; 3.4 ft. wingspan  
**Weight:** 500 lbs.  
**Warhead:** 88 lbs. annular blast fragmentation

**Propulsion:** Solid-fuel rocket motor  
**Speed:** Supersonic

**Sidewinder**

The *Sidewinder* is a short-range, infrared, within visual range air-to-air missiles used by the United States, NATO and other allied nations. The missile has been through a number of modernizations and the current fleet weapon is the AIM-9M. The missile is an all-aspect, heat-seeking missile with improved capabilities against countermeasures. A major modification to the AIM-9M *Sidewinder* is the AIM-9X.

The AIM-9X is a joint U.S. Navy and U.S. Air Force program that upgrades the missile with a staring focal plan array in the seeker, and extremely agile airframe and state-of-the-art signal processors resulting in enhanced target acquisition, missile kinematics and improved infrared counter-countermeasure capabilities. The missile’s high off boresight capability can be coupled to a helmet-mounted cueing system that will revolutionize the way that air-to-air missiles are employed. The Sidewinder is currently deployed on the F/A-18, AV-8 and AH-1 aircraft.

**Dimensions:** 9.6 ft. long; 5 in. diameter; 2.1 ft. wingspan  
**Weight:** 190 lbs.  
**Propulsion:** High performance, solid-fuel rocket motor  
**Warhead:** 20.8 blast fragmentation  
**Speed:** Supersonic
SHIPBOARD GUNS
MK-45 – 5-inch/54-caliber lightweight gun
This 54-caliber, lightweight gun provides surface combatants accurate naval gunfire against fast, highly-manueverable, surface targets, air threats and shore batteries during amphibious operations.

- **Caliber:** 5 inch/54 inch
- **Shell Weight:** 70 lbs.
- **Firing Rate:** 20 rounds per minute
- **Muzzle Velocity:** 2,650 ft./sec
- **Range:** 13 nm.
- **Magazine Capacity:** 475 to 500 rounds
- **Weight:** 47,820 lbs.

**MK-38 – 25 mm machine gun system**
The Navy version of the Army Bushmaster, or “Chain Gun.” This single-barrel, air-cooled, heavy machine gun meets the needs of ships throughout the fleet, especially those operating in the Persian Gulf.

- **Caliber:** 25mm/87
- **Round Weight:** 1.1 lbs.
- **Muzzle Velocity:** 1,100 m/sec
- **Range:** 2,700 yds.
- **Type of Fire:** Single shot; 175 rounds/min. in automatic

**MK-75 – 76mm/62 caliber 3-inch gun**
Best suited for use aboard smaller combat vessels, the MK-75 features rapid fire capability with low manning requirements. The gun was approved for fleet use in 1975 and was first deployed aboard USS Oliver Hazard Perry (FFG 7) in 1978.

- **Caliber:** 3-inch/62
- **Firing Rate:** 85 rounds/min.
- **Muzzle Velocity:** 925 m/sec
- **Range:** 10 nm.
- **Weight:** 7.35 tons

**Phalanx Close-In Weapons System (CIWS)**
The Phalanx CIWS combines a 20mm Gatling gun with search and tracking radar to provide surface ships with terminal defense against anti-ship missiles. The system underwent operational tests and evaluation on board USS Bigelow (DD 942) in 1977 and went into production in 1978 with the first systems installed aboard USS Coral Sea (CV 43) in 1980. The original versions used rounds made from depleted uranium that have since been replaced by tungsten rounds.

- **Caliber:** 20mm/53
- **Firing Rate:** 1,000-3,000 rounds/min.
- **Muzzle Velocity:** 3,650 ft./sec
- **Range:** 6,000 yds.

**60mm Mortar**
Often combined with the M-60
machine gun, the 60mm mortar is used aboard patrol boats (PBs).

- **Caliber:** 60mm
- **Firing Rate:** 10 rounds/min. (trigger mode); 18 rounds/min. (drop mode)
- **Muzzle Velocity:** 500 ft./sec
- **Range:** 1,850 to 2,000 yds.

**MK-48**

The MK-48 Torpedo is a long-range, high-speed, deep-depth, wire-guided acoustic homing weapon designed to combat diesel submarines, nuclear submarines and high-performance surface ships in all environments. Developed by the Applied Research Laboratory, Pennsylvania State University, and Westinghouse Electric Corporation, Baltimore, the MK-48 and its subsequent variants have been in service with the Navy since 1972.

In 1975 an operational requirement was issued by the CNO to develop modifications to the MK-48 to keep pace with threat advancements. This development effort was accelerated to neutralize the former Soviet Alpha submarine threat and resulted in the MK-48 MOD 4 that achieved Initial Operational Capability in 1980.

Additional efforts resulted in development of the digital advanced capability (ADCAP) MK-48 MOD 5 that is carried by Los Angeles, Seawolf and Virginia-class attack submarines and some Ohio-class ballistic missile submarines. The MK-48 MOD 5 became operational in 1988 and

**ANTI-SUBMARINE WARFARE (ASW) TORPEDOES**

**MK-46**

The MK 46 MOD 5A(S) torpedo achieved its initial operational capability and was introduced into the fleet in 1979. It can be launched from fixed and rotary wing aircraft and surface combatants VLA and torpedo tubes. Full-up MK 46 torpedoes are no longer being produced. In 1987, a major upgrade program enhanced the performance of the MK 46 Mod 5A(S) in shallow water.

A service life extension program was initiated in 1992 to extend the life of the MK 46 Mod 5A(S), convert it to the MK 46 Mod 5A(SW), and to provide additional shallow water and bottom avoidance modes. The MK 46 Mod 5A(SW) was introduced to the Fleet in 1996.

- **Dimensions:** 8.5 ft. long, 12.75 in. diameter
- **Weight:** 512 lb.
- **Range:** More than 8,000 yds.
- **Speed:** 45 Knots
- **Propulsion:** Two-speed, reciprocation external combustion
- **Warhead:** 96 lbs. of PBXN-103
- **Depth:** Greater than 1,200 ft.
was approved for production a year later. Although full-up torpedoes have not been produced since 1994, modifications (ADCAP MODS) produced by Northrup Grumman and Raytheon Systems Corporation have enhanced its countermeasure rejection capability, increased its guidance and control processing and memory and improved its shallow water capabilities. The newest variant is designated the MK-48 ADCAP MOD 7, Common Broadband Advanced Sonar System (CBASS).

**MK-50**

The MK-50 torpedo began low-rate initial production in 1987. The MK-50 can be launched from all ASW aircraft and from torpedo tubes aboard surface combatants. It is an advanced lightweight digital torpedo designed for use against faster, deeper-diving and more sophisticated submarines.

- **Dimensions:** 19 feet long, 21 in. diameter
- **Weight:** 3,434 lbs. (MK-48) 3,695 lbs. (MK-48 ADCAP)
- **Range:** Greater than 8 nm.
- **Speed:** Greater than 28 Knots
- **Propulsion:** Positive displacement Piston-type engine with OTTO fuel II
- **Warhead:** Not given
- **Depth:** Not given

**MINES**

**MK-67 Submarine Launched Mobile Mine (SLMM)**

Based on the MK 37 torpedo, the SLMM is a submarine-deployed mine used for covert mining in hostile environments. The MK-67 began active service in 1987.

- **Type:** Submarine-laid bottom mine.
- **Dimensions:** 13.4 ft. long; 19 in. diameter
- **Detection System:** Magnetic/seismic target detection devices (TDDs)
- **Depth Range:** Shallow water
- **Weight:** 1,735 pounds
- **Explosives:** 515 pounds of high explosive

**MK-65 Quickstrike**

The Quickstrike is a family of shallow-water, aircraft-laid mine used primarily against surface ships. The MK-65 mine is a thin-walled mine casing. MK-62 and MK-63 mines are converted, general-purpose bombs. All were approved for service use in the early 1980s.

- **Type:** Aircraft-laid bottom mine.
- **Dimensions:** MK-65 mine is 10.7 ft. long; 21 in. diameter (29 in. across fins; MK-62 and MK-63 mines vary in length depending on flight gear used
- **Detection System:** Magnetic/seismic or magnetic/seismic/pressure target detection devices (TDDs) are used on various models.
- **Depth Range:** Shallow water
- **Weight:** MK-62, MK-63 and MK-65 are 500, 1,000 and 2,000 pound class respectively
- **Explosives:** Various loads
**MK-56**

The MK-56 mine is primarily an ASW mine (the oldest still in use). It reached initial operating capability in 1962.

**Type:** Aircraft-laid, moored mine  
**Dimensions:** 9.5 ft. long (without fairing); 23 in. diameter  
**Weight:** 2,000-pound class  
**Explosives:** 360 pounds of high explosive

**Detection System:** Total field magnetometer.  
**Depth Range:** Intermediate water

Sources: N-85, N-86, N-87, N-88