January

Owner’s + Operator’s Manual 2003

[Number 1028]
Year in Review

Oct'01

On board USS Carl Vinson (CVN 70), an F/A-18 Hornet pilot inspects his aircraft prior to flight operations in support of Operation Enduring Freedom. Photo by PH3 Saul Ingle

Oct'01

A flight deck handler guides an F/A-18 Hornet into position for launch on the flight deck of USS Theodore Roosevelt (CVN 71). Photo by PHC Johnny Bivera

Oct'01

On Christmas Day, U.S. Marines of the 26th Marine Expeditionary Unit (Special Operations Capable) move out to the front lines to defend and maintain perimeter security at a forward operating base in Kandahar, Afghanistan. Photo by PHC Johnny Bivera

Dec'01

ABF3 Chris Ambrose closes a valve in the JP-5 fuel console pump aboard USS John C. Stennis (CVN 74). Photo by PH3 Joshua Word

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ABF3 Chris Ambrose closes a valve in the JP-5 fuel console pump aboard USS John C. Stennis (CVN 74). Photo by PH3 Joshua Word

Nov'01

A deep sea diver from Mobile Diving and Salvage Unit 1 works his way around the Japanese ship that sank more than 100 years ago. U.S. Navy divers have recovered more than 2,000 personal items from the ship that sank more than 100 years ago. Photo by PHC Andrew McKaskle

Nov'01

A deep sea diver from Mobile Diving and Salvage Unit 1 works his way around the Japanese ship that sank more than 100 years ago. U.S. Navy divers have recovered more than 2,000 personal items from the ship that sank more than 100 years ago. Photo by PHC Andrew McKaskle

A search and rescue (SAR) swimmer assigned to Helicopter Combat Support Squadron (HC) 4 is hoisted back aboard an HH-60H Sea Hawk helicopter while practicing SAR jumps. Photo by PH1 Jim Hampshire

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Year in Review

Jan'02

ABs Ruben Guererro and AB3 Matt Potter direct an F/A-18C Hornet onto the aircraft catapult for launch from USS John C. Stennis (CVN 74). Photo by PH2 Matthew K. Lamb.

Jan'02

MU3 Germiah Reyes and the rest of the “Shore Leave” band entertain spectators in Salt Lake City’s Olympic Park during the 2002 Winter Olympic Games. Photo by JO1 Preston Keres.

Jan'02

Secretary of Defense Donald H. Rumsfeld (center) waves to the Navy Seabees who are working to expand the facilities at “Camp X-Ray” in Guantanamo Bay, Cuba. Rumsfeld is in Guantanamo to inspect camp conditions and meet with the guards, medical officers and other support personnel responsible for the confinement and care of 58 Taliban and al Qaeda detainees. Photo by 2nd Class Kevin LaPointe.

Jan'02

AN Jason Correa of Crash and Salvage stands by in full fire-fighting gear, ready for action on the flight deck of USS Theodore Roosevelt (CVN 71). The nuclear powered aircraft carrier is supporting Operation Enduring Freedom.

Jan'02

Crew members on USS Greenville (SSN 772) wait for USS Lake Champlain’s (CG 57) Rigid Hull Inflatable Boat to maneuver into position so they can offload supplies and personnel.

Jan'02

A Standard missile leaves a trail of smoke off USS Vandegrift’s (FFG 48) starboard side, on its intercept course with an incoming “hostile” drone. Nine U.S. Navy ships took part in Missile Exercise (MISSILEX) 02-1, an anti-ship missile defense training evolution, and part of the Commander Task Force (CTF) 75 Multi-Sail battle group interoperability exercise.

Feb'02

AB1 Ruben Guererro and AB3 Matt Potter direct an F/A-18C Hornet onto the aircraft catapult for launch from USS John C. Stennis (CVN 74). Photo by PH2 Matthew K. Lamb.

Feb'02

MU3 Germiah Reyes and the rest of the “Shore Leave” band entertain spectators in Salt Lake City’s Olympic Park during the 2002 Winter Olympic Games. Photo by JO1 Preston Keres.
The Naval Air Station Oceana team, comprised of AM1 Aaron Needham, AZAN Jamison Lambeth and AT3 Kriten Bauman, took first place overall while pulling a 53,000 lb. F-14 Tomcat 132 feet across USS Harry S. Truman's (CVN 75) flight deck during the “Navy Fitness Challenge.”

Photo by ENS John Gay

U.S. Navy SEALs train members of the Republic of the Philippines’ Naval Special Warfare Unit on Fast Rope Infiltration and Exfiltration System (FRIES) concepts. FRIES is a method of dropping off and picking up special operations groups from a variety of field environments.

Photo by PH2 Andrew Meyers

ENS Kristy Nistler scans the horizon for surface contacts at sunset and reports back to the bridge of USS Yorktown (CG 48) during this year’s UNITAS XLIII exercise.

Photo by PH1 Martin E. Maddock

Reconstruction of the Pentagon continues nearly around-the-clock as construction crews pour cement for floors and walls to replace those damaged in the Sept. 11, 2001, terrorist attack.

Photo by Grant Greenwalt

Ordnancemen assigned to USS Theodore Roosevelt (CVN 71) gather their remaining ordnance together for delivery to USS John F. Kennedy (CV 67) during their turnover in the Red Sea.

Photo by PHC Eric Clement

A Lynx helicopter from the Royal Netherlands Navy, hoists an aircrewman and a U.S. Navy Sailor off the flight deck of Colombian naval ship ARC Almirante Padilla (CM 52) for transfer back to USS Yorktown (CG 48). Almirante Padilla is one of the many South American naval units participating in UNITAS XLIII.

Photo by PH3 Antoine Themistocleous
**Year in Review**

*As seen from the cockpit of the lead aircraft, two F/A-18C Hornets, assigned to Strike Fighter Squadron (VFA) 131 conduct combat missions over Afghanistan.*

*Pop Star Jessica Simpson sings a song while on USS Harry S. Truman (CVN 75) during the taping of the television special, “Rockin’ for the USA – A National Salute to the U.S. Military.”*

*MA2 Sean Phelps searches for simulated hostile targets during a SWARM exercise on USS George Washington’s (CVN 73) flight deck. SWARM exercises simulate countermeasures during multiple small boat attacks.*

*Marines assigned to Battalion Landing Team (BLT), 3rd Battalion, 5th Marine Regiment, the ground combat element of the 31st Marine Expeditionary Unit (MEU) Special Operations Capable (SOC) conduct a live fire and maneuver exercise during Exercise Cobra Gold 2002.*

*Construction workers carefully maneuver the last piece of debris removed from “Ground Zero.” The event marked the removal of the last remaining piece of the World Trade Center, Column No. 1001B of Two World Trade Center.*

*GM2 Shermel Howard cleans the barrel of the MK-45, a 5-inch, 54 caliber gun system on board USS Hopper (DDG 70).*

*HTCM Scott Heineman prepares to enter the water for a dive on the sunken Civil War ironclad, Monitor. Heineman, a Navy master diver, took part in the efforts to salvage and recover the turret of the submerged vessel that rests 240 feet below the surface of the Atlantic.*
Demographics

Navy Active-Duty Personnel by Rank/Grade (September 2002)

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<th>Rank/Grade</th>
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Deployments

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<td>On Deployment</td>
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<td>Submarines</td>
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Navy Family Members by Regional Area (December 31, 2000)

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<td>East Asia and Pacific</td>
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<td>North Africa, Near East</td>
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<td>South Asia</td>
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<td>Sub-Saharan Africa</td>
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<td>Western Hemisphere</td>
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<td>Total Foreign Countries</td>
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<td>Aloft</td>
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Numbers from Operation Enduring Freedom Cruise 2002

USS Theodore Roosevelt (CVN 71) returned home March 27, 2002, from its six-month deployment in support of Operation Enduring Freedom. Listed below are some of the statistics Theodore Roosevelt compiled during this historic deployment:

- **Aviation:**
  - Catapults/traps: 10,700
  - Flight Deck Aircraft Moves: 47,000
  - Hangar Bay Aircraft Moves: 4,500
  - Elevator Runs: 9,300
  - Underway Replenishments: 28
  - Fuel Pumped (gal.): 41.5 million
  - Flight hours: 32,425
  - Sorties flown: 10,938
  - Sortie Completion Rate: 99% combat

- **Vertical Replenishments:**
  - 37 Evolutions encompassing day and night helicopter operations

- **Engineering:**
  - Water distilled: 70,000,000 gal.

- **Food Consumed:**
  - Ice cream: 2,250 gal.
  - Cheese, shredded: 23,578 lbs.
  - Cheese, American: 15,805 lbs.
  - French Fries: 121,166 lbs.
  - Shrimp: 16,678 lbs.
  - Chicken: 86,359 lbs.
  - Butter: 23,914 lbs.
  - Flour: 108,266 lbs.
  - Milk: 52,116 gal.
  - Frozen eggs: 51,441 lbs.
  - Milk: 52,116 gal.
  - E-mails: 5,000,000

- **Ships Store:**
  - Collected from Ship’s Store operation: $3,980,000
  - Armament: $2,689,454
  - Soda machine sales: $27,715
  - Snack sales: $16,115
  - Phone card sales: $134,580
  - Ammunition: $31,151
  - Miscellaneous sales: $45,000

- **Disputing Division “The Bank”:**
  - Checks cashed: 8,661
  - Pay accounts maintained: 4,896
  - ATM accounts (night pay) maintained: 2,590
  - Pay out to shipboard: 8,099
  - ATM accounts: 3,064

- **Naval Payroll:**
  - Checks issued: 11,322,277
  - Pay accounts maintained: $796,827
  - U.S. Treasury checks issued: $13,227,177
  - Travel claims processed: 1,069
  - Total Payroll: $3,022,851.94

- **Aircraft Moves:**
  - Hangar Bay Aircraft Moves: 4,500
  - Aircraft Moves: 47,000

- **Underway Replenishments:**
  - 28

- **Concessionaire Sales:**
  - Merchandise sales: $47,000
  - Concessionaire sales: $45,000

- **Milestones:**
  - Historic deployment:
    - Compiled during this
    - Operation Enduring Freedom
    - Deployment in support of Operation
    - NAFTA and Europe
    - Former Soviet Union

- **Distance Traveled:**
  - 2002 cruise
  - 37 distance travelled
  - 60,000 nm

- **Merchandise Sales:**
  - Merchandise sales: $2,689,454
  - Concessionaire sales: $45,000

- **Attendance:**
  - Concessionaire sales: $45,000
  - E-mails: 5,000,000

- **Navigation Services:**
  - Distance travelled: 60,000 nm
  - E-mails: 5 million

- **Food Costs:**
  - TOTAL Food Cost: $6,150,234
  - Ice cream: 2,250 gal.
  - Cheese, shredded: 23,578 lbs.
  - Cheese, American: 15,805 lbs.
  - French Fries: 121,166 lbs.
  - Shrimp: 16,678 lbs.
  - Chicken: 86,359 lbs.
  - Butter: 23,914 lbs.
  - Flour: 108,266 lbs.
  - Milk: 52,116 gal.
  - Frozen eggs: 51,441 lbs.
  - Milk: 52,116 gal.

- **Ice Cream Consumption:**
  - Ice cream: 2,250 gal.

- **Cruise 2002:**
  - Historic deployment:
    - Compiled during this
T he following books comprise the Master Chief Petty Officer of the Navy’s Naval Heritage/Core Values Reading Guide as revised in August 2002. This list is updated periodically as a guide for all enlisted Navy leaders. Each of the books on this list contains sound management concepts and ideas, many of which can be applied to your leadership role in the Navy. Keep in mind that these books are written by civilians, for the civilian workplace, so nothing will directly apply.

“B” List: Reference

A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren by Robert J. Becken
Admiral John H. Tower: The Struggle for Naval Supremacy by Clark G. Reynolds
Air Raid—Pearl Harbor: Recollections of a Day of Infamy by Paul Stiwell
All at Sea: Coming of Age in World War II by Louis R. Harlan
American Naval History: An Illustrated Chronology of the U.S. Navy and Marine Corps, 1775–Present by Jack Sweetman
Assault from the Sea: The Amphibious Landing at Inchon by Curtis A. Utz
At Dawn We Slept: The Untold Story of Pearl Harbor by Gordon W. Prange
Authors at Sea: Modern American Writers Remember Their Naval Service by Robert Shenk
Book of Navy Songs by The Trinity Society
Clash of the Ships: The World War II at Sea by Walter J. Boyne
Cordon of Steel: The U.S. Navy and the Cuban Missile Crisis by Curtis A. Utz
Crossed Currents: Navy Women from World War II to钛盒 by Jean Ebert, Mairi Beth Hall
E-Boat Alert: Defending the Normandy Invasion Fleet by James Foster Tenn
Great American Novel Battles by Jack Sweetman
Heroes in Dungarees: The Story of the American Merchant Marines in World War II by John Bunker
Kiplaid of the Seventh Fleet: A Biography of Admiral Thomas C. Hart, U.S. Navy by Gerald E. Whitner
Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time by Dava Sobel
Magnificent Mitscher by Theodore Taylor, Jeffrey G. Barlow
Midway at Tokai: Gordon W. Prange
Okinawa: The Last Battle of World War II by Robert Leckie
One Hundred Years of Sea Power: The U.S. Navy, 1890–1990 by Edward L. Beach Jr.
Prisoners of the Japanese by Gawon Dawes
PT 405 by Dick Kersey
Quiet Warrior: A Biography of Admiral Raymond A. Sprague by Thomas B. Buel
Revolt of the Admirals: The Fight for Naval Aviation 1945–1950 by Jeffrey Barlow, Dean C. Allard
Rocks & Shooto: Naval Discipline in the Age of Fighting Sail by James E. Valle
Run Silent, Run Deep by Edward L. Beach Jr.
Sea Power: A Naval History by E.B. Potter
Submarine Admiral: From Battleship to Ballistic Missiles by J. Galanter
Submarine Commander: A Story of World War II and Korea by R. Pranger
The First Team: Pacific Naval Air Combat from Pearl Harbor to Midway by John R. Bude
The First Team and the Guadalcanal Campaign: Naval Fighter Combat from August to November 1942 by John B. Lundstrom
This People’s Navy: The Making of American Sea Power by Kenneth J. Hagan
The Two Ocean War: A Short History of the United States Navy in the Second World War by Samuel Eliot Morison
The Unsinkable Fleet: The Politics of U.S. Navy Expansion in World War II by Joel R. Davidson
U-Boat Commander: A Peacetime View of the Battle of the Atlantic by Peter Cramer, Fritz Brulat (naval photographer)
Unsung Sailors: The Naval Armed Guard in World War II by Vin J. Fichtel
War at Sea: A Naval History of World War II by Nathan Millett
War Beneath the Sea: Submarine Conflict During World War II by Peter Paepke
We Pulled Together and Won: Personal Memories of the World War II Era by Reimacke Books

Leadership, Management and Personal Growth

Built to Last: Successful Habits of Visionary Companies by James Collins and Jerry Porras
Changing the Game: Organizational Transformations that Produce the First, Second, and Third by Eric G. Flamholtz, Yvonne Randale and Howard Schultz
Decision Traps: Ten Barriers to Brilliant Decision-Making and How to Overcome Them by J.L. Edward Ross
Deep Change: Discovering the Leader Within by Robert E. Quinn
Future Enterprise: Business Strategy in the Age of the E-customer by David Siegel

Imaginization: New Mindsets for Seeing, Organizing and Managing Business by Robert E. Quinn
In Athena’s Camp: Preparing for Conflict in the Information Age by John Arquilla, et al.
Leadership and Self-deception: Getting to the Other Side by Bennis, Argyris
Leadership is an Art by M.A. DePamphilis
Leadership Without Easy Answers by Ronald H. Heifetz
Leading Change by John P. Kotter
Managing the Speed of Change by Daryl J. Conner
The Changeleader Manifesto: The End of Business as Usual by Doc Sears, Kathleen Locke (photographer)
The Digital Economy: Promise and Peril in the Age of Networked Intelligence by Don Tapscott
The Digital Estate: Strategies for Competing, Surviving and Thriving in an International World by John Bunker
The Human Side of Intragnets: Content, Style, and Politics by Jerry W. Kozlak, et al.
The Leadership Engine: Building Leaders at Every Level by Noel M. Tichy and Dale L. Koontz
The Lexus and the Olive Tree: Understanding Globalization by Thomas L. Friedman
The Other 90%: How to Unlock Your Best Untapped Potential for Leadership and Life by Robert K. Cooper
The Power of Alignment: How Great Companies Stay Centered and Accomplish Things by George Laborziv and Vithal Rane
Who Moved My Cheese? Amazing Way to Deal With Change in Your Work and in Your Life by Spencer Johnson, Kenneth Blanchard
Sources: readguide.html, Sept. 10, 2002
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 Boatswain's Mate), others show the evolution of naval technology in modern times, such as the GS (Gas Turbine System Technician). Source: www.staynavy.navy.mil
Aircraft Carriers

Nimitz-class
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)
PAC Ronald Reagan (CVN 76)*
George H. W. Bush (CVN 77)

Kitty Hawk-class
USS Kitty Hawk (CV 63)
USS Constellation (CV 64)

John F. Kennedy-class
USS John F. Kennedy (CV 67)


* Under Construction

USS Nimitz (CVN 68) - U.S. Navy photo
USS Abraham Lincoln (CVN 72) - Photo by PH2 Virginia Schaefer
USS Theodore Roosevelt (CVN 71) - Photo by PH3 William Vandermate
USS Harry S. Truman (CVN 75) - Photo by PH3 Danny Ewing Jr.
USS Kitty Hawk (CV 63) and Royal Navy support tanker HMS Brambleleaf (A 81) - Photo by PHCS Mahlon Miller
Submarines

ATTACK SUBMARINES

Los Angeles-class
USS Los Angeles (SSN 688)
USS Philadelphia (SSN 690)
USS M-epuisis (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 Portland (SSN 707)
USS M-neapolis-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 Salt Lake City (SSN 716)
USS Olympia (SSN 717)
USS Honolulu (SSN 718)
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 Topka (SSN 754)
USS Miam (SSN 755)
USS Scraton (SSN 756)
USS Alexandria (SSN 757)
USS Asheville (SSN 758)

Seawolf-class
USS Seawolf (SSN 21)
USS Connecticut (SSN 22)

PCU Jimmy Carter (SSN 23)*

SUBMARINES

Virginia-class
PCU Virginia (SSN 774)*
PCU Texas (SSN 775)*
PCU Hawaii (SSN 776)
PCU North Carolina (SSN 777)

Sturgeon-class
USS Parth (SSN 683)

BALLISTIC MISSILE SUBMARINES

Ohio-class
USS Ohio (SSBN 726)
USS Michigan (SSBN 727)
USS Florida (SSBN 728)

USS Georgia (SSBN 729)
USS Hawaii (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 740)
USS Maine (SSBN 741)
USS Wyoming (SSBN 742)
USS Louisiana (SSBN 743)

DEEP SUBMERGENCE RESCUE VEHICLES

DSRV Mystic
DSRV Avalon

SUBMERSIBLE RESEARCH VEHICLES

Submarine NR-1 (Nuclear)
USS Dophin (AGSS 555)

* Under Construction

### Pay Chart

**Monthly Basic Pay Table**

**Effective January 1, 2003**

#### Enlisted Members

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<tr>
<th>Pay Grade</th>
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#### Warrant Officer

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#### Commissioned Officers With More Than Four (4) Years Active-duty Service as an Enlisted Member or Warrant Officer

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#### Commissioned Officers

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*While serving as Master Chief Petty Officer of the Navy or Coast Guard, Sergeant Major of the Army or Marine Corps, or Chief Master Sergeant of the Air Force, basic pay for this grade is $5,732.70, regardless of the cumulative years of service as computed under Section 205, Title 37, U.S. Code.

**Basic pay for 0-7 to 0-10 is limited to the rate of basic pay for Level III of the Executive Schedule. Basic Pay for 0-6 and below is limited to Level V of the Executive Schedule.

***While serving as Chairman or Vice Chairman of the Joint Chiefs of Staff, Chief of Naval Operations, Chief of Staff of the Army or Air Force or as Commandant of the Marine Corps or Coast Guard, basic pay for this grade is $14,055.50, regardless of the cumulative years of service as computed under Section 205, Title 37, U.S. Code.

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 1650.1F and the U.S. Navy Uniform Regulations (NAVPERS 1566.5G).
Ships

MINE WARFARE

Avenger-class
- USS Avenger (CM 1)***
- USS Defender (CM 2)***
- USS Sentry (CM 3)***
- USS Champion (CM 4)***
- USS Guardian (CM 5)
- USS Dvdatator (CM 6)
- USS Patriot (CM 7)
- USS Scout (CM 8)
- USS Pioneer (CM 9)
- USS Warrior (CM 10)
- USS Guardian (CM 11)***
- USS Ardent (CM 12)
- USS D detroit (CM 13)
- USS Chief (CM 14)

Osprey-class
- USS Osprey (MHC 51)***
- USS H ron (MHC 52)***
- USS Pelican (MHC 53)***
- USS Robin (MHC 54)***
- USS Oriole (MHC 55)***
- USS Kingfisher (MHC 56)***
- USS Cormorant (MHC 57)***
- USS Black Hawk (MHC 58)***
- USS Falcon (MHC 59)***
- USS Cardinal (MHC 60)
- USS Raven (MHC 61)
- USS Shrike (MHC 62)***

PATROL BOATS

Cyclone-class
- USS Tempest (PC 2)
- USS Hurricane (PC 3)
- USS mornion (PC 4)
- USS Typhon (PC 5)
- USS Groco (PC 6)
- USS Squall (PC 7)
- USS Zephyr (PC 8)
- USS Chimook (PC 9)
- USS Firebolt (PC 10)
- USS Whirlwind (PC 11)
- USS Thunderbolt (PC 12)
- USS Shamal (PC 13)
- USS Torrado (PC 14)

Supply-class
- USS Rainier (AOE 7)
- USS Bridge (AOE 10)

Safeguard-class
- USS Safeguard (ARS 50)
- USS Grasp (ARS 51)
- USS Salver (ARS 52)
- USS Grapple (ARS 53)

Emerg. S. Land-class
- Submarine Tenders
- USS Emerald S. Land (AS 39)
- USS Frank Cadle (AS 49)

Other Ships in Commission

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


NAVAL FLEET AUXILIARY FORCE

T-AFS (Combat Stores Ships)
- USNS N iagara Falls (T-AFS 3)
- USNS Concord (T-AFS 5)
- USNS San Jose (T-AFS 7)
- USNS S的作用 (T-AFS 8)
- USNS Spica (T-AFS 9)
- USNS Saturn (T-AFS 10)

T-TE (Ammunition Ships)
- USNS K lause (T-TE 28)
- USNS Santa Barbara (T-TE 28)
- USNS Flint (T-TE 32)
- USNS Shasta (T-TE 33)
- USNS M oint Baker (T-TE 34)
- USNS K ika (T-TE 35)

T-AE (Fuel/Supply Ships)
- USNS C atawba (T-AE 168)
- USNS N awoj (T-AE 169)
- USNS M awk (T-AE 170)
- USNS Sioux (T-AE 171)
- USNS Apache (T-AE 172)

T-AD (Oilers)
- USNS H erry J. K aiser (T-AD 187)
- USNS J ohn Lenthall (T-AD 189)
- USNS W alter S. Drie (T-AD 193)
- USNS J ohn Ericsson (T-AD 194)
- USNS S rety Gruman (T-AD 195)
- USNS K awana (T-AD 196)
- USNS P east (T-AO 197)
- USNS S big Hark (T-AD 198)
- USNS T pypeance (T-AD 199)
- USNS G uadalupe (T-AD 200)
- USNS P aten (T-AD 201)
- USNS T yron (T-AD 202)
- USNS L arimie (T-AO 203)
- USNS R aphhons (T-AD 204)

T-AOE (Fast Combat Support)
- USNS Supply (T-AOE 6)
- USNS Arctic (T-AOE 8)

T-AGS (Submarine Tenders)
- USNS A laska (T-AGS 5)
- USNS Littlechief (T-AGS 52)
- USNS Pathfinder (T-AGS 60)
- USNS Summer (T-AGS 61)
- USNS Bowditch (T-AGS 62)
- USNS H ronson (T-AGS 63)
- USNS BrusicC. H ree (T-AGS 64)
- USNS M ary Sears (T-AGS 65)

T-AGS (Oceanographic Survey Ships)
- USNS John M cDonnell (T-AGS 51)
- USNS Littlechief (T-AGS 52)
- USNS Pathfinder (T-AGS 60)
- USNS Summer (T-AGS 61)
- USNS Bowditch (T-AGS 62)
- USNS H ronson (T-AGS 63)
- USNS BrusicC. H ree (T-AGS 64)
- USNS M ary Sears (T-AGS 65)

T-AG (Oceanographic Survey Ship)
- USNS A laska (T-AG 105)

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

SPECIAL MISSION PROGRAM

T-AGS (Ocean surveillance ships)
- USNS S lawart (T-AGOS 1)***
- USNS Indomitable (T-AGOS 7)***
- USNS P raeval (T-AGOS 8)
- USNS A ssertive (T-AGOS 9)
- USNS B old (T-AGOS 12)
- USNS C apable (T-AGOS 16)
- USNS V ictorious (T-AGOS 18)
- USNS A ble (T-AGOS 20)
- USNS E ffective (T-AGOS 21)
- USNS L oyal (T-AGOS 22)
- USNS I mpeccable (T-AGOS 23)
***converted for counter-drug missions

T-AGS (Oceanographic Survey Ships)
- USNS John M cDonnell (T-AGS 51)
- USNS Littlechief (T-AGS 52)
- USNS Pathfinder (T-AGS 60)
- USNS Summer (T-AGS 61)
- USNS Bowditch (T-AGS 62)
- USNS H ronson (T-AGS 63)
- USNS BrusicC. H ree (T-AGS 64)
- USNS M ary Sears (T-AGS 65)

T-AGS (Oceanographic Survey Ship)
- USNS A laska (T-AG 105)

AFLOAT PREPOSITIONING PROGRAM

Maritime Prepositioning Ships

(Support U.S. Marine Corps and U.S. Navy)

T-AK (Maritime Prepositioning Ships)
- M V CPL Louis J., Hauge Jr. (T-AK 3000)
- M V PFC William B. Baugh (T-AK 3001)
- M V PFC James Anderson Jr. (T-AK 3002)
- M V 1st LT A lice B annym (T-AK 3003)
- M V PVT C lark H unst (T-AK 3004)

Official's/Owner's Manual 2003

From left to right: USS Normandy (CG 60), USNS Supply (T-AOE 6) and USS George Washington (CVN 73).

** Naval Reserve Force, Active
SQUADRONS

VF-2 Bounty Hunters
VF-11 Red Rippers
VF-31 Tomcatters
VF-32 Sordidmen
VF-101 Grim Reapers
VF-103 Jolly Rogers
VF-103 Pukin’ Dogs
VF-154 Black Knights
VF-211 Checkmates
VF-213 Black Lions

VFA-37 Bulls
VFA-27 Royal Maces
VFA-25 Fist of the Fleet
VFA-41 Black Aces (F/A-18F)
VFA-201 (USNR) Hunters
VFA-203 (USNR) Yellow Jackets
VFC-12 (USNR) Skyraiders
VFA-115 Eagles (F/A-18E)
VFA-125 Rough Raiders
VFA-113 Stingers
VFA-132 Privateers
VFA-137 Kestrels
VFA-146 Blue Diamonds
VFA-131 Fighting Vipers
VFA-192 Golden Dragons
VFA-103 Eagles (F/A-18E)
VFA-202 (USNR) Vampires
VFA-201 (USNR) Hunters
VFA-203 (USNR) Blue Falcons
VFA-204 (USNR) River Ravens
VFA-32 (USNR) Fighting Falcons
VFA-41 Black Aces (F/A-18F)
VFA-202 (USNR) Vampires
VFA-201 (USNR) Hunters
VFA-203 (USNR) Blue Falcons
VFA-204 (USNR) River Ravens
VFA-32 (USNR) Fighting Falcons
VFA-131 Fighting Vipers
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VFA-204 (USNR) River Ravens
VFA-32 (USNR) Fighting Falcons
VFA-115 Eagles (F/A-18E)
VFA-125 Rough Raiders
VFA-113 Stingers
VFA-132 Privateers
VFA-137 Kestrels
VFA-146 Blue Diamonds
VFA-147 Argonauts
VFA-172 Golden Dragons
VFA-105 Dambusters
VFA-201 (USNR) Hunters
VFA-203 (USNR) Blue Falcons
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VFA-32 (USNR) Fighting Falcons
VFA-131 Fighting Vipers
VFA-132 Privateers
VFA-137 Kestrels
VFA-146 Blue Diamonds

Photo by Vernon Pugh

Wingspan: 37.5 ft.
Length: 56 ft.
Height: 15 ft., 3.5 in.
Speed: Mach 1.4+ (at 45,000 ft., 550 nautical miles per hour)
Range: 1,600 nm (with afterburner)

Armament:
- 24mm Vulcan cannon
- Sidewinder air-to-air missiles
- Phoenix air-to-surface missiles
- Aim-9 Sidewinder air-to-air missiles
- HARM missiles
- Rockeye laser-guided munitions
- Joint Direct Attack Munition (JDAM)
- 500-lb. Mark 82 fragmentation bombs

Crew: two (one pilot, one radar intercept officer)

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VF-32 Sordidmen
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VF-213 Black Lions
**SHORE-BASED**

**E-6A/B**

The E-6A provides secure, survivable, jam-resistant strategic communications while performing the Navy's TACAMO mission. The E-6B program has been established to upgrade TACAMO operational capabilities, and will perform both the TACAMO and airborne command post mission with installed equipment. The E-6B is equipped with a battle-staff compartment and an airborne launch-control system (ALCS) capable of ground alert/force generation, force management, and airborne launch of Pavekeeper and M-intruder Inter-Continental Ballistic Missiles (ICBMs).

Wingspan: 143 ft.
Length: 152.3 ft.
Height: 56 ft., 5 in.
Weight: 341,000 lbs. gross takeoff
Speed: Mach .88
Ceiling: 42,000 ft.
Range: more than 6,400 nm (E-6A); 5,500 nm (E-6B)
Crew: three pilots, two navigators, two flight engineers, seven to 15 mission crew

**P-3C Orion/EP-3E Orion (Aries I)**

The P-3, a land-based, long-range patrol aircraft, has been in the Navy since the 1960s. The Orion and Aries I provide multi-mission intelligence, surveillance, reconnaissance and anti-surface anti-submarine warfare combat capability to theater commanders worldwide.

Wingspan: 134.6 ft.
Length: 155 ft.
Height: 47 ft.
Weight: 200,000 pounds of ordnance, including Harpoon, Maverick, SLAM, SLAM-ER, torpedoes, mines
Crew: 10 (three pilots, three flight officers/engineers, three sensor operators, one in-flight technician)

**SQUADRONS**

- VQ-1 World Watchers
- VQ-2 Sandman
- VQ-3 Ironmen
- VQ-4 Shadows
- VQ-7 Roughnecks
- VQ-92 (USNR) Minutemen
- VP-1 Screaming Eagles
- VP-30 Pro’s Nest
- VP-40 Fighting Marlins
- VP-45 Pelicans
- VP-46 Grey Knights
- VP-47 Golden Seawolves
- VP-62 (USNR) Broad Arrows
- VP-64 (USNR) The Condors
- VP-65 (USNR) Tritons
- VP-66 (USNR) The Liberty Bells
- VP-68 (USNR) Tottens
- VP-82 (USNR) M-intrumen
- VP-94 (USNR) Crawfishes
- VP-1 World Watchers
- VP-2 Sandman
- VP-41 Old Buzzards
- VP-42 Grey Knights
- VP-43 Greyhounds
- VP-44 Princedoms
- VP-45 Pelicans
- VP-46 Grey Knights
- VP-52 Golden Seawolves
- VP-53 (USNR) Broad Arrows
- VP-54 (USNR) The Condors
- VP-57 (USNR) Tritons
- VP-58 (USNR) The Liberty Bells
- VP-59 (USNR) Tottens
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- VP-68 (USNR) M-intrumen
- VP-69 (USNR) Crawfishes
- VP-70 (USNR) The Condors
- VP-71 (USNR) Tritons
- VP-72 (USNR) The Liberty Bells
- VP-73 (USNR) Tottens
- VP-74 (USNR) M-intrumen
- VP-75 (USNR) Crawfishes
- VP-76 (USNR) The Condors
- VP-77 (USNR) Tritons
- VP-78 (USNR) The Liberty Bells
- VP-79 (USNR) Tottens
- VP-80 (USNR) M-intrumen
- VP-81 (USNR) Crawfishes
- VP-82 (USNR) The Condors
- VP-83 (USNR) Tritons
- VP-84 (USNR) The Liberty Bells
- VP-85 (USNR) Tottens
- VP-86 (USNR) M-intrumen
- VP-87 (USNR) Crawfishes
- VP-88 (USNR) The Condors
- VP-89 (USNR) Tritons
- VP-90 (USNR) The Liberty Bells
- VP-91 (USNR) Tottens
- VP-92 (USNR) M-intrumen
- VP-93 (USNR) Crawfishes
- VP-94 (USNR) The Condors
- VP-95 (USNR) Tritons
- VP-96 (USNR) The Liberty Bells
- VP-97 (USNR) Tottens
- VP-98 (USNR) M-intrumen
- VP-99 (USNR) Crawfishes

**C-9B Skytrain**

The C-9B is a military version of the McDonnell Douglas DC-9-32 airliner - was modified with upper cargo doors to allow for cargo or passenger loads or a mixture of both. The C-9 fleet provides cargo and passenger...
transportation as well as forward-deployment logistics support. In routine operations, the C-9s provide unique logistics capabilities for the Navy, particularly the airlift of Naval Reserve personnel to and from training sites and the movement of naval personnel to support ship deployments.

- Wingspan: 93.2 feet
- Length: 119.2 feet
- Height: 27.2 feet
- Weight: 65,283 pounds in cargo configuration; 59,706 pounds in passenger configuration; 59,006 pounds in cargo configuration; maximum takeoff, 108,000 pounds
- Speed: 563 mph
- Range: 2,650 nm
- Ceiling: 37,000 feet
- Payload: 12,444 pounds of cargo or 90 passengers
- Crew: Five (two pilots plus crew chief and cabin attendants)

**C-12 Huron**

The C-12 is a military utility transport. Between 1979 and 1982, 66 UC-12s were procured to replace C-131 and US-2 aircraft in support of Navy and Marine Corps air stations and Reserve centers. Upgraded versions include UC-12F and 10 UC-12M. Two RC-12s were procured to replace C-131s and two new-build RC-12Ms are used for control range, and 20 TC-12s procured from UC-12As augment the T-44A as multi-engine trainers in the Naval Air Training Command. One UC-12 has been converted to an NC-12B and performs sonobuoy testing missions. Three C-12Cs are on loan from the Army and serve as training aircraft at the U.S. Army National Test Pilot School.

- Wingspan: 54.5 feet
- Length: 43.75 feet
- Height: 15 feet
- Weight: empty, 7,315 pounds; maximum takeoff, 15,000 pounds
- Speed: 338 mph
- Ceiling: 35,000 feet
- Range: 1,302 nm
- Payload: 4,215 pounds of cargo or eight passengers
- Crew: two pilots

**TRAI NERS**

- T-44 Goshawk
- T-44B Buckeye
- C-12 Huron

**HELICOPTERS**

**SH/HH-60 Sea Hawk**

The SH-60B is a twin-engine helicopter used for anti-submarine warfare, search and rescue, drug interdiction, anti-ship warfare, cargo lift and special operations. The SH-60B is an airborne platform based aboard cruisers, destroyers and frigates. It deploys sonobuoys and torpedoes in an anti-submarine role while extending the range of the ship’s radar capabilities. The SH-60 is the carrier-based anti-submarine helicopter, which uses SONAR, sonobuoys and torpedoes to detect and destroy submarines. The HH-60H is an armed aircraft designed to accomplish today’s combat search and rescue mission as well as other replenishment and utility functions.

- Height: 17 ft.
- Weight: 21,884 lbs. maximum takeoff
- Speed: 175 mph
- Range: 380 nm
- Ceiling: 14,700 ft.
- Speed: 162 mph
- Ceiling: 10,000 ft.
- Range: 150 nm
- Ceiling: 170 ft.
- Range: 180 nm

**SQUADRONS**

- SH-60B
- HH-60H

**HC-130U/P/N/W King Stallion**

HC-130U/P/N/W King Stallions are a multi-role, twin-engine, five-bladed, twin-turboprop, land-based, general utility transport aircraft. They are capable of carrying a crew of up to 13 people and 10,000 pounds of cargo.

- Height: 17 ft.
- Weight: 21,884 lbs. maximum takeoff
- Speed: 175 mph
- Range: 380 nm
- Ceiling: 14,700 ft.
- Speed: 162 mph
- Ceiling: 10,000 ft.
- Range: 150 nm
- Ceiling: 170 ft.
- Range: 180 nm

**SQUADRONS**

- HC-130U/P/N/W King Stallion

**CH-46 Sea Knight**

The CH-46 is a tandem-rotor transport helicopter designed for both land- and sea-based operations. It can accommodate 25 passengers or 10,000 lbs. of sling-loaded cargo.

**SQUADRONS**

- HC-130U/P/N/W King Stallion

**SH-3 Sea King**

The SH-3 Sea King was flown more than 38 years ago. The H-3s 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.

**SQUADRONS**

- SH-3 Sea King

**HC-11 Gunbearers**

HC-11 Gunbearers are a twin-engine, four-bladed, single-turboprop, land-based, general utility transport aircraft. They are capable of carrying a crew of up to 13 people and 10,000 pounds of cargo.

**SQUADRONS**

- HC-11 Gunbearers

**HS-3 Sea King**

The HS-3 Sea King has a four-bladed, single-turboprop, land-based, general utility transport aircraft. They are capable of carrying a crew of up to 13 people and 10,000 pounds of cargo.

**SQUADRONS**

- HS-3 Sea King
**TH-57 Sea Ranger**

The TH-57 Sea Ranger is used to train several hundred student naval aviators with 45 TH-57Bs (for primary visual flight rules training) and 71 TH-57Cs (for advanced instrument flight rules training) in two helicopter training squadrons at NAS Whiting Field, Milton, Fla. Two TH-57Cs configured for RDT&E are used for photo, chase and utility missions at the Naval Air Warfare Center Aircraft Division at Patuxent River, Md.

- **Length:** 39 ft.
- **Height:** 10 ft.
- **Weight:** 3,200 lbs. maximum takeoff
- **Speed:** 138 mph
- **Ceiling:** 20,000 ft., pressure altitude
- **Range:** 368 nm
- **Crew:** five (one pilot, four student pilots)

**SQUADRONS**

- HT-8 Eightballers
- HT-16 Vigilant Eagles

**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:** 189 mph
- **Ceiling:** 22,500 ft.
- **Range:** 1,120 nm
- **Crew:** three to eight (two pilots, one to six crewmen)

**SQUADRONS**

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

**SH-2G Seasprite**

The SH-2G Seasprite first flew in 1959 and served long as a utility and search-and-rescue helicopter and later as the first light airborne multipurpose system (LAMPS) helicopter.

- **Length:** 38 ft., 4 in. (nose and blades folded)
- **Height:** 15 ft., 6 in. (rotors turning)
- **Weight:** 12,800 lbs. normal takeoff
- **Speed:** 189 mph
- **Ceiling:** 22,500 ft.
- **Range:** 367 nm
- **Armament:** MK46/50 torpedoes; 7.62mm machine guns
- **Crew:** three (two pilots, one sensor operator)

**SQUADRONS**

- HSL-84 Thunderbolts
- HSL-94 Titans

**SPECIAL SQUADRONS**

- VC-6 Firebees
- VX-1 Pioneers
- VX-9 Vampires

**Sources:** Navy Fact File; Naval Air (NAV AIR) Systems Command; NA V AIR Tactical Aircraft Programs; Commander, Naval Forces Pacific; Commander, Naval Forces Atlantic; Commander, Naval Air Reserve Force; and the Standard Naval Distribution List.
# Training Components

Include Seabee Readiness Group, Atlantic (SRGLANT) and Seabee Readiness Group, Pacific (SRGPAC)

<table>
<thead>
<tr>
<th>Training Components</th>
<th>SRGLANT</th>
<th>SRGPAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>1NCD/NCFC 1NCD (FWD) NCR 22 NCR 30</td>
<td></td>
</tr>
<tr>
<td>Reserve</td>
<td>NCB 2 NCB 3 NCR 3 NCR 1 NCR 7 NCR 9</td>
<td></td>
</tr>
</tbody>
</table>

### Underwater Construction Teams (UCT)

| Active | 1NCD/NCFC 1NCD (FWD) UCT 1 UCT 2 |

### Naval Construction Battalion Units (CBU)

| Active | 1NCD/NCFC 1NCD (FWD) CBU 402 CBU 401 CBU 403 CBU 405 CBU 410 CBU 406 CBU 411 CBU 413 CBU 412 CBU 416 CBU 415 CBU 417 CBU 420 CBU 418 CBU 422 CBU 421 CBU 423 CBU 427 |

### Construction Battalion Maintenance Unit (CBMU)

| Active | 1NCD/NCFC 1NCD (FWD) CBMU 202 CBMU 303 |

### Naval Construction Force Support Units (NCFSU)

| Active | 1NCD/NCFC 1NCD (FWD) NCFSU 3 NCFSU 2 |

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A U.S. Navy steelworker assigned to Naval Mobile Construction Battalion (NMCB) 133 welds a pipe during an arc-welding class at the Naval Construction Training Center, Gulfport, Miss.

Photo by PH2 Jacob Johnson
STRATEGIC STRIKE

Trident I (D-5)
The Trident I replaced the Poseidon in the Navy’s ballistic missile inventory. It became operational in 1979 and is carried on Ohio-class ballistic missile submarines.

Dimensions: 74 x 408 in.
Weight: 73,000 lbs.
Propulsion: Cross-linked, double-base fuel rocket
Range: 4,000 nm
Manufacturer: Lockheed-Martin

Trident II (D-2)
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.
Propulsion: Solid-fuel rocket
Range: 4,000 nm
Manufacturer: Lockheed-Martin

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 service 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 (LGB), 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 1,200 pound MK 84/BLU 217.

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 store.

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) Kit

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.

Joint Stand-off Weapon (JSOW)

The joint stand-off 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 air craft 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 an anti-ship warhead.

HARM (High-Speed Anti-Radar Missile)

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

Dimensions: 10 m x 3.7 m x 44 in.
Weight: 798 lbs.
Warhead: 146 lbs.
Range: Depends on launch speed/altitude
Propulsion: Dual-thrust rocket motor
Manufacturer: Raytheon

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, that 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: 3,130 lbs. (air launch), 1,459 lbs. (ASROC launcher), 1,520 lbs. (SAM launcher), 3,521 lbs. (capable launch carrier) (SLAM-ER)
Speed: High subsonic speeds
Warhead: 435 lbs. HE (blast; semi-armor penetrating)
Propulsion: Turbojet (cruise); solid-fuel booster for ship launch
Range: 75 nm
Manufacturer: The Boeing Company

SLAM-ER

Stand-Off Land Attack Missile - Expanded Response (SLAM-ER) is an upgrade to the SLAM and is currently in production. SLAM-ER has a greater range (350+ 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.

Maverick

The Maverick is a short-range, air-to-surface, tactical missile. The version used by the Navy carries a warhead designed to penetrate large, hard targets. First deployed in August 1972.

Dimensions: 8.2 ft. long; 12 in. diameter; 2.4 ft. wing span
Weight: 635 lbs.
Weapons

ANTI-AIR WARFARE (AAW) Aircraft Guns

Mk151

This 20mm Gatling gun, which also forms the basis for the Phalanx Close-In Weapon System is mounted aboard the F/A-18 Hornet and F-14 Tomcat.

Caliber: 20mm/.62
Muzzle Velocity: 3,400 feet/sec.
Rate of Fire: 4,000 to 6,000 rounds/min
Weight: 841 lbs total (gun, feed system, ammunition)
Manufacturer: General Electric

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

AMRAAM

The Navy’s only long-range, air-to-air missile is the AMRAAM. Current air-to-air versions are 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
Manufacturer: Raytheon

Phoenix Missile

The Navy’s only long-range, air-to-air missile, the Phoenix missile has been designed for use in an all-weather, heavy jamming environment. First deployed in 1974.

Dimensions: 13 ft. long; 15 in. diameter; 3 ft. wingspan
Weight: 1,010 lbs.
Propulsion: Solid-fuel rocket motor
Warhead: 135 lbs; proximity fuse, high explosive
Range: In excess of 100 nm
Speed: In excess of 3,000 mph
Manufacturer: Raytheon

SHIPBOARD GUNS

MK 15 – 5-inch/54 caliber lightweight gun

This 54 caliber, lightweight gun provides surface combatants accurate naval gunfire against fast, highly-maneuverable, surface targets, air threats and shore battery sites during amphibious operations.

Caliber: 5 inch/54
Shell Weight: 70 lbs.
Firing Rate: 30 rounds per minute
Muzzle Velocity: 2,650 ft/sec.
Range: 13 nm
Magazine Capacity: 475 to 500 rounds
Weight: 47,820 lbs.

MK 19 – 40 mm machine gun system

The naval version of the Army Buskmaster, or “Chain Gun.” This single-barrel, air-cooled, heavy machine gun meets the needs of ships throughout the fleet, especially those operating in the Arabian 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 auto
Manufacturer: Crane Division, Naval Surface Warfare Center

MK 25 – 36mm/62 caliber 7-inch gun

Best suited for use aboard smaller combat vessels, the MK 75 features rapid fire capability with low manpower requirements. The gun was approved for fleet use in 1979 and was first deployed aboard USS Oliver Hazard Perry (FFG 7) in 1981.

Caliber: 3-inch/62
Rate of Fire: 85 rounds/min.
Muzzle Velocity: 920 m/sec
Range: 10 nm
Weight: 7,155 lbs
Manufacturer: FMC Corporation

RF-140 – 5-inch/.54 caliber 3-inch/.62

Caliber: 5 inch/.54
Shell Weight: 70 lbs.
Firing Rate: 30 rounds per minute
Muzzle Velocity: 2,650 ft/sec.
Range: 13 nm
Magazine Capacity: 475 to 500 rounds
Weight: 47,820 lbs.

MK 18 – 25 mm machine gun system

The naval version of the Army Buskmaster, or “Chain Gun.” This single-barrel, air-cooled, heavy machine gun meets the needs of ships throughout the fleet, especially those operating in the Arabian 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 auto
Manufacturer: Crane Division, Naval Surface Warfare Center

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Firing Rate: 30 rounds per minute
Muzzle Velocity: 2,650 ft/sec.
Range: 13 nm
Magazine Capacity: 475 to 500 rounds
Weight: 47,820 lbs.
**ANTI-SUBMARINE WARFARE (ASW) Torpedoes**

**MK-46**
- The MK-46 Mod 5A(SW) 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. 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(SW) in shallow water. A service life-extension program was initiated in 1992 to extend the life of the MK-46 Mod 5A(SW). 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 lbs.
- **Range:** More than 8,000 yds.
- **Speed:** 52 mph
- **Propulsion:** Two-speed, reciprocation internal combustion
- **Warhead:** 96 lbs. of PBXN-103
- **Depth:** Greater than 1,200 ft.
- **Original Manufacturer:** Alliant Technologies, Howmetty
- **Block:** 1 software upgrade program has enhanced the MK-50’s shallow water and countermeasure capability. Also a new longer-lasting, safer and cheaper stored chemical energy propulsion system is currently being introduced.

**MK-60**
- The MK-60 Torpedo is a long-range, high-speed, deep-depth, wire-guided acoustic homing weapon designed to combat slow diesel submarines, fast, deep-diving nuclear submarines and high-performance surface ships and can be carried aboard all Navy submarines. 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.
- **Dimensions:** 13.4 ft. long, 19 in. diameter.
- **Detection System:** Magnetically or sonically driven target detection devices (TDDs)
- **Depth Range:** Shallow water
- **Weight:** 1,200 pounds
- **Explosives:** 715 pounds of high explosive

**MK-65 Quickstrike**
- A subsonic, acoustically-guided, acoustic homing torpedoes that can be launched from aircraft and surface ships. 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.
- **Dimensions:** 10 ft. 6 in. long, 25 in. diameter (MK-46 Mod 5A(SW)); 10 ft. 6 in. long, 22 in. diameter (MK-46 Mod 5A(HAP)
- **Weight:** 3,630 pounds
- **Explosives:** 1,735 pounds
- **Detection System:** Magnetically or acoustically driven target detection devices (TDDs)
- **Depth Range:** Shallow water
- **Weight:** 6,420 pounds
- **Explosives:** 2,000 pounds

**MK-62, MK-63 and MK-65**
- MK-62, MK-63 and MK-65 mines are 500, 1,000 and 2,000 pound class respectively.
- **Explosives:** Various loads

**MK-66 Captor**
- The Captor is the Navy's primary anti-submarine weapon. This deep-water mine is designed to be laid by aircraft or submarines and is anchored to the ocean floor. Its acoustic detection system is designed to seek hostile submarines, while ignoring surface craft and friendly submarine acoustic signatures. Upon detection of a hostile submarine, the Captor launches an MK-46 Mod 4 torpedo. First fleet use in 1979.
- **Type:** Aircraft-launched, moored mine
- **Dimensions:** 12 ft. long, 21 in. diameter.
- **Depth Range:** Shallow water
- **Weight:** 3,630 pounds
- **Explosives:** 1,735 pounds

**MK-67 Submarine Launched Mobile Mine (SLMM)**
- **Type:** Submarine-launched mobile mine
- **Dimensions:** 13.4 ft. long, 19 in. diameter.
- **Detection System:** Magnetically or sonically driven target detection devices (TDDs)
- **Depth Range:** Shallow water
- **Weight:** 1,200 pounds
- **Explosives:** 715 pounds of high explosive

**MK-68 Torpedo**
- The MK-68 Torpedo was a family of shallow-water, aircraft-launched mines used primarily against surface ships. The MK-65 mine is a high-speed, weighted mine. MK-62 and MK-63 mines are converted, general-purpose bombs. All were approved for service use in the early 1960s.
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