



# *America's Navy*

*U.S Naval Ships, 1955 - 2020*

*edited by*

*Larry Bond, Chris Carlson,  
Peter Grining, & Andy Doty*



# America's Navy

## The United States Navy and Coast Guard 1955 - Present Day

edited by

Larry Bond, Chris Carlson,  
Peter Grining, and Andy Doty

published by

Admiralty Trilogy Group

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The designers of *Harpoon* are prepared to answer questions about the game system. They can be reached in care of [adtr-group@aol.com](mailto:adtr-group@aol.com). Visit their website at [www.admiraltytrilogy.com](http://www.admiraltytrilogy.com).

This version of *America's Navy* contains all corrections from errata through 31 May 2020

Cover: *Harry S. Truman* Carrier Strike Group participates in a strait exercise in the Atlantic Ocean on April 7, 2019 (US Navy).

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**The 2012 Damage Point Standard:** *America's Navy* uses the "2012 Standard" to calculate a ship's damage points. This method, described in the April 2012 issue of the *Naval SITREP* (hence the name) matches historical results more closely than the older "2006 Standard" used in older supplements.

If you are using ship data from more than one *Admiralty Trilogy* publication, make sure that the damage points have all been calculated using the 2012 Standard.

**Annex Notes:** The information on the platforms, weapons, and sensors in this annex has been standardized so that it is compatible and consistent with all *Admiralty Trilogy* games. Equipment that was used in more than one era will have the same statistics in all games. Information in this Annex is compatible with *Harpoon* 5th edition.

The Annex designations are standardized for all four *Admiralty Trilogy* games: *Dawn of the Battleship*, *Fear God & Dread Nought*, *Command at Sea*, and *Harpoon*. Gaps in the sequence are caused by annexes that are not applicable to that era or product.

If there is information in another *Trilogy* publication that conflicts with the data printed here, use the information in the product with the newest copyright date, since new information and corrections can change statistics. If you have a question about the conflict, or about any other data listed, please contact us.

Except for Annex A, systems are listed in their annexes alphabetically, first by country, then by name. The ships in Annex A are listed in traditional order, with aircraft carriers first, then submarines, followed by major combatants, minor combatants, amphibious ships, mine warfare craft, auxiliaries, then civilian vessels. An alphabetical list of ships by class name is provided, beginning on the next page.

Systems listed in *italics* never entered service. They existed only as hypothetical designs, in prototype or developmental form. Ships with a year in parentheses following their name have been radically altered since they entered service, and were operational in their new configuration in the listed year.

## Abbreviations

Annex Y lists all the ship type abbreviations, e.g., "CV" for aircraft carrier.

The abbreviations for the ship weapon arcs are described in section 2.2 of the rules.

Other abbreviations used in this annex are:

ABL	Armored Box Launcher
ACINT	Acoustic Intelligence
ACM	Acoustic Countermeasures
AMDS	Advanced Mine Detection Sonar
ASDS	Advanced Swimmer Delivery System
Blk	Block
BMD	Ballistic Missile Defense
BPDMS	Basic Point Defense Missile System
CEC	Cooperative Engagement Capability
COMINT	Communications Intelligence
ELINT	Electronic Intelligence
ESSM	Evolved Sea Sparrow Missile
FCS	Fire Control System
fl	Full load displacement
FRAM	Fleet Rehabilitation and Modernization
GFCS	Gunfire Control System
LCAC	Landing Craft, Air Cushion
lt, ltshp	Lightship displacement
MCM	Mine Countermeasures
MFCS	Missile Fire Control System
Mk	Mark
MSC	Military Sealift Command
MSTS	Military Sea Transportation Service (later renamed MSC)
NRF	Naval Reserve Force
NTDS	Naval Tactical Data System
NTU	New Threat Upgrade
RAM	Rolling Airframe Missile
RAST	(Helicopter) Recovery Assist, Secure & Transit
SDV	Swimmer Delivery Vehicle
SIGINT	Signals Intelligence
SLBM	Submarine-Launched Ballistic Missile
SLEP	Service Life Extension Program
SOF	Special Operations Forces
std	Standard Displacement
subm	Submerged Displacement
TACTOM	Tactical Tomahawk
TAS	Target Acquisition System
TBM	Tactical Ballistic Missile
TT	Torpedo Tube
VLS	Vertical Launch System
WAA	Wide-Aperture Array

## US ELECTRONIC DESIGNATION SYSTEM

All US and some Western electronic systems use a designation system that describes the equipment with a three-letter code. A typical example is the surface ship search radar listed in Annex J, the SPS-10

### SPS-10

**S:** The first letter stands for the platform carrying the equipment:

A: piloted aircraft	P: portable
B: submarine	S: surface ship
C: pilotless carrier	T: ground transportable
F: fixed ground	P: man-portable
G: general ground	U: multi-platform
K: amphibious	V: ground vehicular
M: ground mobile	W: surface ship or sub use

**P:** The second letter is the general type of equipment

A: invisible light or IR	N: sound in air
C: carrier	P: radar
D: radiac	Q: sonar
G: telegraph or teletype	R: radio
I: interphone, public addr.	S: special or combination
J: electromechanical or inertial wire covered	T: telephone
K: telemetry	V: visual and visible light
L: Countermeasures	W: weapons control
M: meteorological	X: facsimile or TV
	Y: data processing

**S:** the third letter is the function of the equipment

B: bombing	Q: multipurpose or special purpose
C: communications	R: receiver or passive detector
D: DF or surveillance	S: search
E: ejector	T: transmitter
G: fire control	W: automatic or remote control
H: recording, reproduction	X: IFF or recognition
K: computing	Y: surveillance & control
M: maintenance & test	
N: navigation	

**SPS** thus means surface ship radar used for search. "**-10**" stands for the tenth surface ship search radar designated under this system (and the office copier is an "FJH!").

Other examples:

BQQ-2 is a submarine sonar with several functions.  
SAR-8 is a surface ship IR passive detector.  
AWG-9 is an aircraft weapons control system.  
SPY-1 is a surface ship radar used for surveillance and control.

Technically, all electronic designations are supposed to start with "AN/," for example, "AN/WLR-1." The letters stand for "Army-Navy," indicating that this is a Joint system.

A "(V)" with a number at the end, like "SLQ-32(V)3" denotes a version of the basic equipment.

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## Annex A - Ships

**UNITED STATES OF AMERICA**

Air groups for each aviation ship, listing the squadrons with the number and type of planes each carrier embarked during its active service, are listed in Annex R.

**Gerald R. Ford**

**Displacement:** 101600 fl  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** 4th Gen J&D  
**Signature:** Large/Loud  
**Weapons:**

4 EMALS Catapults (2 bow, 2 waist), 3 Elevators, Arresting Gear

SW/P/PQ&SQ(R)3 Mk15 Phalanx Blk IB (3@7.6A)

PW/SA(21)2 RIM-116 RAM w/21 msls

SW/PA(8)2 Mk29 w/8 RIM-162 ESSM

//SPY-3 or SPY-6

**Sensors:** ES: 4th Gen

SPY-3, SPY-4, SPS-73 (*Ford*).

SPY-6(V)3 EASR, SPS-73 (*JFK* and after)

**Remarks:**

*Gerald R. Ford* (CVN 78), *John F. Kennedy* (CVN 79), *Enterprise* (ii) (CVN 80), *Doris Miller* (CVN 81), CVN 82. Dual flight deck.

• Jul 18: *Ford* begins post-shakedown availability. First deployment planned for 2023 or 2024.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	417	834	1250	1500	1667
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Ronald Reagan**

**Displacement:** 101400 fl  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** 4th Gen J&D  
**Signature:** Large/Loud  
**Weapons:**

4 Catapults (2 bow, 2 waist), 4 Elevators, Arresting Gear

PA/SW(8)2 Mk29 w/8 RIM-7P//PS/PA/SA Mk95

PW/SA(21)2 Mk144 w/21 RIM-116 RAM

PA/SW(R)2 Mk15 Phalanx Blk IB (2@7.6A)

**Sensors:** ES: 3rd Gen

SPS-48E, SPS-49A(V)1, SPS-73, SPS-67(V)3, SPQ-9B

**Remarks:**

*Ronald Reagan* (CVN-76), *George W. Bush* (CVN-76). Dual flight deck. Kevlar armor, CHP armor rating is 2 for Hangar, Engineering, Sensors, CIC, 3 for Bridge. Fitted with Tomahawk planning cell.

• 2008+: Fitted with 3rd Gen T acoustic countermeasures.

• Jun 09 - Jan 10: *Bush* fitted with RIM-162 replacing RIM-7P.

• Jan 12 - Mar 13: *Reagan* fitted with PW/SW/PQ&SA(1)3 Mk38 Mod 2 25mm//4 EO GFC. Probably fitted with RIM-162 ESSM replacing RIM-7P.

• Feb - Nov 14: *Bush* deployment with prototype torpedo hardkill system with 10 CAT anti-torpedo torpedoes. Probably removed after deployment.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	416	833	1249	1499	1665
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Theodore Roosevelt**

**Displacement:** 81600 std  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** 3rd Gen J&D  
**Signature:** Large/Loud  
**Weapons:**

**In Class:** 5

**In Service:** 1986

**Crew:** 6286

**Acoustic Cnt:** 2nd Gen T

**Armor Rating:** 0/5/315

**Cbt Sys:** Gen 5 Automatic

CVN

D/Intl

D

J

J

CVN

D/Intl

C

J

CVN

4 Catapults (2 bow, 2 waist), 4 Elevators, Arresting Gear --  
 PW/PA/PQ&SQ/S(R)4 Mk15 Phalanx Blk I (4@7.6A) C  
 PA/SW/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7M/6 Mk95 D  
**Sensors:** ES: 3rd Gen  
 SPS-48C, SPS-49(V)5, SPS-64, SPS-67(V)2, SPS-73, Mk23 TASJ  
 Furuno 900 (use Furuno series) J/Japan

**Remarks:**

Dual flight deck. Kevlar armor, CHP armor rating is 2 for Hangar, Engineering, Sensors, CIC. *G. Washington* and later have improved topside protection (Add CHP armor rating 3 for Bridge).

**Theodore Roosevelt (CVN-71)**

- Completed with 2nd Gen J&D, 2nd Gen ES, Mk15 Phalanx Blk 0, AA rating 4@5.0A. Not fitted with acoustic countermeasures.
- 1987: Fitted with 2nd Gen towed acoustic countermeasures.
- 1990: Estimated RIM-7P replaced RIM-7M.
- 14 Oct 96: Collision with USS *Leyte Gulf*, minor damage to stern.
- Nov 95 - Mar 96: PA Phalanx removed, remaining Phalanx upgraded to Blk I some time in this period, AA rating 3@7.6A.
- Jul 97 - Jul 98: Fitted with 3rd Gen J&D, 3rd Gen ES.
- Mar - Nov 07: SA Mk29//2 Mk95 and PW Mk15 Phalanx replaced by PW/SA(21)2 Mk144 w/21 RIM-116A. AA rating 2@7.6A.
- Aug 09 - Aug 13: Fitted with Ship Self-Defense System, combat system Gen 6 Automatic. Mk23 TAS replaced by SPQ-9B, RIM-7 in remaining two Mk29 launchers replaced by RIM-162 ESSM, estimated 3rd Gen acoustic countermeasures.
- Mar - Nov 15: Prototype torpedo hardkill system fitted for deployment only with 8 CAT anti-torpedo torpedoes.

**Abraham Lincoln (CVN-72)**

- Completed with Sperry Raster vice Furuno 900 (use Furuno series), SPS-72 vice SPS-73.
- 1990: Estimated RIM-7P replaced RIM-7M.
- 5 Jun 95: Collision with USS *Sacramento*, minor damage.
- Nov 95 - Dec 96: SPS-48C replaced by SPS-48E.
- Feb - Jul 02: SPS-64 replaced by SPS-73.
- Aug 06 - Jun 07: SA Mk29//2 Mk95 and PW Mk15 Phalanx replaced by PW/SA(21)2 Mk144 w/21 RIM-116A. AA rating 3@7.6A.
- Mar 13 - May 17: RIM-7 in remaining two Mk29 launchers replaced by RIM-162 ESSM. F-35 capability added.

**George Washington (CVN-73)**

- Estimate completed with Mk29 carrying RIM-7P vice -7M.
- Jan - Dec 05: SA Mk29//2 Mk95 and PW Mk15 Phalanx replaced by PW/SA(21)2 Mk144 w/21 RIM-116A. AA rating 3@7.6A. PQ&SQ Mk15 Phalanx also removed. AA rating 2@7.6A. Mk23 TAS replaced by SPQ-9B.
- Aug 06 - Aug 07: Fitted with Ship Self-Defense System, combat system Gen 6 Automatic. SPS-48C by SPS-48E, SPS-49(V)5 by SPS-49A(V)1 Phalanx upgraded to Blk 1B, no change to rating.
- 22 May 08: Fire in auxiliary spaces, injured 37 crew, required 3 months' repair.
- 2010: Probably fitted with 3rd Gen acoustic countermeasures.
- Aug 17 - 2021: To be fitted with ESSM, Mk38 25mm, provision for MQ-25A, upgraded combat system, estimated 4th Gen acoustic countermeasures.

**John C. Stennis (CVN-74)**

- Probably completed with Mk29 carrying RIM-7P vice -7M, SPS-48E vice SPS-48C, Tomahawk planning cell.
- Jan - Nov 05: Fitted with Ship Self-Defense System, combat system Gen 6 Automatic. Mk23 TAS replaced by SPQ-9B. SA Mk29 NATO Sea Sparrow//2 Mk95 and PW Mk15 Phalanx replaced by PW/SA(21)2 Mk144 w/21 RIM-116A, AA rating 3@7.6A.
- Sep 07 - Mar 08: RIM-7 in remaining two Mk29 launchers replaced by RIM-162 ESSM.
- Feb - Aug 17: Refit with PQ&SQ Phalanx removed, AA rating 2@7.6A, 3rd Gen acoustic countermeasures probably fitted.

- 2015: Fitted with torpedo hardkill system with PQ&SQ(6)2 CAT anti-torpedo torpedoes.
- 2020 - 23: Refit planned.

Harry S. Truman (CVN-75)

- Completed with SLQ-34(V)4 4th Gen J&D, probably completed with Mk29 carrying RIM-7P vice -7M, SPS-48E vice SPS-48C, SPQ-9B vice Mk23, Tomahawk planning cell.
- Aug(?) 08 - Feb 09: SA Mk29 NATO Sea Sparrow//2 Mk95 and PW Mk15 Phalanx replaced by PW/SA(21)2 Mk144 w/21 RIM-116A, estimated 3rd Gen T acoustic countermeasures.
- Mar 11 - Summer 12: Phalanx upgraded to Blk IB.
- Aug 16 - Jul 17: PQ&SQ Phalanx removed, AA rating 2 @7.6A.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	401	803	1204	1445	1605
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Nimitz**

**Displacement:** 81600 std  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** 2nd Gen J&D  
**Signature:** Large/Loud  
**Weapons:** 4 Catapults (2 bow, 2 waist), 4 Elevators, Arresting Gear  
**SW/PA/SA(8)3 Mk25 BPDMS w/8 RIM-7H//6 Mk115**  
**Sensors:** SPS-43, SPS-48A, SPS-10F, SPS-59/LN-66  
**Remarks:** Dual flight deck.

**In Class:** 3  
**In Service:** 1975  
**Crew:** 5698  
**Acoustic Cnt:** 2nd Gen T  
**Armor Rating:** 0/5/315  
**Cbt Sys:** Gen 4 Semi-Automatic  
**ES:** 2nd Gen

**CVN**

Nimitz (CVN-68)

- Jun 83 - Sep 84: Mk25 BPDMS replaced by PW/PA/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7M//6 Mk95 and PW/SS/PQ&SQ(R)3 Mk15 Phalanx Blk 0 (3@5.0A), Kevlar armor, CHP armor rating for Hangar, Engineering, Sensors, CIC is 2. Sensors changed to SPS-64, SPS-67, SPS-48C, SPS-49(V)1, Mk23 TAS, Furuno 900 (use Furuno series).
- Feb 88: SPS-48 updated to SPS-48C.
- Aug 89 - Mar 90: Estimated RIM-7P replaced RIM-7M.
- Dec 93 - Jan 95: Fitted with 3rd Gen J&D, 3rd Gen ES, SPS-48E vice SPS-48C, SPS-49(V)5 vice SPS-49(V)1. Estimated Phalanx upgraded to Blk I (3@7.6A). Estimated Tomahawk Planning cell added.
- Jun 96 - Jan 97: Fitted with Advanced Combat System Direction, Gen 5 Automatic. Phalanx AA rating 3@7.6A.
- May 98 - Jun 01: SA Mk29//2 Mk95 and all Phalanx removed, PW/SW(21)2 Mk144 w/21 RIM-116 RAM added.
- Jan - Dec 02: Fitted with Gen 6 Automatic combat system. SPS-73 replaces SPS-64 and SPQ-9B replaces Mk23 TAS.
- 2008 - May 09: RIM-7 replaced by RIM-162 ESSM in remaining 2 Mk29 launchers, estimated 3rd Gen acoustic countermeasures fitted.
- Nov 10 - Mar 12: PW/PA(R)2 Mk15 Phalanx Blk IB (2@7.6A) added.
- Jan 15 - Oct 16: Refit with P/S(1)2 Mk38 25mm//2 EO GFC and torpedo hardkill system with PQ&SQ(6)1 CAT anti-torpedo torpedoes.

Dwight D Eisenhower (CVN-69)

- Oct 85 - Apr 87: Mk25 BPDMS replaced by PW/PA/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7M//6 Mk95 and PW/SS/PQ&SQ(R)3 Mk15 Phalanx Blk 0 (3@5.0A), Kevlar armor, CHP armor rating for Hangar, Engineering, Sensors, CIC is 2. Sensors changed to SPS-64, SPS-67, SPS-48C, SPS-49(V)5, Mk23 TAS, Furuno 900 (use Furuno series).
- Oct 90 - Jan 91: Estimated RIM-7P replaced RIM-7M.
- 1994: Fitted with prototype CEC datalink for testing and trials.
- 29 Feb 88: Collision with anchored Spanish coal ship, minor damage.
- Oct 88 - Mar 89: Collision damage repaired.
- Oct 90 - Jan 91: RIM-7P probably replaced RIM-7M.
- 1994: Fitted with prototype CEC datalink for testing and trials.
- Jul 95 - Jan 97: Fitted with 3rd Gen J&D, 3rd Gen ES, SPS-48E vice SPS-48C, SPS-49(V)5 vice SPS-49(V)2. Phalanx probably upgraded

- to Blk I (3@7.6A), Tomahawk planning cell added. Advanced Combat Direction System fitted, combat system Gen 6 Automatic.
- 1998: Fitted with PA/SA(3)2 Mk32 324mm TT w/3 Mk46 Mod 7 anti-torpedo torpedoes. Failed operational testing and removed in 2000.
- May 01 - Mar 05: SA Mk29//2 Mk95 and all Phalanx removed, PW/SW(21)2 Mk144 w/21 RIM-116 RAM added. Mk23 TAS replaced by SPQ-9B. Estimated SPS-64 replaced by SPS-73. Combat system Gen 5 Automatic.
- Sep 10 - Jun 11: RIM-7 replaced by RIM-162 ESSM in remaining 2 Mk29 launchers, estimated 3rd Gen acoustic countermeasures fitted.
- Sep 13 - May 15: SW/PA(R)2 Mk15 Phalanx Blk IB (2@7.6A) added.
- 2016: Fitted with torpedo hardkill system with PQ&SQ(6)2 CAT anti-torpedo torpedoes.

Carl Vinson (CVN-70)

- Completed with PW/S/PA/PQ&SQ(R)4 Mk15 Phalanx Blk 0 (4@5.0A) and PA/SW/SA(8)3 Mk29 Sea Sparrow w/8 RIM-7M//6 Mk95 vice Mk25 BPDMS.
- Aug - Dec 82: Fitted with SPS-49(V)1 vice SPS-43.
- Sep 90 - Apr 93: 3rd Gen J&D, 3rd Gen ES. Radars changed to SPS-64, SPS-67, SPS-48E, SPS-49(V)5, Mk23 TAS, Furuno 900 (Furuno series). Phalanx probably upgraded to Blk I (4@7.6A). Estimated RIM-7P replaced RIM-7M. Kevlar armor, CHP armor rating for Hangar, Engineering, Sensors, CIC is 2.
- Oct 94 - Feb 95: Tomahawk planning cell added.
- Nov 05 - Jul 09: Fitted with Gen 6 Automatic combat system. SA Mk29//2 Mk95 and all Phalanx removed, PW/SW(21)2 Mk144 w/21 RIM-116 RAM added. RIM-7 in remaining two Mk29 launchers replaced with RIM-162 ESSM. Mk23 TAS replaced by SPQ-9B. Estimated SPS-64 replaced by SPS-73, estimated 3rd Gen acoustic countermeasures fitted.
- Jul 12 - Feb 13: Fitted with SS(R)1 Mk15 Phalanx Blk 1 (7.6A)
- Jul 13: SPS-48E upgraded to SPS-48G.
- Aug 15 - Apr 16: Fitted with UAV control station, P/S(1)4 Mk38 Mod 2 25mm//4 EO GFC.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	401	803	1204	1445	1605
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Enterprise (1982)**

**Displacement:** 75700 std  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** 2nd Gen J&D  
**Signature:** Large/Loud  
**Weapons:** 4 Elevators, 4 Catapults (2 bow, 2 waist), Arresting Gear  
**PQ/PA/SS(R)3 Mk15 Phalanx Blk 0 (3@5.0A)**  
**PQ/SW(8)2 Mk29 NATO Sea Sparrow w/8 RIM-7M//6 Mk95**  
**Sensors:** SPS-48C, SPS-49(V)1, SPS-65  
**ES:** 2nd Gen  
**Remarks:** CVN-65. Configuration as of completion of Jan 79 - Feb 82 refit. Dual flight deck. Can launch 10 small/med helos at once. CHP armor rating for Flight deck, Hangar, Engineering, Sensors, CIC is 2.

**CVN**

- Oct 90 - Sep 94: Refitted. Tomahawk planning cell added. Phalanx upgraded to Blk I (3@7.6A). Mk23 TAS added, countermeasures and ES upgraded to 3rd Gen. Probably RIM-7M replaced by RIM-7P.
- Aug 04 - Oct 05: Refitted, PQ Phalanx removed, PA/SS mounts remain, 2@7.6A. PQ/SA(21)2 Mk144 w/21 RIM-116 RAM added, 3rd Gen acoustic countermeasures fitted.
- 2012: Decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	382	764	1145	1374	1527
<b>Surf Speed:</b>	33	25	17	8	0	Sinks



**Enterprise****Displacement:** 75700 std**Size Class:** A/Large**Propulsion:** Nuclear**Electrn Cnt:** None**Signature:** Large/Loud**Weapons:**

4 Elevators, 4 Catapults (2 bow, 2 waist), Arresting Gear --

**Sensors:**

SPS-32, SPS-33, SPS-10 J

**Remarks:**

Originally classified as CVAN. Five additional units planned but never built. Dual flight deck. Can launch 10 small/med helos at once. Completed without any armament. Space for PQ/SQ(2)2 Mk10 w/40 Terrier provided, never used. SPS-32/33 prone to frequent break-down, treat as third world maintenance availability.

- Sep 63 - Feb 64: NTDS, Gen 3 Semi-Automatic combat system, SPS-12 added.

- Oct 64 - Jul 65: Refueled.

- Jun - Sep 66: PQ/SQ(8)2 Mk25 BPDMS w/8 RIM-7E//4 Mk115, SPS-58 added.

- 14 Jan 69: Flight deck accident with Zuni rocket caused fires and explosions. 27 killed, 85 injured. Repaired Jan - 1 Mar 69.

- Oct 69 - Jan 71: Refitted, A(8)1 Mk25 BPDMS installed.

- Aug 73 - Jan 74: Fitted with RIM-7H, F-14A, S-3A.

- Apr - Nov 75: Fitted with SLQ-17, estimated 2nd Gen ES and 2nd gen Jammer.

- 1 Jul 76. Reclassified as a CVN.

- Jan 79 - Feb 82: Complex overhaul, revised configuration listed separately.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	382	764	1145	1374	1527
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**John F. Kennedy****Displacement:** 64700 std**Size Class:** A/Large**Propulsion:** Steam Turbine**Electrn Cnt:** 2nd Gen J&D**Signature:** Large/Loud**Weapons:**

4 Elevators, 4 Catapults (2 bow, 2 waist), Arresting Gear --

**Sensors:**

SPS-37A, SPS-43A, SPS-10F J

Furuno 900 (use Furuno series) J/Japan

**Remarks:**

CVA-67. Dual flight deck.

- Dec 68 - Feb 69: Fitted with SW/PA/SA(8)3 Mk25 BPDMS//6 Mk115, SPS-58 radar.

- 1 Dec 74: Reclassified as CV, modified to carry ASW aircraft Mar - Nov 74.

- Mar 79 - Jun 80: Refitted, radars changed to SPS-10, SPS-48C, SPS-49(V)1.

- Sep 84 - Sep 85: Mk29 NATO Sea Sparrow fitted vice Mk25 BPDMS, PW/PA/SA(R)3 Mk15 Phalanx Blk 0 (3@4.4A), Mk23 TAS replaced SPS-58. SPS-10 radar replaced by SPS-64, SPS-67. Combat system upgraded to 4th Gen Semi-Automatic.

- Feb-Apr 90: Phalanx upgraded to Blk I (3@7.6A), fitted with 3rd Gen ES, 3rd Gen J&D.

- 17 Feb 93: Returns from deployment. Nuclear weapons removed last USN carrier deployment of nuclear weapons.

- Sep 93 - Sep 95: Refitted - SPS-48 upgraded to SPS-48E.

- 1994 - 00: Designated as a Naval Reserve carrier. Made several deployments.

- 2000: Testbed for CEC, Advanced Combat Direction System, combat system Gen 6 Automatic.

- 13 Feb 06: Arresting gear no longer operational. Embarks helos only until decommed in 2007.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	344	688	1031	1238	1375
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**CVN****In Class:** 1**In Service:** 1961**Crew:** 5785**Acoustic Cnt:** 1st Gen T**Armor Rating:** 0/5/315**Cbt Sys:** Gen 2 Manual**ES:** 1st Gen**Kitty Hawk****Displacement:** 60100 std**Size Class:** A/Large**Propulsion:** Steam Turbine**Electrn Cnt:** 1st Gen J**Signature:** Large/Loud**Weapons:**

4 Catapults (2 bow, 2 waist), 4 Elevators, Arresting Gear --

**Sensors:**

SPS-37A, SPS-39, SPS-10F J

SPS-8 (*Kitty H., Constellation*), SPS-30, SPS-43A (*America*) J

Furuno 900 (use Furuno series) J/Japan

SQS-23 (*America* only) K**Remarks:**Dual flight deck. *Kitty Hawk* has Terrier BT, *Constellation* Terrier HT.*America* has SM1MR and NTDS, Gen 3 Semi-Automatic combatSystem. *America* displacement 60300 t std.**Kitty Hawk (CV-63)**

- Aug 64 - Apr 65: Fitted with NTDS, Gen 3 Semi-Automatic combat system.

- 1969: Terrier replaced by SM1ER.

- Jan-Apr 73: Fitted for F-14A, reclassified as CV. Radar fit changed to LN-66, SPS-10F, SPS-37A, SPS-39, SPS-43A.

- Mar 76 - Mar 77: Fitted for S-3A, Mk10/SM1ER//2 SPG-55 replaced by PA/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7H//6 Mk95, 2nd

- Gen ES. Radar fit changed to LN-66, SPS-10F, SPS-30, SPS-43A, SPS-48A, SPS-52, SPS-58.

- 1979 - 80: SPS-43A replaced by SPS-49(V)1.

- Jan 82 - Jan 83: Refit with SW(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7H//2 Mk95, PW/SW/SA(R)3 Mk15 Phalanx Blk 0 w/5 bursts (3@4.4A). 2nd Gen J&D, 2nd Gen ES. Radar fit changed to LN-66, SPS-10F, SPS-48C, SPS-49(V)5.

- Nov 87 - Jul 91: SLEP, Radar fit SPS-48E, SPS-49(V)5, SPS-64, SPS-67, Mk23 TAS, 3rd Gen ECM/ES, 2nd Gen T acoustic countermeasures, Gen 4 Semi-Automatic combat system. Can plan Tomahawk strikes on board. Probably fitted with additional SA(R) Mk15 Phalanx, all Phalanx upgraded to Blk I (4@7.6A).

- Feb-May 95: SPS-49 upgraded to SPS-49A(V)1.

- Jun-Sep 01: Fitted with PW/SW(2)12 Mk144 w/21 RAM. SW Mk29 NATO Sea Sparrow//4 Mk95 and PW/PA Mk15 Phalanx removed.

- Decommed May 09.

**Constellation (CV-64)**

- 1965?: Fitted with NTDS, Gen 3 Semi-Automatic combat system.

- 1969: Terrier replaced by SM1ER.

- 1970-71?: Refit. SPS-8B probably replaced by LN-66, SPS-43A radars.

- Feb 75 - Mar 76: Fitted for F-14A and S-3A, reclassified CV.

- 1979 - 80: SPS-49(V)1 fitted vice SPS-43A, PW/PA/SA(R)3 Mk15 Blk 0 Phalanx (3@4.4A) added.

- Jan 83 - Feb 84: Mk10//SPG-55 replaced by SW/PA/SA(8)3 Mk29 Sea Sparrow, PW/SA(S(R)3 Mk15 Phalanx Blk 0 (3@4.4A). Radar fit changed to LN-66, SPS-10F, SPS-48C, SPS-49(V)5. 2nd Gen J&D, 2nd Gen ES.

- Jul 90 - Mar 93: SLEP. Radar fit SPS-48E, SPS-49(V)5, SPS-64, SPS-67, Mk23 TAS, 3rd Gen ECM/ES, 2nd Gen T acoustic countermeasures. Combat system Gen 4 Semo-Automatic. Can plan Tomahawk strikes on board. Phalanx upgraded to Blk I (3@7.6A).

- Decommed Aug 03.

**America (CV-66)**

- 1969: Terrier replaced by SM1ER.

- Jan - Mar 71: SPS-39 replaced by SPS-52.

- Dec 74 - Sep 75: Fitted for F-14A and S-3A. Estimated SPS-52 replaced SPS-37A and LN-66 added.

- Nov 79 - Sep 80: Refitted. Mk10//SM1ER replaced with SW/PA/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7M//6 Mk95, PW/PQ/S(R)3 Mk15 Phalanx Blk 0 w/5 bursts (3@4.4A) (first USN ship so fitted), SPS-48A fitted. SQS-23 removed.

- Dec 81 - Apr 82: SPS-48 updated to SPS-48C, SPS-49(V)5 fitted. Estimated 2nd Gen ES, 2nd Gen J.
- Nov 86 - Feb 88: Refit. Probably received Gen 4 Semi-Automatic combat system, 3rd Gen ES, 3rd Gen J, 2nd Gen T ACM. Phalanx AA strength 3@5.0A. Radar fit Mk23 TAS, SPS-48E, SPS-49(V)5, SPS-64, SPS-67.
- 1990: Phalanx upgraded to Blk I (3@7.6A).
- Decommed Aug 96.

**Damage & Speed Breakdown:**

<b>DP (KH, C):</b>	0	327	655	982	1178	1309
<b>DP (Am):</b>	0	328	656	984	1181	1312
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Forrestal**

**Displacement:** 60000 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J&D  
**Signature:** Large/Loud  
**Weapons:** 4 Catapults (2 bow, 2 waist), 4 Elevators, Arresting Gear PW/SW/PA/SA(1)8 Mk42 5in/54/PS/SS 2 Mk68 (5.5)  
**Sensors:** SPS-8A, SPS-10, SPS-12 (Forrestal, Sara, Ranger) SPS-8B, SPS-10, SPS-37A (Independence) Furuno 900 (use Furuno series)

**In Class:** [4]  
**In Service:** 1955 - 98  
**Crew:** 5630  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0/5/315  
**Cbt Sys:** Gen 2 Manual  
**ES:** 1st Gen

**CVA**

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**C**  
**J/Japan**

**Remarks:**

Reclassified from CVB (large aircraft carrier) to CVA (attack aircraft carrier) during construction. Dual flight deck. Can launch 10 small/med helos at once. CHP armor rating for Hangar, Engineering, Sensors, CIC is 2.

Forrestal (CVA-59)

- Early 60s: SPS-8 replaced by SPS-30.
- Sep 61 - Jan 62: PW/SW(1)4 Mk42 5 inch guns removed (2.7) because of damage in heavy seas. SPS-12 replaced by SPS-43A.
- Apr 66 - Jan 67: NTDS added, Gen 3 Semi-Automatic combat system.
- 29 Jul 67: Fire on board. 134 killed, 161 injured. Repaired in Norfolk Sep 67 - Apr 68. PA/SA(1)4 Mk42 5 inch guns removed, fitted with SW(8)1 Mk25 BPDMS w/8 RIM-7F//2 Mk115, SPS-58.
- Jun 75: Modified to operate ASW aircraft, reclassified from CVA to CV, probably fitted with 2nd Gen T acoustic countermeasures.
- Oct 76 - Jun 77: Fitted with SA(8)1 Mk25 BPDMS, SPS-30 replaced by SPS-48C.
- Jan 83 - May 85: SLEP. Radar fit SPS-48C, SPS-49(V)1, SPS-64, SPS-67. ES, ECM, Acoustic countermeasures upgraded to 2nd Gen. Mk25 BPDMS replaced by P/SW(8)2 Mk29 NATO Sea Sparrow w/8 RIM-7H//4 Mk91. Fitted with PW/S/PA(R)3 Mk15 Phalanx Blk 0 w/5 bursts (3@4.4A)
- 1992: Disarmed and redesignated a training carrier (AVT-16).
- Decommed 1993.

Saratoga (CVA-60)

- Early 60s: PW/SW(1)4 Mk42 5 inch guns removed because of damage in heavy seas (2.7). SPS-8 replaced by SPS-30.
- Jun - Nov 64: NTDS added, Gen 3 Semi-Automatic combat system.
- 1971: Operates as dual attack/ASW carrier with 50 Mk46 torpedoes. 2500 sonobuoys. S-2E and SH-3D.
- Jun 72: Modified for ASW aircraft, reclassified from CVA to CV.
- 1974: Fitted with SW(8)2 Mk25 BPDMS//2 Mk115.
- Oct 76 - Jun 77: SPS-30 replaced by SPS-48A.
- Sep 80 - Feb 83: SLEP. Radar fit SPS-48C, SPS-49(V)1, SPS-64, SPS-67. ES, ECM, Acoustic countermeasures upgraded to 2nd Gen. Mk25 BPDMS replaced by P/SW(8)2 Mk29 NATO Sea Sparrow w/8 RIM-7H//4 Mk91. Fitted with PW/S/PA(R)3 Mk15 Phalanx Blk 0 w/5 bursts (3@4.4A).
- Decommed 1994.

Ranger (CVA-61)

- Aug 63 - Feb 64: PW/SW(1)4 Mk42 5 inch guns removed because of damage in heavy seas (2.7). SPS-8 replaced by SPS-30.
- Nov 73: Radars SPS-10, SPS-30, SPS-37A, PA/SA(1)4 Mk42 5in/54//2 PS/SS Mk68 on this date.
- Aug 63 - Feb 64: SPS-8 replaced by SPS-43.
- Oct 66 - May 67: NTDS added, Gen 3 Semi-Automatic cbt system.
- 1974: Remaining Mk42 guns removed, fitted with SW/P&PQ(8)2 Mk25 BPDMS w/8 RIM-7F//2 Mk115
- Jun 75: Modified to operate ASW aircraft, reclassified from CVA to CV, estimate fitted with 2nd Gen acoustic countermeasures.
- Feb 77 - Mar 78: Refit, Mk25 BPDMS replaced by P/SW/SA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7H//6 Mk91.
- May 84 - Jun 85: Refit. Mk23 TAS, PW/S/PA(R)3 Mk15 Phalanx Blk 0 (3@4.4A) added.
- 1990: Phalanx upgraded to Blk I. AA Rating 3@6.6A.
- Decommed 1993.

Independence (CVA-62)

- Early 60s: PW/SW(1)4 Mk42 5 inch guns removed because of damage in heavy seas (2.7).
- 1973: Remaining Mk42 guns removed, fitted with SW(8)1 Mk25 BPDMS w/8 RIM-7F//2 Mk115. Probably received Gen 4 Semi-Automatic combat system.
- Feb 73: Modified for ASW aircraft, reclassified from CVA to CV.
- 1977: Mk25 BPDMS replaced by PW/SA(8)2 Mk29 NATO Sea Sparrow w/8 RIM-7H//2 Mk91.
- Apr 85 - May 88: SLEP. Received PW/S/SA(R)3 Phalanx Blk 0 (3@5.0A). Mk25 BPDMS replaced with PW/SW/PA(8)3 Mk29 NATO Sea Sparrow w/8 RIM-7M//6 Mk91. Radar fit SPS-48C, SPS-49(V)5, SPS-64, SPS-67. ES, ECM, ACM upgraded to 2nd Gen.
- 1990: Phalanx upgraded to Blk I. AA Rating 3@7.6A.
- Decommed 1998.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	327	654	981	1177	1308
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**United States**

**Displacement:** 66434 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:** 4 Catapults, 4 Elevators, Arresting Gear PW/SW/PA/SA(1)8 Mk42 5in/54//4 Mk25 (5.5) 2F/PW/SW/PA/SA/2A(2)8 Mk33 3in/50//8 Mk25 (1.8)  
**Sensors:** SPS-6E, SPS-8, SPS-10  
**Air Group:** 12 AJ Savage, 45 F2H Banshee, 24 A3D Skywarrior

**In class:** --  
**In Service:** 1950s  
**Crew:** 4127  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0/5/315  
**Cbt Sys:** Gen 2 Manual  
**ES:** 1st Gen

**CV**

**Remarks:**

Never entered service due to Air Force rivalry with the B-36. Flush, straight deck.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	350	700	1049	1259	1399
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Coral Sea (1985)**

**Displacement:** 48000 lt  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 2nd Gen D  
**Signature:** Large/Loud  
**Weapons:** 3 Catapults, 3 Elevators, Arresting Gear PA/S&SQ(R)2 Mk15 Phalanx Blk 0 (4.4A)  
**Sensors:** SPS-65, SPS-48C, SPS-49(V)5, SPS-59/LN-66, SPS-67

**In Class:** 1  
**In Service:** 1985 - 90 (1947)  
**Crew:** 4731  
**Acoustic Cnt:** 2nd Gen T  
**Armor Rating:** 3/12/285  
**Cbt Sys:** Gen 4 Semi-Automatic  
**ES:** 1st Gen

**CV**

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**C**  
**J**

## The Essex-class Carriers

The 24 *Essex*-class carriers, commissioned between 1942 and 1946, had already been modified by the mid-1950s, and would be further modified before the last of them were decommissioned in the 1970s.

None were sunk in WW II, but *Franklin* (CV-13) and *Bunker Hill* (CV-17) were both heavily damaged by Kamikazes in 1944 and 1945. Although repaired, neither returned to active service during or after the war.

In October of 1952, the Navy changed their designations from CV to CVA for "Aircraft Carrier, Attack," and most were later redesignated "CVS," as dedicated antisubmarine carriers. Three were designated LPH for "Amphibious Helicopter Carrier." This radically changed the air groups they carried (see Annex R).

Starting in the late 40s, the class began a series of upgrades and refits designed by the Ship Characteristics Board (SCB). These were extensive changes that would allow them to operate jet aircraft. Most of the ships received either SCB-27A or SCB-27C in the early to mid-1950s, followed by SCB-125 shortly after.

**SCB-27A** was a major reconstruction, strengthening the flight deck and fitting more powerful H8 hydraulic catapults to allow them to operate the larger and heavier jet aircraft. In compensation, their armor belts were removed and blisters added. All four twin 5in/38s on the island were removed and the single 5 inch guns rearranged, as well as many smaller improvements to their aviation equipment. The last *Essex* class built, *Oriskany* (CV-34), was built to SCB-27A standard.

**SCB-27C** was similar, but used even more powerful C11 steam catapults, as well as the capability to store and handle nuclear weapons. On some ships, the centerline number three elevator was replaced with a starboard deck-edge elevator.

**SCB-125** converted the straight deck to an angled one, and included moving number three centerline elevator to the starboard deck edge on ships where it hadn't already been done, along with other improvements to the aviation facilities.

- **SCB-144** was added to many of the CVS ships in the early 1960s, fitting them with an SQS-23 sonar.

As of 1955, the class of 24 can be divided into several groups:

- *Franklin* and *Bunker Hill*, in reserve and never returned to service.
- **Essex (SCB-27A)**: (9 ships) With the exception of *Lake Champlain* (CVA-34), all were later refitted with angled decks.

Three ships had already received the conversion by the end of 1955. *Oriskany*, the last of the *Essex* class to be built, was completed in SCB-27A standard.

- **Essex (SCB-27C)**: (6 ships) These all received angled decks, three by the end of 1955. Many of these were later also retasked as CVS, and a few as LPH ships.

- **Essex (CVS)**: Six "straight deck" *Essex* class had already been redesignated as CVS by 1955, with a seventh, *Boxer*, following in 1956. These ships never received any of the SCB-series modifications, although *Antietam* (CVS-36) was fitted with an angled deck.

<i>Hull Number</i>	<i>Listed As</i>	<i>Name</i>	<i>In Service</i>	<i>SCB-27A</i>	<i>SCB-27C</i>	<i>SCB-125 /125A</i>	<i>SCB-144</i>	<i>Decomm</i>
CV-13	--	Franklin	Jan 44					Oct 64
CV-17	--	Bunker Hill	May 43					Nov 66
CVS-32	Essex CVS	Leyte	Aug 53					May 59
CVS-36	Essex CVS	Antietam <sup>1</sup>	Aug 53					May 63
CVS-37	Essex CVS	Princeton	Jan 54				FY 62	Jan 70
CVS-40	Essex CVS	Tarawa	Jan 55					May 60
CVS-45	Essex CVS	Valley Forge	Nov 53				FY 64	Jan 70
CVS-47	Essex CVS	Philippine Sea	Nov 55					Dec 58
CVA-21	Essex CVS	Boxer <sup>2</sup>	Apr 45				FY 63	Dec 60
CVA-10	Essex SCB-27A	Yorktown	Apr 43	2/51-1/53		7/54-10/55	FY 66	Jun 73
CVA-12	Essex SCB-27A	Hornet	Nov 43	6/51-10/53		8/55-8/56	FY 65	Jun 70
CVA-15	Essex SCB-27A	Randolph	Oct 44	6/51-7/53		3/55-2/56	FY 61	Feb 69
CVA-18	Essex SCB-27A	Wasp	Nov 43	9/48-9/51		7/54-12/55	FY 64	Jul 72
CVA-20	Essex SCB-27A	Bennington	Aug 44	10/50-11/52		7/54-4/55	FY 63	Jan 70
CVA-33	Essex SCB-27A	Kearsarge	Mar 46	1/50-3/52		1/56-1/57	FY 62	Feb 70
CVA-34	Essex SCB-27A	Oriskany <sup>3</sup>	Sep 50			9/57-5/59		May 76
CVA-39	Essex SCB-27A	Lake Champlain	Jun 45	8/50-9/52				May 66
CVA-9	Essex SCB-27A	Essex	Dec 42	9/48-2/51		3/55-3/56	FY 62	Jun 69
CVA-11	Essex SCB-27C	Intrepid	Aug 43		9/51-6/54	1/56-5/57		Mar 74
CVA-14	Essex SCB-27C	Ticonderoga	Sep 44		7/51-10/54	12/55-4/57		Sep 73
CVA-16	Essex SCB-27C	Lexington	Mar 43		7/52-9/55	7/52-9/55		Nov 91
CVA-19	Essex SCB-27C	Hancock	Apr 44		7/51-3/54	8/55-11/56		Jan 76
CVA-31	Essex SCB-27C	Bon Homme						
		Richard	Nov 44		7/52-11/55	7/52-11/55		Jul 71
CVA-38	Essex SCB-27C	Shangri-La	Sep 44		7/51-2/55	7/51-2/55		Jul 51

Notes:

1: Antietam converted to angled deck Sep - Dec 52

2: Boxer redesignated CVS-21 Feb 56.

3: Oriskany was completed to SCB-27A standard. Her SCB-125A conversion included SCB-27C features as well as the angled deck

**Remarks:**

Second unit of *Midway* class. Configuration as of Oct 82 - Feb 85 refit, received F/A-18 capability. Dual flight deck.

- 30 Apr 90: Decommissioned, scrapped 1993.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	306	611	917	1100	1222
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Midway (1982)**

**Displacement:** 47985 std  
**In Class:** 1  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 2nd Gen J&D  
**Signature:** Large/Loud  
**Weapons:** 2 Catapults, 3 Elevators, Arresting gear

PA/S&SQ(R)2 Mk15 Phalanx Blk 0 (4.4A)  
 SA/P&PQ(8)2 Mk25 BPDMS w/8 RIM-7//3 Mk115  
**Sensors:** LN-66, SPS-67(V)1, SPS-49(V)5, SPS-48C

**Remarks:**

- Configuration as of 1982 refit. Dual flight deck.
- Apr 86: Entered yard at Yokosuka to fit blisters, add F/A-18 capability. Radar suite changed to SPS-64, SPS-67(V)1, SPS-49(V)5. Blisters add approx 3000 tons to displacement, reduced speed by 1 knot. Developed severe roll problems, flight operations suspended in rough seas. Treat as Medium-sized on Safe Sea State table.
- Apr 88: US Navy says overhaul will not correct roll problem.
- 26 Apr 90: Decommissioned.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	253	506	758	910	1011
<b>Dam Pts ('86):</b>	0	263	526	789	947	1052
<b>Surf Speed:</b>	30	23	15	8	0	Sinks
<b>Surf Spd ('86):</b>	29	22	15	7	0	Sinks

**Coral Sea (1960)**

**Displacement:** 45100 std  
**In Class:** 1  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:** 3 Catapults, 3 Elevators, Arresting gear

PW/PA/SA(1)6 Mk39 5in/54//PS/SS 2 Mk12/22 (2.9)  
**Sensors:** SPS-12, SPS-8 radars

**Remarks:**

- Third unit of *Midway* class. Configuration as of Apr 57 - Jan 60 SCB-110A reconstruction with dual flight deck.
- 1962: PW/PA/SA(1)3 5 inch guns removed (1.5).
- 1979: C11 catapults replaced with C13.
- 1971: NTDS upgraded, combat system Gen 4 Semi-Automatic.
- 1985: Refitted, listed separately.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	270	541	811	973	1081
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

**Midway (SCB-110)**

**Displacement:** 44950 std  
**In Class:** 2  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Loud  
**Weapons:** 2 Catapults, 3 Elevators, Arresting gear

2PW/3SW/2PA/3SA(1)10 Mk39 5in/54 //2 Mk12/22 (*Midway*), Mk29 (*FDR*) (3.7)  
 3PW/1SW/1PA/4SA(2)9 Mk33 3in/50//2 Mk25 (2.3)

**Sensors:**

SPS-12, SPS-8

**Remarks:**

*Midway*, *Franklin D. Roosevelt*. Third unit *Coral Sea* listed separately. Six units ordered, three canceled. None ready for combat before the end of WW II. Configuration as of SCB-110 reconstruction. Dual flight deck. *Midway* Sep 55 - Sep 57, *FDR* May 54 - Apr 56.

- 1962: Six Mk39 5in/54 removed, leaving PW/SW/PA/SA (1.5). All 3in/50 removed, fitted with 1st Gen J and 1st Gen ES. *Midway* 1962, *FDR* Jun - Nov 63.
- Feb 66 - Jan 70: *Midway* rebuilt SCB-101.66. C11 catapults replaced with C13, flight deck area increased. Mk39 5 inch reduced to SW/PA/SA(1)3 (1.5). Displacement 47985 std, sensors SPS-10, SPS-30, SPS-37A, SPS-37C, Raytheon 1500B, SPS-58. NTDS addwvs, combat system Gen 3 Semi-Automatic.
- Jul 68 - May 69: *FDR* given limited refit, centerline elevator moved to deck edge.
- Jun 75: Class changed from CVA to CV.
- Late 70s: Last three 5 inch guns removed from *Midway*.
- Mar 77: *FDR* decommed.
- 1980: *Midway* radars changed to LN-66, SPS-67(V)1, SPS-49(V)5, SPS-48C.
- 1982: *Midway* refitted, listed separately.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	242	484	726	871	968
<b>DP (SCB-101)</b>	0	253	506	758	910	1011
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

**Essex (SCB-27C)**

**Displacement:** 33793 std  
**In class:** 6  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:** 2 Catapults, 3 Elevators, Arresting Gear

PW/SW/PA/SA(1)8 Mk30 5in/38//2 Mk25 (3.9)  
 PW/SW/PA/SA(2)12 Mk33 3in/50//2 Mk25 (5.2)  
**Sensors:** SPS-6, SPS-8, SPS-10, SPS-37

**Remarks:**

- Intrepid*, *Ticonderoga*, *Lexington*, *Hancock*, *Bon Homme Richard*, *Shangri-La*.
- 1955-57: All fitted with dual flight deck
- Redesignated CVS: *Intrepid* Mar 62, *Ticonderoga* Oct 69, *Lexington* Oct 62, *Shangri-La* Jun 59.
- Jan 69: *Lexington* designated a training carrier (CVT-9, then AVT-9)
- 1970s: *Intrepid*, *Bon Homme Richard*, *Shangri-La* had SPS-37 replaced by SPS-43A.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	223	446	669	803	892
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Essex (SCB-27A)**

**Displacement:** 32652 std  
**In class:** [9]  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:** 2 Catapults, 3 Elevators, Arresting Gear

PW/SW/PA/SA(1)8 Mk30 5in/38//2 Mk25 (3.9)  
 3PW/3SW/4PA/4SA(2)14 Mk33 3in/50//2 Mk25 (6.1)  
**Sensors:** SPS-6, SPS-8, SPS-10, SPS-37

**Remarks:**

- Yorktown*, *Hornet*, *Randolph*, *Wasp*, *Bennington*, *Kearsarge*, *Oriskany*, *Lake Champlain*. Straight flight deck.
- 1953-59: All except *Lake Champlain* fitted with angled deck (SCB-125/125A).

- All except *Oriskany* redesignated CVS: *Yorktown* Jan 57, *Hornet* Jun 58, *Randolph* Mar 59, *Wasp* Nov 56, *Bennington* Jun 59, *Kearsarge* Oct 58, *Lake Champlain* Aug 57.
- Mar - Aug 61: *Oriskany* fitted with NTDS (Gen 3 Semi-Automatic combat system).
- 1961 - 65: All except *Oriskany* and *Lake Champlain* fitted with SQS-23 (SCB-144).
- 26 Oct 66: Fire on board *Oriskany* killed 44, injured 156, repaired until 1967.
- 1967: *Wasp* fitted with ASWSC&SC (Gen 3 Semi-Automatic combat system).
- 1970s: *Bennington*, *Hornet*, *Oriskany* had SPS-37 replaced by SPS-43A.
- Jun 75: *Oriskany* redesignated CV-34.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	218	436	653	784	871
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Essex (CVS)**

**Displacement:** 26688 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:** 2 Catapults, 3 Elevators, Arresting Gear  
 F/A(2)4 Mk32 5in/38, PW/PQ&P (1)4 Mk24 5in/38  
 //F/A 2 Mk4 (11.8 port, 7.8 starboard)

**CVS**

**In class:** [7]  
**In Service:** 1953 (1944) - 70  
**Crew:** 2333 + 1115  
**Acoustic Cnt:** None  
**Armor Rating:** 9/6/180  
**Cbt Sys:** Gen 1 Manual

**Sensors:** SPS-6, SPS-8, SPS-10, SPS-37

**Remarks:**

- Leyte, Antietam, Princeton, Tarawa, Valley Forge, Philippine Sea, Boxer.* Late-build Essex class redesignated as CVS 1953-55. GFCS includes 4 Mk56. Straight flight deck.
- Sep - Dec 52: *Antietam* converted to angled deck.
  - SCB-144: Fitted with SQS-23 sonar. *Princeton* FY 62, *Valley Forge* FY 64.
  - Redesignated LPH: *Boxer* (LPH-4) Jan 59, *Princeton* (LPH-5) May 59, *Valley Forge* (LPH-8) Jul 61.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	191	381	572	686	762
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Medium Carrier**

**Displacement:** 59749 fl  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 2nd Gen J&D  
**Signature:** Large/Noisy  
**Weapons:** 2 Catapults, 2 Elevators, Arresting Gear  
 PW/PA/SA(R)3 Mk15 Phalanx Blk 0 (3@4.4A)

**CVV**

**In Class:** --  
**In Service:** 1979  
**Crew:** 4024  
**Acoustic Cnt:** 2nd Gen T  
**Armor Rating:** 0/5/285  
**Cbt Sys:** Gen 3 Semi-Automatic

**Air Group:**

24 F/A-18, 10 S-3A, 4 EA-6B, 4 E-2C, 8 SH-3G  
**Sensors:** SPS-48A, SPS-49(V)1, SPS-64

**Remarks:**

Proposed class of medium carrier for canceled new-generation V/STOL aircraft. Dual flight deck. Cannot use second catapult if landing aircraft in the same turn. Recommended names USS *Gary Hart*, USS *William Proxmire*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	293	585	878	1053	1170
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Saipan**

**Displacement:** 14500 std  
**Size Class:** B/Medium  
**Propulsion:** Steam turbine  
**Signature:** Med/Noisy

**CVL**

**In Class:** 2  
**In Service:** 1946  
**Crew:** 1821  
**Armor Rating:** 9./

**Weapons:**

2 Catapults, 2 Elevators, Arresting gear  
 2PB&SB/2PQ&SQ/S(4)5 Mk1 40mm,  
 6P/4S(2)10 Mk2 40mm/6 Mk28//? (8.8)  
 P/S(2)16 20mm (2.0L)

**Sensors:**

SK-2, SP radar (both), SR-2 (SR series) radar (*Wright*)

**Remarks:**

- Saipan, Wright.* Independence-class CVLs completed postwar. Straight flight deck.
- By 1950 both removed SK-2, *Wright* receiving SC-2 and SPS-6 and *Saipan* SPS-6.
  - Mar 56 - Mar 62: *Wright* Inactive with Pacific Reserve Fleet.
  - Oct 56: *Saipan* had 20mm removed, foremost funnel deleted. Radar fit SPS-4, SPS-6B, SPS-8, SR, and HF/DF.
  - May 59: *Saipan* reclassified AVT-6.
  - Mar 62 - Aug 63: *Wright* converted to command ship, reclassified CC-2. Fitted with PW/SW/PA/SA(2)8 Mk2 40mm/60//? (3.5).
  - Mar 63 - Aug 66: *Saipan* converted to communications relay ship, renamed *Arlington* (AGMR-2). 40mm and 20mm replaced by PW/SW(2)2 Mk33 3in/50, AA rating 0.3L.
  - Decomm: *Arlington* Jan 70, *Wright* May 70.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	127	254	380	456	507
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Ohio**

**Displacement:** 18750 subm  
**Size Class:** A/Large  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Med/EQuiet  
**Max Depth:** Int V  
**Weapons:** (24)1 Trident C4 or Trident II D5

**SSBN**

**In Class:** 18 - 4  
**In Service:** 1981  
**Crew:** 157  
**Acoustic Cnt:** 3rd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** Gen 4 Semi-Automatic

PB&SB(2)2 Mk68 (Quiet launch) 533mm TT  
 w/12 weapons, est. loadout 9 Mk48 Mod 4, 6 MOSS  
 2nd Gen mobile decoy. Two TT fitted with quiet-launch catapults for MOSS, 2 TT for Mk48

**Sensors:** BQQ-6, BQS-13, TB-16), BQS-15 mine detection  
 BPS-15 (726-740) or BPS-16 (741-743), Raytheon Pathfinder

**Remarks:**

- SSBN 726-743. Natural circulation reactor. Fitted with anechoic coating. Endurance 70 days. Type 15 periscope has 2nd Gen ES. SSBN 626 - 739 has CSA Mk 1 with 8 external CM launchers. Broadband sonar jammers, 5 Tactical Turn duration. 740 - 743 has CSA Mk 2 Mod 0 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMS, 5 Tactical Turn duration. Alert 15 to launch missiles, then 4 msls/minute from periscope depth only in stationary hover.
- 726-733: Trident I with 8 (1981-2000) or 6 (2001 on) warheads (START I). Based in Bangor, WA (Pacific). 726 *Ohio* (Nov 81-02), 727 *Michigan* (Sep 82-03?), 728 *Florida* (Jun 83-03?), 729 *Georgia* (Feb 84-03?), 730 *Henry M. Jackson* (Oct 84), 731 *Alabama* (May 85), 732 *Alaska* (Jan 86), 733 *Nevada* (Aug 86).
  - 734-743: Trident II with W88 (734-737) or W76 (738-743) warheads. Based at King Bay, GA (Atlantic). 734 *Tennessee* (Dec 88, first patrol Mar 90), 735 *Pennsylvania* (Sep 89), 736 *West Virginia* (Oct 90), 737 *Kentucky* (Jul 91), 738 *Maryland* (Jun 92), 739 *Nebraska* (Jul 93), 740 *Rhode Island* (Jul 94), 741 *Maine* (Aug 95), 742 *Wyoming* (Aug 96), 743 *Louisiana* (Aug 97).
  - 1989?-93: Fitted with Gen 5 Automatic combat system with BQQ-5E (passive only) vice BQQ-6, TB-16D, and BQR-15 (SPALT 9080) vice BQR-15.
  - Late 90s: Fitted with WLY-1 (4th Gen AIR) and 4th Gen acoustic countermeasures. Updated with CSA Mk2 Mod 4 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMS, 5 Tactical Turn duration. TB-23 replaces BQR-15 (SPALT 9080).
  - 1997: All fitted with BPS-16 radar by this date.
  - 1998: SSBN 732 in service with 16 vice 8 large acoustic decoys.
  - 2000-08: Remaining Trident I boats fitted with Trident II - 732 (00-02;

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first Pacific with Trident II); 733 (03-04); 730 (05-06/07); 731 (07-08)

- 2002-05: 735, 737, 739, 741, 743 move from Atlantic to Pacific.
- 2005-12: Fitted with CCS Mk2 Blk I fire control (Gen 6 Automatic fire control system) with BQQ-10(V)6 (passive only) vice BQQ-5E (passive only), ADCAP torpedo. All deploying units fitted by Oct 2010.
- 2015: To be fitted with Trident D5A (MLU) - 300 planned (10 ship fits)
- Dec 19 - Jan 20: *Tennessee* deploys with one or two SLBM with 5-7 kT W76-2 warheads, remainder carry either 90 kT W76-1 or 455 kt W88.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	75	151	226	271	301
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	25	19	12	6	0	Sinks

**Lafayette****Displacement:** 8250 subm**Size Class:** B/Medium**Propulsion:** Nuclear**Electrn Cnt:** None**Signature:** Small/Quiet**Max Depth:** Deep I**Weapons:**

(16)1 Polaris A2

PB&SB(2)2 Mk65 533mm TT w/12 weapons, est. loadout  
 2 Mk37 Mod 0, 8 Mk37 Mod 2, 2 Mk45 ASTOR (1963-76);  
 12 Mk48 Mod 1 (1976).

**Sensors:**

BQS-4, BQR-7, BQR-2B

BPS-11 or BPS-15, Raytheon Pathfinder

**Remarks:**

Alert 15 to launch missiles, then launch rate 4 SLBM/minute from periscope depth only in stationary hover. SSBN 626 has bow planes for evaluation. Type 15 periscope has 1st Gen ES.

- *Lafayette* series with Polaris A2. 616 *Lafayette* (63-91), 617 *Alexander Hamilton* (63-93), 619 *Andrew Jackson* (63-89), 620 *John Adams* (64-88), 622 *James Monroe* (63-90), 623 *Nathan Hale* (63-86), 624 *Woodrow Wilson* (63-93), 625 *Henry Clay* (64-90), 626 *Daniel Webster* (64-90) has A3.

- *James Madison* series with Polaris A3. 627 *James Madison* (64-91), 628 *Tecumseh* (64-93), 629 *Daniel Boone* (64-93), 630 *John C Calhoun* (64-93), 631 *Ulysses S. Grant* (64-92), 632 *Von Steuben* (64-93), 633 *Casimir Pulaski* (64-93), 634 *Stonewall Jackson* (64-94), 635 *Sam Rayburn* (64-85), 636 *Nathaniel Greene* (64-86).

- *Benjamin Franklin* series with Polaris A3, Signature Med/Quiet, have additional one Mk37 Mod 2/Mk48 Mod 1. 640 *Benjamin Franklin* (65-93), 641 *Simon Bolivar* (65-94), 642 *Kamehameha* (65-02), 643 *George Bancroft* (66-93), 644 *Lewis and Clarke* (65-91), 645 *James K Polk* (66-99), 654 *George C Marshall* (66-92), 655 *Henry L. Stimson* (66-92), 656 *George Washington Carver* (66-92), 657 *Francis Scott Key* (66-93), 658 *Mariano G Vallejo* (66-95), 659 *Will Rodgers* (67-92)

- Mar 71: First Poseidon C3 patrol by *James Madison*.

- 1969-76: All fitted with Poseidon C3.

- 1974-78: Fitted with BQR-15 towed array and BQR-19.

- 1975: Fitted with CSA Mk 1 with 8 external CM launchers;

Broadband sonar jammers, 5 Tactical Turn duration.

- 1977-82: BQR-2B replaced with BQR-21. 3rd Gen acoustic countermeasures added.

- 1978-83: *Benjamin Franklin* series fitted with Trident C4. First patrol Oct 79 (SSBN 657).

- 1979: Fitted with MOSS 3rd Gen mobile decoy. One torpedo tube is fitted with MOSS quiet launch catapult. 6 MOSS carried vice 3 Mk48 torpedoes.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	44	87	131	157	174
<b>Surf Speed:</b>	16	12	8	4	0	Sinks
<b>Subm Speed:</b>	21	16	11	5	0	Sinks

**Ethan Allen****Displacement:** 7884 subm**Size Class:** B/Medium**In Class:** [5]**In Service:** 1961 - 85**SSBN****Propulsion:** Nuclear**Electrn Cnt:** None**Signature:** Small/Quiet**Max Depth:** Deep I**Weapons:**

(16)1 Polaris A2

PB/SB(2)2 Mk65 533mm TT w/12 weapons, est. loadout

6 Mk37 Mod 0/1, 6 Mk146 (1961-66); 6 Mk37 Mod 2,  
 4 Mk16, 2 Mk45 ASTOR (1967-76)

**Sensors:**

BQS-4, BQR-7, BQR-2B

BPS-9

**Crew:** 110**Acoustic Cnt:** 2nd Gen**Armor Rating:** 0**Btry Rtnng:** 5 (Emerg.)**Cbt Sys:** Gen 2 Manual**ES/AIR:** 1st/2nd Gen**Remarks:**

Alert 15 to launch missiles, then launch rate of 1 SLBM/minute from periscope depth only in stationary hover. Type 15 periscope has 1st Gen ES.

- SSBN 608 *Ethan Allen* (61-83), 609 *Sam Houston* (62-91), 610 *Thomas A Edison* (62-92), 611 *James Marshall* (62-91), 618 *Thomas Jefferson* (63-85).

- Patrols include Mediterranean (Apr 63 on), Pacific (Dec 63 on) with Polaris A2 (Jun 62-74), Polaris A3 (Sep 64 on).

- 1967: *Ethan Allen* fitted with Mk45 ASTOR. Others probably fitted around this time.

- 1974: *James Marshall* trials platform for BQR-21.

- 1977-80: BQR-2B replaced with BQR-21 and BQR-15 towed array and BQR-19 added. Mk 48 Mod 1 torpedoes available.

- 1979: Fitted with MOSS. One torpedo tube is fitted with MOSS quiet launch catapult. 6 MOSS carried vice 3 Mk37 torpedoes.

- 1980-81: Lacked room for Poseidon, so redesignated SSN after final SSBN patrols.

- Sep 82 - Sep 85: *Sam Houston* (struck 1991) and *John Marshall* (struck 1992) converted to SSN as troop transports with two external Dry Dock Shelters (DDS), 67 troops - see separate entry. Limited to one DDS until May 88 (not enough DDS).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	42	85	127	152	169
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	20	15	10	5	0	Sinks

**George Washington****Displacement:** 6709 subm**Size Class:** B/Medium**Propulsion:** Nuclear**Electrn Cnt:** None**Signature:** Small/Noisy**Max Depth:** Int III**Weapons:**

(16)1 Polaris A1

PB/SB(3)2 Mk59 533mm TT w/12 weapons, est. loadout

6 Mk37 Mod 0/1, 6 Mk16 (1959-66); 6 Mk37 Mod 2,  
 4 Mk16, 2 Mk45 ASTOR (1967-76)

**Sensors:**

BQS-4, BQR-2B, BQR-7

BPS-11

**SSBN****In class:** [5]**In Service:** 1959 - 85**Crew:** 112**Acoustic Cnt:** 1st Gen**Armor Rating:** 0**Btry Rtnng:** 5 (Emerg.)**Cbt Sys:** Gen 2 Manual**ES/AIR:** 1st/1st Gen**Remarks:**

Alert 15 to launch missiles, then launch rate of 1 SLBM/minute from periscope depth only in stationary hover. Never fitted for SUBROC. Type 8 periscope has ST range only radar.

- SSBN 598 *George Washington* (59-85), 599 *Patrick Henry* (60-84), 600 *Theodore Roosevelt* (61-78), 601 *Robert E. Lee* (60-83), 602 *Abraham Lincoln* (61-78).

- Nov 60: First patrol - Norwegian Sea & Arctic. Forward deployed from Holy Loch, Scotland.

- Apr 63: First patrols in Mediterranean Sea.

- 1966-67: Fitted with Polaris A3.

- 1977-1980: BQR-2B replaced with BQR-21, BQR-19 and STASS clip-on towed array added. 2nd Gen acoustic countermeasures added. Mk 48 Mod 1 torpedoes available.

- 1980-81: Remainder of class converted to SSN. Not successful - limited sonar, weapons, slow speed and high noise.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	38	76	114	137	152
<b>Surf Speed:</b>	16	12	8	4	0	Sinks
<b>Subm Speed:</b>	22	17	11	6	0	Sinks

**Ohio SSGN**

**Displacement:** 18750 subm  
**In Class:** 4  
**Size Class:** A/Large  
**In Service:** 2007  
**Propulsion:** Nuclear  
**Crew:** 157  
**Electrn Cnt:** None  
**Acoustic Cnt:** 4th Gen  
**Signature:** Med/EQuiet  
**Armor Rating:** 0  
**Max Depth:** Int V  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
**Cbt Sys:** Gen 6 Automatic  
 PB&SB(2)2 Mk68 (Quiet launch) 533mm TT w/12 weapons,  
 est. loadout 1 MOSS launcher w/4 MOSS 3rd gen mobile  
 decoy, 11 Mk48 ADCAP. Cannot fire TACTOM from TT  
 (22)1 tubes w/see remarks

**Sensors:** ES/AIR: 4th/4th Gen

BQQ-5E (passive only), BQR-7, TB-16D, TB-23

BPS-15, Raytheon Pathfinder

**Remarks:**

SSGN 726 *Ohio*, SSGN 727 *Michigan*, SSGN 728 *Florida*, SSGN 729 *Georgia*. Natural circulation reactor. Fitted with CSA Mk2 Mod 4 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Can plan SOF and Tomahawk strikes. Can carry 66 SEALs for long durations plus further 36 SEALs for short durations. Type 15L periscope replaced with AN/BVS-1 non-penetrating periscope with optical, IR (4th Gen), laser rf and ES (3rd Gen), GPS capability.

- 2 tubes converted to 9-swimmer lockout chambers and docks for ASDS and DDS docks - 6 tubes unusable with ASDS carried or 8 tubes unusable with DDS carried. Further 8 tubes can ship either UUV or SOF equipment (2 weapons, 4 dry, 2 wet) or 7 Tomahawk each. Last 14 tubes can carry 7 Tomahawk each. See below for loadouts - estimate 70% Blk IIIC, 30% Blk IIID.
- Pure strike: 140 Tomahawk.
- SOF (ASDS): 1 ASDS, 98 Tomahawk (one would be this standard).
- SOF (DDS): 2 DDS or 1 DDS and 1 ASDS, 56 Tomahawk (estimate two DDS is standard).
- 2006-08: Returned to service - *Ohio* (2002-Feb 06), *Florida* (Aug 03-Apr 06), *Michigan* (Mar 04-Oct 06), *Georgia* (Mar 05-Sep 07). Have two crews for 70% in-theater presence.
- Sep 07: *Ohio* declared fully operational. Remainder declared operational in late 2007.
- 2011-12: BQQ-5E replaced by BQQ-10(V)6.
- Aug 19 - 2020: *Michigan* begins 17-month overhaul.
- Apr 17 - Aug 19: *Ohio* completes 27-month overhaul.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	75	151	226	271	301
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	25	19	12	6	0	Sinks

**Halibut**

**Displacement:** 4895 subm  
**In class:** [1]  
**Size Class:** C/Small  
**In Service:** 1960 - 76  
**Propulsion:** Nuclear  
**Crew:** 111  
**Electrn Cnt:** None  
**Acoustic Cnt:** 1st Gen  
**Signature:** VSmall/Noisy  
**Armor Rating:** 0  
**Max Depth:** Int III  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 PB&SB(2)2 Mk61 533mm TT w/8 4 Mk37 Mod 0 or  
 2 Mk37 Mod 2 and 6 Mk16  
 PQ&SQ(1)2 Mk62 533mm TT w/4 4 Mk37 Mod 0/Mod 2  
 F(1)5 RGM-6A Regulus I

**Sensors:** ES/AIR: 1st/1st Gen

BQS-4, BQR-2/2B

BPS-12

**Remarks:**

Can carry five RGM-6A Regulus I or two RGM-15A Regulus II. Must surface to fire Regulus, two Tactical Turns to prepare for launch, can provide guidance from periscope depth. Type 8 periscope has ST

**SSGN**

range only radar.

- Feb 65-66: Refit - Regulus removed. Fitted with bow thrusters and towed sonar/camera pod for sea bed recon (~6080 m) - real time sonar feed, records cameras images. Reclassified as SSN.
- 1970: Fitted with external diver decompression chamber to operate saturation divers. Used to tap underwater communications cables. Can anchor above sea bed.
- 1974: Fitted to bottom.
- 1977-1980: BQR-2B replaced with BQR-21. 2nd Gen acoustic countermeasures added. Mk 48 Mod 1 torpedoes available.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	31	62	92	111	123
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	16	12	8	4	0	Sinks

**Virginia (ii)**

**Displacement:** 7800 subm  
**In Class:** 19 + 9 + 10  
**Size Class:** B/Medium  
**In Service:** 2007  
**Propulsion:** Nuclear  
**Crew:** 132  
**Electrn Cnt:** None  
**Acoustic Cnt:** 4th Gen  
**Signature:** Small/EQuiet  
**Armor Rating:** 0  
**Max Depth:** Int V  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
**Cbt Sys:** Gen 6 Automatic  
 PB&SB(2)2 533mm (Quiet launch) TT w/26 weapons,  
 est. loadout 14 Mk48, 12 Tomahawk

PB&SB(12)1 VLS w/12 Tomahawk (Blocks I/II) **D, F**

PB&SB(6)2 VPT w/12 Tomahawk total (Blocks III/IV) **D**

**Sensors:** ES/AIR: 3rd/5th Gen

BQQ-10, TB-29A, TB-16G, BQG-5A WAA, BQS-24 mine detec. **K**

BPS-16 **J**

**Remarks:**

- Fitted with pumpjet and anechoic coating. Fitted with two AN/BVS-1 non-penetrating periscopes with optical, IR (4th Gen), laser rf and ES (3rd Gen), GPS capability. Blocks I and II have the CSA Mk2 Mod2 with 14 external CM launchers. Blocks III and IV have CSA Mk4 with 16 external launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Blocks III/IV have two multipurpose Virginia Payload Tubes (VPT) vice individual VLS. Each tube can hold six Tomahawk missiles or a large UUV. Fitted with a 9-man lockout chamber. Can carry 40 SOF troops with no reload torpedoes or 27 SOF with 8 reload torpedoes. Not currently fitted for mines.
- Nov 05: *Virginia* operational mission prior to post-shakedown availability, IOC 2007 (first operational patrol), FOC 2009.
- Block I, SSN 774-777: 774 *Virginia*, 775 *Texas*, 776 *Hawaii*, 777 *North Carolina*.
- Block II, SSN 778-783: 778 *New Hampshire*, 779 *New Mexico*, 780 *Missouri*, 781 *California*, 782 *Mississippi*, 783 *Minnesota*.
- Block III, SSN 784 - 791: 784 *North Dakota*, 785 *John Warner*, 786 *Illinois*, 787 *Washington*, 788 *Colorado*, 789 *Indiana*, 790 *South Dakota*, 791 *Delaware*.
- Block IV, SSN 792-801: 792 *Vermont*
- 2014: SSN 776, 782, 784 and 779 fitted for DDS. SSN 778 fitted 2018.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	242	84	126	151	168
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	34	26	17	9	0	Sinks

**Seawolf (ii)**

**Displacement:** 9150 subm  
**In Class:** 3  
**Size Class:** B/Medium  
**In Service:** 1997  
**Propulsion:** Nuclear  
**Crew:** 131  
**Electrn Cnt:** None  
**Acoustic Cnt:** 4th Gen  
**Signature:** Small/EQuiet  
**Armor Rating:** 0  
**Max Depth:** Deep I  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
**Cbt Sys:** Gen 5 Automatic  
 PB&SB(4)2 Mk60 (Quiet launch) 670mm TT w/50 weapons,  
 est. loadout 38 Mk48 Mod 6, 12 Tomahawk Blk III

**Sensors:** ES/AIR: 4th/4th Gen

BSY-2, BQG-5, TB-16D, TB-29A towed arrays **K**

BPS-16 **J**

**Remarks:**

*Seawolf, Connecticut, Jimmy Carter.* Fitted with pumpjet and anechoic coating. Fitted with CSA Mk2 Mod0 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Type 18 periscope has ES 2nd Gen.

- 1997-00: *Seawolf* not operational due to problems with HP air system, propulsor and sonar. First operational patrol Jun 01 - Tomahawk Blk III fitted mid-deployment.
- 1998-00: *Connecticut* not operational. Brief patrol mid-2001.
- 2004-07: BQS-24 mine detection sonar added.
- Feb 05: *Jimmy Carter* in service. 12140 t subm, crew 151. Can hover and turn in own length using propulsors. Fitted for 50 SOF troops, DDS and ASDS, max subm speed 30 kts.
- 2007: *Seawolf* and *Connecticut* move from Atlantic to Pacific Fleet. Add the following remarks:
- 2010-13: *Seawolf* undergoes overhaul. BQQ-10(V)5 replaces BSY-2. TB-34 and TB-29C added. 5th Gen AIR. BYG-1 6th Gen Automatic combat system also fitted. CSA Mk2 Mod 0 replaced with CSA Mk3 with 16 external launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Type 18 periscope updated with IR (3rd Gen), ES (3rd Gen), and GPS. Type 8 periscope backfitted with IR (3rd Gen).
- 2012-16: *Connecticut* undergoes overhaul. BQQ-10(V)5 replaces BSY-2. TB-34 and TB-29C added. 5th Gen AIR. BYG-1 6th Gen Automatic combat system also fitted. CSA Mk2 Mod 0 replaced with CSA Mk3 with 16 external launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Type 18 periscope updated with IR (3rd Gen), ES (3rd Gen), and GPS. Type 8 periscope backfitted with IR (3rd Gen).
- 2017: *Jimmy Carter* fitted with Mission Reconfigurable Unmanned Undersea Vehicle (MRUUV).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	47	93	140	167	186
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Sub Sp (S, C):</b>	38	29	19	10	0	Sinks
<b>Sub Sp (JC):</b>	30	23	15	8	0	Sinks

**Ethan Allen**

**Displacement:** 7884 subm  
**Size Class:** B/Medium  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Small/Quiet  
**Max Depth:** Deep I  
**Weapons:**  
 PB/SB(2)2 Mk65 533mm TT w/12 Mk48 Mod 1  
**Sensors:**  
 BQS-4, BQR-7, BQR-15, BQR-19, BQR-21  
 BPS-9

**SSN**

**In Class:** [2]  
**In Service:** 1984 - 92  
**Crew:** 124 +67  
**Acoustic Cnt:** 3rd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** Gen 2 Manual

**F**

**K**

**J**

**Remarks:**

Converted SSBNs. Type 15 periscope has an ES sensor (1st Gen).  
 • Sep 82 - Sep 85: *Sam Houston* and *John Marshall* converted from SSBN to troop transports with two external Dry Dock Shelters (DDS). Some missile tubes removed to make room for berthing, airlocks, stowage. Can carry 67 SEALs.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	42	85	127	152	169
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	20	15	10	5	0	Sinks

**Improved Los Angeles**

**Displacement:** see remarks  
**Size Class:** B/Medium  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Small/VQuiet  
**Max Depth:** Int V  
**Weapons:**  
 PB&SB(2)2 Mk67 533mm TT w/26 weapons, est. loadout  
 12 Mk48 ADCAP, 6 Harpoon, 8 Tomahawk Blk I/II (1988-97)  
 18 Mk48 ADCAP, 8 Tomahawk Blk III (1997)

**SSN**

**In Class:** 23 - 1  
**In Service:** 1988  
**Crew:** 141  
**Acoustic Cnt:** 3rd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** Gen 5 Automatic

**F, D**

PB&SB(12)1 Mk45 VLS w/12 Tomahawk **D**

**Sensors:** **ES/AIR:** 3rd/3rd Gen  
 BSY-1 (BQQ-5D), TB-16D and TB-23 towed arrays **K**  
 BPS-16, Raytheon Pathfinder **J**

**Remarks:**

- Fitted with anechoic coating and CSA Mk2 Mod1 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration. Fitted for under-ice operations. SSN 756 and on can carry Mk67 Submarine Launched Mobile Mines (SLMM). Type 18 periscope has 2nd Gen ES.
- SSN 751-767: 7147 t subm.
  - *Hartford* SSN 768 was the trials platform for the pump jet propulsor design for SSN 21. Quiet acoustic signature.
  - SSN 771-773: 7177 t subm.
  - Oct 90: AN/BSY-1 combat system fully operational on SSN 755. SSN 751, 752, and 754 have reduced capability before this date - treat the combat system as 3rd Gen Semi-Automatic.
  - May 95: SSN 758 fitted with Advanced Mine Detection Sonar (AMDS) - HF sonar under-ice, bottom navigation, ASW and MH.
  - Late 90s: BSY-1 updated to BQQ-5E standard. Fitted with WLY-1 (4th Gen AIR) and 4th Gen ACM.
  - 1999-00: SSN 772, 776 fitted for ASDS - 4 more were planned.
  - May 95-2003: *Asheville* SSN 758 was the trials platform for the AMDS HF sonar for mine avoidance, navigation and ASW.
  - Sep 02: TACTOM available for VLS only.
  - 2001: Fitted with combined COMINT/ELINT/ES mast (BLQ-10)
  - 2007-10: Fitted with BQQ-10(V)4 vice BSY-1. TB-29A replaces TB-23. TB-34 replaces TB-16D. BYG-1 6th Gen Automatic combat system replaces BSY-1. Type 18 periscope updated with IR (3rd Gen), ES (3rd Gen), and GPS. Type 8 periscope backfitted with IR (3rd Gen).
  - 2008-11: Fitted with keel ice avoidance sonar, provision for new towed arrays.
  - 23 May 12: SSN 755 badly damaged during dockyard fire. Struck due to budget cuts.

**Damage & Speed Breakdown:**

<b>DP (7147 t):</b>	0	40	79	119	142	158
<b>DP (7177 t):</b>	0	40	80	119	143	159
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	32	24	16	8	0	Sinks

**Los Angeles**

**Displacement:** see remarks  
**Size Class:** B/Medium  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Small/VQuiet  
**Max Depth:** Int V  
**Weapons:**  
 PB&SB(2)2 Mk67 533mm TT w/26 see remarks  
 F&A(12)1 VLS w/12 Tomahawk (SSN-719 - 750)  
**Sensors:**  
 BQQ-5A, BQS-15  
 BPS-15, Raytheon Pathfinder

**SSN**

**In Class:** 39 - 30  
**In Service:** 1976  
**Crew:** 141  
**Acoustic Cnt:** 2nd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** See remarks

**F, D**

**D**

**K**

**J**

**Remarks:**

- Not fitted for under-ice operations or to carry mines. Type 18 periscope has 2nd Gen ES. Fitted with buoyant cable comms. Weapons loadouts estimated.
- SSN 688 - 699: BQQ-5A, Mk113 Mod 2 FCS (Gen 2 Manual): 22 Mk48 Mod 1, 4 SUBROC (1976-88); 26 Mk48 Mod 1 (1988-mid 90s). Upgraded to CCS Mk1 1984-mid 90s, combat system Gen 4 Semi-Automatic. 6927 t subm.
  - SSN 700 - 715: BQQ-5B, Mk117 FCS (Gen 4 Semi-Automatic): 20 Mk48 Mod 3/4, 6 Harpoon IB. SSN-701 and on can launch Tomahawk (TLAM only). Probably all updated to CCS MkI by mid 90s. 6977 t subm.
  - SSN 716 - 718: BQQ-5C, TB-16A, CCS MkI FCS (Gen 4 Semi-Automatic): 12 Mk48 Mod 3/4, 6 Harpoon IB, 8 Tomahawk I/II (1984-96); 18 Mk48 Mod 3/4, 8 Tomahawk I/II (1997 on). Provision for Sea Lance (canceled), Mk67 SLMM, Tomahawk TASM. SSN 719 and on can ship ADCAP when available. 7012 t subm.



- SSN 719-722, 750: BQQ-5C, TB-16, CCS Mk1 FCS (Gen 4 Semi-Automatic), 3rd Gen ES: 12 Mk48 Mod 3/4, 6 Harpoon IB, 8 Tomahawk I/II (1984-96); 18 Mk48 Mod 3/4, 8 Tomahawk I/II (1997). 7102 t subm.
- 1980: Fitted with 3rd Gen ACM.
- Jul 87: SSN 710 fitted with BQG-5D WAA.
- 1989: SSN 691 tasked with secondary trials role from this date. Fitted with ROV hangar in mid 90s.
- 1989-mid 90s: All fitted with BQQ-5D, TB-16D/E, and TB-23. Backfitted with anechoic coating and CSA Mk2 Mod1 with 14 external CM launchers. Broadband sonar jammers and torpedo ACMs, 5 Tactical Turn duration.
- 1991-92: SSN 712 tests BPS-16.
- 1995 - 00: SSN 688, 690, 700, 701, 715 fitted with provisions for Dry Dock Shelter (DDS), can accommodate 20 SEAL vice an estimated 8 Mk48.
- Late 90s: Fitted with BQQ-5E and CCS Mk2 (Gen 5 Automatic combat system), WLY-1 (4th Gen AIR) and 4th Gen ACM.
- 2007-10: In service units fitted with BQQ-10(V)4 vice BQQ-5E. TB-16D/E and TB-23 towed arrays retained. Combat system updated to BYG-1 6th Gen Automatic. Type 18 periscope updated with IR (3rd Gen), ES (3rd Gen), and GPS. Type 8 periscope backfitted with IR (3rd Gen).
- 8 Jan 05: *San Francisco* collided with undersea mountain off Guam, one sailor killed, 98 injured. Repaired Aug 05 - Oct 08.
- 2008-11: Fitted with ice keel avoidance sonar.
- 2016: *San Francisco* decommed, converted to a moored training submarine in San Diego.
- 2019: Only VLS units and SSN 698, 717 remain operational.

**Damage & Speed Breakdown:**

<b>DP (6927 t):</b>	0	39	78	116	140	155
<b>DP (6977 t):</b>	0	39	78	117	140	156
<b>DP (7012 t):</b>	0	39	78	117	140	156
<b>DP (7102 t):</b>	0	39	79	118	141	157
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	32	24	16	8	0	Sinks

**Glenard P. Lipscomb**

**Displacement:** 6480 subm  
**Size Class:** B/Medium  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Small/Quiet  
**Max Depth:** Deep I  
**Weapons:** PB&SB(2)2 Mk63 533mm TT w/24 weapons, est. loadout  
 18 Mk48 Mod 3/4, 6 Harpoon IB

**SSN**

**In Class:** [1]  
**In Service:** 1974 - 90  
**Crew:** 121  
**Acoustic Cnt:** 2nd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** Gen 3 Semi-Automatic

**Sensors:**

BQQ-5A, TB-16, BQS-14  
 BPS-15

**F, D**

**ES/AIR:** 2nd/2nd Gen

**K**  
**J**

**Remarks:**

- SSN 685. Similar to *Sturgeon* class with experimental turbo-electric drive. 20 Mk48 Mod 1, 4 SUBROC.  
 •1984-85: Sonar upgraded to BQQ-5B, Gen 4 Semi-Automatic combat system, 3rd Gen ACM.  
 • 11 Jul 90: Struck.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	37	74	111	133	148
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	23	17	12	6	0	Sinks

**Narwhal**

**Displacement:** 5350 subm  
**Size Class:** B/Medium  
**Propulsion:** Nuclear  
**Electrn Cnt:** None  
**Signature:** Small/Quiet  
**Max Depth:** Deep I

**SSN**

**In Class:** [1]  
**In Service:** 1969 - 99  
**Crew:** 120  
**Acoustic Cnt:** 2nd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)

**Weapons:**

Cbt Sys: Gen 3 Semi-Automatic  
 PB&SB(2)2 Mk63 533mm TT w/26 weapons, est. loadout  
 16 Mk37 Mod 2, 6 Mk16, 4 SUBROC (1960s)  
 or 22 Mk48 Mod 1, 4 SUBROC (1970s)

**F, E**

**Sensors:**

BQQ-2, STASS, BQS-8 or 14  
 BPS-14

**ES/AIR:** 2nd/2nd Gen

**K**  
**J**

**Remarks:**

- SSN-671. Similar to *Sturgeon* class but with prototype natural-circulation reactor. Angled torpedo TT limit max weapon launch speed to 20 kts. Type 15 periscope has 1st Gen ES.  
 • 1979: Sonar upgraded to BQQ-5A, TB-16A. Fitted with prototype Mk117 fire control (Gen 4 Semi-Automatic). Estimated loadout 23 Mk 48 Mod 3/4 (1977-81), 17 Mk48 Mod 3/4, 6 Harpoon IB (1981-97). SUBROC capability removed.  
 • 1989-94: Sonar updated to BQQ-5D, TB-16E, TB-23. BPS-15 replaced BPS-14. 3rd Gen ES, 3rd Gen AIR, 3rd Gen ACM. Fitted with Tomahawk, up to 8 missiles carried instead of torpedoes. Estimated loadout is 18 Mk48, 4 Harpoon/Tomahawk, 4 Tomahawk.  
 • 16 Jan 99: Deactivated, struck Jul 99.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	65	98	117	130
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	25	19	13	6	0	Sinks

**Sturgeon**

**Displacement:** 4780 subm  
**Size Class:** C/Small  
**Propulsion:** Nuclear  
**Acoustic Cnt:** 2nd Gen  
**Signature:** VSmall/Quiet  
**Max Depth:** Deep I

**In Class:** [37]  
**In Service:** 1967 - 04  
**Crew:** 107  
**Electrn Cnt:** None

**SSN**

**Armor Rating:** 0

**Btry Rtnng:** 5 (Emerg.)

**Weapons:**

Cbt Sys: Gen 3 Semi-Automatic  
 PB&SB(2)2 Mk63 533mm TT w/24 weapons, est. loadout  
 11 Mk37 Mod 2, 7 Mk16, 4 SUBROC, 2 Mk45 ASTOR

**F, E**

**Sensors:**

BQQ-2  
 BPS-14

**ES/AIR:** 2nd/2nd Gen

**K**  
**J**

**Remarks:**

- Improved *Permit* design. Angled torpedo TT limit max weapon launch speed to 20 kts. Many fitted with PUFFS. Type 15 periscope has 1st Gen ES.  
 • SSN 637-639, 646-653, 660-670, 672-677: Short Hull with BQQ-2.  
 • SSN 678-683: Long Hull with BQQ-2.  
 • SSN 684, 686, 687: Long Hull with BQQ-5A.  
 • 1970s: SSN 662, 666, 667, 672 fitted with provision for DSRV.  
 • 1972: Mk48 Mod 1 available, replaces 1 reload with wire-G spools. Estimated loadout 19 Mk48 Mod 1, 4 SUBROC. STASS sonar tested on Pacific fleet unit. Many later fitted (estimate from 1973).  
 • 1977: *Parche* fitted for "special projects," including ability to operate saturation divers and to tap underwater cables. Usually carry only 4 torpedoes in TT with ELINT/cable tapping equipment in torpedo room.  
 • 1978: *Richard B. Russel*, *Silversides* fitted with Bustle communications buoy.  
 • Early 1980s: Sonar upgraded to BQQ-5B, TB-16A replaces STASS. Mk117 fire control added Gen 4 Semi-Automatic, SUBROC capability removed. Harpoon capability added. Estimated loadout 18 Mk 48 Mod 3/4, 6 Harpoon IB.  
 • 1980: *Batfish* first USN submarine fitted with anechoic coating.  
 • 1982: *Cavalla* fitted with provision for one DDS. Can carry 16 SEALs vice an estimated 6 Mk48. *Archerfish*, *Silversides*, *William H. Bates*, *Tunny*, *L. Mendell Rivers* fitted 1989-92 (SSN 678-680, 682, 686).  
 • 1980s: *Richard B. Russel* fitted as special projects boat including ability to tap underwater cables. In Service 1987.  
 • 1986: *Richard B. Russel* trials with BQS-24 mine detection sonar.  
 • 1990-94: Surviving units had the sonar upgraded to BQQ-5D, without the TB-23. CCS MK1 combat system added, Gen 4 Semi-Automatic combat system.  
 • Jan 87 - 91: *Parche* fitted with 100 ft extension for special projects including sonar/ASW trials, displacement 7140 t subm. Crew 166, can recover objects from seabed.

• 17 Dec 04: *Parche* struck.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	30	61	91	109	121
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	26	20	13	7	0	Sinks

**Permit**

**Displacement:** 4770 subm  
**In Class:** [14]  
**Size Class:** C/Small  
**In Service:** 1962 - 92  
**Propulsion:** Nuclear  
**Crew:** 106  
**Electrn Cnt:** None  
**Acoustic Cnt:** 2nd Gen  
**Signature:** VSmall/Quiet  
**Armor Rating:** 0  
**Max Depth:** Deep I  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
 PB&SB(2)2 Mk63 533mm TT w/23 weapons, est. loadout  
 12 Mk37 Mod 1/2, 9 Mk16, 2 Mk45 ASTOR (60s-70s) or  
 23 Mk48 Mod 1 (1970s)

**SSN**

**Sensors:**  
 BQQ-2, STASS, BQS-8  
 SS-2  
**ES/AIR:** 1st/2nd Gen

**Remarks:**

Listed as the *Thresher* class until her loss. Angled torpedo TT limit max weapon launch speed to 20 kts. Type 15 periscope has 1st Gen ES. Periscope not fitted with fairing - max useable speed 6 kts. Not fitted with ELINT due to small sail size.

- SSN 593 *Thresher* (60-63), 594 *Permit* (62-91), 595 *Plunger* (62-89), 596 *Barb* (63-89), 603 *Pollack* (64-89), 604 *Haddo* (64-90), 605 *Jack* (67-89), 606 *Tinosa* (64-91), 607 *Dace* (64-88), 612 *Guardfish* (66-91), 613 *Flasher* (66-91), 614 *Greenling* (67-93), 615 *Gato* (67-94), 621 *Haddock* (67-92).
- 10 Apr 63: *Thresher* lost with 129 crew.
- 605 fitted with contra-rotating propellers, lengthened hull (299 feet), slow speed turbines, displaces 4467 t subm, in an attempt for quieter machinery - not successful.
- 1964: SUBROC operational on *Permit*, others later fitted. Estimated loadout 10 Mk37, 7 Mk14, 2 Mk45 ASTOR, 4 SUBROC.
- 1972: BQR-15 tested on Pacific fleet unit. Several later fitted with STASS (estimate 1973 on).
- 1976: *Permit* tests Harpoon missile.
- 1978: *Barb* tests Tomahawk missile.
- 1979-85: Sonar upgraded to BQQ-5B, TB-14A added. Mk117 fire control (4th Gen Semi-Automatic) replaces Mk113. SUBROC capability removed. Harpoon and Tomahawk capability added. Fitted with 3rd Gen ACM. Estimated loadout: 17 Mk48 Mod 3/4 and 6 Harpoon IB.
- 1980s: SSN 596, 604-606, 612-615 fitted for Tomahawk. Estimated torpedo loadout is 4 Harpoon IB, 11 Mk48, 8 Tomahawk Blk I/II.

**Damage & Speed Breakdown:**

<b>DP (4310 t):</b>	0	28	57	85	102	113
<b>DP (4770 t):</b>	0	30	61	91	109	121
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Sb Spd (4310t):</b>	27	20	14	7	0	Sinks
<b>Sb Spd (4770t):</b>	26	20	13	7	0	Sinks

**Tullibee**

**Displacement:** 2607 subm  
**In Class:** 1  
**Size Class:** C/Small  
**In Service:** 1960 - 88  
**Propulsion:** Nuclear  
**Crew:** 56  
**Electrn Cnt:** None  
**Acoustic Cnt:** 2nd Gen  
**Signature:** VSmall/Quiet  
**Armor Rating:** 0  
**Max Depth:** Int III  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
 PB&SB(2)2 Mk64 533mm TT w/6 Mk37 Mod1/2, 6 Mk16  
**Sensors:**  
 BQQ-1, BQG-1 PUFFS  
 BPS-9  
**ES/AIR:** 1st/2nd Gen

**SSN**

**Remarks:**  
 First USN submarine with integrated sonar suite and midships angled TT. Special nuclear-electric drive, can go from full ahead to full astern in seconds (use Small/CPD accel/decel times). Never fitted with SUBROC. ASW trials until 1972, then operational with deployments

to Atlantic and Mediterranean. Type 8 periscope has ST range only radar.

- 1969: BQG-4 replaces BQG-1.
- 1973?: Fitted with STASS towed array.
- 1977: Probably fitted for Mk48 torpedoes - estimated loadout 11 Mk48 Mod 1. Lose 1 reload space due to wire spools.
- 1980: Fitted with 3rd Gen ACM.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	20	41	61	73	81
<b>Surf Speed:</b>	13	10	7	3	0	Sinks
<b>Subm Speed:</b>	16	12	8	4	0	Sinks

**Skipjack**

**Displacement:** 3500 subm  
**In Class:** [6]  
**Size Class:** C/Small  
**In Service:** 1959 - 91  
**Propulsion:** Nuclear  
**Crew:** 94  
**Electrn Cnt:** None  
**Acoustic Cnt:** 2nd Gen  
**Signature:** VSmall/Noisy  
**Armor Rating:** 0  
**Max Depth:** Int III  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
 PB&SB(3)2 Mk59 533mm TT w/12 Mk37 Mod1/2, 12 Mk16  
**Sensors:**  
 BQR-2B, SQS-4 Mod 1  
 SS-2A  
**ES/AIR:** 1st/2nd Gen

**SSN**

**Remarks:**  
 SSN 585 *Skipjack* (59-90), 588 *Scamp* (61-88), 589 *Scorpion* (60-68), 590 *Sculpin* (61-90), 591 *Shark* (61-86), 592 *Snook* (61-86).

Original speed was 33 knots with 5-blade propeller. Never fitted with SUBROC. Fitted to guide Regulus msls.

- 1961: Improved auxiliary machinery and 7-blade propeller, speed reduced to 30 kts, Noisy acoustic signature.
- 1977: Fitted with STASS towed array, BQR-21 vice BQR-2, BPS-12 vice SS-2A, ES upgraded to 2nd Gen. Mk48 capability added, estimated TT loadout is 23 Mk48 Mod 1. Lose 1 reload space due to wire spools.
- 1980: Fitted with 3rd Gen ACM.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	25	49	74	88	98
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	33	25	17	8	0	Sinks
<b>Sub Spd ('61):</b>	30	22	15	8	0	Sinks

**Skate**

**Displacement:** 2860 subm  
**In Class:** [4]  
**Size Class:** C/Small  
**In Service:** 1957 - 87  
**Propulsion:** Nuclear  
**Crew:** 95  
**Electrn Cnt:** None  
**Acoustic Cnt:** 2nd Gen  
**Signature:** VSmall/Noisy  
**Armor Rating:** 0  
**Max Depth:** Int III  
**Btry Rtnng:** 5 (Emerg.)  
**Weapons:**  
 PB&SB(3)2 Mk56 533mm TT w/18 weapons, est. loadout  
 8 Mk37 Mod 0, 10 Mk16  
 PQ&SQ(2)1 Mk57 533mm TT w/2 Mk37 Mod 0  
**Sensors:**  
 SQS-4 Mod 1, BQR-2B  
 SS-2  
**ES/AIR:** 1st/2nd Gen

**SSN**

**Remarks:**  
 Double hull. Fitted with BQS-8 MH sonar and to guide Regulus msls.

- SSN 578 *Skate* (57-86), 579 *Swordfish* (58-89), 583 *Sargo* (58-88), 584 *Seadragon* (59-84).
- 1965: 'Demoted' to second line status, class largely used for Arctic research.
- Nov 65 - Aug 67. *Swordfish* fitted as special projects boat with tethered ROV.
- 1980: Fitted with 3rd Gen ACM.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	22	43	65	77	86
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	19	14	10	5	0	Sinks

**Seawolf (i)**

**Displacement:** 4287 subm  
**Size Class:** C/Small  
**Propulsion:** Nuclear

**Electrn Cnt:** None  
**Signature:** VSmall/Loud  
**Max Depth:** Int III

**Weapons:**  
 PB/SB(3)2 Mk51 533mm TT w/22 weapons, est. loadout  
 10 Mk37 Mod 0, 10 Mk16, 2 Mk45 ASTOR

**Sensors:**  
 BQR-4A, SQS-4 Mod 3  
 SS-2

**Remarks:**

- Dec 58-Sep 60: Reactor replaced, BQR-2B added.
- May 65-Aug 67: Fitted to operate saturation divers (185 m+).
- 1969: Fitted with thrusters - can hover in place.
- Jan 71 - Jun 73: Converted to 'Special project platform' including ability to tap underwater cables and anchor. Fitted to bottom by 1981.
- 1980: Fitted with 3rd Gen ACM. Mk48 capability added. Estimated loadout is 12 Mk48 Mod 1.
- 1986: Operates in Libyan waters.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	28	56	84	101	112
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	20	15	10	5	0	Sinks

**Triton**

**Displacement:** 7773 subm  
**Size Class:** B/Medium  
**Propulsion:** Nuclear

**Electrn Cnt:** None  
**Signature:** Small/Loud  
**Max Depth:** Int III

**Weapons:**  
 PB&SB(2)2 Mk60 533mm TT w/10 weapons, est. loadout  
 4 Mk37 Mod 1 and 6 Mk16

PQ&SQ(1)2 Mk60 533mm TT w/4 Mk37 Mod 1

**Sensors:**  
 BQS-4, BQR-2B  
 BPS-2, SPS-26

**Remarks:**

- SPS-26 considered unreliable. Fitted with CIC, can direct fighters. Type 8 periscope has ST range only radar.
- 1962-64: Converted to SSN. BQS-8 obstacle avoidance sonar added to the sail.
- 3 May 69: Struck as too expensive to operate.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	42	84	125	150	167
<b>Surf Speed:</b>	28	21	14	7	0	Sinks
<b>Subm Speed:</b>	20	15	10	5	0	Sinks

**Nautilus**

**Displacement:** 4092 subm  
**Size Class:** C/Small  
**Propulsion:** Nuclear

**Electrn Cnt:** None  
**Signature:** VSmall/Loud  
**Max Depth:** Int III

**Weapons:**  
 PB&SB(3)2 Mk50 533mm TT w/26 weapons, est. loadout  
 22 Mk16 (1950s); 18 Mk16, 8 Mk37 Mod 0 (1960s-70s);  
 22 Mk48 Mod 1 (1980s)

**Sensors:**  
 BQR-4A, SQS-4 Mod 4  
 BPS-1, BPS-4

**Remarks:**

- Type 8 periscope has ST range only radar.
- 1958: Fitted with deck mounted UQS-1 for under-ice operations.
- 1964: BQR-3A sonar added.

**SSN**

**In Class:** [1]  
**In Service:** 1957 - 87  
**Crew:** 105  
**Acoustic Cnt:** 2nd Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 5 (Emerg.)  
**Cbt Sys:** Gen 2 Manual

**ES/AIR:** 1st/1st Gen

F  
K  
J

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	27	55	82	98	109
<b>Surf Speed:</b>	22	17	11	6	0	Sinks
<b>Subm Speed:</b>	23	19	13	7	0	Sinks

**Grayback**

**Displacement:** 3650 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric

**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int III

**Weapons:**  
 PB&SB(2)2 Mk52 533mm TT w/6 Mk 37 Mod 0, 6 Mk16  
 PQ&SQ(1)2 Mk53 533mm TT w/4 Mk37 Mod 0  
 F(1)4 RGM-6A Regulus

**Sensors:**  
 BQR-2B, BQS-4  
 BPS-2

**Remarks:**

Must surface to fire Regulus, can provide guidance from periscope depth. Stern Mk53 TT are swim out only - Quiet launch for Mk37 torpedoes. Type 8 periscope has ST range only radar.

- 1964: Decommissioned when Regulus taken out of service.
- 1967 - 1969: Conversion to LPSS, BQG-4 PUFFS added, room for 85 commandos, Swimmer Delivery Vehicles and small boats in former Regulus hangar.
- 1970-72: Operated off South Vietnam.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	25	51	76	91	101
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	14	11	7	4	0	Sinks

**Growler**

**Displacement:** 3387 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric

**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int III

**Weapons:**  
 PB&SB(2)2 Mk54 533mm TT w/6 Mk 37 Mod 0, 6 Mk16  
 PQ&SQ(1)2 Mk55 533mm TT w/4 Mk37 Mod 0  
 (1)4 RGM-6A Regulus I

**Sensors:**  
 BQR-2B, BQS-4  
 SS-2

**Remarks:**

Stern Mk55 TT are swim out only - Quiet launch for Mk37 torpedoes. Type 8 periscope has ST range only radar.

- Decommissioned when Regulus taken out of service. Cost to modify Growler as Grayback was prohibitive.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	24	48	72	86	96
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	14	11	7	4	0	Sinks

**Balao**

**Displacement:** 2425 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric

**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II

**Weapons:**  
 PB&SB(3)2 Mk34 533mm TT w/8 Mk37 Mod 0, 8 Mk16  
 A(1)2 RGM-6A Regulus I

**Sensors:**  
 BQS-2, BQR-3  
 SS-2

**In class:** [1]  
**In Service:** 1958 - 84  
**Crew:** 84

**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 2 Manual

**ES/AIR:** 1st/1st Gen

**SSG**

F  
F  
D  
K  
J

**SSG**

**In class:** [1]  
**In Service:** 1958 - 64  
**Crew:** 84  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 2 Manual

**ES/AIR:** 1st/1st Gen

F  
F  
D  
K  
J

**SSG**

**In class:** [1]  
**In Service:** 1955 - 64  
**Crew:** 81  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 2 Manual

**ES/AIR:** 1st/1st Gen

F  
D  
K  
J

**Remarks:**

SSG 317 *Barbero*. Max torpedo launch depth for Mk14/16 is Int I. Mk37 can swim out at any operating depth. Must surface to fire Regulus, can provide guidance from periscope depth.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	9	7	5	2	0	Sinks

**Gato****Displacement:** 2425 subm**Size Class:** C/Small**Propulsion:** Diesel-Electric**Electrn Cnt:** None**Signature:** VSmall/Noisy**Max Depth:** Int II**Weapons:**

PB&amp;SB(3)2 Mk34 533mm TT w/18 weapons, est. loadout

14 Mk16, 2 Mk27 Mod 4

PQ&amp;SQ(2)2 Mk35 533mm TT w/5 Mk27 Mod 4

A(1)2 RGM-6A Regulus I

**Sensors:**

BQS-2, BQR-3

SS-2

**Remarks:**

SSG 282 *Tunny*. Max torpedo launch depth for Mk14/16 is Int I. Mk37 can swim out at any operating depth. Must surface to fire Regulus, can provide guidance from periscope depth.

- 1966: APSS conversion, see separate entry.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	21	16	11	5	0	Sinks
<b>Subm Speed:</b>	10	8	5	3	0	Sinks

**Barbel****Displacement:** 2640 subm**Size Class:** C/Small**Propulsion:** Diesel-Electric**Electrn Cnt:** None**Signature:** VSmall/Quiet**Max Depth:** Int III**Weapons:**

PB/SB(3)2 Mk58 533mm TT w/22 weapons, est. loadout

12 Mk37 Mod 1/2, 12 Mk16

**Sensors:**

BQS-4, SQS-4 Mod 3, BQR-2B

BPS-12

**Remarks:**

Single prop.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	20	41	61	73	81
<b>Surf Speed:</b>	14	11	7	4	0	Sinks
<b>Subm Speed:</b>	18	14	9	5	0	Sinks

**Guppy III****Displacement:** 2870 subm**Size Class:** C/Small**Propulsion:** Diesel-Electric**Electrn Cnt:** None**Signature:** VSmall/Noisy**Max Depth:** Int II**Weapons:**

PB&amp;SB(3)2 Mk34 533mm TT w/22 weapons, est. loadout

12 Mk37 Mod 1/2, 10 Mk16

PQ&amp;SQ(2)2 Mk35 533mm TT w/6 weapons, est. loadout

6 Mk37 Mod 0

**Sensors:**

BQR-2B, BQG-4 PUFFS, BQS-4

SS-2

**In class:** [1]**In Service:** 1952 - 65**Crew:** 85**Acoustic Cnt:** 1st Gen**Armor Rating:** 0**Btry Rtnng:** 45 (old)**Cbt Sys:** Gen 2 Manual**ES/AIR:** 1st/1st Gen

SSG

F

F

D

K

J

SS

F

K

J

SS

**In class:** [9]**In Service:** 1960 (1945) - 75**Crew:** 95**Acoustic Cnt:** 1st Gen**Armor Rating:** 0**Btry Rtnng:** 72 (old)**Cbt Sys:** Gen 2 Manual**ES/AIR:** 1st/1st Gen

F

F

K

J

**Remarks:**

Includes six *Balao* (SS-343, 344, 346, 351, 416, 425) and three *Tench* (SS-487, 490, 524). Fitted for Mk45 ASTOR torpedoes. Max torpedo launch depth is Int I. Can crash dive. Max snort speed 6 kts. Fitted with a Type 8 periscope with a ST range only radar.

- 21 Nov 1973: SS-344 *Cobbler* (*Canakkale*), SS-346 *Corporal* (*Birinci Inonu*) transferred to Turkey.

- 19 Dec 1973: SS-351 *Greenfish* (*Amazonas*) transferred to Brazil.

- 15 Oct 1973: SS-425 *Trumpetfish* (*Goias*) transferred to Brazil.

- 29 Oct 1973: SS-487 *Remora* (*Katsonis*) transferred to Greece.

- 18 Aug 1972: SS-490 *Volador* (*Gianfranco Gazzana Priaroggia*), SS-524 *Pickrel* (*Primo Longobardo*) transferred to Italy.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	22	43	65	77	86
<b>Surf Speed:</b>	17	13	9	4	0	Sinks
<b>Subm Speed:</b>	16	12	8	4	0	Sinks

**Darter****Displacement:** 2250 subm**Size Class:** C/Small**Propulsion:** Diesel-Electric**Electrn Cnt:** None**Signature:** VSmall/Quiet**Max Depth:** Int III**Weapons:**

PB/SB(3)2 Mk58 533mm TT w/22 Mk16

PB/SB(2)1 Mk58 533mm TT w/4 Mk27 Mod 4

**Sensors:**

BQR-4, BQS-4

BPS-11

**Remarks:**

Improved *Tang* class. Used German Type XXI technology. Max snort speed 12 knots.

- Early 60s: Estimated torpedo loadout 16 Mk37 Mod 1/2, 6 Mk16 forward, 4 Mk37 Mod 0/3 aft.

- Mid-70s: 21 Estimated torpedo loadout Mk48 Mod 1 forward, 4 Mk37 Mod 2 aft. Can carry Mk10 or Mk49 (2 per torpedo) or Mk27 mines.

- 1965: Fitted with BQG-4 (PUFFS) sonar and Mk45 ASTOR torpedo.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	18	37	55	66	73
<b>Surf Speed:</b>	15	15	8	4	0	Sinks
<b>Subm Speed:</b>	16	12	8	4	0	Sinks

**Guppy IIA****Displacement:** 2440 subm**Size Class:** C/Small**Propulsion:** Diesel-Electric**Electrn Cnt:** None**Signature:** VSmall/Noisy**Max Depth:** Int II**Weapons:**

PB&amp;SB(3)2 Mk34 533mm TT w/22 Mk16

PQ&amp;SQ(2)2 Mk35 533mm TT w/6 Mk27 Mod 4

**Sensors:**

BQR-2, BQS-2, JT or BQR-3

SS-2

**Remarks:**

Includes 12 *Balao* (SS 340, 365, 368, 377 382, 385, 391, 394, 396, 402, 410, 415) and four *Tench* (SS 418, 420, 421, 424). Maximum torpedo launch depth is Int I. Can crash dive.

- 30 May 58: *Stickleback* (SS 415) lost in collision, crew rescued.

- late 50s: JT/BQR-3 removed. Later fitted with BQS-4,

- 1964: Some carry Redeye SAM for use on surface - Estimated F&A(1)1 Redeye w/4 missiles.

- 30 Nov 1970: SS-394 *Razorback* (*Murat Reis*) transferred to Turkey.

- 14 Dec 1970: SS-402 *Sea Fox* (*Burak Reis*) transferred to Turkey.

- 1 Jul 1971: SS-396 *Ronquil* (*Isaac Peral*) transferred to Spain.

- 1 Jul 1972: SS-421 *Trutta* (*Cerbe*) transferred to Turkey.

- 26 Jul 1972: SS-365 *Hardhead* (*Papanikolis*) transferred to Greece.

- 1 Aug 1973: SS-340 *Entemedor* (*Preveze*), SS-391 *Pomfret* (*Oruc*

SS

**In Class:** [1]**In Service:** 1956 - 89**Crew:** 93**Acoustic Cnt:** 1st Gen**Armor Rating:** 0**Btry Rtnng:** 96 (old)**Cbt Sys:** Gen 2 Manual

F

F

K

J

SS

**In class:** [15]**In Service:** 1952 (1944) - 74**Crew:** 85**Acoustic Cnt:** 1st Gen**Armor Rating:** 0**Btry Rtnng:** 100 (old)**Cbt Sys:** Gen 2 Manual

F

F

ES/AIR: 1st/1st Gen

K

J

*Reis*), SS-410 *Threadfin* (*Ikinci Inonu*), SS-418 *Thornback* (*Uluc Ali Reis*) transferred to Turkey.

- 26 Jun 1974: SS-368 *Jallao* (S-35) transferred to Spain.
- 18 Nov 1974: SS-382 *Picuda* (*Narciso Monturiol*), SS-385 *Bang* (*Cosme Garcia*) transferred to Spain.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	16	12	8	4	0	Sinks

**Barracuda (ex-K class)**

**Displacement:** 1160 subm **In class:** [3] **SS**

**Size Class:** D/Small **In Service:** 1952 - 73

**Propulsion:** Diesel-Electric **Crew:** 37

**Electrn Cnt:** None **Acoustic Cnt:** 1st Gen

**Signature:** VSmall/Noisy **Armor Rating:** 0

**Max Depth:** Int II **Btry Rtnng:** 70 (old)

**Weapons:** **Cbt Sys:** Gen 2 Manual

PB&SB(3)2 533mm TT w/8 weapons, estimated loadout  
4 Mk16, 4 Mk27 Mod 4 **F**

**Sensors:** **ES/AIR:** 1st/1st Gen

BQR-2, BQR-4, BQS-3 **K**

SS-2 **J**

**Remarks:**

'K'-class hunter-killer submarine. Originally designated SSK. Maximum torpedo launch depth is Int I.

- 1959: BQR-4 removed. Used in training role.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	12	24	35	42	47
<b>Surf Speed:</b>	13	10	7	3	0	Sinks
<b>Subm Speed:</b>	9	7	5	2	0	Sinks

**Tang**

**Displacement:** 2260 subm **In class:** [6] **SS**

**Size Class:** C/Small **In Service:** 1951 - 80?

**Propulsion:** Diesel-Electric **Crew:** 83

**Electrn Cnt:** None **Acoustic Cnt:** 1st Gen

**Signature:** VSmall/Noisy **Armor Rating:** 0

**Max Depth:** Int III **Btry Rtnng:** 85 (old)

**Weapons:** **Cbt Sys:** Gen 2 Manual

PB&SB(3)2 Mk43 533mm TT w/16 Mk16 **F**

PQ&SQ(1)2 Mk44 533mm TT w/4 Mk16, 4 Mk27 Mod 4 **F**

**Sensors:** **ES/AIR:** 1st/1st Gen

QHB, JT or BQR-3 **K**

BPS-4 **J**

**Remarks:**

*Tang*, *Trigger*, *Wahoo*, *Trout*, *Gudgeon*, *Harder*. First four fitted with unreliable and noisy diesel engines. Max snort speed 11 knots. First US class with hydraulic TT, can fire from any depth. Fitted with a Type 8 periscope with a ST range only radar.

- 1957 - 59: Diesels replaced on first four of class, resolving maintenance and noise issues (stats as above).
- 1960? - 64: Sonars changed to BQR-2B and BQS-4, fitted to fire Mk37 Mod 1/2 torpedoes.
- 1966 - 68: *Wahoo*, *Gudgeon*, *Harder* fitted with BQG-4 PUFFS, displacement 2700 t subm, can fire Mk45 ASTOR.
- 1979-82: *Tang*, *Wahoo* and *Trout* were to have been transferred to Iran - canceled in 1979.

**Damage & Speed Breakdown:**

<b>DP (2260 t):</b>	0	18	37	55	66	73
<b>DP (2700 t):</b>	0	21	42	62	75	83
<b>Surf Speed:</b>	15	11	8	4	0	Sinks
<b>Subm Speed:</b>	18	14	9	5	0	Sinks

**Fleet Submarine**

**Displacement:** 2425 subm **In class:** [35] **SS**

**Size Class:** C/Small **In Service:** 1942 - 75

**Propulsion:** Diesel-Electric **Crew:** 81

**Electrn Cnt:** None **Acoustic Cnt:** 1st Gen

**Signature:** VSmall/Noisy **Armor Rating:** 0

**Max Depth:** Int II **Btry Rtnng:** 45 (old)

**Weapons:**

PB&SB(3)2 Mk34 533mm TT w/16 Mk14/16 **F**

PQ&SQ(2)2 Mk35 533mm TT w/8 4 Mk14/16, 4 Mk27 Mod4 **F**

**Sensors:** **ES/AIR:** 1st/1st Gen

BQS-2, BQR-3 **K**

SS-2 **J**

**Remarks:**

Includes nine *Gato*, 18 *Balao*, and eight *Tench*. Cheaper conversions, compared with GUPPY-series with streamlined sail only. Maximum snorkel speed is 7 kts. Max torpedo launch depth is Int I. Can crash dive.

- 5 Mar 1966: SS-336 *Capitaine* (*Alfredo Cappellini*) transferred to Italy.

- 12 Jan 1962: SS-413 *Spot* (*Simpson*) transferred to Chile.

- 23 Jan 1961: SS-414 *Springer* (*Thomson*) transferred to Chile.

- 1 Jun 1964: SS-479 *Diablo* (*Ghazi*) transferred to Pakistan.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	10	8	5	3	0	Sinks

**Fleet Snorkel**

**Displacement:** 2425 subm **In class:** [18] **SS**

**Size Class:** C/Small **In Service:** 1947 - 71

**Propulsion:** Diesel-Electric **Crew:** 85

**Electrn Cnt:** None **Acoustic Cnt:** 1st Gen

**Signature:** VSmall/Noisy **Armor Rating:** 0

**Max Depth:** Int II **Btry Rtnng:** 45 (old)

**Weapons:** **Cbt Sys:** Gen 1 Manual

PB&SB(3)2 Mk34 533mm TT w/16 Mk14/16 **F**

PQ&SQ(2)2 Mk35 533mm TT w/4 Mk14/16, 4 Mk27 Mod4 **F**

**Sensors:** **ES/AIR:** 1st/1st Gen

BQS-2, BQR-3 **K**

SS-2 **J**

**Remarks:**

Includes 13 *Balao* (SS-302, 303, 320, 331, 338, 392, 398, 399, 405, 408, 409) and 5 *Tench* (SS-423, 475, 476, 480, 482). Can crash dive.

Max snort speed 6 knots. Max torpedo launch depth is Int I.

- 2 Dec 1968: SS-475 *Argonaut* (*Rainbow*) transferred to Canada.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	10	8	5	3	0	Sinks

**Guppy IA**

**Displacement:** 2400 subm **In class:** [10] **SS**

**Size Class:** C/VSmall **In Service:** 1951 - 74

**Propulsion:** Diesel-Electric **Crew:** 82

**Electrn Cnt:** None **Acoustic Cnt:** 1st Gen

**Signature:** VSmall/Noisy **Armor Rating:** 0

**Max Depth:** Int II **Btry Rtnng:** 72 (old)

**Weapons:** **Cbt Sys:** Gen 2 Manual

PB&SB(3)2 Mk34 533mm TT w/16 Mk14/16 **F**

PQ&SQ(2)2 Mk35 533mm TT w/4 Mk14/16, 4 Mk27 Mod4 **F**

**Sensors:** **ES/AIR:** 1st/1st Gen

BQS-2, BQR-3 **K**

SS-2 **J**

**Remarks:**

Includes 9 *Balao* (SS-319, 322, 323, 324, 341, 342, 403, 406, 407) and one *Tench* (SS-417). Maximum snorkel speed is 8 kts. Max torpedo launch depth is Int I. Can crash dive.

- 1 Jul 71: SS-341 *Chivo* (*Santiago Del Estero*) transferred to Argentina.

- 30 Jun 72: SS-323 *Caiman* (*Dumlupinar*) transferred to Turkey.

- 15 Jul 74: SS-406 *Sea Poacher* (*Pabellon de Pica*) transferred to Peru.

- 31 Jul 74: SS-403 *Atule* (*Pacocha*) transferred to Peru.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	38	57	68	76
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	17	13	9	4	0	Sinks

**Guppy II**

**Displacement:** 2400 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II  
**Weapons:**  
 PB&SB(3)2 Mk34 533mm TT w/16 Mk14/16  
 PQ&SQ(2)2 Mk35 533mm TT w/4 Mk14/16, 4 Mk27 Mod4  
**Sensors:**  
 JT, WFA  
 SS-2

**In class:** [22]  
**In Service:** 1947 - 73  
**Crew:** 85  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 100 (old)  
**Cbt Sys:** Gen 1 Manual  
**ES/AIR:** 1st/1st Gen

**SS**  
**F**  
**F**  
**K**  
**J**

**Remarks:**

- Includes 12 *Balao* (SS-339, 343-347, 349- 352, 416, 425) and 12 *Tench* (SS-426, 478, 483- 487, 490, 522-525). Maximum snorkel speed is 9 kts. Max torpedo launch depth is Int I. SS-484 *Odax*, SS-486 *Pomodon*, modified from Guppy I. Can crash dive.
- 26 Aug 49: *Cochino* (SS-345) lost after battery explosion off Norway, one crewman and six rescuers lost.
  - 1954: Sonar fit changed to BQS-2, BQR-3, BQS-3.
  - 1959: Mk37 Mod1/2 torpedoes available.
  - Modified to Guppy III: SS-351 *Greenfish* 1961, SS-343 *Clamagore*, SS-344 *Cobbler*, SS-346 *Corporal*, SS-425 *Trumpetfish*, SS-487 *Remora*, SS-524 *Pickeral* 1962, SS-490 *Voladore* 1963
  - 1964: Some carry Redeye SAM for use on surface, estimated as F&A(1)1 Redeye w/4 missiles.
  - 1 Jul 1971: SS-339 *Catfish* (*Santa Fe*) transferred to Argentina.
  - 5 Jan 1972: SS-347 *Cubera* (*Tiburon*) transferred to Venezuela.
  - 13 May 1972: SS-523 *Grampus* (*Rio Grande do Sul*) transferred to Brazil.
  - 8 Jul 1972: SS-484 *Odax* (*Rio de Janeiro*) transferred to Brazil.
  - 28 Jul 1972: SS-350 *Dogfish* (*Guanabara*) transferred to Brazil.
  - 27 Mar 1973: SS-483 *Sea Leopard* (*Bahia*) transferred to Brazil.
  - 12 Apr 1973: SS-478 *Cutlass* (*Hai Shih*) transferred to Taiwan.
  - 15 May 1973: SS-525 *Grenadier* (*Picua*) transferred to Venezuela.
  - 17 Oct 1973: SS-522 *Amberjack* (*Ceara*) transferred to Brazil.
  - 18 Oct 1973: SS-426 *Tusk* (*Hai Pao*) transferred to Taiwan.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	38	57	68	76
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	17	13	9	4	0	Sinks

**Sailfish**

**Displacement:** 3168 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int III  
**Weapons:**  
 PB&SB(3)2 Mk49 533mm TT w/10 Mk37 Mod1/2, 8 Mk16  
**Sensors:**  
 BQR-2B, BQS-4  
 BPS-2, BPS-3

**In class:** [2]  
**In Service:** 1956 - 78  
**Crew:** 95  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 72 (old)  
**Cbt Sys:** Gen 2 Manual  
**ES/AIR:** 1st/1st Gen

**SSR**  
**F**  
**K**  
**J**

**Remarks:**

- Sailfish*, *Salmon*. Considered too slow to keep up with surface groups.
- 1960 - 61: Radar picket equipment removed, BQG-4 PUFFS added. Submerged speed increases to 14 kts. Reclassified as SS.
  - Jun 64 - Apr 65: *Salmon*; FRAM II conversion.
  - Jan 65 - Feb 66: *Sailfish*; FRAM II conversion.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	46	69	83	92
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Sub Sp (SSR):</b>	10	8	5	3	0	Sinks
<b>Sub Sp (SS):</b>	14	11	7	4	0	Sinks

**Balao**

**Displacement:** 2308 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric

**In class:** [1]  
**In Service:** 1949 - 61  
**Crew:** 108

**SSR**

**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II  
**Weapons:**  
 PB&SB(2)2 Mk34 533mm TT w/6 Mk14/16, 2 Mk27 Mod4  
**Sensors:**  
 QHB, JT  
 SV-2, SR-2, BPS-4

**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 1 Manual  
**ES/AIR:** 1st/1st Gen

**Remarks:**  
 Migraine II conversion.  
 • 11 May 1961: SS-312 *Burrfish* (*Grilse*) transferred to Canada.  
**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	37	56	67	74
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	8	6	4	2	0	Sinks

**Gato**

**Displacement:** 2308 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II  
**Weapons:**  
 PB&SB(2)2 Mk34 533mm TT w/12 6 Mk14/16, 2 Mk27 Mod4  
**Sensors:**  
 BQS-2, BQR-3  
 SS-2, SV-2, BPS-2

**In class:** [3]  
**In Service:** 1953 - 60  
**Crew:** 108  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 1 Manual  
**ES/AIR:** 1st/1st Gen

**Remarks:**  
 Migraine III conversion. Atlantic: *Pompon*, *Ray*, *Redfin*, Pacific: *Rasher*, *Raton*, *Rock*.  
 • Late 50s: SV-2 removed. Some fitted with BPS-3.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	37	56	67	74
<b>Surf Speed:</b>	18	14	9	5	0	Sinks
<b>Subm Speed:</b>	8	6	4	2	0	Sinks

**Gato**

**Displacement:** 2425 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II  
**Weapons:**  
 PB&SB(3)2 Mk34 533mm TT w/7 Mk37 Mod1/2, 9 Mk16  
 PQ&SQ(2)2 Mk35 533mm TT w/4 Mk37 Mod 1/2, 4 Mk16  
**Sensors:**  
 BQS-2, BQR-3  
 SS-2

**In class:** [1]  
**In Service:** 1966 - 69  
**Crew:** 85  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 2 Manual  
**ES/AIR:** 1st/1st Gen

**Remarks:**  
 SS 282 *Tunny*. Can bottom. Max torpedo launch depth is Int I. Converted from SSG.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	21	16	11	5	0	Sinks
<b>Subm Speed:</b>	10	8	5	3	0	Sinks

**Balao**

**Displacement:** 2415 subm  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** None  
**Signature:** VSmall/Noisy  
**Max Depth:** Int II  
**Weapons:**  
 PB&SB(3)2 Mk34 533mm TT w/7 Mk37 Mod1/2, 9 Mk16  
 PQ&SQ(2)2 Mk35 533mm TT w/4 Mk37 Mod 1/2, 4 Mk16  
**Sensors:**  
 BQS-2, BQR-3  
 SS-2 or BPS-2

**In class:** [2]  
**In Service:** 1959 - 69  
**Crew:** 120 + 160  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (old)  
**Cbt Sys:** Gen 2 Manual  
**ES/AIR:** 1st/2nd Gen

**APSS**  
**K**  
**J**

**Remarks:**

SS 313 *Perch*, SSG 325 *Sealion*. Can carry 115 troops. Hangar can hold LVT with jeep and 75mm howitzer, plus eight 10 man small boats. HRS helicopter can land on aft deck. Max torpedo launch depth is Int I.

- 1965: *Perch* operates off South Vietnam. Equipped with F/A(1)2 40mm deck guns (0.3L) and M2 .50 cal (0.1L).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	39	58	69	77
<b>Surf Speed:</b>	20	15	10	5	0	Sinks
<b>Subm Speed:</b>	8	6	4	2	0	Sinks

**DCS**

**Displacement:** 28 subm  
**Size Class:** F/VSmall  
**Propulsion:** Electric  
**Signature:** Stealthy/Quiet  
**Max Depth:** Int I

**In Class:** 0 + 1 + 2  
**In Service:** 2020  
**Crew:** 2 + 8  
**Armor Rating:** 0  
**Btry Rtnng:** 30 (new)

**SSM****Sensors:**

HF Obstacle Avoidance

K

**Remarks:**

Dry Combatant Submarine. Can use diver lockout chamber down to 30 m.

- 3QFY20: Operational from surface craft.
- FY26: Operational from submarines.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	3.9
<b>Surf Speed:</b>	5	4	3	1	0	Sinks
<b>Subm Speed:</b>	5	4	3	1	0	Sinks

**SDV Mk11**

**Displacement:** 4.5 subm  
**Size Class:** F/VSmall  
**Propulsion:** Electric  
**Signature:** Stealthy/Quiet  
**Max Depth:** Int I

**In Class:** 2 + 5  
**In Service:** 2019  
**Crew:** 2 + 4  
**Armor Rating:** 0  
**Btry Rtnng:** 25 (new)

**LSDV****Remarks:**

Shallow Water Combat Submersible (SWCS). Can be launched from Extended length Dry Deck Shelter.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	0.3	0.6	0.9	1.0	1.2
<b>Surf Speed:</b>	5	4	3	2	0	Sinks
<b>Subm Speed:</b>	6	5	3	2	0	Sinks

**ASDS**

**Displacement:** 60 subm  
**Size Class:** F/VSmall  
**Propulsion:** Electric  
**Signature:** Stealthy/Quiet  
**Max Depth:** Int I

**In Class:** [1]  
**In Service:** 2004 - 08  
**Crew:** 2 + 8  
**Armor Rating:** 0  
**Btry Rtnng:** 45 (new)  
**ES/AIR:** None/???

**SS****Sensors:**

HF Obstacle Avoidance

K

**Remarks:**

Advanced SEAL Delivery System. Fitted with 2 folding masts - comms and periscope. Not fitted with diesel engines, must recharge batteries while on the mother ship or alongside. Can be carried by converted Improved *Los Angeles* or *Virginia* SSN and SSGN or surface ships with well dock. First boat considered too noisy and suffers from low-life batteries

- Apr 05: Remainder of class canceled.
- Nov 08: Suffers damage whilst battery charging and struck.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	1.6	3.3	4.9	5.9	6.5
<b>Surf Speed:</b>	6	5	3	2	0	Sinks
<b>Subm Speed:</b>	8	6	4	2	0	Sinks

**SDV MkVIII Mod 0/1**

**Displacement:** 3 subm  
**Size Class:** G/VSmall  
**Propulsion:** Electric

**In Class:** 14 - 4  
**In Service:** 1975 - 22  
**Crew:** 2 + 6

**SSM**

**Signature:** VSmall/see remarks

**Armor Rating:** 0

**Max Depth:** Shallow

**Btry Rtnng:** 9 (new)

**Sensors:**

HF Obstacle Avoidance

K

**Remarks:**

Swimmer Delivery Vehicle. Acoustic signature Noisy/Quiet for Mod 0/ Mod 1. Rated down to 152 m, much deeper than divers in open cockpit can handle. Can plant MkV Limpet mines (100 lb explosives). One SDV can be carried in a drydeck shelter. Range 15 nmi.

- 1996 - 06: Mod 1 Gator upgrade with 2 + 6 crew, battery rating 18 (new), Quiet acoustic signature. Range 36 nm
- 1999: Three transferred to UK.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	0.2	0.4	0.7	0.8	0.9
<b>Surf Speed:</b>	6	5	3	2	0	Sinks
<b>S. Spd (Mod 0):</b>	6	5	3	2	0	Sinks
<b>S. Spd (Mod 0):</b>	9	7	5	2	0	Sinks

**SDV MkVII**

**Displacement:** 1.0 subm  
**Size Class:** G/VSmall  
**Propulsion:** Electric  
**Signature:** Stealthy/Noisy  
**Max Depth:** Shallow

**In Class:** ?

**In Service:** 1968 - 80s

**Crew:** 1 + 3

**Armor Rating:** 0

**Btry Rtnng:** 8 (new)

**SSM****Remarks:**

Swimmer Delivery Vehicle. First production USN SDV. Eight hour endurance.

- Early 80s: Retired.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	0.1	0.2	0.3	0.3	0.4
<b>Surf Speed:</b>	4	3	3	1	0	Sinks
<b>Subm Speed:</b>	5	4	3	2	0	Sinks

**Drydeck Shelter**

**Displacement:** 30 subm  
**Size Class:** None  
**Propulsion:** None  
**Signature:** None  
**Max Depth:** Int II

**In Class:** 6

**In Service:** 1987

**Crew:** See Remarks

**Armor Rating:** 0

**Btry Rtnng:** None

**DDS****Remarks:**

Hangar for one SDV MkVIII or four CRRC and 20 SEALs plus airlock into submarine. Can launch SDV/CRRC from Shallow Depth (130 feet max) or perform mass lockout of 20 SEAL. Takes 12 hours to fit to submarines equipped to handle DDS and a further 12 hours to test systems. Can be carried by C-5 or C-17 transport aircraft. Originally fitted with SSN 688, 690, 700, 701, 715.

- 2014: Atlantic and Pacific each has 3 DDS, 2 SSGN and 2 SSN. Always one DDS per SSGN, with remainder on either SSGN or SSN. Atlantic - SSGN 728 and 729, SSN 778 and 784. Pacific - SSGN 726, 727; SSN 776, 782.
- Sep 18 - Sep 23: Modernized with 1.27 m extension for SDV Mk11.

**Iowa Guided Missile Battleship**

**Displacement:** 44000 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Loud

**In Class:** 1

**In Service:** 1956

**Crew:** 2753

**Armor Rating:** 45/19/195

**Cbt Sys:** Gen 2 Manual

**BBG****Weapons:**

F(3)2 Mk7 16in/50//2 Mk13  
A(2)2 Mk10 w/80 Terrier//2 SPG-55  
A(1)1 launcher w/8 Regulus II  
P/S(2)10 Mk28 5in/38//4 Mk12 (9.8)  
PW/SW/4P/4S/PA/SA(2)12 Mk33 3in/50 (2.7)

**Sensors:**

SPS-6B, SPS-8

C

D

D

C

C

**Remarks:**

SCB 19. *Kentucky*. Proposal to convert unfinished hull as BBG. Authorized in 1954, canceled later that year. Displacement estimated.

J

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	266	532	797	957	1063
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Iowa Ballistic Missile Monitor (Sep 58) BBMG**

**Displacement:** 40000 std **In Class:** 4  
**Size Class:** A/Large **In Service:** 1963  
**Propulsion:** Steam Turbine **Crew:** 2130  
**Signature:** Large/Loud **Armor Rating:** 45/19/195  
**Weapons:** **Cbt Sys:** Gen 3 Semi-Automatic

- F(3)2 Mk7 16in/50//2 Mk13 **C**
- P/S(2)2 Mk28 5in/38//1 Mk56 GFCS (2.0) **C**
- A(2)1 Mk12 w/56 Talos//2 SPG-49 **D**
- P/S(1)4 Mk12 w/42 Tartar//SPG-51 **D**
- A(1)1 launcher w/4 Regulus II **D**
- P&S(1)8 Mk16 ASROC launcher w/8 ASROC **E**
- PB/SB(3)2 Mk32 324mm TT w/Mk44 **F**
- 2 ASW helicopters **B**

**Sensors:** **J**  
 SPS-10, SPS-37, SPS-30, SPS-39  
**K**  
 SQS-26

**Remarks:**  
 Listed configuration is Scheme I. Scheme II would replace both forward 16 inch turrets with F(2)1 Talos launcher//2 SPG-49. Launch tubes for 6 Polaris missiles added early in 1959. Program canceled in 1959. Fitted with NTDS, Flag plot and command spaces for amphibious command staff. Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	250	499	749	898	998
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Iowa Ballistic Missile Monitor II (1956) BBMG**

**Displacement:** 40000 std **In Class:** 4  
**Size Class:** A/Large **In Service:** 1961  
**Propulsion:** Steam Turbine **Crew:** 2753  
**Signature:** Large/Loud **Armor Rating:** 45/19/195  
**Weapons:** **Cbt Sys:** Gen 2 Manual

- F/A(2)2 Mk12 Talos w/80 msls//4 SPG-49 **D**
- P/S(2)4 Mk11 w/42 Tartar//2 SPG-55 **D**
- (12)1 launcher w/12 Jupiter **D**

**Sensors:** **J**  
 SPS-2, SPS-10, SPS-32, SPS-33, SPS-37

**Remarks:**  
 Preliminary design work only. Fitted with three sets of fin stabilizers. Scheme I was fitted with 4 twin Talos launchers and 12 single Tartar launchers (!), but was impractical because of mutual interference from the 28 missile guidance radars. Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	250	499	749	898	998
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Iowa (1982) BB**

**Displacement:** 46177 std **In Class:** [4]  
**Size Class:** A/Large **In Service:** 1982 (1943) - 92  
**Propulsion:** Steam Turbine **Crew:** 2753  
**Signature:** Large/Loud **Armor Rating:** 45/19/210  
**Electrn Cnt:** 3rd Gen J&D **Acoustic Cnt:** 2nd Gen T  
**Weapons:** **Cbt Sys:** Gen 3 Semi-Automatic

- 2F/A(3)3 Mk7 406mm/50//2 Mk13 **C**
- P/S(2)6 Mk28 5in/38//4 Mk25 (5.9) **C**
- PW/SW/PA/SW(R)4 Mk15 Phalanx Blk 0 (4@4.4A) **C**
- PS/SS(4)4 Mk141 w/4 Harpoon **D**
- PB&SB(4)8 Mk143 ABL w/4 Tomahawk **D**

**Sensors:** **ES:** 3rd Gen **J**  
 SPS-67(V)1, SPS-49(V)5, SPS-59/LN-66

**Remarks:**  
*Iowa, New Jersey, Missouri, Wisconsin.* Configuration as of 1981 - 88 modernization. Recommissioned: IA Apr 84, NJ Dec 82, MO May 86, WI Oct 88. Typical Tomahawk loadout 16 TASM, 8 TLAM-C, 8 TLAM-N. Aft helo pad with space for three Small helicopters. Aft 406mm turret cannot fire while helicopters are on the pad.

- NJ has SPS-10 vice SPS-67. WI has SPS-64 vice LN-66, Phalanx Blk I vice Blk 0, AA rating 4@6.6A.
- Dec 86: Iowa fitted with Pioneer UAV for gunfire spotting, others fitted later.
- 1988: WI fitted with Mk15 Phalanx Blk I (4@6.3A).
- Apr 89: Gun explosion on Iowa, 47 killed. No.2 (forward) turret un-serviceable and never repaired.
- 1991: MO and WI fitted with P/S(1)2 Bushmaster Mk88 25mm and Stinger missiles for service in Middle East
- Decomed: IA 1990, NJ, WI 1991, MO 1992.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	275	549	824	988	1098
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Iowa (1967) BB**

**Displacement:** 46177 std **In class:** [1]  
**Size Class:** A/Large **In Service:** 1967 (1943) - 69  
**Propulsion:** Steam Turbine **Crew:** 1626  
**Electrn Cnt:** 1st Gen J&D **Acoustic Cnt:** None  
**Signature:** Large/Loud **Armor Rating:** 45/19/210  
**Weapons:** **Cbt Sys:** Gen 2 Manual

- 2F/A(3)3 Mk7 406mm/50//2 Mk13 **C**
- 2PW/2SW/P/S/2P&PQ/2S&SQ(2)10 **C**
- Mk28 5in/38//F/P/S/A 4 Mk25 (9.8) **C**
- Aft Pad (1)4 helo **B**

**Sensors:** **ES:** 1st Gen **J**  
 SPS-6, SPS-10

**Remarks:**  
*New Jersey.* Recommissioned for Vietnam War. Aft 406mm turret cannot fire while helicopters are on the pad.  
 • Apr 68: Deployment. One 406mm turret and half of the 5 inch guns not manned. Uses QH-50DM UAV for NGS spotting.  
 • Dec 69: Decomed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	275	549	824	988	1098
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Iowa (1950) BB**

**Displacement:** 46177 std **In class:** [3]  
**Size Class:** A/Large **In Service:** 1950 (1943) - 58  
**Propulsion:** Steam Turbine **Crew:** 1626  
**Signature:** Large/Loud **Armor Rating:** 44/18  
**Weapons:** **Cbt Sys:** Gen 2 Manual

- 2F/A(3)3 Mk7 406mm/50//2 Mk13 **C**
- 2PW/2SW/P/S/2P&PQ/2S&SQ(2)10 **C**
- Mk28 5in/38//F/P/S/A 4 Mk25 (9.8) **C**
- P/S(4)20 Mk2 40mm/60 (5.0L) - IA, MO **C**
- P/S(4)16 Mk2 40mm/60 (4.0L) - WI **C**
- Aft Pad (1)4 HUP-2 Retriever **B**

**Sensors:** **ES:** 1st Gen **J**  
 SPS-6, SPS-8, SPS-10

**Remarks:**  
*Iowa, New Jersey, Wisconsin.* Recommissioned for Korean War: IA Aug 51, NJ Nov 50, WI Mar 51. Aft 406mm turret cannot fire while helicopters are on the pad.

- 1956: Iowa, New Jersey and Wisconsin fitted to carry 10 Mk23 406mm nuclear shells with nuclear warheads each for B mount only.
- 1962: Mk23 nuclear shells removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	275	549	824	988	1098
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Strike Cruiser CSGN**

**Displacement:** 15000 std **In Class:** --  
**Size Class:** B/Medium **In Service:** 1978-97  
**Propulsion:** Nuclear **Crew:** 650  
**Electrn Cnt:** 3rd Gen J&D **Acoustic Cnt:** 2nd Gen T  
**Signature:** Med/Noisy **Armor Rating:** 0



**Weapons:** **Cbt Sys:** Gen 4 Semi-Automatic

F(1)1 Mk71 8in/55//SPG-60 **C**  
 P/S(R)2 Mk15 Phalanx Blk 0 (2@5.0A) **C**  
 F/A(2)2 Mk26 w/64 SM2MR Blk II & ASROC//4 SPG-62 **D**  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 **F**  
 PS/SS(4)4 Mk141 w/4 Harpoon IC **D**  
 PB&SB(4)2 Mk143 ABL w/4 Tomahawk **D**  
 Aft Pad(1)2 SH-60B LAMPS III **B**

**Sensors:** **ES:** 3rd Gen **J**  
 SPY-1A, SPS-49(V)1, SPQ-9A **K**  
 SQS-53B

**Remarks:**

Design proposed during the Ford Administration. Eight units planned for construction starting in FY 78. Designed for independent operations, as opposed to fleet air defense. Ballistic protection over vital spaces. CHP armor rating for CIC, Mk26/SM2MR, Mk71 gun, Engineering, Sensors, Mk143 ABL is 2. Mk86 FCS for Mk71 uses SPG-60 against air targets, SPQ-9 vs. surface targets. SPG-60 can direct Mk45 gun or illuminate fifth target for SM2 msIs. SPG-60 maximum range band against air targets is Short.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	130	260	389	467	519
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Virginia (i)**

**Displacement:** 10500 ltshp **In Class:** [4] **CGN**  
**Size Class:** B/Medium **In Service:** 1978 - 97  
**Propulsion:** Nuclear **Crew:** 598  
**Electrn Cnt:** 2nd Gen J&D **Acoustic Cnt:** 1st Gen T  
**Signature:** Med/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** Gen 4 Semi-Automatic

F(2)1 Mk26 w/16 ASROC, 28 SM1MR Blk I & **D**  
 A(2)1 Mk26 w/24 SM1MR//A2 SPG-51 **C**  
 F/A(1)2 Mk45 5in/54//A SPG-60 (2.2) **D**  
 PS/SS(4)2 Mk141 w/4 Harpoon IC **F**  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5 **B**  
 Aft pad(1)1 SH-2F LAMPS I **B**  
 1 Elevator **--**

**Sensors:** **ES:** 2nd Gen **J**  
 SPS-40B, SPS-48A, SPS-55, SPS-59/LN-66, SPQ-9A **K**  
 SQS-53A

**Remarks:**

*Virginia, Texas, Mississippi, Arkansas.* Magazines hold 18 Mk46 torpedoes for helo and Mk32 TT. Aluminum superstructure, -15% damage modifier. Forward and aft Mk26 launchers share a total of 2 SPG-51 directors. SPG-60 can direct Mk45 guns or illuminate third target for SM1MR msIs. SPG-60 maximum range against air targets is Short. Elevator on fantail leaked into hangar, helicopter rarely embarked.

- Only *Arkansas* fitted with Harpoon on commissioning.
- Fitted with Harpoon. *Mississippi* 1979, *Texas* by Jan 80, *Virginia* Dec 80.
- 1982 - 86: Kevlar armor added, CHP armor rating for Mk26 launcher, Mk45 gun, Sensors is 2.
- 1984-87: Refitted. P/S(R)2 Mk15 Phalanx Blk 0 (2@5.0A) added, PQ&SQ(4)2 Mk143 ABL w/4 Tomahawk (CHP armor rating 2) added in place of helicopter. ECM and ES upgraded to 3rd Gen, Acoustic Counterterm upgraded to 2nd Gen Towed. *Virginia* 1984-85, *Arkansas* 1985?-86, *Texas* 1985-87, *Mississippi* 1986-87.
- May 86: *Virginia* equipped with SM-2MR Blk II.
- 1990 - 92: *Virginia* fitted with SPS-48E and SPS-64 replacing LN-66 and SPS-48.
- Received New Threat Upgrade: SPS-48 upgraded to SPS-48E (except *Mississippi*), SPS-40 replaced by SPS-49(V)5 (except *Virginia*), SPS-10 and LN-66 replaced by SPS-64, SM1MR replaced by SM2MR Blk II, ASROC removed from forward magazine, stowage for SM2MR increased to 44. Combat system Gen 5 Human. *Mississippi* Mar 91 - Aug 92, *Texas* entered refit 1992 but decommed before completion. *Virginia* and *Arkansas* struck instead of being upgraded.
- 1991: *Arkansas* fitted with P/S(1)2 Mk38 25mm for Middle East deployment.
- 1992: *Mississippi* fitted with SPS-48E vice SPS-48C.

• Decommed: *Texas* 1993, *Virginia* 1994 (fitted w/SPS-40B vice SPS-49 when decommed), *Mississippi* 1996, *Arkansas* 1997.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	94	189	283	339	377
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**California**

**Displacement:** 9676 lt **In Class:** [2] **CGN**  
**Size Class:** B/Medium **In Service:** 1974 - 99  
**Propulsion:** Nuclear **Crew:** 550  
**Electrn Cnt:** 2nd Gen J&D **Acoustic Cnt:** 1st Gen T  
**Signature:** Med/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** Gen 4 Semi-Automatic

F/A(1)2 Mk45 5in/54//F SPG-60 (2.2) **C**  
 F/A(1)2 Mk13 Mod 3 w/40 SM1MR Blk VI//4 SPG-51 **D**  
 F(8)1 Mk16 w/24 ASROC **E**  
 PB/SB(2)2 Mk32 324mm TT w/2 Mk46 **F**

**Sensors:** **ES:** 2nd Gen **J**  
 SPS-40B, SPS-48C, SPQ-9A, SPS-10, SPS-59/LN-66 **K**  
 SQS-26

**Remarks:**

*California, South Carolina.* Helo pad aft. Magazines hold another 8 Mk46 torp (manual reload). Aluminum superstructure, -15% damage modifier. SPG-60 can direct Mk45 gun or illuminate target for SM1/SM2 msIs. SPG-60 maximum range against air targets is Short.

- Early 80s: Fitted with P/S(R)2 Mk15 Phalanx Blk 0 (2@5.0A), PS/SS(4)2 Mk141 w/4 Harpoon IC, P/S(1)4 M2 .50 cal. (0.1), estimated 2nd Gen acoustic countermeasures. *South Carolina* Jan 83 - May 84. *California* possibly 1992 - 83.
- 1986 - 87: Vital spaces fitted with Kevlar armor, CHP armor rating for Mk13, Mk45, CIC, sensors is 2.
- Fitted with New Threat Upgrade; Cbt System Gen 5 Human, SM1MR replaced by SM2MR Blk II/III. SPS-48C upgraded to SPS-48E, SPS-40 replaced by SPS-49(V)5, SPS-10 replaced by SPS-64 and SPS-67. ES and ECM upgraded to 3rd Gen, ACM to 2nd Gen Towed. Mk16 ASROC launcher removed. *California* Apr 90 - Jan 93, *South Carolina* Mar 91 - Mar 94.
- 1999: Both units decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	89	179	268	321	357
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Truxtun**

**Displacement:** 8600 std **In Class:** [1] **DLGN**  
**Size Class:** B/Medium **In Service:** 1967 - 95  
**Propulsion:** Nuclear **Crew:** 534  
**Electrn Cnt:** 1st Gen D **Acoustic Cnt:** None  
**Signature:** Med/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** Gen 3 Semi-Automatic

F(1)1 Mk42 5in/54//Mk68 (0.4) **C**  
 P/S(2)2 Mk33 3in/50//2 Mk34 (0.5) **C**  
 A(2)1 Mk10 w/60 weapons//2 SPG-55 **D, E**  
 PB/SB(1)2 Mk25 533mm TT w/1 Mk37 torp **F**  
 PB/SB(2)2 Mk32 324mm TT w/2 Mk46 torp **F**  
 Aft Pad (1)1 DASH **B**

**Sensors:** **ES:** 1st Gen **J**  
 SPS-10, SPS-40, SPS-48A **K**  
 SQS-26

**Remarks:**

Originally classified as DLGN. Mk10 loadout is 40 RIM-2 Terrier BT/HT and 20 ASROC. Aluminum superstructure, -15% damage modifier.

- 1969: SM1ER replaced Terrier.
- Nov 70 - Jan 71: LAMPS I refit, DASH hangar and flight deck enlarged for SH-2F Seasprite. ECM and ES upgraded to 2nd Gen. 533mm TT removed.
- Feb 74 - Jun 1975: Nuclear refuel. Designation changed to CGN 30 Jun 75.
- 1977: SM2ER replaced SM1ER. Combat system upgraded to Gen 4 Semi-Automatic, Mk42 AA Rating 1.6.
- 1979-80: Mk33 guns replaced by PB/SQ(4)2 Mk141 w/4 Harpoon. Radar fit changed to SPS-40D, SPS-48C, SPS-59/LN-66.

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- Sep 82 - Jul 84: Refitted, received SM2ER Blk II, SPS-10, LN-66 replaced by SPS-64, SPS-67. ECM upgraded to 3rd Gen, Countermeasures upgraded to 3rd Gen J&D. PW/SW(R)2 Mk15 Phalanx Blk 0 (2@5.0A) added.
- Oct 89 - Jan 90: Radar fit changed to SPS-48C, SPS-49(V)5, SPS-64, SPS-67. Fitted with 1st Gen acoustic countermeasures.
- 29 Sep 95: Decommissioned.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	76	152	228	274	304
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Bainbridge****Displacement:** 7600 std**Size Class:** B/Medium**Propulsion:** Nuclear**Electrn Cnt:** 1st Gen J**Signature:** Med/Noisy**Weapons:**

P/S(2)2 Mk33 3in/50//2 Mk34 (0.9)

F/A(2)2 Mk10 Mod 5 w/40 Terrier BW &amp; BT//4 SPG-55

F(8)1 Mk16 w/8 ASROC

P/S(3)2 Mk32 324mm TT w/3 Mk44 torp

**Sensors:**

SPS-10, SPS-37, SPS-39

SPS-59/LN-66

SQS-23

**Remarks:**

Original designation DLGN. Helo pad aft. No ASROC reloads. Aluminum superstructure, -15% damage modifier.

• Aug 67 - May 68: Nuclear refuel.

• 1967: Mk46 torpedoes available.

• Jun 74 - Sep 76: AAW Modernization, fitted with NTDS. Combat system upgraded to Gen 4 Semi-Automatic. SM1ER//SPG-55B replaced Terrier//SPG-55. 2nd Gen D countermeasures fitted, ES upgraded to 2nd Gen. SQS-23 upgraded to SQQ-23 PAIR. Fitted with SPS-59/LN-66 and SPS-43 radars, equipment to process signals from LAMPS helicopter. No hangar. Mk33 3 inch guns replaced by P/S(1)2 Mk67 20mm (0.1L)

• 1 Jul 75: Reclassified as CGN.

• Oct 78 - Jan 79: PB/SQ(4)2 Mk141 w/4 Harpoon added, 20mm removed.

• Oct 83 - Apr 85: Refitted. Radar fit changed to SPS-67, SPS-48C, SPS-49(V)5. SM2ER vice SM1ER, P/S(R)2 Mk15 Phalanx Blk 0 (2@5.0A, P/S(1)4 M2 .50 cal (0.1L) added. Countermeasures and ES upgraded to 3rd Gen (J&D), 2nd Gen acoustic countermeasures added.

• 1990: Received New Threat Upgrade, combat system Gen 5 Human.

• 1993?: ASROC launcher removed.

• 6 Oct 95: Decommissioned.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	70	140	210	252	280
<b>Surf Speed:</b>	34	26	17	8	0	Sinks

**Long Beach (1983)****Displacement:** 15100 lt**Size Class:** B/Medium**Propulsion:** Nuclear**Electrn Cnt:** 3rd Gen J&D**Signature:** Med/Noisy**Weapons:**

F(2)1 Mk10 w/80 SM2ER &amp;

F(2)1 Mk10 w/40 SM2ER//F/A 4 SPG-55

PS/SS(4)2 Mk141 w/4 Harpoon

P/S(1)2 Mk30 5in/38//2 Mk35 (2.2)

A(R)2 Mk15 Phalanx Blk 0 (2@5.0A)

P&amp;S(8)1 Mk16 w/8 ASROC

PB/SB(3)2 Mk32 324mm TT w/3 Mk46

Aft Pad(1)1

**In Class:** [1]**In Service:** 1962 - 95**Crew:** 459**Acoustic Cnt:** 1st Gen T**Armor Rating:** 0**Cbt Sys:** Gen 3 Semi-Automatic**CGN****C****D****E****F****ES:** 1st Gen**J****J****K****Sensors:**

SPS-67(V)1, SPS-48C, SPS-49(V)3, SPS-59/LN-66

SQQ-23 PAIR

**Remarks:**

20 total ASROC carried. Configuration after 1983 midlife conversion. Aluminum superstructure, -15% damage modifier. Armor rating for Bridge/CIC is 2.

• 1985: Harpoon launchers moved to superstructure, PQ&SQ(4)2 Mk144 ABL w/4 Tomahawk added.

• 1994: Deactivated. Canceled FY93 upgrade would have added flag facilities (TFCC), New Threat Upgrade (Gen 5 Human combat system), another 2 Tomahawk ABL.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	120	240	360	432	480
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Long Beach****Displacement:** 14200 std**Size Class:** B/Medium**Propulsion:** Nuclear**Electrn Cnt:** 1st Gen D**Signature:** Med/Noisy**Weapons:**

F(2)1 Mk10 Mod 2 w/80 Terrier BW &amp; BT &amp;

F(2)1 Mk10 Mod 1 w/40 Terrier//F/A 4 SPG-55

A(2)1 Mk12 w/52 Talos//2 SPG-49

P&amp;S(8)1 Mk16 w/8 ASROC

PB/SB(3)2 Mk32 324mm TT w/3 Mk46 torp

Aft Pad(1)1

**Sensors:**

SPS-32, SPS-33, SPS-10

SQS-23

**Remarks:**

20 total ASROC carried. Aluminum superstructure, -15% damage modifier.

• 1961: Commissioned, but NTDS, SPS-33, Terrier and Talos not operational until late 1962. Originally Terrier BW and BT, later upgraded to SPG-55A with Terrier HT capability.

• 1962 - 1963: P/S(1)2 Mk30 5in/38//2 Mk56 added (1.0).

• 1967: Mk46 torp replaced Mk44.

• 1968: SPS-12 radar added because of problems with SPS-32/33.

• 1969: SM1ER replaced Terrier.

• Dec 76: Plan to fit ship with Aegis canceled.

• 1977: Fitted with aft pad.

• 1978: Talos deactivated.

• Jan-Apr 79: Talos removed launcher and director removed, PS/SS(4)2 Mk141 w/4 Harpoon added.

• Oct 80 - Mar 83: Upgraded. See separate entry.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	106	213	319	383	425
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Ballistic Missile Defense Ship****Displacement:** 19000 std**Size Class:** B/Medium**Propulsion:** Diesel**Electrn Cnt:** 3rd Gen J&D**Signature:** Small/Quiet**Weapons:**

F(1)1 Railgun (30.0)

F&amp;A(8)32 Mk41/Mk57 VLS w/see remarks

PW/SW/A(21)3 Mk49 w/21 RIM-116B RAM Blk IA

A(1)1 Mk110 57mm (2.7)

Aft pad, Elevator, 2 MV-22, 4 SH-60

**Sensors:**

X band, S band radars (use SPY-3, SPY-4)

**Remarks:**

Proposal by Huntington Ingalls shipyard for Ballistic Missile Defense ship. Based on the *San Antonio* LPD hull. VLS would carry a total of 256 missiles; could carry SM6, SM3, SM2, quad-pack ESSM, Tomahawk. Fitted with Ship Self-Defense System Mk2.

**CGN****In Class:** [1]**In Service:** 1961 - 94**Crew:** 1020**Acoustic Cnt:** 1st Gen T**Armor Rating:** 0**Cbt Sys:** Gen 3 Semi-Automatic**D****D****D****E****F****B****ES:** 1st Gen**J****K****CGN****In Class:** [1]**In Service:** 1983 - 94**Crew:** 1162 + 68**Acoustic Cnt:** 2nd Gen T**Armor Rating:** 0**Cbt Sys:** Gen 4 Semi-Automatic**D****D****C****C****E****F****B****CG?****In Class:** --**In Service:** --**Crew:** 360**Acoustic Cnt:** 3rd Gen T**Armor Rating:** 0**Cbt Sys:** Gen 6 Automatic**C****D****D/Intl****C****--****ES:** 3rd Gen**J**

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	152	304	455	546	607
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Bunker Hill (CMP)**

**Displacement:** 7260 lt  
**Size Class:** B/Medium  
**Propulsion:** COGAG/ CPP  
**Electrn Cnt:** 4th Gen J&D  
**Signature:** Med/Quiet  
**Weapons:**  
 F&A(8)16 Mk41 VLS w/128 msls total, est. loadout  
 80 SM2MR Blk IIIB, 24 ESSM, 10 SM3, 24 Tomahawk,  
 8 VL ASROC. Can also fire SM6//4 SPG-62  
 PS/SS(4)2 Mk141 w/4 Harpoon IC  
 F/A(1)2 Mk45 Mod 4 5in/62//SPY-1 and SPQ-9B (2.2)  
 P/S(R)2 Mk15 Phalanx 1B (7.6A)  
 P/S(1)2 Mk38 Bushmaster 25mm  
 P/S(1)4 M2 .50 cal (0.1L)  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 or Mk54  
 Aft Pad(1)2 MH-60R Seahawk  
**Sensors:** ES: 3rd Gen  
 SPY-1D, SPS-73, SPS-64, SPQ-9B  
 SQS-53C, TB-37 MFTA  
 4th Gen FLIR /laser rangefinder (surface fire for Mk45)

**Remarks:**

Cruiser Modernization Program. Aegis Baseline 9, allows simultaneous engagement of air and ballistic missile targets. Aluminum superstructure, -15% damage modifier. Fitted with RAST helo recovery system. SPY-1 directs Mk45 gun against air targets, SPQ-9B directs gun against surface targets. Magazines hold 36 Mk54 torps for helo and Mk32 TT. CHP armor rating for Sensors, Mk41, Mk45 is 2.  
 • 2014: *Port Royal, Lake Erie, Chosin* placed on reduced operating status. Eleven units in total placed in reserve until modernization  
 • Upgrades: *Chancellorsville* Apr 12 - Mar 13, *Normandy* Apr 13 - Mar 14, *Vicksburg* Jul 16 - Sep 17, *Anzio* Jan - Aug 18?, *Cowpens* Sep 18 - Dec 19, *Gettysburg* Jan 19 - Mar 20, *Hué City* Oct 19 - ?, *Chosin* Dec 19 - Nov 21, *Cape St. George* ?  
 • 16 Nov 13: *Chancellorsville* struck by BQM-74 target drone during combat system tests, two sailors injured, damage to vital systems. Repaired Jan - Jun 14.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	74	148	221	266	295
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Bunker Hill**

**Displacement:** 8910 std  
**Size Class:** B/Medium  
**Propulsion:** COGAG/ CPP  
**Electrn Cnt:** 3rd Gen J&D  
**Signature:** Med/Quiet  
**Weapons:**  
 F&A(8)16 Mk41 VLS w/122 msls total, est. loadout  
 96 SM2MR Blk II, 26 Tomahawk//PW/SW/2A 4 SPG-62  
 PS/SS(4)2 Mk141 w/4 Harpoon IC  
 F/A(1)2 Mk45 5in/54//SPY-1 and SPQ-9 (2.2)  
 P/S(R)2 Mk15 Phalanx Blk 0 (5.0A)  
 P/S(1)4 M2 .50 cal (0.1L)  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5  
 Aft Pad(1)2 SH-60B LAMPS III  
**Sensors:** ES: 3rd Gen  
 SPY-1A (CG 52-58), SPY-1B (CG 59-73),  
 SPS-49(V)6, SPS-55, SPS-64, SPQ-9A  
 SQS-53A (CG 52-55), -53B (CG 56-67), -53C (CG 68-73),  
 SQR-19(V)1 (CG 54-64, 66-73) or SQR-19(V)3 (CG 65)

**Remarks:**

Fitted with RAST. Magazines hold 36 torpedoes for helos and 324mm TT. Initially limited to SPQ-9A directing Mk45 guns against surface targets only. CHP armor rating for Sensors, Mk41, Mk45 is 2. Aluminum superstructure, -15% damage modifier.  
 • Systems: SM2MR Blk III 1990?; SM2MR Blk IIIB 1999; Nulka

hovering decoy (4th Gen J&D) fitted 2000-06; Phalanx Blk I (2@7.6A) (CG 55 1992 on, remainder in 1990s); SQS-53C vice SQS-53A (1998). CG 65-73 have 4 SLQ-49 stationary distraction decoys.  
 • 1991: SPY-1 upgraded to direct Mk45 gun against air targets.  
 • Early 90s: VLS cranes deleted - each Mk41 VLS launcher increases to 64 vice 61 cells - estimated Mk41 loadout 32 Tomahawk, 96 SM2MR). P/S(1)2 Mk38 Bushmaster 25mm guns (local control only) added to units deploying to Middle East.  
 • Late 90s?: SQR-19 removed, stored ashore. CG 53, 50 in 2001; CG 54 in 2002; CG 66, 69 in 2003.  
 • 1998: CG 70, 73 fitted with SM2 Blk IVA.  
 • 1999: CG 58, 59, 63 fitted with 4th Gen J&D.  
 • 2001: CG 70 used for trials with SM2 Blk IVA and SM3 - first generation BMD.  
 • May 01: CG 72 fitted with Dutch Scout radar vice SPS-64.  
 • Sep 05-10: Five fitted with first generation Ballistic Missile Defense, estimated 8 SM3 carried vice 8 SM2MR. CG 70 in 2005, CG 73 in late 06; CG 67 in Sep 06; CG 61, CG 72 in 2009 - all with BMD upgrades below.  
 • 2005-10: Mk38 Bushmaster 25mm fitted with EO(D/N) GFC (no longer local control).  
 • 2006: Five updated to BMD 3.6 with SM3 Blk IA. Can detect and engage ballistic missile and air targets at the same time.  
 • 2008: Fitted with Scan Eagle UAV. Carried in torpedo magazine vice an estimated six torpedoes. Launched and recovered from helo pad.  
 • 2008+: Estimate fitted with 3rd Gen acoustic countermeasures.  
 • 2009: Five BMD ships fitted with SM3 Blk IA, fuze-modified SM2 Blk IV used as terminal interceptor (retired 2012) - estimate 8 each carried vice 16 SM2MR.  
 • Feb 08-18: Cruiser Modernization Program, 11 ships updated. Listed separately.  
 • 2012-14: CG 59, 60, 62-66, 71 fitted with SQS-53D, TB-37 MFTA and Mk54 torpedoes.  
 • 2013: BMD ships fitted for remote targeting from land-based TPY-2 radars (Aegis Ashore).  
 • Dec 14: First MH-60R deployment on CG 69. All fitted by 2015.  
 • Mar 16: CG 57 fitted with SPQ-9B replacing SPQ-9A.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	74	148	221	266	295
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Ticonderoga (ii)**

**Displacement:** 7219 lt  
**Size Class:** B/Medium  
**Propulsion:** COGAG/ CPP  
**Electrn Cnt:** 3rd Gen J&D  
**Signature:** Med/Quiet  
**Weapons:**  
 F(2)2 Mk26 Mod 1 w/20 SM2MR & 20 ASROC,  
 A(2)2 Mk26 Mod 1 w/44 SM2MR//PW/SW/2A 4 SPG-62  
 F/A(1)2 Mk45 5in/54//SPY-1 and SPQ-9 (2.2)  
 P/S(R)2 Mk15 Phalanx Blk 0 (5.0A)  
 P/S(1)2 Mk38 Bushmaster 25mm  
 P/S(1)4 M2 .50 cal (0.1L)  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5  
 Aft Pad(1)2 SH-60B LAMPS III  
 PS/SS(4)2 Mk141 w/4 Harpoon IB  
**Sensors:** ES: 3rd Gen  
 SPY-1A, SPS-49(V)6, SPQ-9A, SPS-55, SPS-64  
 SQS-53A

**Remarks:**

*Ticonderoga, Yorktown, Vincennes, Valley Forge, Thomas C Gates.*  
 Fitted with RAST. Magazines hold 36 torpedoes for helos and 324mm TT. CG 47 and CG 48 have SPS-53 vice SPS-64, SM2MR Blk I, SH-2F vice SH-60B and not fitted with RAST. Initially limited to SPQ-9A directing Mk45 guns against surface targets only. CHP armor rating for Sensors, Mk26, Mk45 is 2. Aluminum superstructure, -15% damage modifier.  
 • Systems: SM2MR Blk I 1983, SM2MR Blk II 1984, Harpoon IC 1985, SM2MR Blk III 1990; Phalanx Blk IA 1992 (2@7.6A); P/S(1)2 Mk38 Bushmaster 25mm in the early 90s.

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- 1983: Ships deploying to Med and Persian Gulf typically carry Stinger msls - estimated as P/S(1)2 Stinger.
- 1991: SPY-1 upgraded to direct Mk45 gun against air targets.
- 1994?: ASROC retired - Forward Mk26 carries 44 SM2MR.
- 1996: Two fitted with increased automation (crew of 309). *Yorktown* (1996), *Ticonderoga* (2000).
- 2005: Planned refits canceled - would have received SQS-53D.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	76	152	228	274	294
<b>Surf Speed:</b>	30	22	15	8	0	Sinks

**Belknap**

**Displacement:** 6570 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electr Cnt:** 1st Gen D  
**Signature:** Med/Noisy  
**Weapons:**

F(2)1 Mk10 w/60 msls, normal loadout 52 Terrier and 8 ASROC. Can carry up to 20 ASROC and only 40 Terrier//2 SPG-55

A(1)1 Mk42 5in/54//Mk68 (1.4)

P/S(1)2 Mk33 3in/50//2 Mk5 (0.9)

PB/SB(3)2 Mk32 324mm TT w/3 Mk44

Aft Pad(1)3 DASH Drone

**Sensors:** ES: 1st Gen

SPS-10, SPS-43, SPS-48A

SQS-26

**Remarks:**

Originally classed as DLGs. Originally fitted with two Mk25 stern tubes for Mk48 torpedoes, but these were never used. Aluminum superstructure, -15% damage modifier. Carries 12 reload torpedoes.

- *Wainwright*, *Belknap*, *Josephus Daniels* not fitted with NTDS, combat system Gen 2 Manual. Have SPS-39 vice SPS-48. 1st Gen T acoustic countermeasures not fitted to *Josephus Daniels* or *Sterett*.
- 1960s: Countermeasures upgraded to 2nd Gen ES, 2nd Gen D.
- Late 60s: *Belknap*, *Josephus Daniels*; NTDS added. Combat system Gen 3 Semi-Automatic.
- 1967: Mk46 torp replaced Mk44.
- 1969: SM1ER missile replaced Terrier. *Belknap* fitted with SPS-48A replacing SPS-39.
- 1970s: Fitted with SPS-59/LN-66 radar. Mk25 TT removed.
- 1971-72: LAMPS I refit, DASH hangar and flight deck enlarged for SH-2 Sea Sprite. *Belknap* Dec 71, *Biddle* Apr 72, *Wainwright* Jul 72.
- 1974: *Belknap* fitted with SLQ-17 EW, Estimated 2nd gen ES, 2nd gen J&D.
- 1 Jul 75: Reclassified as CGs.

- 22 Nov 75: *Belknap* involved in collision with carrier *John F. Kennedy*, heavily damaged by fire. Rebuilt 1976 - May 80. Combat system Gen 4 Semi-Automatic. SM2 replaced SM1, Mk33 3 inch guns replaced by Mk15 Blk 0 Phalanx (2@5.0A) and PB/SQ(4)2 Mk141 w/4 Harpoon, SQS-26 replaced by SQS-53A, SPS-43 replaced by SPS-49(V)1. 1st Gen T Mk6 Fanfare torpedo decoy replaced by 2nd Gen SLQ-25 Nixie. Kevlar armor in critical spaces.
- 1976: *Sterett* first of class fitted with PB/SQ(4)2 Mk141 w/4 Harpoon in place of Mk33 3in/50.
- 1977-80: Class fitted with P/S(R)2 Mk15 Phalanx Blk 0 (2@5.0A), SM2ER replaced SM1ER, estimate fitted with 2nd Gen acoustic countermeasures.
- Late 70s-early 80s: Fitted with SM1MR vice Terrier, 2nd Gen D, Harpoon, SPS-48C. SPS-43 replaced by SPS-49(V)5 on *Daniels*, *Wainwright*, *Horne*, *Jouett* or SPS-40 on *Biddle*, *Fox*, *Standley*, *Sterett*.
- Early 80s: Fitted with SM2ER, 2nd Gen D and ES replaced by 3rd Gen ES, 3rd Gen J&D.

- New Threat Upgrade for all except *Belknap*, upgrades SPS-48 to SPS-48E. Combat system Gen 5 Human. *Biddle* Jul 86-Jul 87, *Jouett* 1988?-89, *Horne* Sep 88-89, *Fox* Sep 89-Sep 90, *Wainwright* 1990?-91, *Standley* Jun 90-Aug 91, *Daniels* 1991-92, *Sterett* Jul 91-Aug 92.
- 1986-87: *Belknap* refitted as 6th Fleet flagship. Helicopter hangar replaced by accommodations, pad enlarged for SH-3 (Medium helicopter).

- Decommed: *Wainwright*, *Biddle* 1993; *Josephus Daniels*, *Jouett*, *Horne*, *Sterett*, *William H. Standley*, *Fox* 1994; *Belknap* 1995.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	64	127	191	229	254
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Albany**

**Displacement:** 13700 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electr Cnt:** 1st Gen J  
**Signature:** Med/Noisy  
**Weapons:**

P/S(1)2 Mk24 5in/38//2 Mk56 (1.0)

F/A(2)2 Mk12 w/52 RIM-8 Talos//4 SPG-49, 4 SPW-2

P/S(2)2 Mk11 w/42 RIM-24 Tartar//4 SPG-51

P&S(8)1 Mk16 w/8 ASROC

PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torpedoes

**Sensors:** ES: 1st Gen

SPS-10, SPS-29, 2 SPS-30, SPS-39

SQS-23

**Remarks:**

*Albany* (Nov 58-Mar 62), *Chicago* (Nov 58 - Feb 64), *Columbus* (Nov 59 - Jan 62). *Baltimore/Oregon City* class heavy cruisers converted to missile cruisers. Talos magazine under armor. Tartar magazine has no armor. No ASROC reloads. Aluminum superstructure, -15% damage modifier. Helo pad aft for small helicopter.

- *Chicago* has NTDS, combat system Gen 4 Semi-Automatic.
- Feb 67 - Jun 69: *Albany* had SPS-29, SPS-39 replaced by SPS-43A, SPS-48A. Fitted with NTDS, combat system Gen 4 Semi-Automatic.
- 1970s: *Columbus* has SPS-29 and SPS-39 replaced by SPS-43A.
- Nov 70: *Albany* ECM upgraded to 1st Gen J&D.
- Aug 72 - Aug 73: *Chicago* AAW Refit. Fitted with NTDS, Combat system Gen 4 Semi-Automatic. Countermeasures upgraded to 1st Gen J&D, SPS-29, SPS-39 replaced by SPS-43A, SPS-52. One SPS-30 removed.
- Sep 74 - Dec 74: *Albany* converted to flagship. SPS-48A vice SPS-39. One SPS-30 removed. Second SPS-30 removed late 76.
- 1979: Planned refit included SM1MR replacing Tartar, adding 2 Phalanx and (4)2 Harpoon, canceled for lack of funds.
- 1980: Talos removed from service.
- Decommed: *Columbus* Jan 75, *Chicago* Mar 80, *Albany* Aug 80.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	104	208	311	374	415
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Leahy**

**Displacement:** 5670 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electr Cnt:** 1st Gen D  
**Signature:** Med/Noisy  
**Weapons:**

F/A(2)2 Mk10 w/est. 36 Terrier HT-3, 4 BT-3A(N)

//2F/2A SPG-55A

P/S(2)2 Mk33 3in/50//2 Mk34 (0.5)

F(8)1 Mk16 w/8 ASROC

PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp

**Sensors:** ES: 1st Gen

SPS-10, SPS-37, SPS-39

SQS-23, except *Yarnell* has SQQ-23 PAIR

**Remarks:**

Originally classed as DLG. Each Mk10 has both Terrier BT and HT. No reloads for ASROC. Aluminum superstructure, -15% damage modifier. VERTREP area aft. Total of 12 torps carried for Mk32 TT, manual reloading.

- *Halsey*, *Reeves*, *Turner*, *Worden* built with only F/A SPG-55.
- Mar - Jun 65: *Worden* fitted with SPS-48A replacing SPS-39.
- 1967: Mk46 torp replaced Mk44.
- Class AAW refit: Fitted with NTDS, combat system Gen 4 Semi-

CG

CG

D

C

C

F

B

J

K

CG

D

C

E

F

J

K

Automatic. All fitted with four SPG-55B, SPS 37 replaced by SPS-43. SM1ER Blk II/III replaced Terrier, ECM and ES upgraded to 2nd Gen. *Leahy* Feb 67 - Aug 68, *Harry E. Yarnell* Feb 68 - Jun 69, *Gridley* Sep 68 - Jan 70, *Reeves* Apr 69 - Aug 70, *Worden* Nov 69 - Jan 71, *Dale* Nov 70 - Nov 71, *England* Apr 70 - Jun 71, *Richmond K. Turner* May 71 - May 72, *Halsey* Nov 71 - Dec 72.

- 1 Jul 75: Reclassified as CGs.
- 1976: *Dale* had SPS-43 replaced by SPS-49(V)1.
- Jul 79: *Turner* test. fires Harpoon. Estimated fitted Sept 78. *Yarnell* fitted late 70s with Phalanx.
- 1974+: All except *Yarnell* fitted with 2nd Gen acoustic countermeasure SLQ-25 vice 1st Gen Fanfare.
- 1980s: Fitted with PB/SQ (4)2 Mk141 w/4 Harpoon in place of Mk33 3 inch guns, P/S(R)2 Mk15 Phalanx Blk 0 w/5 bursts (2@5.0A), SPS-59/LN-66, P/S(1)4 M2 .50 cal (0.1L) added. *Leahy* Jan-May 81, *Dale* Mar 81 - Feb 82, *Turner* Jan-Dec 82, *Gridley* Oct 82-Oct 83, *Worden* by 1983?, *England* by Jan 83, *Reeves* Harpoon by 1983, Phalanx by Feb 84. *Halsey* early 80s. *Gridley* and *Yarnell* also upgraded SQS-23 to SQQ-23 PAIR.
- 1986-91: Class received New Threat Upgrade and SM2ER Blk II. Combat system Gen 5 Human. 3rd Gen J&D, 3rd Gen ES fitted. SPS-43 replaced by SPS-49(V)5, SPS-39 by SPS-48A, SPS-10 by SPS-67. *Dale* Jan 87-Jun 88, *England* Oct 86-Oct 87, *Gridley* Feb 90-Mar 91, *Halsey* May 89-90?, *Leahy* Jul 87-88, *Reeves* 1988-89?, *Turner* Jun 88-Jul 89, *Worden* 1988-89, *Yarnell* 1987-88
- Jan-Apr 93: *Gridley* refit with SM2ER Blk III.
- Decommed: *Leahy*, *Harry E. Yarnell*, *Worden*, *Reeves* 1993; *Dale*, *Gridley*, *England*, *Halsey* 1994; *Richmond K. Turner* 1995.

**Damage & Speed Breakdown:**

Dam Pts:	0	58	115	173	207	230
Surf Speed:	33	25	17	8	0	Sinks

**Boston**

**Displacement:** 14480 std  
**Electrn Cnt:** 1st Gen J  
**Propulsion:** Steam Turbine  
**Size Class:** B/Medium  
**Signature:** Med/Noisy  
**Weapons:** F(3)2 Mk16 8in/55//Mk13  
 F/2P/2S(2)5 Mk38 5in/38//Mk25 (5.9)  
 P/S(2)6 Mk33 3in/50//6 (*Boston*) or 4 (*Canberra*) Mk56 (2.7)  
 A(2)2 Mk4 w/72 RIM-2 Terrier BW and BT //2 Mk25 Mod 7 (*Boston*) or SPG-5 (*Canberra*)  
 Aft Pad(1)1 HUP-2 Retriever

**Sensors:** SPS-6, SPS-10, SPS-12, SPS-3 (CXRX), SPS-13 (*Canberra*)

**Remarks:**

- Boston* converted Jan 52 - Nov 55, *Canberra* Jan 52 - Jun 56. Converted *Baltimore* class heavy cruisers. Helo hangar under flight deck. CHP armor rating for Bridge, CIC and Terrier magazines is 4.
- Feb - Jun 63: *Boston* had SPS-3 radar replaced by SPS-30.
- 1966: SPS-6, SPS-12 replaced by SPS-30, SPS-37A.
- 1968: Terrier system removed, used as gun cruisers.

**Damage & Speed Breakdown:**

Dam Pts:	0	127	254	380	456	507
Surf Speed:	33	25	16	8	0	Sinks

**Des Moines**

**Displacement:** 19930 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Med/Noisy  
**Weapons:** 2F/A(3)3 Mk16 8in/55//2 Mk13  
 F/A/2P/2S(2)6 Mk32 5in/38//4 Mk12/22 (3.6)  
 2F/4P/4S(2)10 Mk27 3in/50//4 Mk56 (5.5)  
 Aft Pad(1)21 HUP-2 Retriever  
 2 Aft catapult, 4 Floatplanes (*Des Moines* only)

**Sensors:**

SR-3, SG-5

**Remarks:**

- Des Moines*, *Salem*, *Newport News*. Fourth unit *Dallas* canceled incomplete in 1946, nine other planned units canceled. Hangar under flight deck. Completed with (2)6 20mm, but removed as superfluous in 1952.
- 1948-49: Catapults and aircraft removed.
- Post-1953: Search radars replaced by SPS-8A, SPS-12; Mk12/22 GFC radars replaced by Mk25.
- 1955: Forward-most 3in/50 removed because of damage in heavy seas, AA rating 8.2.
- 1959: Mk27 3in/50 replaced by Mk33, same performance.
- 1962: *Newport News* rebuilt as flagship. Two midships 3 inch mounts removed, AA rating 4.5.
- 1966: *Newport News* 3 inch fit P/S(2)4, AA rating 1.8.
- 1966: *Des Moines* fitted with 1st Gen D.
- 1 Oct 72: *Newport News* suffered explosion in number two 8 inch gun turret, 19 killed and 10 injured. Turret remained out of action for remainder of her service.
- 1973: *Newport News* 3 inch fit P/S(2)2, AA rating 0.9.
- 1974: *Newport News* all 3in/50 removed.
- Decommed: *Des Moines* 1961, *Salem* 1959 (preserved as a museum), *Newport News* 1975.

**Damage & Speed Breakdown:**

Dam Pts:	0	157	314	470	564	627
Surf Speed:	33	25	16	8	0	Sinks

**Oregon City**

**Displacement:** 14472 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:** 2F/A(3)3 Mk15 8in/55//2 Mk13  
 F/2P/2S/A(2)6 Mk32 5in/38//2 Mk12/22 (6.7)  
 F/PW/SW/3P/3S/PA/SA(4)11 Mk2 40mm/60, PA/SA(2)2 Mk1 40mm/60 (3.0L)  
 PW/SW/PA/SA(1)24 Mk10 20mm (1.5L)  
 2 Aft catapults, 2 SC-1 Seahawk

**Sensors:**

SK, SC-2, 2 SG

**Remarks:**

- Oregon City*, *Albany*, *Rochester*. Modified *Baltimore* design. Additional unit *Northampton* completed as a command cruiser, listed separately. Additional six units laid down canceled 1945 and scrapped incomplete.
- *Rochester* had catapult and aircraft removed, converted to operate 4 HO3S-1 helicopters.
- Feb - May 51: *Rochester* overhauled.
- Combat system Gen 2 Manual, all 40mm and 20mm guns replaced with 2F/4P/4S(2)10 Mk27 3in/50//?, AA rating 2.7. *Rochester* May - Sep 53, *Albany* 1955?
- Jun 58: *Albany* converted to guided missile cruiser, listed separately. Planned conversion for *Rochester* canceled.
- Decommed: *Oregon City* 1947, *Rochester* 1961.

**Damage & Speed Breakdown:**

Dam Pts:	0	127	253	380	455	506
Surf Speed:	33	25	16	8	0	Sinks

**Baltimore**

**Displacement:** 13600 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Med/Noisy  
**Weapons:** 2F/A(3)3 Mk16 8in/55//2 Mk13  
 F/2P/2S/A(2)6 Mk38 5in/38//2 Mk12/22 (6.7)  
 P/S(4)12 Mk2 40mm/60 (3.0L) (2 cranes)  
 P/S(4)11 Mk2 40mm/60, (2)2 Mk1 40mm/60 (3.0L) (1 crane)

**Sensors:** ES: 1st Gen  
 SG, SK J

**Remarks:**  
*Baltimore, Boston, Canberra, Quincy, Pittsburgh, Saint Paul, Columbus, Helena, Bremerton, Fall River, Macon, Toledo, Los Angeles, Chicago.* Configuration as of post-WW II and early 1950s refits.  
 • Most except *St. Paul, Helena, Toledo* in reserve after WW II, reactivated for Korean war. *Macon* Oct 50, *Los Angeles* Jan 51, *Pittsburgh* Sep 51, *Boston, Bremerton* Nov 51, *Quincy* Jan 52.  
 • Jan 52: *Boston* and *Canberra* converted to missile cruisers, listed separately.  
 • 1952-55: 40mm replaced by 2F/4P/4S(2)10 Mk27 or Mk33 3in/50//? (5.5). 20mm removed. Combat system Gen 2 Manual, 5 inch AA rating 7.8.  
 • 1956-58: Fitted with A(1)1 Regulus w/3 missiles/SPQ-2. Takes six hours to load and prep for launch. *Toledo, Macon, Los Angeles* Mar 56-1958, *Helena* Jul 56.  
 • Nov 58: *Chicago* converted to missile cruiser, listed separately as part of the *Albany* class.  
 • Nov 59: *Columbus* converted to missile cruiser, listed separately as part of the *Albany* class.  
 • Feb - Aug 56: *Saint Paul*; Fwd 5in/38 mount removed for command spaces, AA rating 7.8.  
 • Late 50s: SG and SK radars replaced by SPS-6 or SPS-12, SPS-8  
 • 1960: *Helena*; Regulus system removed from all four ships. SPS-43 added on *Helena* 1960, *Los Angeles* 1961.  
 • Decommed: *Baltimore* 1956, *Quincy* 1954, *Pittsburgh* 1956, *Saint Paul* 1971, *Helena* 1963, *Bremerton* 1960, *Fall River* 1947, *Macon* 1961, *Toledo* 1961, *Los Angeles* 1963.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	122	243	365	437	486
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Cleveland (Talos Cmd)** CLG

**Displacement:** 11280 std  
**In class:** [2]  
**Size Class:** B/Medium  
**In Service:** 1960 (1944) - 79  
**Propulsion:** Steam Turbine  
**Crew:** 1382  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 12/4  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F(3)1 Mk16 6in/47//Mk13 C  
 F(2)1 Mk32 5in/38//Mk56 (2.0) C  
 A(2)1 Mk7 w/46 RIM-8 Talos//2 SPG-49, 2 SPW-2 D

**Sensors:** ES: 1st Gen  
 SPS-2, SPS-17, SPS-10, SPS-39 (*Little Rock*) J  
 SPS-8B, SPS-10, SPS-29, SPS-39 (*Oklahoma City*) J

**Remarks:**  
*Little Rock, Oklahoma City.* Fitted as flagship. Aluminum superstructure, -15% damage modifier. Fitted with aft pad for Small helicopter. Terrier magazine CHP armor rating is 3.  
 • Early 1960s: SQS-23 and DASH facilities added.  
 • 1963: SPS-8B and SPS-2 replaced by SPS-30.  
 • Late 60s: SPS-17, SPS-29, SPS-39 replaced by SPS-43A.  
 • 1975: Redesignated CG.  
 • Decommed: *Little Rock* Nov 76, *Oklahoma City* Dec 79. *Little Rock* preserved as a museum ship in Buffalo, NY.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	183	274	329	365
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Cleveland (Terrier)** CLG

**Displacement:** 11280 std  
**In class:** [1]  
**Size Class:** B/Medium  
**In Service:** 1960 (1944) - 69  
**Propulsion:** Steam Turbine  
**Crew:** 1382  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 12/4  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F(3)2 Mk16 6in/47//Mk13 C  
 F/P/S(2)3 Mk38 5in/38//Mk25 (3.9) C  
 A(2)1 Mk9 w/120 RIM-2 Terrier//2 SPQ-5 D

**Sensors:** ES: 1st Gen  
 SPS-8B, SPS-10, SPS-29, SPS-39 J

**Remarks:**  
*Topeka* Aluminum superstructure, -15% damage modifier.  
 • early 1960s: SQS-23 and DASH facilities added.  
 • 1963: SPS-8 replaced by SPS-30.  
 • Late 60s: SPS-29 replaced by SPS-43A. Estimated SPS-37 at the same time.  
 • Jun 69: Decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	183	274	329	365
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Cleveland (Terrier Cmd)** CLG

**Displacement:** 11280 std  
**In class:** [2]  
**Size Class:** B/Medium  
**In Service:** 1959 (1944) - 74  
**Propulsion:** Steam Turbine  
**Crew:** 1070  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 12/4  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F(3)1 Mk16 6in/47//Mk13 C  
 F(2)1 Mk38 5in/38//Mk25 (2.0) C  
 A(2)1 Mk9 w/120 RIM-2 Terrier//2 SPQ-5 D

**Sensors:** ES: 1st Gen  
 SPS-8, SPS-10, SPS-29, SPS-39 J  
 SQS-23 (*Springfield*) J

**Remarks:**  
*Providence, Springfield.* Aluminum superstructure, -15% damage modifier.  
 • 1960s: *Providence*; SQS-23, DASH facilities added.  
 • 1963: SPS-8 replaced by SPS-30.  
 • late 60s: SPS-29 replaced by SPS-43A. Estimated SPS-37 at the same time.  
 • 1969: Both placed in reserve.  
 • Decommed: *Providence* 1973, *Springfield* 1974.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	183	274	329	365
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Cleveland (Talos)** CLG

**Displacement:** 11820 std  
**In class:** [1]  
**Size Class:** B/Medium  
**In Service:** 1958 (1945) - 70  
**Propulsion:** Steam Turbine  
**Crew:** 1070  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 12/4  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F(3)1 Mk16 6in/47//Mk13 C  
 F/P/S(2)3 Mk38 5in/38//Mk25 (3.9) C  
 A(2)1 Mk7 w/46 RIM-8 Talos//2 SPG-49, 2 SPW-2 D

**Sensors:** ES: 1st Gen  
 SPS-8B, SPS-10, SPS-29, SPS-39 J

**Remarks:**  
*Galveston* (CLG-3). Aluminum superstructure, -15% damage modifier.  
 • Aug 1961 - Sep 1961: Upgrades to Talos.  
 • Jun 62: Refitted, SPS-8B, SPS-39 replaced by SPS-30, SPS-37, SPS-39, 1st Gen towed acoustic countermeasures. Estimated DASH facilities added.  
 • Late 60s: SPS-29 replaced by SPS-43A.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	183	274	329	365
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Worcester** CL

**Displacement:** 14700 std  
**In class:** [2]  
**Size Class:** B/Medium  
**In Service:** 1948 - 58  
**Propulsion:** Steam Turbine  
**Crew:** 1401  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 12/9  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

2F/2P&S/2A(2)6 Mk16DP 6in/47//2 Mk13 (5.9) C  
 F/2PB/2SB/P/S/2PQ/2SQ(2)11 Mk33 3in/50//4 Mk56 (5.5) C

**Sensors:** ES: 1st Gen  
SPS-6, SPS-8, SPS-10 J

**Remarks:**  
*Worcester, Roanoke.* Two additional units *Vallejo, Gary* canceled incomplete 12 Aug 45, six additional planned units canceled.  
• 1958: Both decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	128	256	384	461	512
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

### Northampton CLC

**Displacement:** 14700 std In class: [1]  
**Size Class:** B/Medium In Service: 1953 - 70  
**Propulsion:** Steam Turbine Crew: 1635  
**Signature:** Med/Noisy Armor Rating: 14/6  
**Electrn Cnt:** 1st Gen J Acoustic Cnt: None  
**Weapons:** Cbt Sys: Gen 2 Manual C

F/A(1)4 Mk42 5in/54//Mk67 (5.5) C  
P/S(2)4 Mk37 3in/70//4 Mk56 (8.8) C  
Aft Pad (1)2 HUP-2 Retriever B  
**Sensors:** ES: 1st Gen J  
SPS-2, SPS-8, SPS-10, SPS-29D

**Remarks:**  
*Northampton* (CLC-1). Helo hangar under deck. There is a 10% chance each Tactical Turn a 3in/70 is fired of a mount casualty, rendering it nonfunctional.  
• 15 Apr 61: Redesignated to CC-1.  
• 1962: All 3 inch guns removed.  
• 1964: SPS-2 removed.  
• 1968: Three 5 inch mounts removed, leaving only A(1)1 Mk42. AA rating 1.4. Mk67 FC radar, 2 Mk56 removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	128	256	384	461	512
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

### Arleigh Burke Flight III DDG

**Displacement:** 10700 fl In Class: 0 + 1 + 12  
**Size Class:** B/Medium In Service: 2023  
**Propulsion:** COGAG/ CPP Crew: 278  
**Electrn Cnt:** 4th Gen J&D Acoustic Cnt: 4th Gen T  
**Signature:** Small/Quiet Armor Rating: 0  
**Weapons:** Cbt Sys: Gen 6 Automatic

F&A(8)4 fwd & (8)8 aft Mk41 VLS w/9 msls total, D  
typical loadout 38 SM2MR, 6 SM3  
Blk IA/IB, 16 SM6, 32 ESSM, 4 VL ASROC, C  
24 Tactical Tomahawk//F/2A 3 SPG-62 C  
F(1)1 Mk45 Mod 4 5in/62//see remarks (1.1) C  
P/S(1)2 Mk38 Mod 2 Bushmaster 25mm//2 EO GFC C  
PB/SB(3)2 Mk32 324mm TT w/3 Mk54 F  
Aft Pad(1)2 MH-60R Seahawk B  
**Sensors:** ES: 4th Gen  
SPY-6(V)1 AMDR, SPQ-9B, J  
BridgeMaster E (Decca 2000 series) J  
SQS-53D, TB-37 MFTA, Kingfisher mine detection K  
Mk20 Mod 1 EO sensor (4th Gen FLIR, laser rangefinder) --

**Remarks:**  
*Jack H. Lucas 125, Louis H. Wilson 126, Ted Stevens 128, Jeremiah Denton 129, William Charette 130, George M Neal 131, Quentin Walsh 132, Sam Nunn 133, John E. Kilmer 134, Thad Cochran 135, Richard G. Lugar 136.* 137-138 under contract, 139-144 projected. Simultaneous AAW and BMD (3rd Gen) using SPY-6, capable of remote engagement. Mk45 uses SPY-1 for AA and SPQ-9B/laser rf for surface fire. Broad hull, treat as A-sized ship equipped with dual stabilizers on Sea State Speed table, fitted with RAST. CHP armor rating for sensors, CIC, Mk41, Mk45 is 5.  
• DDG 138 planned to have ADMR-X replacing SPQ-9B

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	94	187	281	337	374
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

### Zumwalt DDG

**Displacement:** 14564 std In Class: 2 + 1  
**Size Class:** B/Medium In Service: 2021  
**Propulsion:** COLGAG Crew: 148 + 38  
**Electrn Cnt:** 4th Gen D Acoustic Cnt: 3rd Gen T  
**Signature:** VSmall/VQuiet Armor Rating: 0  
**Weapons:** Cbt Sys: Gen 6 Automatic

F(1)2 AGS 155mm/62 w/see remarks C  
PA/SA(1)2 Mk46 30mm Bushmaster III//2 EO GFC C  
PS&SS(24)2 & (16)2 Mk57 VLS w/80 msls, est. loadout  
38 Tactical Tomahawk Blk IV/Va, 40 ESSM (10 quad-packs),  
20 SM2MR Blk IIIA, 6 SM6 Blk IA, 6 VL ASROC//SPY-3 D  
Aft Pad(2)1 MH-60R, 3 MQ-8B B  
**Sensors:** ES: 4th Gen  
SPY-3 MFR (3D, SS, FC), SPS-73 J  
SQS-60, SQS-61, TB-37 MFTA K  
FLIR/IRST (est. 4th Gen) --

**Remarks:**  
*Zumwalt, Michael Monsoor, Lyndon B. Johnson.* Fitted with RAST, ballast tanks (treat as Size Class A with dual stabilizers on Sea State/Speed and Safe Sea State tables), electrical propulsion (accelerates as if equipped with CPP), command facilities, space for 20 SOF. SPY-3 can only engage either air or surface targets at one time. Reduced magnetic, IR, radar, acoustic signatures. Each critical hit on the VLS destroys DP/D6 cells, up to the maximum number of cells in that section (24 cells forward port and starboard, and 16 cells aft port and starboard). Aft pad can accommodate Large helicopter. Can carry additional MH-60R vice MQ-8C. Stern ramp with belowdecks boat hangar. Composite superstructure on the first two units, -15% damage modifier.  
• AGS not operational, as 155mm LRAP rounds canceled due to expense, planned 2017 Excalibur replacement canceled Dec 19.  
• Oct 16: *Zumwalt* commissioned without combat system. Fitted 2018 - Mar 20, IOC planned Dec 21, with first deployment expected in 2022.

**Damage & Speed Breakdown:**

<b>Dam Pts (Z, M):</b>	0	108	216	324	389	432
<b>Dam Pts (L):</b>	0	127	255	382	458	509
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

### Arleigh Burke Flight IIA Technology Insertion DDG

**Displacement:** 9800 fl In Class: 2 + 4 + 4  
**Size Class:** B/Medium In Service: 2021  
**Propulsion:** COGAG/ CPP Crew: 270  
**Electrn Cnt:** 4th Gen J&D Acoustic Cnt: 4th Gen T  
**Signature:** Small/Quiet Armor Rating: 0  
**Weapons:** Cbt Sys: Gen 6 Automatic

F&A(8)4 fwd & (8)8 aft Mk41 VLS w/96 msls total, typical loadout 38 SM2MR, 6 SM3 Blk IA/IB, 16 SM6, 32 ESSM, D  
4 VL ASROC, 24 Tactical Tomahawk//F/2A 3 SPG-62 C  
F(1)1 Mk45 Mod 4 5in/62//see remarks (0.9) C  
A(R)1 Mk15 Phalanx Blk IB (7.6A) C  
PB/SB(3)2 Mk32 324mm TT w/3 Mk54 F  
Aft Pad(1)2 MH-60R Seahawk B  
**Sensors:** ES: 4th Gen  
SPY-1D, SPQ-9B or SPS-67, J  
BridgeMaster E (use Decca 2000 series) J  
SQQ-53D, TB-37 MFTA, Kingfisher mine detection K  
Mk20 Mod 1 EO sensor (4th Gen FLIR, laser rangefinder) --

**Remarks:**  
DDG 116-124, 127. *Thomas Hudner 116, Paul Ignatius 117, Daniel Inouye, 118, Carl M. Levin, 120, Frank E. Petersen Jr. 121, John Basilone 122, Lenah H. Sutcliffe Higbee 123, Harvey Barnum Jr. 124, Patrick Gallagher 127.* SPY-1D can engage air and BMD targets (3rd Gen) at same time, can engage remote targets with SM6. Fitted with RAST. Mk45 uses SPY-1 for AA and SPQ-9B/laser rf for surface fire. Broad hull, treat as A-sized ship equipped with dual stabilizers on Sea State/Speed table. CHP armor rating for Sensors, Mk41, Mk45 is 5. Provision for PB&SB(4)2 Harpoon msls.

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- DDG 116-118 have SPS-67(V)3 vice SPQ-9B. DDG 116 has 3rd Gen ES.
- Can carry Scan Eagle UAV in torpedo magazine vice an estimated six torpedoes. Launched and recovered from helo pad.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	88	175	263	315	350
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Arleigh Burke Flight IIA Restart****DDG**

**Displacement:** 9515 fl  
**In Class:** 3  
**Size Class:** B/Medium  
**In Service:** 2016  
**Propulsion:** COGAG/ CPP  
**Crew:** ???  
**Electrn Cnt:** 4th Gen J&D  
**Acoustic Cnt:** 3rd Gen T  
**Signature:** Small/Quiet  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 6 Automatic

F&A(8)4 fwd & (8)8 aft Mk41 VLS w/96 msls total, typical  
 loadouts 38 SM2MR, 6 SM3 Blk IA/IB, 16 SM6, 32 ESSM,  
 4 VL ASROC, 24 Tactical Tomahawk//F/2A 3 SPG-62

F(1)1 Mk45 Mod 4 5in/62//see remarks (0.9)

A(R)1 Mk15 Phalanx Blk IB (7.6A)

P/S(1)2 Mk38 Bushmaster 25mm//EO director

P/S(1)4 M2 .50 cal (0.1L)

PB/SB(3)2 Mk32 324mm TT w/3 Mk54

Aft Pad(1)2 MH-60R Seahawk

**Sensors:** ES: 3rd Gen

SPY-1D, SPS-64, SPS-67, BridgeMaster E (Decca series)

SQQ-53C, TB-37 MFTA, Kingfisher mine detection

Mk20 Mod 1 EO sensor (4th Gen FLIR, laser rangefinder)

**Remarks:**

*John Finn 113, Ralph Johnson 114, Rafael Peralta 115.* Fitted with RAST. Mk45 uses SPY-1 for AA and laser rf for surface fire. Broad hull, treat as A-sized ship equipped with dual stabilizers on Sea State/Speed table. Fitted with Integrated Air and Missile Defense (IAMD) - SPY-1D can detect and engage air and TBM targets at same time, can engage remotely with SM6. CHP armor rating for Sensors, CIC, Mk41, Mk45 is 5. Provision for PS/SS(4)2 Mk141 w/4 Harpoon.  
 • Can carry Scan Eagle UAV in torpedo magazine vice an estimated six torpedoes. Launched and recovered from helo pad.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	86	172	258	310	344
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Arleigh Burke Flight IIA****DDG**

**Displacement:** see remarks  
**In Class:** 46  
**Size Class:** B/Medium  
**In Service:** 2000  
**Propulsion:** COGAG/ CPP  
**Crew:** 380  
**Electrn Cnt:** 3rd Gen J&D  
**Acoustic Cnt:** 2nd Gen T  
**Signature:** Small/Quiet  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 6 Automatic

F&A(8)4 fwd & (8)8 aft Mk41 VLS w/96 msls total, typical  
 72 SM2MR, 4 VL ASROC, 20 Tomahawk or 36 SM2MR,  
 4 VL ASROC, 56 Tomahawk//F/2A 3 SPG-62

F(1)1 Mk45 Mod 4 5in/62//see remarks (0.9)

F/A(R)2 Mk15 Phalanx Blk I (2@7.6A)

PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5A(SW)

Aft Pad(1)2 SH-60 Seahawk

**Sensors:** ES: 3rd Gen

SPY-1D, SPS-67(V)3, SPS-64 (DDG 79-86), BridgeMaster E

(use Decca 2000 series) (DDG 87-112)

SQS-53C, SQR-19(V)3 towed array

3rd Gen FLIR (DDG 82 - 84) or

4th Gen FLIR/laser rf (DDG 85 - 112)

**Remarks:**

DDG 79-112, DDG 79-84 displ 9238 fl, DDG 85-90 9300 fl, DDG 91-112 9400 fl. Fitted with RAST. Mk45 uses SPY-1 for AA and SPS-67 or EO/laser rangefinder for surface fire. Broad hull, treat as A-sized ship with dual stabilizers on Sea State/Speed table. CHP armor rating for Sensors, CIC, Mk41, Mk45 is 5. Provision for PB&SB(4)2 Harpoon.  
 • DDG 79, 80 have Mk45 5in/54 (1.1). DDG 81-84 has F/A Phalanx, DDG 85-112 have aft Phalanx only. DDG 91-112 have 4th Gen J&D

• Jul 02: ESSM available on DDG 85-112 as standard, DDG 79-84 fitted 2004-06. 32 ESSM replace 8 SM2MR.

• May 04: Tactical Tomahawk available.

• 2008: Fitted with Scan Eagle UAV. Carried in torpedo magazine vice an estimated six torpedoes. Launched and recovered from helo pad.

• 2009-17: Refits with Mk54 torpedoes, MH-60R vice SH-60B, TB-37 MFTA added. SH-60B retired 2015. First DDG-87 Sep 09.

• Sep 12 - Nov 14: *Donald Cook* (DDG-75) fitted with 4th Gen J&D and six stationary distraction decoys.

• Nov 13: Six SM6 replace six SM2MR.

• 2014: DDG-109 fitted with SPQ-9B replacing SPS-67.

• Jul 15: DDG-96 fitted with 4th Gen ES.

• 2017-21: Refits with 6 SM6 replacing 6 SM2MR, SPY-1D can detect and engage air and BMD targets at same time (3rd Gen BMD), Phalanx Blk IB, 4th Gen J&D, 4th Gen FLIR/laser rf (can direct Mk45).

DDG-80 2017-18, DDG-79 2018-22, DDG 83 2019-20, DDG 84, 85 2019-20, DDG 87 2019-21.

• 2020: DDG-105 fitted with F ODIN laser dazzler integrated to combat system.

• 2020s: To be fitted SM6 remote engagement.

**Damage & Speed Breakdown:**

<b>DP (79-84):</b>	0	84	169	253	303	337
<b>DP (85-90):</b>	0	85	169	254	304	338
<b>DP (91-112):</b>	0	85	171	256	307	341
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Arleigh Burke Flight I, II****DDG**

**Displacement:** see remarks

**In Class:** 21, 7

**Size Class:** B/Medium

**In Service:** 1991, 1996

**Propulsion:** COGAG/ CPP

**Crew:** 346

**Electrn Cnt:** 3rd Gen D

**Acoustic Cnt:** 2nd Gen T

**Signature:** Small/Quiet

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 5 Automatic

F&A(8)4 fwd & (8)8 aft Mk41 VLS w/90 msls total, typical

loadout 72 SM2MR, 18 Tomahawk or

62 SM2MR, 28 Tomahawk or

34 SM2MR, 56 Tomahawk//F/2A 3 SPG-62

F(1)1 Mk45 5in/54//SPY-1D (1.1)

F/A(R)2 Mk15 Phalanx Blk I (2@7.6A)

PS/SS(4)2 Mk141 w/4 Harpoon IC

PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5A(S)

**Sensors:**

ES: 3rd Gen

SPY-1D, SPS-64, SPS-67(V)3

SQS-53C

3rd Gen FLIR, SRS-1 Combat DF

**Remarks:**

DDG 51-78. DDG 51 displ 6624 lt, DDG 52-71 6731 lt. Helo pad aft with RAST (except DDG-51 is not fitted with RAST). Can refuel and reararm LAMPS helos (9 torpedoes and sonobuoys) but no hangar for maintenance. Broad hull, treat as A-sized ship equipped with dual stabilizers on Sea State/Speed table. Mk45 gun uses SPS-67 against surface targets and SPY-1 against air targets. CHP armor rating for Sensors, CIC, Mk41, Mk45 is 5. VLS strikedown crane occupies three Mk41 cells in fore and aft groups. DDG 68-71 fitted with 3rd Gen J&D. Fitted with 4 SLQ-49 floating distraction decoys (retired early 00s). DDG-72-78 fitted with SRS-1 Combat DF, in addition to SLQ-32 3rd Gen ES, see 5.2.9.5.

• 1990s Refits: Strikedown cranes removed from Mk41 VLS, cells plated over. Fitted with 3rd Gen J&D. Most have SQR-19 removed, stored ashore.

• 1993: VL ASROC available.

• 2000s refits: Fitted with P/S(1)2 Mk38 Bushmaster 25mm and P/S(1)4 M2 .50 cal (0.1L). Fitted with Nulka decoy (4th Gen D).

Phalanx Blk IA upgraded to Blk IB (7.6A). Fitted with Tactical Tomahawk and ESSM (6 quad-packs for 24 ESSM vice 6 SM2MR in all loadouts).

• 1993: Tomahawk Blk III (planned to retired 2022) and VL ASROC available, 4 VL ASROC replace 4 SM2MR.

• Sep 99: Eleven of DDG 52-67 fitted with 3rd Gen J&D by this date.

• 2001?: Fitted with P/S(1)1 Mk 38 Bushmaster 25mm.

• May 04: Tactical Tomahawk available.



- 2004 - 06: DDG 53, 60, 65, 69, 70 fitted to provide BMD remote targeting, no engagement ability. DDG-54 first BMD patrol off Japan Oct 04.
- Jul 05: Fitted with Scan Eagle UAV. Carried in torpedo magazine vice an estimated six torpedoes. Launched and recovered from helo pad.
- 2009-13: DDG 53-56, 58-63, 65, 67-71 fitted for 1st Gen BMD with six SM3 replacing 6 SM2MR.
- 2008 - 15: DDG 53-56, 58-78 fitted for 2nd gen BMD with 6 SM3 replacing 6 SM2MR.
- 2010-12: DDG-60, 62, 63 fitted with Mk54 torp, TB-37 MFTA sonar.
- Dec 13: DDG-61 fitted with six Mk59 floating distraction decoys.
- 2013-20: DDG 51-53, 56, 57, 60, 61, 63, 65-67, 69, 70 fitted with 6 SM6 replacing 6 SM2MR, 32 ESSM replacing 8 SM2MR, P/S(1)2 Mk38 Mod 2 Bushmaster 25mm//2 EO directors, 4th Gen J&D. DDG 51-53, 56, 57, 61, 65-67, 69-70 also fitted with Mk54 torpedoes and TB-37 sonar.
- 2014-19: DDG 51-63, 65-69, 72, 74, 76, 77 fitted with SM6 remote engagement.
- 2016-18: DDG 54, 55, 58, 59 fitted with Mk54 torpedoes, TB-37 sonar.
- 2016-17: DDG 64, 71, 75, 78 refits with A(11)1 SeaRAM w/11 RAM Blk II replacing A Phalanx, 4th Gen J&D, 4th Gen ES and six stationary distraction decoys.
- 17 Jun 17: *Fitzgerald* (DDG 62), collided with container ship *ACX Crystal* southwest of Yokosuka, Japan. She was severely damaged. Seven were killed, and three injured. Transported to Pascagoula aboard a heavy-lift vessel in late 2017, then repaired until Feb 20; returned to homeport Jun 20.

**Damage & Speed Breakdown:**

<b>DP (DDG 51):</b>	0	82	163	245	293	326
<b>DP (52-71):</b>	0	83	165	248	297	330
<b>DP (72-78):</b>	0	84	168	252	302	336
<b>Surf Speed:</b>	31	23	16	8	0	Sinks

**Kidd**

**Displacement:** 6950 ltshp  
**Size Class:** B/Medium  
**Propulsion:** COGAG/ CPP  
**Electrn Cnt:** 3rd Gen D  
**Signature:** Med/Quiet  
**Weapons:**

**DDG**

**In Class:** [4]  
**In Service:** 1981 - 99  
**Crew:** 340  
**Acoustic Cnt:** 2nd Gen T  
**Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic

- F(2)1 Mk26 Mod 3 w/24 SM1MR &  
 A(2)1 Mk26 Mod 4 w/44 see remarks//2 SPG-51  
 F/A(1)2 Mk45 5in/54//F SPG-60 (2.2)  
 PA/SB&S(R)2 Mk15 Phalanx Blk 0 (5.0A)  
 PS/SS(4)2 Mk141 w/4 Harpoon IC  
 Aft Pad(1)2 SH-2F LAMPS I  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5  
**Sensors:** ES: 3rd Gen  
 SPS-55, SPQ-9A, SPS-48C, LN-66  
 SQS-53A  
**Remarks:**  
*Kidd, Callaghan, Scott, Chandler.* Iran's gift to the US Navy, also called "The Dead Admiral" or "Ayatollah" class. Aluminum superstructure, -15% damage modifier. After msl magazine has 16 ASROC, 28 SM1MR Blk IV. Mk86 FCS for Mk45 uses SPG-60 against air targets, SPQ-9 vs. surface targets. SPG-60 can direct Mk45 gun or illuminate target for SM1 or SM2 msIs out through Short Range band. CHP armor rating for Sensors, Mk26, Mk45 is 2. Carries 18 Mk46 torps for manual reload of TT. Usually carries only 1 SH-2F.  
 • 1987: Fitted with Sidekick jammer, countermeasures upgraded to 3rd Gen J&D.  
 • Fitted with New Threat Upgrade. Combat system Gen 5 Human. SPS-48 upgraded to SPS-48E, SPS-49(V)5 added, carries SM2MR Blk II vice SM1, SPG-60 moved to A arc. *Scott* 1987? - Mar 88, *Kidd* Aug 88 - Sep 89, *Callaghan* Aug 89 - Jul 90, *Chandler* Aug 89 - Aug 90.  
 • 1991: *Kidd* deployed to Persian Gulf, carries 1 SH-2F and 1 'Prime Chance' armed OH-58D.

- Late 94: ASROC removed by this date. Aft Mk26 loadout changed to 44 SM2MR.
- If retained in USN service, would have been fitted with 2 SH-60B LAMPS III with RAST vice SH-2F, SQS-53C vice SQS-53A, possibly SQR-19A towed array sonar.
- Decomed: *Kidd, Callaghan, Scott* 1998, *Chandler* 1999.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	72	143	215	257	286
<b>Surf Speed:</b>	31	23	16	8	0	Sinks

**Mitscher (1968)**

**Displacement:** 3642 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Small/Noisy  
**Weapons:**  
 F/A(1)2 Mk42 5in/54//Mk25 (2.7)  
 A(1)1 Mk13 w/40 RIM-24 Tartar//2 SPG-51  
 F(8)1 Mk12 w/8 ASROC  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 torp  
 Aft Pad(1)1 DASH

**DDG**

**In class:** [2]  
**In Svc:** 1968 (1966) - 78  
**Crew:** 377  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic

**Sensors:** ES: 1st Gen  
 SPS-10, SPS-37, SPS-39  
 SQS-23

**Remarks:**

*Mitscher, John S. McCain.* Converted from DL to DDG, *Mitscher* Mar 66 - Jun 68, *John S. McCain Jun 66* - Sep 69. No ASROC reloads.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	51	101	152	182	202
<b>Surf Speed:</b>	36	27	18	9	0	Sinks

**Decatur**

**Displacement:** 3060 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Small/Noisy  
**Weapons:**  
 F(1)1 Mk42 5in/54//SPG-53B (1.4)  
 A(1)1 Mk13 w/40 RIM-24 Tartar//SPG-51  
 P&S(8)1 Mk12 w/8 ASROC  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk44  
**Sensors:** ES: 1st Gen  
 SPS-48A, SPS-29, SPS-10  
 SQS-23

**DDG**

**In Class:** [4]  
**In Service:** 1966 (1955) - 83  
**Crew:** 337  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic

**Remarks:**

*Decatur* 1966, *John Paul Jones, Parsons, Somers* 1967. Converted *Forrest Sherman*-class DDs. Were to have Aft Pad(1)2 DASH, but were built with ASROC. Have 8 ASROC reloads. SPG-53B can direct Mk42 gun or control missile. SPS-40 in *Somers*. Aluminum superstructure, -15% damage modifier.  
 • 1967: Mk46 torpedoes replaced Mk44.  
 • 1969: Refitted, Tartar replaced with SM1MR.  
 • 1973: *Somers* fitted with automatic tracking for SPS-48 (SYS-1), combat system Gen 4 Semi-automatic.  
 • Decomed: *Parsons, Somers, John Paul Jones* 1982, *Decatur* 1983.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	38	77	115	138	153
<b>Surf Speed:</b>	31	23	16	8	0	Sinks

**Coontz**

**Displacement:** 4700 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Small/Noisy

**DDG**

**In Class:** [10]  
**In Service:** 1960 - 93  
**Crew:** 360  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0

**Weapons:**

F(1)1 Mk42 5in/54//Mk68 (1.4)  
 P/S(2)2 Mk33 3in/50//2 Mk34 (0.9)  
 F(8)1 Mk16 w/8 ASROC  
 A(2)1 Mk10 w/40 Terrier//2 SPQ-5  
 P/S(3)2 Mk32 324mm TT w/3 Mk44

**Sensors:**

SPS-10, SPS-37, SPS-39  
 SQS-23

**Remarks:**

Aluminum superstructure, -15% damage modifier. *Farragut*, *Dewey*, *Preble* have SPQ-5 w/Terrier BW-1, others have SPG-55A w/Terrier BT-3. *King* and *Mahan* fitted with first NTDS systems, combat system Gen 4 Semi-Automatic.

- Dec 65- Jan 66: *Coontz* fitted with aft pad and refueling facilities. *Mahan* fitted by Aug 66.
- 1967: Torpedo changed from Mk44 to Mk46.
- Some fitted with SPS-52 replacing SPS-39. *Coontz* 1966/67, *Dewey* by May 68, *Mahan* 1968.
- AAW refit. 3 inch guns removed, NTDS added to all units, combat system Gen 4 Semi-Automatic. SQS-23 upgraded to SQQ-23 PAIR, SPQ-5 replaced by SPG-55, Terrier replaced by SM1ER. SPS-39 replaced by SPS-48A. Countermeasures upgraded to 2nd Gen D, ES to 2nd Gen. *Farragut* May 68 - May 69, *Luce* Feb 70 - Jul 71, *MacDonough* Apr 73 - Apr 74, *Coontz* Feb 71 - Apr 72, *King* Jul 74 - Mar 77, *Mahan* Aug 73 - Mar 75, *Dahlgren* Feb 72 - Mar 73, *William V. Pratt* Oct 72 - Oct 73, *Dewey* Nov 69 - Apr 71, *Preble* Jan 69 - Jul 70. *Farragut* fitted with 8 ASROC reloads.
- 1977-83: Fitted with (4)2 Mk141 w/4 Harpoon, estimate 2nd Gen acoustic countermeasures. *Coontz*, *Dahlgren*, *Farragut* 1977-79. *Dewey*, *King*, *Luce*, *Macdonough*, *Mahan*, *Pratt*, *Preble* 1980-1983.
- 1979: *Mahan* tested SM2ER.
- Apr 80 - Apr 81: *Mahan* tested New Threat Upgrade, combat system Gen 5 Human. SM2ER Blk II, SPS-48E, SPS-49(V)5.
- 1985-87: SPS-37 replaced by SPS-49(V)5, SQS-23 replaced by SQQ-23 PAIR, ES and ECM upgraded to 3rd Gen. P/S(1)4 M2 .50 cal (0.1) added.
- 1987: *Farragut* and *Dahlgren* fitted with New Threat Upgrade and SM2ER. Combat system Gen 5 Human.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	51	102	152	183	203
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Charles F. Adams**

DDG

**Displacement:** 3350 std

**In Class:** [23]

**Size Class:** C/Small

**In Service:** 1960 - 92

**Propulsion:** Steam Turbine

**Crew:** 340

**Electrn Cnt:** 1st Gen D

**Acoustic Cnt:** None

**Signature:** Small/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 3 Semi-Automatic

F/A(1)2 Mk42 5in/54//Mk68 (2.7)  
 A(2)1 Mk11 w/40 RIM-24 Tartar//2 SPG-51 (DDG-2 to 14)  
 A(1)1 Mk13 w/40 RIM-24 Tartar//2 SPG-51 (DDG-15 to 24)  
 P&S(8)1 Mk112 w/8 ASROC  
 P/S(3)2 Mk32 324mm TT w/3 Mk44

**Sensors:**

**ES:** 1st Gen

SPS-10, SPS-39A, SPS-37 (DDG 2-4, 8-14),

SPS-29 (DDG 5-7), SPS-40A (DDG 15-24)

SQS-23 bow (DDG-2 to 19) or hull (DDG-20 to 24)

**Remarks:**

Aluminum superstructure, -15% damage modifier. DDG-20 to DDG-24 have bow-mounted SQS-23 vice hull-mounted. Many later fitted with 4 manual ASROC reloads. *Robison*, *Buchanan*, *Berkeley*, *Semmes*, *Tattnall*, *Goldsborough*, *Waddell* fitted with 1st Gen T Acoustic Countermeasures.

- 1967: Torpedo changed from Mk44 to Mk46.
- 1969: Tartar replaced by SM1MR.
- Apr - Sep 71: *Buchanan* SPS-39 replaced by SPS-48A.
- 1971 - 73: A(4)1 Sea Chaparral w/4 RIM-72A fitted for evaluation. Eight manual reloads. *Lawrence* 1971-72, *Hoel* 1972-73.
- 1972 - 1973: *Towers*, *Robinson*, *Berkeley*, *Cochrane*; Fitted with

**Displacement:** 3350 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Small/Noisy  
**Weapons:**  
 F/A(1)2 Mk42 5in/54//Mk68 (2.7)  
 A(2)1 Mk11 w/40 RIM-24 Tartar//2 SPG-51 (DDG-2 to 14)  
 A(1)1 Mk13 w/40 RIM-24 Tartar//2 SPG-51 (DDG-15 to 24)  
 P&S(8)1 Mk112 w/8 ASROC  
 P/S(3)2 Mk32 324mm TT w/3 Mk44  
**Sensors:**  
 SPS-10, SPS-39A, SPS-37 (DDG 2-4, 8-14),  
 SPS-29 (DDG 5-7), SPS-40A (DDG 15-24)  
 SQS-23 bow (DDG-2 to 19) or hull (DDG-20 to 24)  
**Remarks:**  
 Aluminum superstructure, -15% damage modifier. DDG-20 to DDG-24 have bow-mounted SQS-23 vice hull-mounted. Many later fitted with 4 manual ASROC reloads. *Robison*, *Buchanan*, *Berkeley*, *Semmes*, *Tattnall*, *Goldsborough*, *Waddell* fitted with 1st Gen T Acoustic Countermeasures.  
 • 1967: Torpedo changed from Mk44 to Mk46.  
 • 1969: Tartar replaced by SM1MR.  
 • Apr - Sep 71: *Buchanan* SPS-39 replaced by SPS-48A.  
 • 1971 - 73: A(4)1 Sea Chaparral w/4 RIM-72A fitted for evaluation. Eight manual reloads. *Lawrence* 1971-72, *Hoel* 1972-73.  
 • 1972 - 1973: *Towers*, *Robinson*, *Berkeley*, *Cochrane*; Fitted with

JPTDS, a compact version of NTDS. Combat system Gen 4 Semi-Automatic.

- 1975?: SQS-23 upgraded to SQQ-23 PAIR in four ships, including *John King* Apr 75.
- 1976: Harpoon capability added to Mk11/Mk13 launcher. Mk11 ships carry 4 Harpoon in place of SM1MR, Mk13 ships carry 6 Harpoon in place of SM1MR.
- 1982: Countermeasures upgraded to SRBOC (3rd Gen D).
- 1982 - 87?: SLQ-32(V)2 3rd Gen ES, SPS-40D and SPS-52B replacing SPS-29, -37 and SPS-39A fitted to all.
- 1980s: Three fitted with NTDS, Combat system Gen 4 Semi-Automatic. Radar fit changed to SPS-10, SPS-40D, SPS-52C, LN-66. Mk68 replaced with Mk86 GFCS (SPG-60 and SPQ-9A radars). SPG-60 can direct Mk42 gun or additional SM1MR missile. *Tattnall* Aug 81 - Sep 82, *Goldsborough* Nov 83 - Jul 84, *Benjamin Stoddert* Apr 84 - Aug 85.
- Class decommed 1989 - 92.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	81	122	146	162
<b>Surf Speed:</b>	35	25	18	9	0	Sinks

**Gyatt**

DDG

**Displacement:** 2637 std

**In Class:** [1]

**Size Class:** C/Small

**In Service:** 1955 (1945) - 69

**Propulsion:** Steam Turbine

**Crew:** 345

**Electrn Cnt:** None

**Acoustic Cnt:** 1st Gen T

**Signature:** Small/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 2 Manual

F(2)2 Mk38 5in/38//Mk25 (3.9)

A/P&S(2)2 Mk33 3in/50//Mk56 (1.8)

A(2)1 Mk8 w/12 RIM-2 Terrier//Mk25

PB&SB(24)2 Mk10/11 Hedgehog w/6 salvoes

**Sensors:**

**ES:** 1st Gen

SPS-6, SPS-10

QHB

**Remarks:**

- *Gearing* class unit converted to DDG configuration Oct 55 - Dec 56, reclassified as DDG-712. Mk25 GFCS modified for missile guidance. First USN warship fitted with fin stabilizers.
- Jun - Oct 62: Terrier removed, PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp and Aft Pad(1)1 DASH added, reclassified as DD-712.
- 1967: Mk44 torpedoes replaced by Mk46.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	82	122	147	163
<b>Surf Speed:</b>	34	25	16	8	0	Sinks

**Air-Capable Spruance**

DDH

**Displacement:** 7000 std

**In Class:** 1

**Size Class:** B/Medium

**In Service:** c1982

**Propulsion:** COGAG/ CPP

**Crew:** 370

**Electrn Cnt:** 3rd Gen J&D

**Acoustic Cnt:** 2nd Gen T

**Signature:** Med/Quiet

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 4 Semi-Automatic

F/A(1)2 Mk45 5in/54//SPG-60 (1.9)

PB&SB/P&P(Q)R)2 Mk15 Phalanx Blk 0 (5.0A)

F(8)1 Mk112 w/24 ASROC

PB/SB(3)2 Mk32 324mm TT w/7 Mk46

PB&SB(4)2 Mk141 w/4 Harpoon

A(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7M//Mk91

Aft Pad(1)4 SH-60B LAMPS III

**Sensors:**

**ES:** 3rd Gen

SPS-64 or SPS-53 or SPS-59/LN-66

SPS-40D, SPQ-9A, SPS-55, Mk23 TAS

SQS-53B, SQR-19 towed array

**Remarks:**

- Design authorized by Congress for FY 78 as DD-997 over Navy objections. Can operate VSTOL aircraft as well as helicopters. Aluminum superstructure, -15% damage modifier. Magazines hold 24 RIM-7M and 18 Mk46 torpedo manual reloads. SPG-60 can either illuminate 2nd target for NATO Sea Sparrow or direct Mk45 5 inch gun. CHP armor rating for Sensors, Mk45 is 2.

• Instead constructed as a standard *Spruance*, USS *Hayler*, DD-977.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	133	199	239	265
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Mitscher**

DL

**Displacement:** 3642 std  
**In class:** [4]  
**Size Class:** C/Small  
**In Service:** 1955 - 69  
**Propulsion:** Steam Turbine  
**Crew:** 440  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F/A(1)2 Mk42 5in/54//F Mk25 (2.8) C  
 F/A(2)2 Mk33 3in/50//A Mk35 (1.8) C  
 P&PB/S&SB/PA/SA(2)4 Mk10/24 20mm (1.0L) C  
 F(1)1 Mk108 Weapon Alfa w/4 salvoes//SQG-1 E  
 PB/SB(2)2 Mk23 533mm TT w/2 Mk35 or Mk37 torp F  
 1 DC Rail w/12 Mk14 DC E

**Sensors:** ES: 1st Gen

SPS-6, SPS-8A J  
 SPS-10 (*Mitscher, John S. McCain*) J  
 SPS-4 (*Willis A. Lee, Wilkinson*) J  
 QHB K

**Remarks:**

*Mitscher, John S. McCain, Willis A. Lee, Wilkinson.* Experimental designs, each fitted with a different propulsion layout. Six torpedo reloads. Aluminum superstructure, -15% damage modifier. Mk35 can direct 5 inch and 3 inch guns against single target.

• Mid-50s: QHB, SQG-1 sonars replaced by SQS-4 (estimated Mod 4).

• 1956: *Willis A. Lee* fitted with EDS combat system, Gen 3 Semi-Automatic.

• 1957-58: Mk33 3in/50s, aft Weapon Alfa, and DC Rail replaced by F/A(2)2 Mk37 3in/70//Mk35 (8.8). There is a 10% chance each Tactical Turn a 3in/70 is fired of a mount casualty, rendering it nonfunctional.

• Early 60s: Class Improvement program replaced boilers on *Mitscher, John S. McCain*. Remaining Weapon Alfa removed from *Willis A. Lee, Wilkinson*. *Mitscher* had fwd 3in/70 mount removed.

• 1960: Class reboilered, Aft 3 inch gun replaced by PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp, Aft Pad(1)2 DASH. SPS-4 radar replaced by SPS-29. SQS-4 replaced by SQS-23 (*Mitscher, John S. McCain*) SQS-26 (*Willis A. Lee, Wilkinson*).

• Converted to DDG: *Mitscher* Mar 66 - Jun 68; *John S. McCain* Jun 66 - Sep 69, listed separately.

• 1969: *Willis A. Lee, Wilkinson* decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	43	86	128	154	171
<b>Surf Speed:</b>	36	27	18	9	0	Sinks

**Norfolk**

DL

**Displacement:** 5556 std  
**In class:** [1]  
**Size Class:** B/Medium  
**In Service:** 1953 - 70  
**Propulsion:** Steam Turbine  
**Crew:** 546  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** None  
**Signature:** Med/Quiet  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F/A(2)4 Mk33 3in/50//2 Mk56 (1.8) C  
 PA/SA/P/S(2)4 Mk 20/24 20mm/70 (1.0L) C  
 F/A(1)4 Mk108 Weapon Alfa w/5 salvoes//SQG-1 E  
 P/S(4)2 Mk24 533mm TT w/4 Mk35 or Mk37 torp F

**Sensors:** ES: 1st Gen

SPS-6 J  
 QHB, SQG-1 K

**Remarks:**

Designed with larger, slower screws. 22 torpedo reloads. Laid down as ASW cruiser (CLK), redesignated DL during construction.

• 1957-58: Fitted with SPS-26 radar.

• 1959: Mk33 3 inch guns replaced by F/A(2)4 Mk37 3in/70 AA (17.6), 20mm removed. QHB sonar replaced by SQS-4 (estimated Mod 4).

• 1960: A(1)2 Weapon Alfa replaced by A(8)1 Mk6 w/8 ASROC added.

• 1962: SPS-10, SPS-37 radar added, SQS-4 replaced by SQS-26.

• 1960s: Mk24 TT replaced by PB/SB(3)2 Mk32 324mm TT w/3 Mk44. Remaining Weapon Alfa probably removed.

• 1967: Mk46 torpedoes introduced.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	67	134	200	240	267
<b>Surf Speed:</b>	34	26	17	9	0	Sinks

**Improved Spruance**

DD

**Displacement:** 6156 ltshp  
**In Class:** [24]  
**Size Class:** B/Medium  
**In Service:** 1987 - 2005  
**Propulsion:** COGAG/ CPP  
**Crew:** 324  
**Electrn Cnt:** 3rd Gen J&D  
**Acoustic Cnt:** 2nd Gen T  
**Signature:** Med/Quiet  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 4 Semi-Automatic

F/A(1)2 Mk45 5in/54//F SPG-60 & SPQ-9A (2.0) C  
 PW/SW(R)2 Mk15 Phalanx Blk 0 (5.0A) C  
 F&A(8)8 Mk41 VLS w/61 Tomahawk & VL ASROC D, E  
 A(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7M//Mk91 D  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 F  
 PS/SS(4)2 Mk141 w/4 Harpoon D  
 P/S(1)2 Mk38 Bushmaster 25mm C  
 P/S(1)4 M2 .50 cal (0.1L) C  
 Aft Pad(1)1 SH-60B LAMPS III B

**Sensors:** ES: 3rd Gen

SPS-55, SPS-40D, SPQ-9A, Mk23 TAS, SPS-59/LN-66 J  
 SQS-53C, SQR-19(V)1 K

**Remarks:**

DD 963-973, 975, 977, 980-982, 985, 987-989, 991, 992, 997. Modified with Mk41 VLS. Cannot carry SM2MR. RAST helo recovery system. Aluminum superstructure, -15% damage modifier. Magazines hold 24 RIM-7M and 18 Mk46 torpedo manual reloads. SPG-60 can control either Mk45 5 inch gun or can illuminate second target for NATO Sea Sparrow. Mk45 uses SPG-60 for AA and SPQ-9A for surface fire. CHP armor rating for Sensors, Mk41, Mk45 is 2. Fitted with 4 SLQ-49 floating distraction decoys.

• DD-997 has SPS-49(V)5 vice SPS-40. Mk23 TAS not initially fitted in DD 985, 986, 990, 992. DD 978 has SQS-53C (further five later fitted).

• Normal Mk41 loadout is 57 Tomahawk and 4 VL ASROC, although nominal loadout is 45 Tomahawk and 16 VL ASROC. VLS loading crane occupies three Mk41 cells.

• 1990: DD 963-968, 970, 971, 973, 975, 980-982, 991, 992 fitted with SQR-19(V)3.

• Early 90s: Fitted with P/S(1)4 .50 cal (0.1L).

• 1993: Fitted with RIM-7P vice RIM-7M. Phalanx upgraded to Blk IA (2@6.6A).

• 1993 - 96: Fitted with SSDS Mod 0, Gen 5 Human combat system. Operational 1995.

• Mid-90s: DD-969, 972, 977-979, 982, 985, 987, 989, 992, 997 refitted: Hangars widened, can carry 2 SH-60. Torpedo magazines also altered to permit storage of Penguin Mk2 msls for SH-60.

• 1995 -97: DD-972, 973, 977, 982, 987, 988, 992 fitted with A(21)1 Mk49 w/21 RIM-116A RAM.

• 1997: *Radford* fitted with advanced mast structure with reduced RCS for trials. No effect on overall radar signature.

• Late 90s: Fitted with SPS-64 replacing SPS-59/LN-66. DD 972 *John Young* fitted with SPQ-9B replacing SPQ-9A. All except DD 985, 988, 990, 992 fitted with Mk23 TAS.

• Struck: DD-980, 981 2000, DD-966 2001. DD-970 struck in 2001 and used for experimental work.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	132	198	238	264
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Spruance**

DD

**Displacement:** 6156 ltshp  
**In Class:** [31]  
**Size Class:** B/Medium  
**In Service:** 1975 - 98  
**Propulsion:** COGAG/ CPP  
**Crew:** 353  
**Electrn Cnt:** 1st Gen D  
**Acoustic Cnt:** 2nd Gen T  
**Signature:** Med/Quiet  
**Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 4 Semi-Automatic  
 F/A(1)2 Mk45 5in/54//F SPG-60 & SPQ-9A (2.0) **C**  
 A(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7M//Mk91 **D**  
 F(8)1 Mk16 ASROC w/8 msl **E**  
 PS/SS(3)2 Mk32 324mm TT w/7 Mk46 **F**  
 Aft Pad(1)2 SH-2F LAMPS **B**  
**Sensors:** ES: 2nd Gen **J**  
 SPS-53 or SPS-59/LN-66 **J**  
 SPS-40D, SPQ-9A, SPS-55 **J**  
 SQS-53A, SQR-15 (DD 966, 967, 976, 985) **K**

**Remarks:**  
 DD 963-992. Aluminum superstructure, -15% damage modifier. Magazines hold 24 RIM-7M and 18 Mk46 torpedo manual reloads and 16 ASROC automatic reloads. Mk45 uses SPG-60 for AA and SPQ-9A for surface fire.  
 • DD 963-970 have SPS-53, remainder LN-66. DD 976-997 have 3rd Gen ES.  
 • 1977-79: Fitted with PB&SB(4)2 Mk141 w/4 Harpoon. Fitted on DD 986 - 987 as built.  
 • 1978 - 80: Fitted with A(8)1 MK29 NATO Sea Sparrow w/8 RIM-7M//Mk91.  
 • Feb 79 - 1987: Fitted with SLQ-32(V)2 (3rd Gen ES).  
 • 1982-86: Kevlar armor fitted over critical spaces, CHP armor rating for Sensors, Mk45 is 2. Fitted with PW/SW(R)2 Mk15 Phalanx Blk 0 (5.0A), 2nd Gen D electronic countermeasures.  
 • 1982 - 84: DD 963, 969, 979 fitted with Mk23 TAS same time as Phalanx refits.  
 • Nov 81 - 82: DD 980 fitted with SQR-19(V)1 for trials.  
 • 1984-86: DD 974, 976, 979, 983, 984, 989, 990 fitted with PB&SB(4)2 Mk143 ABL for Tomahawk missiles. These ships never received the Mk41 VLS upgrade, except for *Deyo*, which had her Mk143 ABL removed during the upgrade, and *Harry W. Hill*, which never received Mk143 or Mk41 launchers.  
 • 1985: SQS-53A upgraded to SQS-53B (first ship DD-980), SQR-19 added except for DD 969, 972, 976, 982-985, 986, 988-990, SH-60B replaced SH-2F, RAST fitted. Four ships carried SQR-15 instead of SQR-19.  
 • May-Jul 86: DD 967 fitted with SH-60B and RAST helicopter recovery system.  
 • 1987: Fitted with SLQ-32(V)3 (3rd Gen J&D, 3rd Gen ES).  
 • 1987 - 94: DD 963-973, 975, 977, 980-982, 985, 987-989, 991, 992, 997 fitted with Mk41 VLS replacing Mk16 ASROC launcher, listed separately as Improved *Spruance* class.  
 • 1990: SPG-60 fitted to direct Mk45 and RIM-7M/P.  
 • 1992: SQR-15 removed from ships so fitted.  
 • early 90s: Fitted with P/S(1)4 .50 cal (0.1L). Fitted with SQR-19, except DD 986.  
 • 1993: Fitted with RIM-7P replacing RIM-7M.  
 • Mid-90s: DD-976, 983, 990 refitted: Hangars widened, can carry 2 SH-60. Torpedo magazines also altered to permit storage of Penguin Mk2 msls for SH-60.  
 • By 1995: ASROC removed from unconverted units.  
 • Late 97: DD-972 fitted with SPQ-9B replacing SPQ-9A.  
 • Late 90s: Fitted with SPS-64 replacing SPS-53 and SPS-59/LN-66. DD 974, 976, 979, 983 fitted with Mk23 TAS.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	132	198	238	264
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

**Forrest Sherman (ASW Refit) DD**  
**Displacement:** 2850 std **In Class:** [8]  
**Size Class:** C/Small **In Service:** 1967 (1955) - 88  
**Propulsion:** Steam Turbine **Crew:** 324  
**Electrn Cnt:** 1st Gen J **Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 3 Semi-Automatic **C**  
 F/A(1)2 Mk42 5in/54//Mk68 (2.7) **E**  
 A(8)1 Mk112 w/8 ASROC **F**  
 PB/SB(2)3 Mk32 324mm TT w/2 Mk46 **F**  
**Sensors:** ES: 1st Gen **J**  
 SPS-37 or SPS-40A, SPS-10

SQS-23, SQS-35 IVDS **K**  
**Remarks:**  
*Barry, Blandy, Davis, Du Pont, Jonas Ingram, Manley, Morton, Richard S. Evans*. Ships of *Forrest Sherman* class modernized 1967 - 71. Also called *Barry* subclass. SPS-40 on *Jonas Ingram, Du Pont, Blandy*. Some units had Mk56 aft with Mk68 forward.  
 • 1974+: Estimate fitted with 2nd Gen acoustic countermeasures.  
**Damage & Speed Breakdown:**  

<b>Dam Pts:</b>	0	43	86	128	154	171
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Gearing FRAM II DDR**  
**Displacement:** 2699 std **In class:** [16]  
**Size Class:** C/Small **In Service:** 1960 - 74  
**Propulsion:** Steam Turbine **Crew:** 345  
**Electrn Cnt:** 1st Gen J **Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 2 Manual **C**  
 2F/A(2)3 Mk38 5in/38//Mk25 (5.9) **E**  
 PB&SB(24)2 Mk15 Hedgehog w/6 salvoes **F**  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp  
**Sensors:** ES: 1st Gen **J**  
 SPS-10, SPS-12 or SPS-29 or SPS-40, SPS-8 or SPS 30 **K**  
 SQS-23  
**Remarks:**  
 DD 713, 742, 764, 765, 805, 807, 830, 831, 834, 838, 858-861, 874, 877. No torpedo reloads. Aluminum superstructure, -15% damage modifier.  
 • DD 764, 765, 858-861 have SPS-12, Aft Pad(1)2 DASH.  
 • DD 805, 807, 830, 877 have SPS-40A, Aft Pad(1)2 DASH.  
 • DD 713, 831, 834, 838 have SPS-30. DD 742, 874 have SPS-8.  
 • 1967: Mk46 torpedoes introduced.  
**Damage & Speed Breakdown:**  

<b>Dam Pts:</b>	0	35	70	105	126	140
<b>Surf Speed:</b>	34	25	16	8	0	Sinks

**Gearing FRAM I DD**  
**Displacement:** 2699 std **In Class:** [79]  
**Size Class:** C/Small **In Service:** 1960 (1944)-79  
**Propulsion:** Steam Turbine **Crew:** 345  
**Electrn Cnt:** 1st Gen J **Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 2 Manual **C**  
 F(2)2 Mk38 5in/38//Mk25 (3.9) (Group A) **C**  
 F/A(2)2 Mk38 5in/38//Mk25 (3.9) (Group B) **E**  
 P&S(8)1 Mk112 w/8 ASROC **F**  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp **E**  
 PB&SB(24)2 Mk10/11 Hedgehog w/6 salvoes (Group A) **B**  
 Aft Pad (1)2 QH-50C DASH  
**Sensors:** ES: 1st Gen **J**  
 SPS-10, SPS-29/37 or SPS-40A **K**  
 SQS-23  
**Remarks:**  
 Fleet Rehabilitation and Modernization program 1960 to 1965. Aluminum superstructure, -15% damage modifier.  
 • 8 Group A: DD 786, 790, 826, 841, 844, 845, 868, 890.  
 • 71 Group B: DD 710, 711, 714-719, 743, 763, 782-785, 787-789, 806, 808, 817-825, 827, 829, 832, 833, 835-837, 839, 840, 842, 843, 846, 847, 849-853, 862-867, 869-873, 875, 876, 878-889. Manual ASROC and torpedo reloads.  
 • late 50s: DD 817, 835, 888, 889 fitted with EDS combat system, Gen 3 Semi-Automatic.  
 • 1968: DD 841 fitted with 1st generation jammer. DD 850 fitted 1970.  
 • May 72: Ten ships fitted with Shrike On Board (SOB) with 4 AGM-45 Shrike mounted on top of ASROC launcher. Cued by ship's ES. Probably removed soon after. Includes DD 782, 783, 845.  
 • May 72-Oct 73: DD 783, 785, 786, 836, 845, 852, 875, 884, 886 deploy to Vietnam with A(4)1 Sea Chaparral w/4 RIM-72C with 8 manual reloads on DASH pad and 1st Gen D. Some carry Redeye missiles.  
 • 1967: Mk46 torpedo replaced Mk44.

- 19 Apr 72: *Higbee* bombed by Mig-17 during action off Dong Ha, Vietnam. Aft 5 inch mount destroyed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	35	70	105	126	140
<b>Surf Speed:</b>	34	25	16	8	0	Sinks

**Fletcher FRAM II**

DD

**Displacement:** 2406 std  
**In class:** [3]  
**Size Class:** C/Small  
**In Service:** 1960 (1942) - 70  
**Propulsion:** Steam Turbine  
**Crew:** 345  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F/A(1)2 Mk30 5in/38//Mk25 (2.0)  
 F(1)1 MK08 Weapon Alfa w/5 salvoes  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp  
 Aft Pad (1)2 DASH  
**Sensors:** ES: 1st Gen  
 SPS-6, SPS-10  
 SQS-4 Mod 1/2

**Remarks:**

DD 446 *Radford*, 447 *Jenkins*, 449 *Nicholas*. Converted 1960 to 1961. Aluminum superstructure, -15% damage modifier.  
 • Feb 62: *Jenkins* fitted with VDS, estimated as SQS-35. *Radford* fitted Feb 63.  
 • 1967: Mk46 torpedoes introduced.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	65	98	117	130
<b>Surf Speed:</b>	35	26	17	9	0	Sinks

**Fletcher (DASH)**

DD

**Displacement:** 2406 std  
**In class:** [1]  
**Size Class:** C/Small  
**In Service:** 1960 (1942) - 65  
**Propulsion:** Steam Turbine  
**Crew:** 345  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

2F/A(1)3 Mk30 5in/38//Mk25 (2.9)  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp  
 Aft Pad (1)2 DASH  
**Sensors:** ES: 1st Gen  
 SPS-10, SPS-29D  
 SQS-4 Mod 1/2

**Remarks:**

USS *Hazelwood* (DD-531). Converted 1960 to 1961 as DASH test ship. Aluminum superstructure, -15% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	65	98	117	130
<b>Surf Speed:</b>	35	26	17	9	0	Sinks

**Forrest Sherman**

DD

**Displacement:** 2735 lt  
**In Class:** [18]  
**Size Class:** C/Small  
**In Service:** 1955 - 88  
**Propulsion:** Steam Turbine  
**Crew:** 324  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual

F/2A(1)3 Mk42 5in/54//F Mk68 (4.1)  
 F/A(2)2 Mk33 3in/50//A Mk68 (1.8)  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes  
 2 DC Rail w/6 Mk14 DC  
 PB/SB(2)2 Mk25 533mm TT w/2 Mk35 or Mk37 torp (931, 932)  
 PB/SB(1)2 Mk12 w/3 Mk32 (933, 936-938, 940-951)  
**Sensors:** ES: 1st Gen  
 SPS-6C, SPS-10  
 SQS-4

**Remarks:**

DD 931-933, 936-938, 940-951. Only first two fitted with 533mm TT, remainder have PB/SB(1)2 Mk12 w/1 Mk32 torpedoes and 4 reload torpedoes. Mk68, Mk56 could control 5 inch or 3 inch guns. DD 945-951 had Mk56 aft with Mk68 forward.  
 • AAW conversions: *Decatur* Jun 65 - Apr 66, *John Paul Jones* Dec 65 - Sep 67, *Parsons* Jun 65 - Nov 67, *Somers* Mar 66 - Feb 68. Listed separately as *Decatur* class DDG.  
 • Jul - Sep 66: *Barry* fitted with SQS-23 replacing SQS-4 sonar.  
 • 1967: Torpedo changed from Mk44 to Mk46.  
 • 1967-71: *Barry*, *Davis*, *Jonas Ingram*, *Manley*, *Du Pont*, *Blandy*, *Morton*, *Richard S. Edwards* received ASW Modernization, listed separately.  
 • 1967-71: Mk33 guns, Hedgehog, DC rails removed, Mk25 TT replaced by PB/SB(3)2 Mk32 324mm TT w/3 Mk46 torp. SPS-6 replaced by SPS-12 (*Mullinix*) or SPS-37 (*Bigelow*, *Edson*) or SPS-40 (*Forrest Sherman*, *Turner Joy*). Fitted with SQS-23 replacing SQS-4 sonar.  
 • 1974 - 75: *Hull* fitted with F(1)1 Mk71 8in/55 replacing F(1)1 Mk42. Trials 1974-75, deployments 1976-78. Refit 1979-80 with Mk71 replaced by Mk42.  
 • 1974+: Estimate fitted with 2nd Gen acoustic countermeasures.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	45	91	136	163	181
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Gearing DDE**

DDE

**Displacement:** 2637 std  
**In Class:** [8]  
**Size Class:** C/Small  
**In Service:** 1949 - 64  
**Propulsion:** Steam Turbine  
**Crew:** 345  
**Electrn Cnt:** None  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 1 Manual

F/A(2)2 Mk38 5in/38//Mk25 (3.3)  
 P/S/A(2)3 Mk33 3in/50//Mk35 (1.6)  
 PB&SB(24)1 Mk15 Hedgehog  
 P/S(1)4 Mk23 533mm TT w/5 Mk35 or Mk37  
 2 Mk14 DC rail w/9 Mk14 DC  
 (1)6 Mk6 DC proj w/4 Mk14 DC  
**Sensors:** ES: 1st Gen  
 SPS-6, SPS-10  
 QHB, QDA

**Remarks:**

DDE 764, 765, 825, 827, 858-861. *Gearing* class DDK, then DDE conversion. Mk23 TT carried Mk35 or Mk37 torp, have twenty reloads.  
 • Early 50s: *Robert A. Owens* (DD 827) received F/A(2)2 Mk37 3in/70 (8.8) vice 5 inch guns. Mk33 3 inch guns removed. Combat system Gen 2 Manual, There is a 10% chance each Tactical Turn a 3in/70 is fired of a mount casualty, rendering it nonfunctional. Mk15 Hedgehog replaced by F/A(1)2 Mk108 Weapon Alfa.  
 • Fall 56: *Carpenter* (DD 825) refitted as *Robert A. Owens*.  
 • May - Aug 61: *Carpenter* replaced SQS-23 with SQS-26.  
 • 1961: 764, 765, 858-861 converted to *Gearing* FRAM II, listed separately.  
 • 1963-65: 825, 827 converted to *Gearing* FRAM I Group B, listed separately.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	82	122	147	163
<b>Surf Speed:</b>	34	25	16	8	0	Sinks

**Fletcher DDE**

DDE

**Displacement:** 2406 std  
**In Class:** [18]  
**Size Class:** C/Small  
**In Service:** 1949 - 70  
**Propulsion:** Steam Turbine  
**Crew:** 345  
**Electrn Cnt:** 1st Gen J  
**Acoustic Cnt:** 1st Gen T  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 1 Manual

F/A(1)2 Mk30 5in/38//Mk25 (1.6)  
 A(2)2 Mk33 3in/50//Mk56 (1.6)  
 F(1)1 MK08 Weapon Alfa w/5 salvoes  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes

## America's Navy

2 Mk14 DC Rail w/9 Mk14 DC **E**  
 PB/SB(2)2 Mk23 533mm TT w/2 Mk35 or Mk37 torp **F**  
 P/S(1)2 Mk2 482mm TT w/1 Mk32 torp **F**  
**Sensors:** **ES:** 1st Gen  
 SPS-6, SPS-10 **J**  
 QHB **K**

**Remarks:**  
 DD-445, 446, 447, 449, 450, 465, 466, 468, 470, 471, 498, 499, 507,  
 508, 510, 517, 576, 577. May have 1 or 2 Mk14 DC rails.  
 • 1960 - 61: FRAM II update for DD 446, 447, 449. Listed separately.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	38	77	115	138	153
<b>Surf Speed:</b>	35	26	17	9	0	Sinks

**Gearing (1950s)**

**Displacement:** 2637 std **DD**  
**Size Class:** C/Small **In Class:** [98]  
**Propulsion:** Steam Turbine **In Service:** 1944 - 68  
**Electrn Cnt:** None **Crew:** 345  
**Signature:** Small/Noisy **Acoustic Cnt:** 1st Gen T  
**Weapons:** **Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

2F/A(2)3 Mk38 5in/38//Mk25 (5.0) **C**  
 P/S/A(2)3 Mk33/3in/50//Mk51 (0.5L) **C**  
 Bow(24)2 Mk10/11 Hedgehog w/5 salvoes **E**  
 1 Mk14 DC rail w/9 Mk14 DC **E**  
 (1)6 Mk6 DC proj w/4 Mk14 DC **E**  
**Sensors:** **ES:** 1st Gen **J**  
 SPS-6, SPS-10 **K**  
 QGA

**Remarks:**

DD 710, 712, 716-719, 743, 763, 782, 783, 785-790, 808, 818-824,  
 826, 828, 836, 837, 839-841, 843-853, 862, 864-869, 871, 872, 884-  
 887, 890 use stats as above.  
 • 1945 - 54: 35 units completed as or converted to DDRs, 40mm and  
 20mm removed, P&S(1)1 Mk34 3in/50, SPS-8 radar added. DDR  
 711, 713-715, 742, 743, 784, 805-807, 817, 829-835, 838, 842, 863,  
 870, 873-883, 888, 889.  
 • Apr 46: DD 848 *Witek* commissioned. Used as test ship. Fitted with  
 pumpjets in 1959. Struck 1968.  
 • 1949: DD 719, 824 completed with one F Mk38 and all DC projec-  
 tors removed. Fitted with F(1)1 Mk108 Weapon Alfa, PA/A(2)2 Mk33  
 3in/50, PS/SS(24) Mk15 Hedgehog, PB/SB(1)4 533mm TT w/1  
 torpedo (6 reloads).  
 • 1949: 8 additional units (DDE 764, 765, 825, 827, 858-861) complet-  
 ed as DDE, listed separately. DD 818-820, 847, 871 later converted  
 but have P&S(4)1 533mm TT.  
 • Sep 52: DD 828 *Timmerman* commissioned to test new steam  
 machinery. Struck 1956.  
 • Oct 55 - Dec 56: DD 712 *Gyatt* converted to DDG, listed separately.  
 • late 50s: Fitted with SQS-4 replacing QHB. DD 837, 848 have one  
 forward Mk38 5in removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	82	122	147	163
<b>Surf Speed:</b>	32	24	16	8	0	Sinks

**Allen M. Sumner FRAM II**

**Displacement:** 2746 std **DD**  
**Size Class:** C/Small **In Class:** [33]  
**Propulsion:** Steam Turbine **In Service:** 1960 (1943) - 75  
**Electrn Cnt:** 1st Gen J **Crew:** 345  
**Signature:** Small/Noisy **Acoustic Cnt:** 1st Gen T  
**Weapons:** **Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

2F/A(2)3 Mk38 5in/38//Mk25 (5.9) **C**  
 PB/SB(3)2 Mk32 TT w/3 Mk43, Mk44, Mk46 **F**  
 PB/SB(1)2 Mk25 533mm TT w/1 Mk15, Mk35 or Mk37 **F**  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes **E**  
 Aft Pad (1)2 DASH **B**  
**Sensors:** **ES:** 1st Gen **J**  
 SPS-10, SPS-29/37 or SPS-40 **K**  
 SQS-4

**Remarks:**

DD 692-694, 697-699, 703, 704, 709, 723-725, 727-730, 744, 746,  
 752, 754, 755, 757-761, 770, 776-781. DD-729 not fitted with VDS.  
 Aluminum superstructure, -15% damage modifier.  
 • 7 Jan 63: DASH operational on DD 761.  
 • 30 Jun 69: DD-754 *Frank E. Evans* sunk in collision with HMAS  
*Melbourne*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	36	71	107	128	142
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**Allen M. Sumner**

**Displacement:** 2535 std **DD**  
**Size Class:** C/Small **In Class:** [53]  
**Propulsion:** Steam Turbine **In Service:** 1943 - 73  
**Electrn Cnt:** None **Crew:** 345  
**Signature:** Small/Noisy **Acoustic Cnt:** 1st Gen T  
**Weapons:** **Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

2F/A(2)3 Mk38 5in/38//Mk25 (5.0) **C**  
 P&S(5)1 Mk14 TT w/5 Mk15 torp **F**  
 2 Mk14 DC rail w/9 Mk14 DC **E**  
 (1)6 Mk6 DC proj w/4 Mk14 DC **E**  
**Sensors:** **ES:** 1st Gen **J**  
 SG-2, SR, SC-2 **K**  
 QGA

**Remarks:**

DD 692-694, 696-709, 722-725, 727-732, 734, 744-748, 752-762,  
 770, 775-781, 857. Carry 66 DC.  
 • 1960-63: 33 through FRAM II, see separate entry.  
 • Jan 70: DD 707 *Soley* damaged in grounding. Struck Jul 70.  
 • 1968-73: Remaining 19 struck. 696, 700-702, 705, 706, 708, 722,  
 731, 732, 734, 745, 747, 748, 753, 756, 762, 775, 857

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	40	79	119	142	158
<b>Surf Speed:</b>	36	27	18	9	0	Sinks

**Fletcher (1950s)**

**Displacement:** 2406 std **DD**  
**Size Class:** C/Small **In Class:** [42]  
**Propulsion:** Steam Turbine **In Service:** 1942 - 70  
**Electrn Cnt:** None **Crew:** 345  
**Signature:** Small/Noisy **Acoustic Cnt:** 1st Gen T  
**Weapons:** **Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

F/A(1)4 Mk30 5in/38//Mk25 (3.4) **C**  
 P/S/A(2)3 Mk33 3in/50//Mk35 (1.6) **C**  
 P/S(5)1 Mk14 TT w/5 Mk15 torp **F**  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes **D**  
**Sensors:** **ES:** 1st Gen **J**  
 SPS-6, SPS-10 **K**  
 QCJ

**Remarks:**

DD 519, 520, 527, 530, 532, 535, 537, 544, 547, 556, 561, 564, 566,  
 629, 630, 642, 644, 650-652, 655, 659, 666, 669, 670, 674, 677-679,  
 681, 685, 687, 689, 793-796, 799, 804.

• Late 60s: Fitted with PB/SB(3)2 Mk32 TT w/3 Mk43 or Mk44  
 torpedoes. Mk33 removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	38	77	115	138	153
<b>Surf Speed:</b>	35	26	17	9	0	Sinks

**O.H. Perry**

**Displacement:** see remarks **FFG**  
**Size Class:** C/Small **In Class:** [51]  
**Propulsion:** COGAG/ CPP **In Service:** 1977 - 2015  
**Electrn Cnt:** None **Crew:** 250  
**Signature:** Small/Quiet **Acoustic Cnt:** 2nd Gen T  
**Weapons:** **Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic

P&S(1)1 Mk75 76mm/62//Mk92 CAS (4.5) **C**  
 F(1)1 Mk13 w/40 see remarks/Mk92 STIR **D**  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 Mod 5 **F**  
 Aft Pad(1)2 SH-2F LAMPS I **B**

**Sensors:**

SPS-49(V)2, SPS-55, Mk92 CAS  
SQS-56

ES: 2nd Gen

J  
K**Remarks:**

- FFG 1-16, 19-34, 36-43, 45-61. Has 18 Mk46 torpedoes. Mk13 has 36 SM1MR Blk VI, 4 Harpoon IB (estimated Harpoon IC from 1985). Carry one helo as standard. The Mk92 CAS gunfire director can be used as a director for a second SM1 channel, but it will only be able to provide half the number of intercepts as the Mk 92. CHP armor rating for Mk13, 76mm, Engineering, Sensors and CIC is 2. Single prop, double the speed reduction of Engineering critical hits. Aluminum superstructure, -15% damage modifier.
- Systems: Crew of 228 (FFG 19, 1981); A(R)1 Mk15 Phalanx Blk 0 (5.0A) (1981?-88); 3rd Gen D, 3rd Gen ES, backup OP 76mm director (FFG 27, Nov 82); SM1MR Blk VI (1983); Harpoon IC (1985); Mk46 Mod 5A(S) (1990); Mk15 Phalanx Blk I (7.6A) (1990s); SM1MR Blk VIA (1994, not on NRF); Mk46 Mod 5A(SW) (1996); All systems backfitted to earlier units.
  - Short hull: FFG 7-16, 19-34 displ 2769 lt. Some converted to Long hull - FFG 7 (1990?, not fitted with RAST, retains SH-2F), 8 (1981); 15 (1990?); 28 (182?); 29, 32 (1981-90). Last struck 2003.
  - Long hull: FFG 36-43, 45-61 displ 3610 lt, fin stabilizers and provision for LAMPS III, RAST (FFG 50, Dec 84 on; backfitted); Phalanx Blk IB (7.6A) (1999-10); Nulka 4th Gen D (2004-10).
  - 1982: FFG 26 fitted as stabilizer trials ship. All Short hull, except FFG 16 and FFG 30, later backfitted.
  - Feb 85: First LAMPS III deployment (FFG 37) - 1 SH-60B vice SH-2F. Two SH-60B from 1987.
  - 1985: SQR-18 fitted to all.
  - Jul 85: FFG 55-61 fitted with SQR-19(V)2 vice SQR-18 as standard. Backfits: FFG 8 (1987); 28, 29, 32, 36, 39 (1988); 12 (1989); 7, 15 (1990), 9, 48-50, 52 (1991), 20, 51 (1992).
  - 1985-89: FFG 7, 9-16, 19-23, 25, 27 (all Short hull) passed to Naval Reserve Force (NRF).
  - 1990s: Fitted with P/S(1)2 or P/S(1)4 M2 .50 cal mg (0.1L for either fit).
  - CORT upgrade - Mk92 CORT radar replaces Mk92 CAS, SPS-49(V)4, Kingfisher mine avoidance sonar. Allows 76mm and SM1MR to engage sea skimming tgts. FFG 61 1989; FFG 47, 48, 50 in 1991; 36, 51 in 1992; 53-55, 57, 58 in 1995?; 52 in Mar 95-Nov 96.
  - 1988-92: Fitted with 3rd Gen J&D - FFG 29, 30, 32, 36, 40, 45-59, 61.
  - 1991: FFG 22, 47 fitted with P/S(1)2 Mk38 Bushmaster 25mm (local control) and Kingfisher mine avoidance sonar; FFG 37 with MMS (2nd Gen FLIR) and 3 OH-58D (Armed). Bushmaster cross-decked to ships deploying to Middle East.
  - Jul 93-94: FFG 40, 43, 46, 47, 50-56, 58, 59 fitted Penguin msls (estimate 4 msls vice torpedoes) for SH-60B.
  - 1994: SH-2F retired - NRF carry 1 SH-2G each, remainder of short hull ships have no helo (crew of 214).
  - 1990s-99: FFG 9, 31, 32, 36, 38, 42, 43, 47-55, 57-61 fitted with VSmall radar signature.
  - 1997: Proposed CANDO refits with Mk92 CAS upgraded to 5th generation, would have allowed firing SM2MR missiles. Planned for FFG 8, 32, 33, 37, 40, 43, 45, 46, 49, 58, but canceled.
  - 1997-99: CORT ships fitted with SSDS Mod 0, Gen 5 Human combat system.
  - 2001: SH-2G retired - Short hull ships no longer carry helo.
  - 2002: CORT ships Phalanx updated to Blk IB (no change to AA strength), remainder 2004 - 10.
  - 2003: Fitted with P/S(1)2 Mk38 Mod 2 Bushmaster 25mm/2 EO directors.
  - 2004: Mk13 launcher no longer used (remove Standard and Harpoon msls).
  - Sep 09: FFG 61 fitted with F(1)1 Mk38 Mod 2 Bushmaster 25mm (stabilized and EO GFC). Later also FFG 48, 50, 51, 55, 59, 60.
  - 2011: First deployment with 1 SH-60B and 2 MQ-8B.
  - 12 Feb 14: *Taylor* (FFG-50) ran aground while mooring in Samsun, Turkey during operations supporting the 2014 Winter Olympics. Propeller damaged.
  - 2017: Last unit decommed.

**Damage & Speed Breakdown:**

<b>DP (2770 t):</b>	0	36	72	107	129	143
<b>DP (3610 t):</b>	0	43	86	129	155	172
<b>Surf Speed:</b>	29	22	14	7	0	Sinks

**Brooke**

**Displacement:** 2640 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J&D  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk30 5in/38//Mk56 (1.0)  
A(1)1 Mk22 w/16 Tartar//SPG-51  
F(8)1 Mk112 w/8 ASROC  
P/S(3)2 Mk32 324mm TT w/3 Mk44  
Aft Pad (1)2 DASH

**Sensors:**

SPS-10, SPS-52, SPS-59/LN-66  
SQS-26

**DEG/FFG**

**In Class:** [6]  
**In Service:** 1966 - 90  
**Crew:** 228  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic

**Remarks:**

- Brooke, Ramsey, Schofield, Talbot, Richard L. Page, Julius A. Furer.* Originally classified as DEG. Aluminum superstructure, -15% damage modifier. Single prop, double the speed reduction of Engineering critical hits. Fitted with stabilizers. SPS-39 vice -52 on *Brooke*. *Talbot, Richard L. Page, Furer* have ASROC reload magazine with additional 8 missiles. Originally classified as DEG. Tight turning circle due to large rudder, treat as Size D for Ship Turning Distance.
- 1967: Mk46 torpedoes replace Mk44.
  - Sep 67: *Brooke* had SPS-39 replaced by SPS-52.
  - 1972 - 75, Fitted for 1 SH-2D LAMPS I. *Schofield* 1972; *Talbot, Furer* 1973; *Brooke, Ramsey, Page* 1975.
  - Summer 74: *Talbot* had 5 inch replaced by OTO Melara 76mm/62//STIR (4.5), SQS-56 sonar for trials of *O.H. Perry* weapons systems. Restored to standard configuration after trials.
  - 30 Jun 75: Rated as FFGs.
  - 1976-77s: AAW modernization. Tartar replaced by SM1MR. Combat system Gen 4 Semi-Automatic, estimate fitted with 2nd Gen acoustic countermeasures.
  - Early 80s: Fitted with 2nd Gen ES, 2nd Gen D countermeasures.
  - 1988: *Brooke (Khaibar), Talbot (Hunam), Richard L. Page (Tabuk), Julius A. Furer (Badr)* leased to Pakistan. Returned and scrapped 1993. *Schofield* decommed.
  - Jun 00: *Ramsey* expended as a target.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	35	69	104	124	138
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Patrol Frigate 4501**

**Displacement:** 4600 fl  
**Size Class:** C/Small  
**Propulsion:** CODOG  
**Electrn Cnt:** 4th Gen J&D  
**Signature:** Small/Quiet  
**Weapons:**

F(1)1 Mk110 57mm//SPQ-9B (2.7)  
A(R)1 Mk15 Phalanx Blk IA (7.6A)  
4 x M2 .50 cal. (0.1L)  
2 x M240B 7.62mm (0.1L)  
Aft Pad(1)2 MH-60

**Sensors:**

SPS-75  
EO sensor

**FF**  
**In Class:** --  
**In Service:** --  
**Crew:** 148  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic

**Remarks:**

- Proposal by Huntington Ingalls shipyard for frigate based on the US Coast Guard National Security Cutter with minimal modifications. Stern ramp for launching/recovering RHIB. Carries Nulka 4th Gen countermeasure.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	66	99	119	132
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Patrol Frigate 4921**

FF

**Displacement:** 4600 ft  
**Size Class:** C/Small  
**Propulsion:** CODOG  
**Electrn Cnt:** 4th Gen J&D  
**Signature:** Small/Quiet  
**Weapons:**  
 F&A(12)1 Mk56 VLS w/12 ESSM//CEAFAR  
 F(1)1 Super Rapid 76mm/62//CEAFAR (6.8)  
 A(11)1 SeaRAM w/11 RIM-116A  
 PB&SB(4)2 Mk141 w/4 Harpoon IG  
 PB(3)1 Mk32 324mm TT w/3 Mk54 torp  
 Aft Pad(1)2 MH-60  
**Sensors:**  
 CEAFAR active phased array radar  
 Hull sonar, towed array

**In Class:** --  
**In Service:** --  
**Crew:** 140  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic  
**D**  
**C/Italy**  
**D**  
**D**  
**F**  
**B**  
**J/Aust**  
**K**

**Remarks:**

Proposal by Huntington Ingalls shipyard for frigate based on the U.S. Coast Guard National Security Cutter. Carries Nulka 4th Gen countermeasure. CEAFAR radar provides direction for both gun and ESSM.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	66	99	119	132
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Knox**

DE/FF

**Displacement:** 3130 lt  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Small/Quiet  
**Weapons:**  
 F(1)1 Mk42 5in/54//Mk68 (1.4)  
 F(8)1 Mk16 w/8 ASROC  
 PB/SB(2)2 Mk32 324mm TT w/2 Mk46  
 Aft Pad (1)1 DASH  
**Sensors:**  
 SPS-10, SPS-40A, SPS-59/LN-66  
 SQS-26

**In Class:** [46]  
**In Service:** 1969 - 94  
**Crew:** 224  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic  
**C**  
**E**  
**F**  
**B**  
**ES:** 1st Gen  
**J**  
**K**

**Remarks:**

DE 1052-1097. Originally classified as DE. Aluminum construction, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits. 18 reloads for Mk32 TT. Eight automatic reloads for ASROC.

- 1970s: DE 1068, 1072, 1074, 1075 had Mk16 modified to fire Standard ARM with two on launcher, two in magazine.
- Early 70s: DE 1061 trials SQR-15. Four fitted included DE 1056 and 1067.
- 1971 - 75: A(8)1 Mk25 BPDMS w/8 RIM-7//Mk115 added to 31 units: DE-1052-1069, 1071-1083.
- 1972 - 75: Fitted with 1 SH-2D LAMPS I replacing DASH. SQS-35 VDS fitted to DE-1052, 1056, 1063-1071, 1073-1076, 1078-1097.
- 1975: DE 1070 fitted with A(8)1 Mk29 w/8 RIM-7 NATO Sea Sparrow//1 Mk95, Mk23 TAS radar, estimate fitted with 2nd Gen acoustic countermeasures.
- 30 Jun 75: Reclassified as FF.
- 1976: FF-1091 fitted to fire Harpoon from 2 cells in ASROC launcher, F(8)1 Mk16 w/6 ASROC, 2 Harpoon. 6 ASROC and 2 Harpoon reloads. Fitted to all in the late 70s.
- 1978: FF 1078 trials SQR-18 sonar.
- 1980s: Fitted with 2nd Gen D countermeasures, 2nd Gen ES, 2nd Gen towed acoustic decoy, SPS-67(V)1 replaces LN-66. Mk25 removed from FF 1083, 1091-93, 1096.
- 1981: SQS-35 ships fitted with SQR-18.
- 1983 - 87: FF 1055-1060, 1062-1064, 1066-1070, 1073, 1075-1082, 1084-1090, 1092-1095, 1097 fitted with A(R)1 Mk15 Phalanx (4.4A). Replaces Mk25 and Mk29.
- 1983: Non-VDS ships fitted with SQR-18.
- 1991: SQS-35 de-activated.
- To Naval Reserve Fleet (NRF). FF 1060, 1061, 1072 1982-83. FF 1055, 1058, 1059, 1078, 1079, 1083-1085, 1088-1091, 1095, 1097 1989-91

- 1991 - 94: Class struck.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	42	84	126	151	168
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Garcia**

DE/FF

**Displacement:** 2620 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Small/Noisy  
**Weapons:**  
 F/A(1)2 Mk30 5in/38//Mk56 (2.0)  
 F(8)1 Mk116 w/8 ASROC  
 P/S(3)2 Mk32 324mm TT w/3 Mk44  
 A(1)2 Mk24/25 533mm TT w/8 Mk37  
 Aft Pad (1)2 DASH  
**Sensors:**  
 SPS-10, SPS-40A, SPS-59/LN-66  
 SQS-26

**In Class:** [10]  
**In Service:** 1964 - 89  
**Crew:** 266  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic  
**C**  
**E**  
**F**  
**F**  
**B**  
**ES:** 1st Gen  
**J**  
**K**

**Remarks:**

DE 1040, 1041, 1043, 1047 - 1051. Aluminum superstructure, -15% damage modifier. Single prop, double the speed reduction of Engineering critical hits. Fitted with stabilizers. Tight turning circle due to large rudder, treat as Size class D for Ship Turning Distance.

- 1960s: *Voge, Sample, Koelsch, Albert David, O'Callahan*; Automatic ASROC reload with 8 weapons added.
- 1967: Mk46 torp replaced Mk44.
- 1967 - 68: *Bradley* had aft 5 inch replaced by P&S(8)1Mk25 BPDMS w/8 RIM-7E Sea Sparrow//Mk115 for trials. 5 inch gun restored after trials.
- 1967 - 68: *Voge, Koelsch* had ASWSC&CS added. Combat system Gen 4 Semi-Automatic and Link 11 near-real time datalink.
- 1968: *Miller* fitted with unknown VDS.
- Late 60s - 70: 533mm TT removed.
- 1972 - 75: *Garcia, Edward McDonnell* fitted with SQR-15.
- DASH hangar enlarged to accept single SH-2F LAMPS I. ECM and ES upgraded to 2nd Gen. Aft 5 inch arc changed to P&S. *Garcia, Bradley, Brumby, O'Callahan 1972, Edward McDonnell, Davidson 1973, Voge 1974.*
- 1974?: *Albert David, Sample* fitted with SQR-15 towed array sonar.
- Late 70s: Fitted with 2nd Gen acoustic countermeasures.
- 1988-9: *Garcia (Saif), Brumby (Karbar), Koelsch (Siqqat), O'Callahan (Aslat)* leased to Pakistan, scrapped 1993. *Bradley (Pernambuco), Davidson (Paraiba), Sample (Parana), Albert David (Para)* transferred to Brazil.
- 1993 - 94: *McDonnell* and *Voge* scrapped.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	35	69	104	124	138
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Bronstein**

DE/FF

**Displacement:** 2360 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Small/Noisy  
**Weapons:**  
 F(2)1 Mk33 3in/50 & A(1)1 Mk34 3in/50//F Mk56 (1.4)  
 F(8)1 Mk16 w/8 ASROC  
 P/S(3)2 Mk32 324mm TT w/3 Mk44  
 Aft Pad(1)2 DASH  
**Sensors:**  
 SPS-5, SPS-40A, SPS-59/LN-66  
 SQS-26

**In Class:** [2]  
**In Service:** 1963 - 90  
**Crew:** 191  
**Acoustic Cnt:** 1st Gen T  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic  
**C**  
**E**  
**F**  
**B**  
**ES:** 1st Gen  
**J**  
**K**

**Remarks:**

*Bronstein, McCloy*. Originally classified as DE. Single prop, double the speed reduction of Engineering critical hits. Aluminum superstructure, -15% damage modifier. These ships were small and even more cramped than the *Garcia* class.



- ? : SPS-5 replaced by SPS-10.
- 1967: Mk46 torp replaced Mk44.
- Mid-70s: A(1)1 Mk34 3 inch gun removed, replaced by SQR-15 towed array. AA rating 0.9, estimate fitted with 2nd Gen acoustic countermeasures.
- 1993: *Bronstein (Hermenegildo Galena)*, *Mcloy (Nicolas Bravo)* transferred to Mexico.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	32	64	96	115	128
<b>Surf Speed:</b>	26	20	13	7	0	Sinks

**Claud Jones**

**Displacement:** 1450 std  
**Size Class:** D/Small  
**Propulsion:** Diesel  
**Electrn Cnt:** 1st Gen J  
**Signature:** Small/Noisy  
**Weapons:**

F/A(2)2 Mk33 3in/50//Mk52 (1.8)  
 PB&SB(24)2 Mk10/11 Hedgehog w/5 salvoes  
 1 Mk14 DC rail w/9 Mk14 DC

**Sensors:** ES: 1st Gen

SPS-5, SPS-6  
 SQS-4 Mod 1/2

**Remarks:**

*Claud Jones, John R. Perry, Charles Berry, McMorris.* Single prop, double the speed reduction of Engineering critical hits. Aluminum superstructure, -15% damage modifier.

- 1960s: PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp added.
- 1961: *Charles Berry, McMorris* had F(3)1 MkIII Terne added. Removed 1964.
- 1967: Mk46 torpedoes introduced.
- 1972: *Claud Jones*; Mk10/11 Hedgehog removed.
- Transferred to Indonesia: *John R. Perry (Samadikun)* 20 Feb 73, *Charles Berry (Martadinata)* 31 Jan 74, *Claud Jones (Mongidisi)*, DE-1036 *McMorris (Ngurah Rai)* 16 Dec 74.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	47	70	84	93
<b>Surf Speed:</b>	21	16	11	5	0	Sinks

**Evans**

**Displacement:** 1450 std  
**Size Class:** D/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** None  
**Signature:** Small/Noisy  
**Weapons:**

F/A(2)2 Mk33 3in/50//Mk52 (1.8)  
 F(1)1 Mk108 Weapon Alfa w/5 salvoes  
 1 Mk14 DC Rail w/9 Mk14 DC

**Sensors:** ES: 1st Gen

SPS-5, SPS-6  
 SQS-4 Mod 1/2

**Remarks:**

*Evans, Bridget, Bauer, Hooper, John Willis, Van Voorhis, Hartley, Joseph K Taussig.* Carry 44 DC total. Tight turning circle due to large twin rudders, treat as Size D for Ship Turning Distance. Single prop, double the speed reduction of Engineering critical hits. Aluminum superstructure, -15% damage modifier.

- 1959: *John Willis* fitted with SQS-4 VDS.
- 1963 - 67: Aft 3 inch gun replaced by PB/SB(3)2 Mk32 ASW TT w/ Mk44 torpedoes, Aft Pad (1)2 DASH, AA rating 0.9. SQS-4 replaced by SQS-23.
- 1967: *Evans, Bridget, Bauer, Hooper*; A(1)1 Mk3 40mm/60 (0.1L) added.
- 1960s: Mk32 324mm TT w/3 Mk44 torp, SQS-4 Mod 1/2 VDS added.
- Late 1960s: Mk108 removed, DCs probably removed at the same time.
- 1967: Mk46 torpedoes introduced.
- 1970: *Van Voorhis* fitted with SQR-14 ITASS.

- 8 Jul 72: *Hartley* transferred to Columbia as *Boyaca*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	47	70	84	93
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Dealey**

**Displacement:** 1450 std  
**Size Class:** D/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Small/Noisy  
**Weapons:**

F/A(2)2 Mk33 3in/50//2 Mk34 (1.8)  
 F(1)1 Mk108 Weapon Alfa w/5 salvoes  
 1 Mk14 DC Rail w/9 Mk4 DC  
 6 DC Projectors w/4 Mk9 DC

**Sensors:** ES: None

SPS-5, SPS-6C  
 SQS-4 Mod 1/2

**Remarks:**

DE 1006, 1014, 1015, 1021-1030. Aluminum superstructure, -15% damage modifier. Single prop, double the speed reduction of Engineering critical hits. Tight turning circle due to large twin rudders, treat as Size D for Ship Turning Distance. DE 1006 has F(3)2 Mk3 Squid w/8 salvoes vice Mk108 (treat as Double Squid), 8 DC projectors and 80 DC total. Remainder have 44 DC total.

- 1959: DE 1027 first USN ship fitted with SQS-4 VDS. DE 1006, 1014, 1021 fitted from 1962.
- 1960s: Fitted with 1st Gen ES.
- 1963-67: *DE 1015, 1022, 1025-1030* had aft 3 inch gun replaced by Aft Pad (1)2 DASH, remaining 3 inch AA rating 0.9. SQS-4 replaced by SQS-23.
- Mid 60s: DE 1006, 1014, 1021 added PB/SB(3)2 Mk32 ASW TT w/3 Mk44 torpedoes.
- Late 60s: Squid and Mk108 removed from all. Estimated DC removed at same time.
- 1970: DE 1015, 1021, 1022 fitted with SQR-14 ITASS.
- 1967: DE 1023, 1024, 1026 fitted with A(1)1 Mk3 40mm/60 (0.1L)
- 28 Jul 72: DE 1006 transferred to Uruguay as *18 de Julio*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	47	70	84	93
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Constitution**

**Displacement:** 2200 fl  
**Size Class:** C/Small  
**Propulsion:** Sail  
**Signature:** Small/Quiet  
**Weapons:**

P/S(1)10 12 pdr smoothbore  
 P/S(1)28 24 pdr smoothbore

**Remarks:**

Previous designation IX-21. Wooden construction, -35% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	26	51	77	92	102
<b>Surf Speed:</b>	Wind	Wind	Wind	Wind	0	Sinks

**Freedom**

**Displacement:** 2840 std  
**Size Class:** C/Small  
**Propulsion:** CODAG/Water jet  
**Electrn Cnt:** 3rd Gen D  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk110 57mm/70//DORNA EO (2.7)  
 A(2)1 Mk31 w/21 RIM-116B-1 RAM Blk IA  
 PA/SA(1)2 M2 .50 cal. (0.1L)  
 Aft pad (1)1 MH-60R and 3 MQ-8B Fire Scout UAV

DE

C

E

E

E

J

K

Frigate

C

C

FFL

C

D

C

B

**Sensors:** ES: 3rd Gen  
 SPS-75 (*Freedom* through *Billings*) J  
 SPS-80 (*Indianapolis* and later) J  
 2 BridgeMaster E (use Decca 2000 series) J/UK

**Remarks:**  
*Freedom, Fort Worth, Milwaukee, Detroit, Little Rock, Sioux City, Wichita, Billings, Indianapolis, St. Louis, Minneapolis-St. Paul, Cooperstown, Marinette, Nantucket, Beloit, Cleveland.* Lock-Mart Littoral Combat Ship Flight 0. Monohull. Fitted with dual stabilizers and helo recovery system. Resupply by helicopter only, not fitted to receive cargo by UNREP. Not fitted to perform Helicopter Inflight Refueling (see 4.9). Aluminum superstructure, -15% damage modifier.  
 • *Indianapolis* and later have A(11)1 SeaRAM w/11 RIM-116B-1 RAM Blk IA replacing A(21)1 Mk31 RAM launcher.  
 • Based at Mayport. *Freedom* (ASW), *Fort Worth* (MCM), *Milwaukee* used for training and trials. Remainder to be fitted for ASW, MCM or SuW. Of 35 *Freedom & Independence* - 10 ASW, 15 MCM, 10 SuW.  
 • ASW: 3rd Gen Twd acoustic countermeasures, TB-37 sonars. MH-60R with 20 Mk54 torpedoes and 300 sonobuoys. In service 2020. *Fort Worth* is first of class to be fitted.  
 • MCM: USV with acoustic/magnetic sweep, mine recon UUV, MH-60S with ALMDS and AMNS. In service 2022.  
 • SuW: P/S(1)2 Mk46 30mm/2 EO GFC, MH-60R or MH-60S with Hellfire msls. In service 2014. F&A(12)2 VLS w/12 AGM-114L Hellfire added in 2019 on *Detroit*, possibly also *Milwaukee*.  
 • 2016: Crew increases to 95.  
 • 2020: Fitted with PB/SB(4)2 NSM w/4 missiles. *Nantucket* and on will be fitted during construction.  
 • Mar 21: *Freedom* and *Fort Worth* to be decommed.  
 • 2022 on: Two per year fitted with SEWIP, Nulka decoys (4th Gen J&D, ES), Radar director mode added for MK110.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	36	73	109	131	145
<b>Surf Speed:</b>	40	30	20	10	0	Sinks

**Independence** FFL  
**Displacement:** 2176 lt **In class:** 11 + 5 + 3  
**Size Class:** C/Small **In Service:** 2010  
**Propulsion:** CODAG/Water jet **Crew:** 75  
**Electrn Cnt:** 4th Gen D **Acoustic Cnt:** None  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 5 Automatic  
 F(1)1 Mk110 57mm/70/SPS-77 (2.7) C  
 A(11)1 SeaRAM w/11 RIM-116B-1 RAM Blk IA D  
 PB/SB/PA/SA(1)4 M2 .50 cal. (0.1L) C  
 Aft pad (1)1 MH-60R/S and 3 MQ-8B Fire Scout UAV B  
**Sensors:** ES: 3rd Gen  
 BridgeMaster E (use Decca 2000 series) J/UK  
 SPS-77 (also Mk110 57mm GFC) J  
 KAX-2 3rd Gen TV/IR & laser rf --

**Remarks:**  
*Independence, Coronado, Jackson, Montgomery, Gabrielle Giffords, Omaha, Manchester, Tulsa, Charleston, Cincinnati, Kansas City, Oakland, Mobile, Savannah, Canberra, Santa Barbara, Augusta, Kingsville, Pierre.* GD/Austal Littoral Combat Ship Flight 0. Trimaran. Carries Nulka 4th Gen decoy. Aluminum construction, -25% damage modifier. Multihull construction, -25% damage modifier. Treat as being fitted with stabilizers. Maneuvers as Size Class B. Mk110 can be directed by SPS-77 or KAX-2. Not fitted to Helicopter Inflight Refueling (see 4.9).  
 • Aug 16: *Coronado* fitted with PB&SB(2)2 Mk141 w/2 Harpoon IC for trials. Possibly moved to *Montgomery* in 2019.  
 • Based at San Diego. *Independence* (MCM), *Coronado* (SuW) used for training and trials. Remainder to be fitted for ASW, MCM or SuW (see *Freedom* class).  
 • 2016: Crew increases to 98.  
 • Sep 19: *G. Giffords* fitted with PS/SS(4)2 NSM (Naval Strike Missile) and MQ-8C (SuW).  
 • Mar 21: *Independence* and *Coronado* to be decommed.  
 • 2022: Two per year to be fitted with SEWIP, Nulka decoys (4th Gen J&D, ES).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	20	39	59	70	78
<b>Surf Speed:</b>	40	30	20	10	0	Sinks

**Mark VI** PB  
**Displacement:** 65 fl **In class:** 4 + 1 + 11  
**Size Class:** F/VSmall **In Service:** 2015  
**Propulsion:** Diesel/Waterjet **Crew:** 10 + 8  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 1 Manual  
 F/A(1)2 Mk38 Bushmaster 25mm C  
 F/A(1)2 M50 GWS .50 cal//EO director (01.L) C  
 F/PW/SW/PA/SA?(1)6 M2 .50 cal. or  
 M134 miniguns or M19 40mm GL (0.2L) C

**Sensors:**  
 Generic x-band nav radar J  
 4th Gen FLIR --

**Remarks:**  
 48 planned. Main cabin can carry UUVs, medical facilities, passengers. Primary role as patrol boats, secondary as SEAL team transports. Ballistic protection for bridge, engines and fuel tanks. CHP armor rating for Bridge, Engineering is 2. Aluminum construction, -25% damage modifier.  
 • 2016: First deployments to Persian Gulf and Guam.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	9.3
<b>Surf Speed:</b>	35	26	18	9	0	Sinks

**PBR** PBR  
**Displacement:** 8 std **In class:** [718]  
**Size Class:** G/VSmall **In Service:** 1965 - 2010s  
**Propulsion:** Diesel/water jet **Crew:** 4  
**Signature:** Stealthy/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 1 Manual  
 F(2)1 M2 .50 cal & A(1)1 M2 .50 cal (0.1L) C  
 A(1)1 81mm mortar --

**Sensors:** J  
 Generic x-band nav radar  
**Remarks:**  
 Small arms carried vary. GRP construction, special damage modifier -10%.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	3.1
<b>Surf Speed:</b>	25	19	13	6	0	Sinks

**Cyclone** PC  
**Displacement:** 286 lt **In Class:** 14 - 1  
**Size Class:** E/VSmall **In Service:** 1993  
**Propulsion:** Diesel **Crew:** 28  
**Electrn Cnt:** 2nd Gen D **Acoustic Cnt:** None  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 2 Manual  
 F/A(1)2 Mk38 Bushmaster 25mm C  
 P/S(1)2 .50 cal (0.1L) C  
 F/A(1)2 7.62mm (0.1L) C  
 F&A(1)1 Stinger w/6 missiles D

**Sensors:** ES: 1st Gen RWR  
 2 SPS-72 J  
 Wesmar MS3850 mine detection --

**Remarks:**  
 PC 1-14. Guns are unstabilized and local control only. Fitted with stabilizers. PC 14 is lengthened with stern ramp for deploying small boats (352 lt displacement). CHP armor rating for Bridge is 2. Forward 25mm removed from many due to sea damage.  
 • 1995: 3rd Gen ES vice RWR, est. 3rd Gen FLIR (Jun 02 on).  
 • 1999-00: PC-2, 8, 13 lengthened as PC-14.  
 • Late 90s: Fitted with Mk96 stabilized mount with EO GFC - A(1+1) Mk96 mount (Mk38 Bushmaster, Mk19 40mm AGL) vice aft 25mm mount.  
 • Jun 02: Fitted with (estimated) 3rd Gen FLIR.

- 2004: PC-1 transferred to Philippines.
- 2009: PC-6 fitted with Mk38 Mod 2 Bushmaster 25mm (stabilized, RO GFC) vice Mk96.
- To US Coast Guard with Stinger msls removed: PC-1 (Feb 00-Mar 04); PC-8, 13, 14 (Oct 04); PC-4 (Oct 04-Aug 08); PC-5 (Sep 05 - Aug 08). Returned to USN service in 2011 with Stinger restored.
- May 14 - 2016: Fitted with Mk60 Griffin Missile System. P/S(4)2 Mk208 w/4 BGM-176B Griffin IIB/F SSQ-133 (4th Gen FLIR, laser designator).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	10	20	30	36	40
<b>D Pts (PC-14):</b>	0	12	23	35	41	46
<b>Surf Speed:</b>	35	26	18	9	0	Sunk

**Swift (i)**

**Displacement:** 19 std  
**Size Class:** G/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/Noisy  
**Weapons:**

- F(2)1 M2 .50 cal (0.1L)
- A(1)1 M2 .50 cal/81mm mortar (0.1L)

**Sensors:**

Generic x-band nav radar

**Remarks:**

Small arms carried vary. Built to civilian standards, special damage modifier -50%.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	3.0
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Asheville**

**Displacement:** 225 std  
**Size Class:** E/VSmall  
**Propulsion:** CODAG  
**Signature:** VSmall/Noisy  
**Weapons:**

- F(1)1 Mk34 3in/50/Mk63 (0.5)
- A(1)1 Mk3 40mm/60 (0.1L)
- P/S(1)2 M2 .50 cal. (0.1L)

**Sensors:**

Generic x-band nav radar

**Remarks:**

PGM 84-90, 92-101. Aluminum construction, -25% damage modifier.

- 1967: Reclassified from motor gunboats (PGM) to as patrol gunboats (PG).
- 1970s: PG 86, 87 have PB&SB(1)2 Mk32 w/1 Tartar TRIP//1 Mk87 (Dutch WM22 radar). PG 98, 100 have PB&SB(1)2 Mk32 w/1Standard ARM. All have 40mm removed, speed reduced to 34 knots and 2 manual reloads carried.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	6	12	18	22	24
<b>Surf Speed:</b>	38	29	19	10	0	Sinks
<b>Speed ('70s):</b>	34	24	17	9	0	Sinks

**Tucumcari**

**Displacement:** 58 std  
**Size Class:** F/VSmall  
**Propulsion:** CODOG  
**Signature:** VSmall/Noisy  
**Weapons:**

- F(1)1 Mk3 40mm/60 (0.1L)
- P/S(2)2 M2 .50 cal. (0.1L)
- A(1)1 81mm mortar

**Sensors:**

Generic x-band nav radar

**Remarks:**

Hydrofoil. Aluminum construction, special damage modifier of -25%.

- 1971: 81mm replaced by A(2)1 Mk67 20mm (0.1L).

- 1972: Ran aground near Puerto Rico during exercise, further damaged during removal, struck 1972.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	11
<b>Surf Speed:</b>	40	30	20	10	0	Sinks

**Flagstaff**

**Displacement:** 57 std  
**Size Class:** F/VSmall  
**Propulsion:** CODOG  
**Signature:** VSmall/Noisy  
**Weapons:**

- F(1)1 Mk3 40mm/60 (0.1L)
- P/S(2)2 M2 .50 cal (0.1L)
- A(1)1 81mm mortar

**Sensors:**

Generic x-band nav radar

**Remarks:**

Hydrofoil. Aluminum construction, special damage modifier of -25%.

- 1971: 40mm replaced by M-551 Sheridan turret for trials.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	11
<b>Surf Speed:</b>	40	30	20	10	0	Sinks

**Pegasus**

**Displacement:** 231 fl  
**Size Class:** E/VSmall  
**Propulsion:** Gas Turbine  
**Electrn Cnt:** 2nd Gen D  
**Signature:** VSmall/Loud  
**Weapons:**

- F(1)1 Mk75 76mm/62//Mk92 STIR (4.0)
- PB&SB(4)2 Mk141 w/4 Harpoon

**Sensors:**

SPS-63

**Remarks:**

*Pegasus, Hercules, Taurus, Aquila, Aries, Gemini.* Hydrofoil. Pegasus has Mk94 (WM-28) vice Mk 92. Max hullborne speed is 12 knots. Aluminum construction, -25% damage modifier.

- 1985 - 86: Fitted with SPS-64 vice SPS-63.
- 1991: Upgrade with 3rd Gen D, 3rd Gen ES canceled.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	6	11	17	20	22
<b>Surf Speed:</b>	40	30	20	10	0	Sinks

**Iowa Commando/Heavy Assault Ship**

**Displacement:** 44000 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Loud  
**Weapons:**

- F(3)2 Mk7 16in/50//2 Mk13
- P/S(2)2 Mk28 5in/38 /1 Mk56 GFCS (2.0)
- 32 HUS helicopters (20 in hangar, 12 on flight deck)

F(8)1 ASROC launcher w/8 msls

Centerline elevator

14 LCM(6) or 6 LCM(6) and 6 LCM(8)

**Sensors:**

SPS-10, SPS-37, SPS-30, SPS-39  
 SQS-23

**Remarks:**

1961 proposal. Flight deck aft, spots for 3 medium-sized helicopters. Flag plot. Carried extra fuel for replenishing amphibious task force. One 16-inch gun converted to fire Mk23 nuclear rounds. Carried 1800 troops. Initially typed as "Commando Ship" but then redesignated "Heavy Assault Ship." Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	266	532	797	957	1063
<b>Surf Speed:</b>	33	25	16	8	0	Sinks

PCF

PG

PGH

PGH

PHM

BBHA?

**SSC**

**Displacement:** 106 lt  
**Size Class:** E/VSmall  
**Propulsion:** Gas Turbine  
**Signature:** VSmall/Quiet  
**Sensors:**

BridgeMaster E (use Decca 2000 series)

**Remarks:**

Ship-to-Shore Connectors. LCUA replacement. Improved LCUA design. 73 planned. Personnel transport module can carry 180 troops or 74 t payload. Hovercraft, -20% damage modifier, amphibious construction, -25% damage modifier, aluminum craft, -25% damage modifier.

• LCAC 100 will be for test. and training, LCAC 101 the first production unit. Fitted to launch APC from water starting with the 10th unit.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	2	4	6	7	8
<b>Spd (Loaded):</b>	35	26	18	9	0	Sinks
<b>Spd (Empty):</b>	50	38	25	13	0	Sinks

**LCAC**

**Displacement:** 93 lt  
**Size Class:** E/VSmall  
**Propulsion:** Gas Turbine  
**Signature:** VSmall/Quiet  
**Sensors:**

CMR-91 (use LN-66)

**Remarks:**

LCAC 1 - 91. CHP armor rating for Bridge is 2, LCAC 34 and on have Engineering armor 2 also. Design payload 60 tons, overload 75 tons. Hovercraft, -20% damage modifier, amphibious craft, -25% damage modifier.

• 1986: In service. First deployment on LSD 42 Germantown in 1987.  
 • 1993: 16 minesweeping systems delivered. Can tow mechanical or acoustic/magnetic minesweep or AQS-14 side-scan sonar at 25 knots.

• 1996: Nine personnel transport modules delivered. Can carry 145 troops with stores or 180 troops.

• 2001 - 21: 68 through LCAC MkII SLEP with new engines. Payload 72 t, overload 75 t, Furuno or BridgeMaster E replaces CMR-91 radar. LCAC 91 delivered as MkII.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	3	5	8	9	10
<b>Spd (Loaded):</b>	40	30	20	10	0	Sinks
<b>Spd (Empty):</b>	54	41	27	14	0	Sinks

**Blue Ridge**

**Displacement:** 16790 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 3rd Gen J&D  
**Signature:** Medium/Noisy  
**Weapons:**

P/S(2)2 Mk33 3in/50//2 Mk56 (0.9)  
 3 LCP, 2 LCVP

**Sensors:**

SPS-10, SPS-40C, SPS-64, SPS-48C, SPS-59/LN-66

**Remarks:**

*Blue Ridge, Mount Whitney.* Originally designated AGC, redesignated as LCC 1969. Dedicated command ships with extensive communications facilities. Aft pad for Large helos, fitted with stabilizers. Typically carries one SH-3D helicopter. Does not suffer penalty for amphibious construction.

• 1974: P/S(8)2 Mk25 BPDMS Sea Sparrow w/8 RIM-7F//2 Mk115 added, combat system 3rd Gen Semi-Automatic, probably fitted with 2nd Gen acoustic countermeasures.

• 1978: Mk56 GFCS removed, Mk33 3in/50 are in local control, AA rating 0.5L.

• Early 1980s: Fitted with 3rd Gen ES, 3rd Gen J&D.

**LCUA**

**In Class:** 0 + 10 + 64  
**In Service:** 2020  
**Crew:** 4 + 26  
**Armor Rating:** 0

**J/UK**

• Fitted with F/A(R)2 Mk15 Phalanx Blk 0 (2@4.4A). SPS-10 replaced by SPS-65, estimated SPS-62 added. *Blue Ridge* 1985, *Mount Whitney* 1987.

• 1992: Sea Sparrow and 3 inch gun guns, SPS-62 removed. SPS-64 and 2nd Gen towed countermeasures added.

• Jan - Oct 17: *Mount Whitney* has 10-month HME overhaul in Croatia.

• 2000: Fitted with 4th Gen Semi-Automatic combat system. *Blue Ridge* has SPS-48C, SPS-64 removed, fitted with SPS-67. *Mount Whitney* has SPS-40, SPS-48C, SPS-64 removed. Fitted with SPS-67 and SPS-72.

• 2003: Fitted with P/S(1)2 Mk38 Mod 2 Bushmaster 25mm//2 EO directors.

• c2008: Estimate fitted with 3rd Gen acoustic countermeasures.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	140	280	419	503	559
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Mount McKinley**

**Displacement:** 7234 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**

F(1)1 Mk24 5in/38//Mk52 (0.8)  
 P/S(2)2 Mk1 40mm/60 & A(4)1 Mk2 40mm/60 (0.8L)  
 Aft Pad(1)1 HUP-2 Retriever

**Sensors:**

SPS-8, SPS-10

**Remarks:**

Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

• 1960s: SPS-8 replaced by SPS-30.

• 1 Jan 69: Redesignated LCC.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	65	130	194	233	259
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**LCM(8)**

**Displacement:** 62 lt  
**Size Class:** F/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy

**Remarks:**

Bow ramp. Mk1, Mk3, Mk5 are steel. Mk2 and Mk4 are 52 lt for deck storage, aluminum construction, -25% damage modifier. Amphibious craft, -25% damage modifier.

Steel can carry 150 troops, aluminum 200 troops.

• 2018: Eight with USN (6 MPS, one each coast) and 24 with Army.

**Damage & Speed Breakdown:**

<b>Mk1, Mk3, Mk5</b>						
<b>Dam Pts:</b>	--	--	--	--	--	11
<b>Surf Speed:</b>	9	7	5	2	0	Sinks
<b>Mk2, Mk4</b>						
<b>Dam Pts:</b>	--	--	--	--	--	6
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**LCM(6)**

**Displacement:** 27 lt  
**Size Class:** F/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy

**Remarks:**

Can carry 34 tons of cargo or 80 troops. Amphibious craft, -25% damage modifier. Bow ramp.

• 2000: Retired from amphibious role. Used in support roles only.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	6.2
<b>Surf Speed:</b>	10	8	4	3	0	Sinks

**LCUA**

**In Class:** 91 - 17  
**In Service:** 1986  
**Crew:** 5 + 25  
**Armor Rating:** 0

**J/Canada**

**LCC**

**In class:** [5]  
**In Service:** 1943 - 71  
**Crew:** 550  
**Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

**C**

**C**

**B**

**J**

**LCM**

**In class:** 522 - 490  
**In Service:** 1952  
**Crew:** 5  
**Armor Rating:** 0

**LCM**

**In class:** 927 - 917  
**In Service:** 1952  
**Crew:** 5 + 80  
**Armor Rating:** 0

**LCPL**

**Displacement:** 9 std  
**Size Class:** G/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/Noisy

**Remarks:**

Amphibious craft, -25% damage modifier. Can be fitted with F(1)1 M2 .50 cal (0.1L)

- 1956: Fitted with SPN-11 radar for use as boat guides. Later fitted with SPS-59 radar.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	2.8
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**LCU-1700**

**Displacement:** 274 std  
**Size Class:** E/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy  
**Sensors:**

Generic x-band nav radar

**Remarks:**

Replacement for LCU-1610. Can carry 154 t cargo or 2 tanks or 350 troops. Bow and stern ramps. Amphibious ship, -25% damage modifier. Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	7	15	22	26	29
<b>Surf Speed:</b>	8	6	4	2	0	Sink

**LCU-1610**

**Displacement:** 190 lt  
**Size Class:** E/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy  
**Sensors:**

SPS-53

**Remarks:**

LCU 1610-1624, 1627-1681. US Army has LCU 1667-1679, remainder USN. Bow and stern ramps for ro-ro operation. Can carry 2 M1 Abrams or ten double-stacked ISO 20-foot containers. Amphibious craft, -25% damage modifier.

- 1980s: LN-66 replaces SPS-55.
- 2004: Furuno replaces LN-66.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	6	12	17	21	23
<b>Surf Speed:</b>	11	8	6	3	0	Sinks

**LCU-1466**

**Displacement:** 347 std  
**Size Class:** E/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy

**Remarks:**

LCU 1466-1609. Can carry 167 tons or three MBT. Amphibious craft, -25% damage modifier. Bow ramp.

- 14 transferred. Japan LCU 1602-1607. Taiwan LCU 1594-1601.
- 2011: 32 remain.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	8	16	24	29	32
<b>Surf Speed:</b>	8	6	4	2	0	Sinks

**LCVP**

**Displacement:** 13 std  
**Size Class:** G/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/Noisy

**Remarks:**

Can carry four tons of cargo or 36 troops. Mk5, Mk7 (285) are GRP construction, -10% damage modifier. Rest are wooden construction, -35% damage modifier. Amphibious craft, -25% damage modifier.

**LCPL**

**In class:** 345 - 327  
**In Service:** 1953  
**Crew:** 3 + 17  
**Armor Rating:** 0

**Damage & Speed Breakdown:**

<b>DP (Wood):</b>	--	--	--	--	--	1.9
<b>DP (GRP):</b>	--	--	--	--	--	3.1
<b>Surf Speed:</b>	9	7	5	2	0	Sinks

**CCA**

**Displacement:** 12 fl  
**Size Class:** G/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/Noisy

**Sensors:**

Generic x-band nav radar  
 CCFLIR 3rd Gen FLIR & laser rf

**Remarks:**

Combat Craft, Assault. Two can be airdropped from C-17A. Medium range. Reduced signature. GRP construction, -10% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	3.6
<b>Surf Speed:</b>	9	7	5	2	0	Sinks

**CCM Mk1**

**Displacement:** 27 fl  
**Size Class:** F/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/Noisy  
**Weapons:**

F(1)1 RWS .50 cal mg  
 A(1)1 .50 cal or 7.62mm mg (0.1L)

**Sensors:**

Generic x-band nav radar  
 CCFLIR 3rd Gen FLIR & laser rf

**Remarks:**

Combat Craft Medium. Can be transported by C-17A. Reduced signature, ballistic armor. GRP construction, -10% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	6.2
<b>Surf Speed:</b>	52	39	26	13	0	Sinks

**CCC**

**Displacement:** 29.5 lt  
**Size Class:** F/VSmall  
**Propulsion:** Diesel/Waterjet  
**Signature:** Stealthy/Noisy

**Sensors:**

Furuno series  
 CCFLIR 3rd Gen FLIR & laser rf

**Remarks:**

Combat Craft, Heavy. SEAL Insertion Observation and Neutralization (SEALION). Reduced signature. Radar on retractable mast, VSmall with radar in use. Can be carried by C-17A. Medium range. Aluminum construction, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	6.6
<b>Surf Speed:</b>	9	7	5	2	0	Sinks

**M80 Stiletto**

**Displacement:** 60 std  
**Size Class:** F/VSmall  
**Propulsion:** Diesel  
**Signature:** Stealthy/EQuiet  
**Weapons:**

Scan Eagle UAVs  
 11 m rigid hull inflatable boat

**Sensors:**

Furuno series

**Remarks:**

Carbon composite construction, -25% damage modifier. Heavily automated, requires a crew of only three. Draft less than 1 meter. Can carry 37 ton payload. Range 500 nmi. Can carry a complement of 12 SEALs. M-shaped hull creates air cushion at high speeds, reducing

**LCU**

**In class:** 0 + 3 + 29  
**In Service:** 2022  
**Crew:** 13  
**Armor Rating:** 0

J

**LCU**

**In class:** 70 - 38  
**In Service:** 1959  
**Crew:** 14 + 300  
**Armor Rating:** 0

J

**LCU**

**In class:** 144 - 112  
**In Service:** 1954  
**Crew:** 6 + 300  
**Armor Rating:** 0

**LCVP**

**In class:** [1552]  
**In Service:** 1956 - 06  
**Crew:** 3 + 36  
**Armor Rating:** 0

**LCW**

**In class:** 29 + 3  
**In Service:** 2015  
**Crew:** 4 + 12  
**Armor Rating:** 0

J

--

**LCW**

**In class:** 26 + 4  
**In Service:** 2015  
**Crew:** 4 + 18  
**Armor Rating:** 0  
**Cbt Sys:** --

C

C

**LCW**

J

--

**LCW**

**In class:** 2 + 1  
**In Service:** 2014  
**Crew:** 7 + 13  
**Armor Rating:** 0

J/Japan

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**LCW**

**In Class:** 1  
**In Service:** 2006  
**Crew:** 3 + 12  
**Armor Rating:** 0  
**Cbt Sys:** --

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J/Japan

## America's Navy

wave effects and wake. Treat as medium-sized vessel for sea-keeping purposes. Rear ramp for recovering small boats.

- 2008: Narcotics patrol in Caribbean. To trial role in 2011.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	9.8
<b>Surf Speed:</b>	50	38	25	13	0 Sinks

**CRRC****LCW**

<b>Displacement:</b> 0.12 std	<b>In Class:</b> ?
<b>Size Class:</b> G/VSmall	<b>In Service:</b> ?
<b>Propulsion:</b> Gasoline	<b>Crew:</b> 1 + 5
<b>Signature:</b> Stealthy/Noisy	<b>Armor Rating:</b> 0

**Remarks:**

Combat Rubber Raiding Craft. Can be carried under or in helicopters, released from submerged submarines and airdropped from aircraft.

Can carry 1.3 t cargo or 5 troops or divers. Can land on beaches in sea state 3. Cruise speed 15 knots on outboard.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	0.1
<b>Spd (paddles):</b>	3	2	2	1	0 Sinks
<b>Spd (outbrd.):</b>	32	24	16	8	0 Sinks

**NSW RIB****LCW**

<b>Displacement:</b> 8.2 std	<b>In Class:</b> [72]
<b>Size Class:</b> G/VSmall	<b>In Service:</b> 1997
<b>Propulsion:</b> Diesel/Waterjet	<b>Crew:</b> 3 + 8
<b>Signature:</b> Stealthy/Noisy	<b>Armor Rating:</b> 0
<b>Weapons:</b>	<b>Cbt Sys:</b> --

F/A 2 weapons stations (See Remarks)

**Sensors:**

Furuno series

J/Japan

**Remarks:**

11 meter rigid inflatable boat. Each weapons station can be fitted with either (1)1 M2 .50 cal or (1)1 7.62mm mg. Sustained speed 33 knots. GRP construction, -10% damage modifier. Inflatable sponsons, -30% damage modifier.

- 2000: Cleared to be airdropped.
- To be replaced by CCA.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	1.7
<b>Surf Speed:</b>	32	24	16	8	0 Sinks

**Mark V Pegasus****LCW**

<b>Displacement:</b> 57 fl	<b>In Class:</b> [20]
<b>Size Class:</b> F/VSmall	<b>In Service:</b> 1995 - 2013
<b>Propulsion:</b> Diesel/Waterjet	<b>Crew:</b> 5 + 16
<b>Signature:</b> Stealthy/Noisy	<b>Armor Rating:</b> 0
<b>Weapons:</b>	<b>Cbt Sys:</b> Gen 1 Manual

P/S/PA/SA 4 weapons stations (See Remarks)

F&A(1)1 Stinger w/6 missiles

**Sensors:**

ES: 1st Gen RWR

Furuno series

J/Japan

**Remarks:**

Reduced radar and IR signatures. Used as SEAL transports in low and medium threat insertions. Can be carried by C-5 Galaxy. Can carry 4 CRRC or 1 Mk8 LSDV or 1 CRRC and Scan Eagle UAV. Each weapons station can be fitted with either (2)1 M2 .50 cal or (1)1 7.62mm mg. Aluminum construction, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	9.5
<b>Surf Speed:</b>	50	38	25	13	0 Sinks

**Seafox****LCW**

<b>Displacement:</b> 10.6 lt	<b>In Class:</b> [36]
<b>Size Class:</b> G/VSmall	<b>In Service:</b> 1981 - ?
<b>Propulsion:</b> Diesel	<b>Crew:</b> 3 + 12
<b>Signature:</b> Stealthy/EQuiet	<b>Armor Rating:</b> 0
<b>Weapons:</b>	<b>Cbt Sys:</b> --

PA/SA(1)2 .50 cal (0.1L)

PW/SW(1)2 7.62mm (0.1L)

C  
C

**Sensors:**

LN-66

ES: 1st Gen RWR

J/Canada

**Remarks:**

SWCL (Special Warfare Craft Light). GRP construction, -10% damage modifier. Carries CRRC. Can be carried by C-130 Hercules.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	3.3
<b>Surf Speed:</b>	32	24	16	8	0 Sinks

**PB MkIII (Sea Spectre)****LCW**

<b>Displacement:</b> 28 std	<b>In Class:</b> [36]
<b>Size Class:</b> F/VSmall	<b>In Service:</b> 1981 - ?
<b>Propulsion:</b> Diesel	<b>Crew:</b> 3 + 12
<b>Signature:</b> VSmall/Noisy	<b>Armor Rating:</b> 0
<b>Weapons:</b>	<b>Cbt Sys:</b> --

PB&SB(1)1 Mk3 40mm/60 (0.1L)

C

PW(1)1 Mk16 20mm (0.1L)

C

PW/PQ&SA(1)2 .50 cal (0.1L)

C

PA/SB(1)2 Mk19 40mm grenade launcher

--

81mm mortar

--

**Sensors:**

LN-66

J/Canada

**Remarks:**

SWCM (Special Warfare Craft Medium). Aluminum construction, -25% damage modifier.

- 1981: PB 777 fitted with PB&SB(1)2 Penguin Mk3 missiles. Has PW/SB(1)2 .50 cal mg.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	5.1
<b>Surf Speed:</b>	50	38	25	13	0 Sinks

**America (ii)****LHA**

<b>Displacement:</b> 44854 fl	<b>In Class:</b> 2 + 1 + 1
<b>Size Class:</b> A/Large	<b>In Service:</b> 2014
<b>Propulsion:</b> CODLOG/ CPP	<b>Crew:</b> 1204 + 1871
<b>Electrn Cnt:</b> 4th Gen J&D	<b>Acoustic Cnt:</b> 3rd Gen T
<b>Signature:</b> Large/Noisy	<b>Armor Rating:</b> 0
<b>Weapons:</b>	<b>Cbt Sys:</b> Gen 6 Automatic

F/A(8)2 Mk29 NATO Sea Sparrow w/8 ESSM//2 Mk57

D

F/PA(21)2 Mk31 w/21 RIM-116 RAM Blk IA

D

F/SA(R)2 Mk15 Phalanx Blk IB (2@7.6A)

C

P/S/A(1)3 Mk38 Bushmaster 25mm

C

3P/3S/A(2)7 Mk95 Mod 1 .50 cal (0.3L)

C

2 Elevators

--

**Sensors:**

ES: 3rd Gen

SPS-48E, SPQ-9B, SPS-49A(V)2, 2 SPS-73 (America, Tripoli)

J

SPY-6(V)2 EASR, SPQ-9B, 2 SPS-73 (Bougainville)

J

**Remarks:**

America, Tripoli, Bougainville, fourth unit. Replacement for Tarawa class. Based on USS Makin Island (LHD-8) design. First two units do not have well deck. Extensive command facilities. Landing spots for ten helicopters. Amphibious ship, -25% damage modifier. First USN amphibious ship with armored magazines.

- Bougainville and any later units can carry 2 LCUA in well deck. Troop berthing reduced to 1462. Reduced air group, SPY-6(V)2 replaces SPS-48 and SPS-49. Redesigned superstructure with Phalanx arcs PW/SA, RAM arcs SW/PA.

- May 15 - Mar 16. America refitted. Deck strengthened to accommodate F-35. Tripoli completed with F-35 capability.

- Jun 2020: Fourth unit ordered.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	220	439	659	790	878
<b>Surf Speed:</b>	23	17	12	6	Sinks	

**Tarawa****LHA**

<b>Displacement:</b> 33536 std	<b>In Class:</b> [5]
<b>Size Class:</b> A/Large	<b>In Service:</b> 1976 - 2015
<b>Propulsion:</b> Steam Turbine	<b>Crew:</b> 892 + 1903
<b>Electrn Cnt:</b> 2nd Gen J&D	<b>Acoustic Cnt:</b> 2nd Gen T
<b>Signature:</b> Large/Noisy	<b>Armor Rating:</b> 0

**Weapons:** PQ/SQ/PA(1)3 Mk45 5in/54//F SPG-60 (2.2) **C**  
 F/A(8)2 Mk25 BPDMS w/8 RIM-7F//2 Mk115 **D**  
 P/S(1)6 Mk67 20mm (0.5L) **C**  
 18 CH-46 Sea Knight, 4 CH-53, 4 AH-1S **B**  
 2 Elevator **--**  
 1 LCUA or 4 LCU or 7 LCM(8) or 17 LCM(6) **A**

**Sensors:** SPS-10, SPS-40B, SPS-52B, SPS-53, SPS-59/LN-66, SPQ-9A **J**  
**ES:** 1st Gen

**Remarks:** *Tarawa, Saipan, Belleau Wood, Nassau, Peleliu.* Can launch 12 CH-46 or 9 CH-53 from flight deck at once. Hangar can hold 28 CH-46 or 19 CH-53 or 25 Sea Harrier. Mk45 guns use SPG-60 for AA fire and SPQ-9A for surface fire. Typically carry 2 LCU and 3 LCM(8) or 17 LCM(6) in well deck plus 40 LVTP on vehicle deck. Amphibious ship, -25% damage modifier.

- 1983 - 88 : BPDMS, PA Mk45 5 inch, 20mm removed, F/A(R)2 Mk15 Phalanx Blk 0 (2@5.0A) added. 1st Gen ES upgraded to 3rd Gen. ECM upgraded to 3rd Gen J&D, 2nd Gen T acoustic countermeasures added.
- 1992 - 96: Class modernized. Combat system Gen 5 Automated. Mk23 TAS added, SPS-52 replaced by SPS-48E, PW/SA(21)2 Mk49 w/21 RIM-116A RAM added. SPS-10 and LN-66 replaced by SPS-64, SPS-67.
- 1996 - 97: Tarawa refit.
- 1996 - 97: *Peleliu* refit with MV-22B Osprey capability added.
- 1997 - 98: 5 inch guns removed.
- 1998 - 99: SPQ-9 and SPG-60 removed. P/S(1)8 Mk95 Mod 1 .50 cal (0.3L) fitted replacing all 20mm.
- Decommed: *Tarawa* 2009, *Saipan* 2007, *Belleau Wood* 2005, *Nassau* 2011, *Peleliu* 2015.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	166	333	499	599	665
<b>Surf Speed:</b>	24	18	12	6	0	Sinks

**Wasp**

**Displacement:** 34047 std **LHD**  
**In Class:** 8  
**Size Class:** A/Large **In Service:** 1989  
**Propulsion:** Steam Turbine **Crew:** 892 + 1903  
**Electrn Cnt:** 3rd Gen J&D **Acoustic Cnt:** 2nd Gen T  
**Signature:** Large/Noisy **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 5 Automatic **C**  
 F/PA/SA(R)3 Mk15 Phalanx Blk 0 (3@5.0A) **D**  
 F/A(8)2 Mk29 NATO Sea Sparrow w/8 RIM-7M//2 Mk91 **D**  
 P/S(1)8 M2 .50 cal. (0.1L) **C**  
 2 Elevators **--**  
 3 LCUA and 4 LCPL or 12 LCM(6) or 6 LCM(8) or 2 LCU **A**

**Sensors:** SPS-49(V)5, SPS-67(V)1, Mk23 TAS, SPS-64 **J**  
 SPS-52C (LHD-1), SPS-48E (LHD-2 and on) **J**  
 SRS-1 Combat DF **--**

**Remarks:** Can launch 9 large helos at once. CHP armor rating for flight deck is 2. Amphibious ship, -25% damage modifier. In addition to SLQ-32 3rd Gen ES, fitted with SRS-1 Combat DF ES, see 5.2.9.5.  
 • *Makin Island* fitted with CODLOG/PPP propulsion, radar fit changed to SPS-48E, SPS-49A(V)1, SPS-73, SPQ-9B, Combat system Gen 6 Automatic.  
 • 1996 - 97: *Wasp* fitted with SPS-48E replacing SPS-52B, combat system Gen 6 Automatic. SA Phalanx removed, F/SA(21)2 Mk49 w/21 RIM-116A RAM added.  
 • 1998 - 02: SA Phalanx removed, F/SA(21)2 Mk49 w/21 RIM-116A RAM, Gen 6 Automatic combat system added.  
 • 2003: Fitted with P/S/PQ&SQ(1)3 Mk38 25mm//3 EO GFC.  
 • 2003: *Iwo Jima* fitted with SPQ-9B.  
 • mid 2010s: Some fitted with SPS-73 replacing SPS-64, estimated 3rd Gen acoustic countermeasures.  
 • 2005 - 10: Fitted for MV-22 replacing CH-46.  
 • 2014: *Wasp* fitted with SPQ-9B.  
 • 2014 - 18: Fitted for F-35B replacing AV-8B, ESSM. First F-35B deployments in 2018.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	168	336	504	605	672
<b>Spd:</b>	22	18	11	6	0	Sinks
<b>Spd (LHD-8):</b>	24	18	12	6	0	Sinks

**Charleston**

See *Charleston* AKA listing.

**LKA**

**Harrisburg**

**Displacement:** 19908 lt **In Class:** 0 + 0 + 1  
**Size Class:** A/Large **In Service:** 2025  
**Propulsion:** Diesel **Crew:** 386 + 613  
**Electrn Cnt:** 4th Gen J&D **Acoustic Cnt:** 4th Gen T  
**Signature:** Large/Quiet **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 6 Automatic **D**  
 PW/SA(21)2 Mk31 w/21 RIM-116B RAM Blk IA **C**  
 F/PA(1)2 Mk46 Mod 1 30mm Bushmaster II **D**  
 Aft Pad(1)2 MV-22 **B**  
 2 LCUA or 1 LCU or 4 LCM(8) **A**  
**Sensors:** ES: 3rd Gen **J**  
 SPY-6(V)2 EASR, SPQ-9B, SPS-73(?)

**Remarks:**

*Harrisburg. San Antonio* Flight II. Replaces *Harper's Ferry* and *Whidbey Island* class LSD. Same hull as *San Antonio* class. Up to eighteen planned. Less extensive radar signature reduction than original *San Antonio* class. Deck space for 2 MV-22 or CH-53E or 4 UH-1Y or AH-1Z. Hangar space for 1 MV-22 or CH-53 or 3 AH-1Z or UH-1Y. Amphibious construction, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	128	255	383	459	510
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**San Antonio**

**Displacement:** 24900 fl **LPD**  
**In Class:** 11 + 2  
**Size Class:** A/Large **In Service:** 2006  
**Propulsion:** Diesel **Crew:** 360 + 800  
**Electrn Cnt:** 3rd Gen J&D **Acoustic Cnt:** 2nd Gen T  
**Signature:** Medium/Quiet **Armor Rating:** 0  
**Weapons:** Cbt Sys: Gen 6 Automatic **D**  
 PW/SA(21)2 Mk31 w/21 RIM-116A RAM **C**  
 F/PA(1)2 Mk46 Mod 1 30mm **B**  
 Aft Pad(1)2 MV-22 **A**  
 2 LCUA or 4 LCM(8) or 9 LCM(6), or 20 LVT  
**Sensors:** ES: 3rd Gen **J**  
 SPQ-9B, SPS-48E, SPS-73 **J**  
 Generic x-band nav radar

**Air Group:**

- 2 CH-53 or 4 AH/UH-1 or 4 CH-46 or 2 MV-22

**Remarks:**

*San Antonio, New Orleans, Mesa Verde, Green Bay, New York, San Diego, Anchorage, Arlington, Somerset, John P. Murtha, Portland, Fort Lauderdale, Richard M. McCool, Jr.* Deck space for 2 MV-22 or CH-53E or 4 CH-46 or UH-1N or AH-1. Hangar space for 1 MV-22 or CH-53 or 2 CH-46 or 3 AH-1W or UH-1N. Reduced RCS. Replaces *Austin, Anchorage, Charleston, and Newport* classes. Amphibious construction, -25% damage modifier.  
 • *Richard M. McCool Jr.* has SPY-6(V)2 EASR replacing SPS-48E.  
 • 2013: Fitted for Scan Eagle UAV, estimated 3rd Gen acoustic countermeasures.  
 • May 14: RAM Blk II operational on *Arlington*.  
 • 2016: Last two have several cost-saving measures, but radar signature increased to Large, troop capacity reduced to 650.  
 • Dec 19: *Portland* fitted with manually aimed F(1)1 SEQ-3 LaWS high energy laser. Can be used as laser dazzler or to destroy VSmall air targets out to 0.9 nmi at NOE and Low altitudes.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	137	274	410	492	547
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Austin**

**Displacement:** 11050 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 2nd Gen D  
**Signature:** Med/Noisy  
**Weapons:**  
 PW/SW/PA/SA(2)4 Mk33 3in/50//F Mk56 & PA/SA 2 Mk63 (1.8) C  
 Aft pad (1)8 UH-34D Choctaw B  
 1 Elevator --  
 1 LCU, 3 LCM(6) or 9 LCM(6) or 4 LCM(8), or 28 LVTP --  
**Sensors:** ES: 1st Gen J  
 SPS-10, SPS-40A

**Remarks:**

Up to 8 medium helos can be accommodated for short periods on the flight deck. Hangar can accommodate only one small helicopter. Amphibious ship, -25% damage modifier.  
 • *Austin, Ogden, Duluth* have 930 troops, remainder fitted as flagships with 856 troops and flag staff.  
 • 1977-78: PW/SA Mk33 removed, AA rating 0.9. ES upgraded to 2nd Gen.  
 • 1980: *Coronado* (LPD 11) redesignated as command ship (AGF 11).  
 • 1983-84: *Coronado* refit with ES updated to 3rd Gen, Aft Pad(1)1 SH-3D, F/SS(R)2 Mk15 Phalanx Blk 0 (2@4.4A) added.  
 • 1984-87: F/SS(R)2 Mk15 Phalanx Blk 0 (2@4.4A) added to Atlantic Fleet units. ECM upgraded to 3rd Gen D. 2nd Gen Towed Acoustic Countermeasure added.  
 • Late 80s: Mk56, 2 Mk63 directors removed. Mk33 in local control, AA rating 0.3L.  
 • 1987: Planned SLEP canceled.  
 • 1990-93: F/SS(R)2 Mk15 Phalanx Blk 0 (2@4.4A) added to Pacific Fleet units. ECM upgraded to 3rd Gen D. 2nd Gen Towed Acoustic Countermeasure added.  
 • 1993: Fitted to operate Pioneer UAV. Typically one per fleet carries 5-8 UAV.  
 • Early 90s: SPS-10 replaced by SPS-67, P/S(1)2 Mk38 25mm Bushmaster added.  
 • 1992-93: Remaining Mk33 removed.  
 • 24 Jan 12: *Ponce* (LPD 15) redesignated AFSB-I 15 (Afloat Forward Staging Base, Interim), operated by MSC. Fitted with (1)2 Mk38 Mod 2 25mm, ScanEagle UAV, 2 Kingfish prototype UUV.  
 • Aug 14: *Ponce* fitted with F(1)1 SEQ-3 LaWS high energy laser, aimed by Mk15 Phalanx radar, treat as integrated to combat system. Can be used as laser dazzler.  
 • 14 Oct 17: *Ponce* decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	79	159	238	285	317
<b>Surf Speed:</b>	21	16	11	5	0	Sinks

**Raleigh**

**Displacement:** 8276 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 PW/SW/P/S(2)4 Mk33 3in/50//Mk56 (3.6) C  
 Aft pad (1)6 CH-46 Sea Knight B  
 1 LCU, 3 LCM (6) or 4 LCM(8) or 20 LVTP --  
**Sensors:** ES: 1st Gen J  
 SPS-10, SPS-40A, SPS-59/LN-66

**Remarks:**

*Raleigh, Vancouver, La Salle*. Up to 6 medium helos can be accommodated. LCM (6) carried on the boat deck can be replaced by 4 LCPL. Amphibious ship, -25% damage modifier.  
 • 1972: *La Salle* became flagship for the Persian Gulf (AGF-3), with crew 842.  
 • 1978: PW Mk33, Mk56 removed. AA rating 0.8L.  
 • 1980 - 82: *La Salle* refitted, P/S(R)2 Mk15 Phalanx replacing P/S Mk33, Aft Pad(1)1 SH-3D  
 • 1980s: F/S(R)2 Mk15 Phalanx added. ES upgraded to 2nd Gen. ECM upgraded to 2nd Gen D. *Raleigh* 1984, *Vancouver* late 80s.

**LPD**

• Decommed: *Raleigh* 1991, *Vancouver* 1992. *La Salle* 2005.  
**Damage & Speed Breakdown:**  

<b>Dam Pts:</b>	0	71	142	213	256	284
<b>Surf Speed:</b>	21	16	11	5	0	Sinks

**Iwo Jima**

**Displacement:** 17000 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 2F/PA/SA(2)4 Mk33 3in/50//3 Mk34 (3.6) C  
 2 Elevators --  
**Sensors:** ES: 1st Gen J  
 SPS-10, SPS-40A

**Remarks:**

*Iwo Jima, Okinawa, Guadalcanal, Guam, Tripoli, New Orleans, Inchon*. Can launch seven small/medium or 4 large helos at once. Hangar can hold 19 CH-46 or 11 CH-53. Aviation ship, does not suffer amphibious ship modifier. Single prop, double the speed reduction of Engineering critical hits.  
 • F/PA 3 inch guns replaced by F/P&PQ(8)2 Mk25 BPMS Sea Sparrow w/8 RIM-7//4 Mk115. AA rating 1.8. *Tripoli, Inchon* 1972, *Okinawa, Iwo Jima, New Orleans* 1973, *Guam, Guadalcanal* 1974.  
 • 1970: Fitted with 1st Gen J countermeasures.  
 • Late 70s: Mk34 FC radars removed, AA rating 0.5L.  
 • 1980s: Acoustic Countermeasures upgraded to 2nd Gen T, Electronic Countermeasures to 3rd Gen J&D, ES to 3rd Gen. Combat system Gen 3 Semi-Automatic.  
 • 1983 - 86: SW/P&PQ(R)2 Mk15 Phalanx Blk 0 (2@4.4A)(*Okinawa* had F Mk25 launcher replaced by Phalanx, has F instead of SB&S arc). P/S(1)2 Mk38 Bushmaster 25mm added.  
 • 1996: *Inchon* reconfigured as a mine countermeasures support ship. All Mk25 BPDMS and Mk33 removed. Operated CH-53E Sea Dragon helicopters, served as tender for *Avenger-* and *Osprey-*class minehunters. Transferred to the Naval Reserve Force.  
 • Oct 01: *Inchon* suffered major boiler room fire, one sailor killed, severely damaged, not repaired.  
 • Decommed: *Okinawa* 1992, *Iwo Jima* 1993, *Guadalcanal* 1994, *Tripoli* 1995, *New Orleans* 1997, *Guam* 1998, *Inchon* 2002.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	106	212	317	381	423
<b>Surf Speed:</b>	23	17	12	6	0	Sinks

**Essex LPH**

**Displacement:** 30800 std  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Large/Loud  
**Weapons:**  
 F/A(2)4 Mk38 5in/38//2 Mk37 (7.8) C  
 PW/PA(1)2 Mk30 5in/38//2 Mk56 (1.0) C  
 3 Elevators --  
**Sensors:** ES: 1st Gen J  
 SPS-10, SPS-12, SPS-30

**Remarks:**

*Boxer, Princeton, Valley Forge*. *Essex*-class carriers converted to LPH. Configuration as of conversion. Carries 16 CH-37. Aviation ship, does not suffer amphibious damage modifier. *Valley Forge* has SPS-6C, SPS-8A, SPS-10 radars. Four boilers not used as LPH, with speed reduced to 27 knots.  
 • Early 1960s: F/A(2)2 Mk38, AA rating 3.9. Mk30 5 inch guns removed.  
 • Decommed: *Boxer* 1969, *Princeton, Valley Forge* 1970.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	210	419	629	754	838
<b>Surf Speed:</b>	27	20	14	7	0	Sinks



**Casablanca LPH**

**Displacement:** 8000 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Loud  
**Weapons:**  
 PW/SW/P&PQ/SQ(2)4 Mk1 40mm/60 (0.5L)

1 Elevator  
**Sensors:**  
 SPS-10, SPS-12

**Remarks:**  
*Thetis Bay.* Casablanca-class CVE decommed after WW II, recommed 1956 as CVHA (assault helicopter carrier). Configuration as of conversion. Carries 15 CH-37. Can launch/land 5 Medium helicopters at once. Aviation ship, does not suffer amphibious construction modifier.

• 1959: Reclassified as LPH.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	85	171	256	307	341
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Harpers Ferry**

**Displacement:** 11894 lt  
**Size Class:** B/Medium  
**Propulsion:** Diesel/CPP  
**Electrn Cnt:** 3rd Gen D  
**Signature:** Med/Noisy  
**Weapons:**  
 F/A(R)2 Mk15 Phalanx Blk 0 (2@5.0A)

P/S(1)2 Mk38 Bushmaster 25mm  
 P/S(1)8 M2 .50 cal (0.1L)  
 2 LCPL, 2 LCUA or 4 LCM(8) or 9 LCM(6) or 1 LCU  
**Sensors:**  
 SPS-64, SPS-49(V)5, SPS-67

**Remarks:**  
*Harpers Ferry, Carter Hall, Oak Hill, Pearl Harbor.* Cargo version of *Whidbey Island* class. Helo pad aft with spots for two large helicopters.

• 1997-2004. Refitted with Surface Ship Self Defense System (combat system Gen 6 Automatic), 2nd Gen IRST, F/A(21)2 Mk49 w/21 RIM-116 RAM, 3rd Gen J&D. *Harpers Ferry* 1997, *Carter Hill* by 2001, *Oak Hill* by 2004, *Pearl Harbor* completed in this configuration.

• 2008+: Estimate fitted with 3rd Gen acoustic countermeasures.

• Late 2010s: SPS-64 replaced by SPS-73.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	181	272	326	362
<b>Surf Speed:</b>	22	16	11	6	0	Sinks

**Whidbey Island**

**Displacement:** 11854 std  
**Size Class:** B/Medium  
**Propulsion:** Diesel/CPP  
**Electrn Cnt:** 3rd Gen D  
**Signature:** Med/Noisy  
**Weapons:**  
 P/S(R)2 Mk15 Phalanx Blk 0 (5.0A)

P/S(1)2 Mk38 Bushmaster 25mm  
 P/S(1)6 M2 .50 cal. (0.1L)  
 2 LCVP, 4 LCUA or 21 LCM(6) or 10 LCM(8) or 3 LCU or 64 LVTP  
**Sensors:**  
 SPS-64, SPS-67(V)1, SPS-49(V)5

**Remarks:**  
 Aft pad has spots for two large helos, no hangar. Carry one LCM(6), 2 LCPL MkII, one LCVP on deck. Amphibious ship, -25% damage modifier.

• 1993: *Whidbey Island* trials ship for Surface Ship Self-Defense System with 2nd Gen IRST, 3rd Gen J&D. Combat system Gen 6 Automatic.

• 1999-2002. Seven other units refitted with Surface Ship Self Defense System, 2nd Gen IRST, 3rd Gen J&D. Combat system Gen

**LPH**

**In class:** [1]  
**In Service:** 1956 (1944) - 64  
**Crew:** 540 + 1600  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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6 Automatic. All eight units fitted with F/A(21)2 Mk49 w/21 RIM-116 RAM

• 2008+: Estimate fitted with 3rd Gen acoustic countermeasures.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	83	166	249	299	332
<b>Surf Speed:</b>	22	16	11	6	0	Sinks

**Anchorage**

**Displacement:** 8200 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen D  
**Signature:** Med/Noisy  
**Weapons:**  
 PW/SW/P/S(2)4 Mk33 3in/50//2 Mk56 (1.8)

P/S(1)6 M2 .50 cal. (0.1L)  
 4 LCVP, 3 LCUA or 3 LCU or 15 LCM(6) or 9 LCM(8) or 50 LVT

**Sensors:**  
 SPS-10, SPS-40, SPS-69 (LSD-38 only)  
 SPS-59/LN-66

**Remarks:**

*Anchorage, Portland, Pensacola, Mount Vernon, Fort Fisher.* Carries 1 LCM(6), 1 LCP, 2 LCPL as deck cargo. Removable helo deck aft, no hangar. Can be fitted with mezzanine deck for 15 LVT with 2 LCUA or 1 LCU 1 or 12 LCM(6) or 6 LCM(6) or 65 LVT total. Typically carry 1 LCM(6) and 3 LCU. *Fort Fisher* has SPS-67 vice SPS-10. Amphibious ship, -25% damage modifier.

• 1977 - 78: Port Mk33 and Mk56 removed, AA rating 0.5L.

• 1980s: P/S(R)2 Mk15 Phalanx Blk 0 (2@4.4A) added. ES and ECM upgraded to 2nd Gen. Combat system Gen 4 Semi-Automatic. Refitted so well deck can carry 3 LCUA as alternative load.

• 1990: Forward 2 Mk33 3 inch guns removed, leaves S(2)1 Mk33 3in/50, AA rating 0.3L.

• 1990s: P/S(1)2 Mk38 Bushmaster 25mm added. 2nd Gen Towed Acoustic Countermeasure added.

• 1993-94: Remaining Mk33 3 inch guns removed.

• 1994: SPS-10 replaced with SPS-67. *Portland* fitted with SPS-73, remainder with SPS-64.

• Decommed: *Fort Fisher* 1998, *Pensacola* 1999 (transferred to Taiwan as *Hsu Hai 2 Jun 00*), *Anchorage, Portland, Mount Vernon* 2003.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	71	141	212	254	282
<b>Surf Speed:</b>	22	16	11	6	0	Sinks

**Thomaston**

**Displacement:** 6880 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 PW/2P/P&PQ(2)4 Mk33 3in/50 &

SW/2S/S&SQ(2)4 Mk33 3in/50//P/S 2 Mk35 (3.6)  
 4 LCVP, 3 LCU or 9 LCM (8) or 16 LCM(6) or 50 LVT

**Sensors:**  
 SPS-10, SPS-6

**Remarks:**  
 Helo pad aft for one large helicopter. Well deck aft. Amphibious ship, -25% damage modifier

• 1960s: P/S 2 Mk33 removed, AA rating 2.7.

• 1977: 3 Mk33 and Mk35 radars removed, AA rating 0.5L. LN-66 radar added.

• 1980s: All but *Thomaston* fitted with 2nd Gen D.

• 1980s: *Spiegel Grove, Alamo, Hermitage* fitted with P/S(R)2 Mk15 Phalanx Blk 0 (2@4.4A).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	63	126	188	226	251
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Casa Grande (1950s)**

**Displacement:** 4790 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk30 5in/38 (0.8)  
 PW/SW(4)2 Mk2 40mm/60 & PA/SA(2)2 Mk1 40mm/60 (0.8L)  
 PW/SW/PA/SA(1)16 Mk10 20mm (1.0L)

Aft Pad (1)1 CH-34 Choctaw  
 3 LCU or 18 LCM(6)

**Sensors:**

SPS-10

**Remarks:**

Also *Cabildo* class. Similar to *Ashland* class, but with different propulsion. No hangar. Amphibious ship, -25% damage modifier. Class placed in reserve after WW II. Configuration as of the 1950s, when the class was reactivated for Korean war service.

- c1960: 5 inch gun removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	46	91	137	164	182
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Ashland (1950s)**

**Displacement:** 4790 std  
**Size Class:** C/Small  
**Propulsion:** Steam Recip  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk21 5in/38 (0.8)  
 PW/SW(4)2 Mk2 40mm/60 & PA/SA(2)2 Mk1 40mm/60 (0.8L)  
 3 LCU or 18 LCM(6)

**Sensors:**

SPS-10

**Remarks:**

Amphibious ship, -25% damage modifier. Class placed in reserve after WW II. Configuration as of the 1950s, when the class was reactivated for Korean war service. Aft helo pad added.

- 20mm removed postwar.
- c1960: 5 inch guns removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	46	91	137	164	182
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Newport**

**Displacement:** 4975 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Diesel/CPP  
**Electrn Cnt:** 2nd Gen D  
**Signature:** Med/Noisy  
**Weapons:**

PA/SA(2)2 Mk33 3in/50//2 SPG-50 (0.9)  
 3 LCVP, 1 LCPL

**Sensors:**

SPS-10, SPS-59/LN-66

**Remarks:**

Amphibious ship, -25% damage modifier. Can lay a causeway to land vehicles directly on land. Can beach with 500 t cargo or transport 2000 t. Aft helo pad.

- 1977-78: SPG-50 FC radars removed, AA rating 0.3L.
- Early 80s: All except *Schenectady* fitted with SPS-64 replacing SPS-59/LN-66.
- Late 80s - 94: F(R)1 Mk15 Phalanx Blk 0 (4.4A) added to all except *Barbour County*, *Boulder*, *Frederick*, *Racine*, *Schenectady*.
- 1993: Mk33 3 inch guns removed.
- 2000: USS *La Moure County* ran aground 12 Sep 00 off Chile during exercises, struck from Navy list 17 Nov, sunk as a gunfire target Jul 01.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	51	101	152	182	202
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**LSD**

**In Class:** [13]  
**In Service:** 1943 - 71  
**Crew:** 265 + 260  
**Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

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**De Soto County**

**Displacement:** 3859 lt  
**Size Class:** C//Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Weapons:**

PW/SW/A(2)3 Mk33 3in/50 (0.5L)

2 LCVP

**Sensors:**

SPS-10

**Remarks:**

Improved habitability. Amphibious ship, -25% damage modifier. Helicopter pad midships. Can carry one LCM(6) as deck cargo, blocking helo pad. Can beach with 500 t cargo or transport 1825 t.

- 1972: *Graham County* reclassified as Patrol Craft Tender (AGP-1176), for *Asheville* gunboats. Deployed to Mediterranean.
- 1972: *De Soto County*, *York County* to Italy as *Grado*, *Carole*.
- 1973: *Grant County* transferred to Brazil as *Duque De Caxais*.
- 1981: *Suffolk County*, *Wood County* transferred to Greece. *Lorain County* transferred to Mexico.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	43	86	128	154	171
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**LSD**

**In Class:** [8]  
**In Service:** 1942 - 70  
**Crew:** 265 + 300  
**Armor Rating:** 0  
**Cbt Sys:** Gen 1 Manual

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**Terrebone Parish**

**Displacement:** 2590 lt  
**Size Class:** C/Small  
**Propulsion:** Diesel/CPP  
**Signature:** Small/Noisy  
**Weapons:**

PW/SW/A(2)3 Mk33 3in/50//2 Mk34 (1.8)

F/PW/SW/PA/SA(2)3 Mk10 20mm (0.4L)

3 LCVP, 1 LCPL

**Sensors:**

SPS-10

**Remarks:**

LST 1156-1170. Midships helicopter pad. Amphibious ship, -25% damage modifier. Can beach with 500 t cargo or transport 1395 t.

- 1950s: 20mm removed.
- 9 Feb 1973: *Washtenaw County* reclassified as Special Minesweeper MSS-2.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	66	98	118	131
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**LST**

**In Class:** [20]  
**In Service:** 1969 - 2002  
**Crew:** 262 + 430  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic

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**Carronade**

**Displacement:** 1040 std  
**Size Class:** D/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk30 5in/38//Mk52 (0.5)

F/A(2)2 Mk1 40mm/60 (0.5L)

F(2)8 5" rockets

**Sensors:**

SPS-5

**Remarks:**

Fire support ship. Five-inch rocket magazines have CHP armor rating of 2.

- 1960 - 65: In reserve. Re-commissioned for Vietnam War.
- 1 Jan 1969: Re-designated LFR.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	22	44	65	78	87
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Spearhead (ii)**

**Displacement:** 1515 lt  
**Size Class:** C/Small  
**Propulsion:** Diesel/Waterjet  
**Signature:** Small/Quiet

**In Class:** 11 + 2 + 1  
**In Service:** 2011  
**Crew:** 41 + 312  
**Armor Rating:** 0

**LST**

**In Class:** [7]  
**In Service:** 1957 - 89  
**Crew:** 172 + 634  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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**LST**

**In Class:** [21]  
**In Service:** 1952 - 73  
**Crew:** 157 + 392  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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**IFS**

**In class:** [1]  
**In Service:** 1953 - 73  
**Crew:** 139  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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**EPF**

**Sensors:**

Generic x-band, s-band nav radars **J/Intl**

**Remarks:**

*Spearhead, Choctaw County, Millinocket, Fall River, Trenton, Brunswick, Carson City, Yuma, City of Bismarck, Burlington, Puerto Rico, Newport, Apalachicola, Cody.* Can carry armored company of infantry battalion or 635 t cargo. Australian-designed and -built wave-piercing catamaran. Helo pad for large-sized helicopters. Treat as bring fitted with dual stabilizers. Aluminum construction, -25% damage modifier. Auxiliary, special damage modifier of -25%. Provision for PW/SW/PA/SA(1)4 M2 .50 cal. (0.1L).

• 2015: Cleared to launch LSDV.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	15	31	46	55	61
<b>Spd (Loaded):</b>	35	29	19	10	0	Sinks
<b>Spd (Unload.):</b>	43	32	22	11	0	Sinks

**Joint Venture**

**Displacement:** 1668 fl **In Class:** [1] **EPF**  
**Size Class:** C/Small **In Service:** 2001 - 08  
**Propulsion:** Diesel/Waterjet **Crew:** 30  
**Signature:** Small/Quiet **Armor Rating:** 0

**Sensors:**

Generic x-band nav radar **J**

**Remarks:**

Australian-designed and -built wave-piercing catamaran. *Ex-Top Cat*, car/passenger ferry leased Oct 01 for two-year trials on suitability for military missions including logistic support, mine warfare, and special operations. Can carry 600 tons cargo or 400 tons with 570 troops and equipment over short distances (max 24 hours). The vehicle deck can carry light vehicles up to truck size. Helo pad for large-sized helicopters and hydraulic stern ramp added during refit at start of lease period. Also carries extensive communications equipment. Aluminum construction, -25% damage modifier. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	7	14	20	24	27
<b>Spd (Lded):</b>	38	29	19	10	0	Sinks
<b>Spd (Unl.):</b>	50	38	25	13	0	Sinks

**Spearhead (i)**

**Displacement:** 1875 fl **In Class:** [1] **EPF**  
**Size Class:** C/Small **In Service:** 2002 - 05  
**Propulsion:** Diesel/Waterjet **Crew:** 22  
**Signature:** Small/Quiet **Armor Rating:** 0

**Sensors:**

Generic x-band nav radar **J**

**Remarks:**

Australian-built wave-piercing catamaran. *Incat Evolution 10B*. Intended as Theater Support Vessel. Helo pad for large-sized helicopters and hydraulic stern ramp. Aluminum construction, -25% damage modifier. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	7	15	22	26	29
<b>Spd (Lded):</b>	38	29	19	10	0	Sinks
<b>Spd (Unl.):</b>	42	32	21	11	0	Sinks

**Montford Point**

**Displacement:** 34500 **In class:** 5 + 1 + 1 **ESB/ESD**  
**Size Class:** A/Large **In Service:** 2013  
**Propulsion:** Diesel-Electric **Crew:** 34 + 250  
**Signature:** Large/Noisy **Armor Rating:** 0

**Sensors:**

Generic x-band nav radar **J**  
 SPS-77 (*Herschel Williams*) **J**

**Remarks:**

*Montford Point, John Glenn, Lewis B. Puller, Herschel "Woody" Williams, Miguel Keith*, two more. Mobile Landing Platform. One for each MPPS squadron. Operated by Military Sealift Command. Based on commercially-designed *Alaska*-class crude oil tanker. Auxiliary,

-25% damage modifier. Further two ESB ordered, additional planned for two ESD and six ESB.

• *Montford Point, John Glenn* are Mobile Landing Platform (MLP) for Maritime Prepositioning Force. Serves as a transfer point for cargo by LCUAs. Can partially submerge to provide docking for 3 LCUAs, side ramp. Can operate safely through sea state 3.

• *Lewis B. Puller, Herschel "Woody" Williams, Miguel Keith* are Expeditionary Mobile Base (ESB) to support MCM and SOF. C<sup>3</sup> facilities and midships pad (2)2 MH-53 or (4)4 MH-60 helicopters or V-22. Can also house small craft for SOF operations. *Puller* replaced *USS Ponce* in Bahrain in 2017. Williams planned for Mediterranean.

• Sep 15: MLP renamed Expeditionary Mobile Dock (ESD)

• Aug 17: *Lewis B. Puller* transferred from the MSC to regular Navy as a commissioned warship so it can be armed.

• Mar 18: *Puller* operates with MH-53E.

• Sep 18: *Herschel Williams* to be fitted with SPS-77.

• Mar 20: *Puller* operates with Army AH-64E.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	170	339	509	610	678
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Swift (ii)**

**Displacement:** 1875 fl **In Class:** [1] **MCS**  
**Size Class:** C/Small **In Service:** 2003 - 13  
**Propulsion:** Diesel/Waterjet **Crew:** 100 + 102  
**Signature:** Small/Quiet **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F(1+1)1 Mk38 Bushmaster 25mm + Mk19 40mm AGL **C**

PW/SW/PA/SA(1)4 .50 cal (**0.1L**) **C**

**Sensors:**

2 Kelvin Hughes nav radars (use Generic nav radar) **J/Intl**  
 3rd Gen FLIR **--**

**Remarks:**

HSV-X2 (High Speed Vessel). Australian-designed and -built wave-piercing catamaran. Equipped as mine countermeasures flagship - can refuel ships using astern method. Also used as logistics transport with stern ramp for 500 t cargo. Can carry 250 seated passengers or 128 seated and additional 87 berths. Aft Pad for medium helo. Shallow draft, treat as Size Class E on grounding table. 35 knots max loaded speed. Aluminum construction, -25% damage modifier. Warship built to mercantile standards, -15% damage modifier. Multi-hull, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	11	21	32	38	42
<b>Spd (Empty):</b>	42	32	21	11	0	Sinks
<b>Spd (Loaded):</b>	35	26	18	9	0	Sinks

**Osprey**

**Displacement:** 796 lt **In Class:** [12] **MHC**  
**Size Class:** D/Small **In Service:** 1993 - 07  
**Propulsion:** Diesel **Crew:** 51  
**Signature:** Small/Quiet **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** Gen 2 Manual

PA/SA(1)2 M2 .50 cal. (**0.1L**) **C**

SLQ-48 ROV or sweep gear **--**

**Sensors:**

SPS-64 **J**  
 SQQ-32 MH sonar **--**

**Remarks:**

MHC 51-62. Reduced acoustic and magnetic signatures (treat as Size E-G vs influence mines). Shock hardened. Can carry SLQ-48 mine disposal vehicle or sweep gear (magnetic sweep). GRP construction, -10% damage modifier.

• 1997?: Fitted with mechanical sweep.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	18	36	53	64	71
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**Bittern**

**Displacement:** 300 std  
**Size Class:** E/VSmall  
**Propulsion:** Diesel/CPP  
**Signature:** VSmall/Noisy  
**Weapons:**

F(1)1 Mk3 40mm/60 (0.1L)

Sweep gear

**Sensors:**

Generic x-band nav radar

SQQ-14 MH sonar

**Remarks:**

MHC 443. *Bittern*. Uses divers to destroy mines. Estimated as fitted with mechanical sweep gear only. Wooden construction, -35% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	6	13	19	23	25
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**MHC**

**In Class:** [1]  
**In Service:** 1957 - 72  
**Crew:** 40  
**Armor Rating:** 0  
**Cbt Sys:** --

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J

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**Avenger**

**Displacement:** 1447 fl  
**Size Class:** D/Small  
**Propulsion:** Diesel/CPP  
**Signature:** Small/Quiet  
**Weapons:**

PA/SA(1)2 M2 .50 cal (0.1L)

2 SLQ-48 ROV

Sweep gear

**Sensors:**

SPS-55, SPS-66

SQQ-30 (#1-9) or SQQ-32 (#10-14) minehunting sonar

**Remarks:**

MCM 1-14. Reduced magnetic and acoustic signatures (treat as Size E-G vs magnetic and acoustic mines only). SLQ-48 can be fitted with either cable cutters (moored mines) or charges (bottom mines) - max depth Int II. Can tow either acoustic/magnetic or mechanical sweep.

Two *Avenger* can tow mechanical team sweep down to Deep I.

Wooden hull with GRP superstructure, -10% damage modifier.

• 1989: Fitted with SLQ-37(V)2 acoustic/mechanical sweep also.

• 1990: MCM 1 *Avenger* fitted with prototype SQQ-32.

• 2010: MCM 11 *Gladiator* fitted with Mk38 Bushmaster 25mm (local control, no AA).

• 2012 - 16: Fitted with SQQ-32(V)4. Estimated SPS-73 vice SPS-66 and SLQ-60 Expendable Mine Neutralization System (EMNS) vice SLQ-48.

• 17 Jan 13: MCM 5 *Guardian* lost after running aground.

• 2014: MCM 1 *Avenger*, MCM 2 *Defender* decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	22	44	66	79	88
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**MHS**

**In Class:** 14 - 3  
**In Service:** 1987  
**Crew:** 83  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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**MSB 5**

**Displacement:** 30 lt  
**Size Class:** F/VSmall  
**Propulsion:** Gas Turbine  
**Signature:** VSmall/Noisy  
**Weapons:**

A(1)1 M2 .50 cal. (0.1L)

Magnetic sweep

**Sensors:**

Generic x-band nav radar

**Remarks:**

Can be carried as deck cargo or amphibious ships well decks.

Wooden construction, -35% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	--	--	--	--	--	5.8
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**MSB**

**In Class:** [49]  
**In Service:** 1952 - 93  
**Crew:** 6  
**Armor Rating:** 0  
**Cbt Sys:** --

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**MSL Mk1 - 4**

**Displacement:** 10.2 std  
**Size Class:** G/VSmall  
**Propulsion:** Gas Turbine  
**Signature:** VSmall/Noisy  
**Weapons:**

Sweep gear

**Sensors:**

Generic x-band nav radar

**Remarks:**

Mk1 *MSL 1-4*. Mk2 *MSL 5-29*. Mk3 *MSL 30*. Mk4 *MSL 31-65*. Can be fitted with acoustic or magnetic or mechanical sweep at P/S depth only. Mk1 and Mk2 are wooden construction, -35% damage modifier. Mk3 and Mk4 are GRP construction, -10% damage modifier.

• 1967: Two Mk1 and one Mk2 fitted with diesel propulsion as Mk5.

**Damage & Speed Breakdown:**

<b>DP (Mk1, 2):</b>	--	--	--	--	--	2.6
<b>DP (Mk1, 2):</b>	--	--	--	--	--	3.6
<b>Surf Speed:</b>	10	8	5	3	0	Sinks

**MSB**

**In Class:** [56]  
**In Service:** 1946 - 92  
**Crew:** 4  
**Armor Rating:** 0  
**Cbt Sys:** --

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**Cove**

**Displacement:** 197 std  
**Size Class:** E/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Noisy  
**Weapons:**

A(1)1 M2 .50 cal. (0.1L)

Sweep Gear

**Sensors:**

Generic x-band nav radar

**Remarks:**

*Cove, Cape*. .50 cal. arc estimated. Can be fitted with Oropesa or magnetic sweep gear. Wooden construction, -35% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	5	10	14	17	19
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**MSI**

**In class:** [2]  
**In Service:** 1958 - 71  
**Crew:** 30  
**Armor Rating:** 0  
**Cbt Sys:** --

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**Bluebird/Falcon/Redwing/Albatross**

**Displacement:** 320 lt  
**Size Class:** D/Small  
**Propulsion:** Diesel/CPP  
**Signature:** Small/Noisy  
**Weapons:**

F/A(1)2 Mk24 20mm (0.1L)

Sweep Gear

**Sensors:**

SPS-53

USQ-1 minehunting sonar

**Remarks:**

*Bluebird* class MSC 121, 122. *Falcon* class MSC 190-199. *Redwing* class MSC 200-209. *Albatross* class MSC 289, 290. Further 139 *Bluebird* built for export as *Adjutant* class. Wooden construction, -35% damage modifier.

• 13 transferred to other countries.

**Damage & Speed Breakdown:**

<b>DDP (B):</b>	0	7	15	22	26	29
<b>DP (F, A):</b>	0	8	16	23	28	31
<b>DP (R):</b>	0	8	17	25	30	33
<b>Spd (B):</b>	14	11	7	5	0	Sinks
<b>Spd (F, R, A):</b>	13	10	7	3	0	Sinks

**MSI**

**In Class:** [24]  
**In Service:** 1953 - 75  
**Crew:** 39  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

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**Ability**

**Displacement:** 801 std  
**Size Class:** D/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Weapons:**

F(1)1 Mk3 40mm/60 (0.1L)

Sweep Gear

**In class:** [3]  
**In Service:** 1958 - 77  
**Crew:** 82  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

**MSO**

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**Sensors:**

SPS-53

USQ-1 minehunting sonar

**Remarks:**

*Ability, Alacrity, Assurance.* Wooden construction, -35% damage modifier.

- 1973: *Ability* struck.

- 1973: *Alacrity, Assurance* converted to surveillance ships with SQR-15 towed array. Struck 1977.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	12	24	36	43	48
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Agile/Aggressive/Dash/Acme****MSO****Displacement:** 716 lt**In class:** [61]**Size Class:** D/Small**In Service:** 1952 - 94**Propulsion:** Diesel**Crew:** 82**Signature:** Small/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

F(1)1 Mk3 40mm/60 (0.1L)

**C**

Sweep Gear

**--****Sensors:**

SPS-53

**J**

USQ-1 minehunting sonar

**K****Remarks:**

*Agile* class MSO 421. *Aggressive* class MSO 422-427, 432-449, 455-474, 488-496. *Dash* MSO 428-431. *Acme* MSO 508-511. Many additional exported. Reduced magnetic signature (treat as Size E-G vs magnetic mines only). Wooden construction, -35% damage modifier.

- 1968-72: MSO 433, 437, 438, 441-443, 445, 446, 448, 449, 456, 488, 490 fitted with SQQ-14 replacing UQS-1 MH sonar. Mk68 20mm replaces 40mm.

- 1970: MSO 490 fitted with Tergiversator replacing sweep gear for exercise. Simulates aircraft carrier and escort acoustic and active sonar signatures. Treat as second generation mobile decoy.

- 1980: MSO 443 fitted with prototype SQQ-30 sonar.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	12	24	36	43	48
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Yellowstone****AD****Displacement:** 13318 lt**In Class:** [4]**Size Class:** B/Medium**In Service:** 1980- 96**Propulsion:** Steam Turbine**Crew:** 1595**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

PW/SW/PA/SA(2)4 Mk33 3in/50//Mk56 (1.6)

**C****Sensors:**

SPS-10, SPS-59/LN-66

**J****Remarks:**

*Yellowstone, Acadia, Cape Cod, Shenandoah.* Aft pad for Large helicopter. Auxiliary, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	98	195	293	351	390
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Klondike****AD****Displacement:** 8165 std**In Class:** [4]**Size Class:** B/Medium**In Service:** 1945 - 73**Propulsion:** Steam Turbine**Crew:** 826**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 1 Manual

F(1)1 Mk24 5in/38//Mk26 (0.8)

**C**

PW/SW/PA/SA(2)4 Mk33 3in/50//Mk35 (1.6)

**C**

P/A(2)2 Mk1 40mm/60 (0.3L)

**C****Sensors:**

SPS-5

**J****Remarks:**

*Klondike, Arcadia, Everglades, Frontier.* Arcadia has SPS-12 radar, removed by 1965. Auxiliary, -25% damage modifier. Originally carried 20 20mm, removed postwar.

Decommed: *Klondike, Everglades* 1970, *Arcadia* 1968, *Frontier* 1968.**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	65	130	194	233	259
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Dixie (1959)****AD****Displacement:** 9450 std**In Class:** [5]**Size Class:** B/Medium**In Service:** 1940 - 1994**Propulsion:** Steam Turbine**Crew:** 1262**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

PW/SW(1)2 Mk38 5in/38//Mk12/22 (2.0)

**C**

P/S(1)4 Mk24 20mm (0.3L)

**C**

Aft pad (1)1 DASH

**B****Sensors:**

SPS-10

**J****Remarks:**

*Dixie, Prairie, Piedmont, Sierra, Yosemite.* *Dixie* commissioned in 1940, all others in 1944. Configuration as of FRAM modernization 1959-63.

Helo pad and hangar aft are for servicing and rearming DASH ASW drones. Auxiliary, -25% damage modifier.

- 1974-75: Helicopter deck, hangar and 5 inch guns removed.

- Decommed: *Dixie, Piedmont* 1982, *Prairie, Sierra* 1993, *Yosemite* 1994.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	72	143	215	257	286
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Samuel Gompers****AD****Displacement:** 13600 fl**In Class:** [2]**Size Class:** B/Medium**In Service:** 1967 - 96**Propulsion:** Steam Turbine**Crew:** 1430**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

F(1)1 Mk30 5in/38//Mk25 (1.0)

**C****Sensors:**

SPS-10, SPS-64

**J****Remarks:**

*Samuel Gompers, Puget Sound.* Helo pad aft. Also carries 2 Mk19

40mm grenade launchers. Auxiliary, -25% damage modifier

- 1979: 5 inch gun removed, P/S(1)2 Mk67 20mm added (0.1L).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	99	198	296	356	395
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Kilauea****AE****Displacement:** 9238 lt**In Class:** [8]**Size Class:** B/Medium**In Service:** 1968 - 2013**Propulsion:** Steam Turbine**Crew:** 380**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

PW/SW(2)4 Mk33 3in/50//2 Mk35 (1.8)

**C**

Aft Pad(1)2 CH-46 Sea Knight

**B****Sensors:**

SPS-10, SPS-64

**J****Remarks:**

*Kilauea, Butte, Santa Barbara, Mount Hood, Flint, Shasta, Mount Baker, Kiska.* Four replenishment stations to port, three to starboard. Single prop, double the speed reduction of Engineering critical hits.. Auxiliary, -25% damage modifier. Cargo capacity approximately 6500 tons.

- 1973: One starboard stores station fitted for conversion to fuel UN-REP. Takes 4 hours to modify between roles. Reduced to 5 minutes conversion in 1984.

- 1980: *Kilauea* disarmed, transferred to MSC.

- 1982-83: Mk33 3 inch guns removed.

- 1986-87: Combat system Gen 3 Semi-Automatic, 2nd Gen Decoys and 2nd Gen ES, F/A(R)2 Mk15 Phalanx Blk 0 (2@4.4A) added to *Flint, Shasta, Mount Baker, Kiska*.
- 1992 - 93: 2nd Gen Towed Acoustic Countermeasure added.
- Transferred to MSC with Phalanx removed: *Flint* 1995, *Butte, Kiska, Mount Baker* 1996, *Shasta* 1997, *Santa Barbara, Mount Hood* 1998.
- Struck: *Mount Hood* Aug 99, *Butte* 2004, *Santa Barbara* 2005, *Kilauea* 2008, *Mount Baker* 2010, *Shasta, Kiska* 2011, *Flint* 2013.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	76	153	229	275	305
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Suribachi**

**Displacement:** 14000 std  
**In Class:** [5]  
**Size Class:** B/Medium  
**In Service:** 1956 - 95  
**Propulsion:** Steam Turbine  
**Crew:** 346  
**Electrn Cnt:** 1st Gen D  
**Acoustic Cnt:** None  
**Signature:** Med/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 PW/SW/2A(2)4 Mk33 3in/50//2 SPG-50 (3.6)  
 P/S(1)4 M2 .50 cal. (0.1L)  
**Sensors:**  
**ES:** 1st Gen  
 SPS-6

**AE**

**Remarks:**

*Suribachi, Mauna Kea, Nitro, Pyro, Haleakala*. 7500 cargo in five holds including three for ammunition. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier. 3 holds configured to carry msls.

- 1960s: Aft Pad added for Small helicopter.
- 1977-78: SPS-6 replaced by SPS-10. SPG-50 removed, guns to local control only.
- 1984: LN-66, 2nd Gen ES, 2nd Gen D added.
- 1994: SPS-64 added.
- Decommed: *Haleakala* 1993, *Suribachi, Pyro* 1994, *Mauna Kea, Nitro* 1995.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	93	186	278	334	371
<b>Surf Speed:</b>	21	16	11	6	0	Sinks

**Wrangell**

**Displacement:** 6350 lt  
**In class:** [7]  
**Size Class:** B/Medium  
**In Service:** 1944 - 73  
**Propulsion:** Steam Turbine  
**Crew:** 267  
**Signature:** Med/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 1 Manual  
 A(1)1 Mk24 5in/38//Mk26 (0.8)  
 PW/SW/PA/SA(2)4 Mk33 3in/50 (1.7)  
 P/S(2)2 Mk1 40mm/60 (0.3L)  
**Sensors:**  
 SPS-10

**AE**

**Remarks:**

Auxiliary, -25% damage modifier, Fitted with 10 Mk24 20mm, removed after WW II.

- 1960s: 5 inch and 40mm guns removed.
- 1970s: *Firedrake, Mount Katmai, Paricutin*; Aft Pad (1)1 CH-46 Sea Knight replaced PA/SA Mk33 mounts.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	60	119	179	214	238
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Rainier**

**Displacement:** 6350 lt  
**In Class:** [5]  
**Size Class:** B/Medium  
**In Service:** 1951 (1941) - 70  
**Propulsion:** Diesel  
**Crew:** 281  
**Signature:** Med/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 A(1)1 Mk24 5in/38//Mk26 (1.0)  
 PW/SW/PA/SA(1)4 Mk34 3in/50 (0.3L)  
**Sensors:**  
 SPS-10

**AE**

**Remarks:**

*Sirius, Spica, Saturn*. Four cargo holds. Aft pad only. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

- Later fitted with twin hangars. Initially UH-46 then MH-60S.
- 2003: *Saturn* and *Spica* have two leased civil SA 330J Puma.

**Remarks:**

Unit of *Lassen* class decommed post-WW II, reactivated 1951. Auxiliary, -25% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	60	119	179	214	238
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Mars**

**Displacement:** 9400 lt  
**In Class:** [7]  
**Size Class:** B/Medium  
**In Service:** 1963 - 98  
**Propulsion:** Steam Turbine  
**Crew:** 486  
**Signature:** Med/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 PW/SW/P/S(2)4 Mk33 3in/50//Mk56 (1.8)  
 Aft Pad(1)2 CH-46 Sea Knight  
**Sensors:**  
 SPS-10, SPS-40, SPS-59/LN-66

**AF/AFS**

**Remarks:**

*Mars, Sylvania, Niagara Falls, White Plains, Concord, San Diego, San Jose*. Carry 7000 t in five holds; #1 and #5 for spare parts, #3 and #4 for provisions, #2 for aviation spare parts. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

- 1975: SPS-40 replaced by 2 Raytheon nav radars.
- Late 70s: P/S Mk33 3 inch guns and Mk56 GFCS removed from all but *White Plains*, AA rating 0.3L.
- Early 80s: PW/SW Mk33 3 inch guns removed in all but *White Plains*.
- 1980s: *Sylvania* and *White Plains* (1982-83) have P/S Mk33 removed, 3 inch AA rating 0.5L. Fitted with 2 Mk15 Phalanx Blk 0. *Sylvania* arcs P/S (4.4A), *White Plains* F/A (2@4.4A).
- 1990: 2nd Gen ES, 2nd Gen D fitted.
- 1992-94: Transferred to MSC with Mk33, Phalanx, SPS-40, ES and decoys removed, crew reduced to 153. Remaining units receive 2nd Gen Towed Acoustic Countermeasures.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	77	155	232	278	309
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Rigel**

**Displacement:** 15150 lt  
**In Class:** [1]  
**Size Class:** B/Medium  
**In Service:** 1955 - 94  
**Propulsion:** Steam Turbine  
**Crew:** 350  
**Signature:** Med/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 PW/SW/PA/SA(2)4 Mk33 3in/50//Mk56 (1.8)  
**Sensors:**  
 SPS-10

**AF**

**Remarks:**

Sensors estimated. Single prop, double the speed reduction of Engineering critical hits.. Auxiliary, -25% damage modifier.

- 1961: Fitted with midships helo pad. Moved to aft position in 1963.
- 23 Jun 75: Transferred to MSC. Mk33 removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	88	176	263	316	351
<b>Surf Speed:</b>	21	16	11	5	0	Sinks

**Ex-UK Lyness**

**Displacement:** 9010 lt  
**In Class:** [3]  
**Size Class:** B/Medium  
**In Service:** 1981 (1966) - 09  
**Propulsion:** Diesel  
**Crew:** 157  
**Signature:** Medium/Noisy  
**Armor Rating:** 0  
**Sensors:**  
 2 Generic x-band, s-band nav radars

**AFS**

**Remarks:**

*Sirius, Spica, Saturn*. Four cargo holds. Aft pad only. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

- Later fitted with twin hangars. Initially UH-46 then MH-60S.
- 2003: *Saturn* and *Spica* have two leased civil SA 330J Puma.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	75	150	225	270	300
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Blue Ridge**

See LCC listing for Blue Ridge

**AGC**

**Mount McKinley**

See LCC listing for Mount McKinley

**AGC**

**Belmont**

**Displacement:** 15200  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Medium/Noisy  
**Weapons:** PW/SW/PA/SA(1)4 M2 .50 cal. (0.1L) (*Liberty*)

**In Class:** [2]  
**In Service:** 1964 (1944)  
**Crew:** 318, 358  
**Armor Rating:** 0  
**Cbt Sys:** --

**AGI**

**Sensors:**

2 Nav radars  
 ELINT, SIGINT

**C**

**J/Intl**

--

**Remarks:**

*Belmont (ex-Iran Victory), Liberty (ex-Simmons Victory)*. USN designation AGTR (technical research ship). Victory ships taken over by USN in 1963 for signals intelligence service. Civilian construction, -50% damage modifier. Single prop, double the speed reduction of Engineering critical hits.  
 • 8 Jun 67: Attacked by Israeli forces, 34 killed, 171 wounded. Decommed Jun 68.  
 • 1970: *Belmont* decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	131	197	236	262
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Banner**

**Displacement:** 550 ltshp  
**Size Class:** D/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Weapons:** P/S(1)2 M2 .50 cal. (0.1L)

**In Class:** 3 - 2  
**In Service:** 1965 (1944)  
**Crew:** 83  
**Armor Rating:** 0  
**Cbt Sys:** --

**AGI**

**Sensors:**

Generic x-band nav radar  
 ELINT, SIGINT

**C**

**J**

--

**Remarks:**

*Banner (ex-Captain William M. Galt), Pueblo, Palm Beach (ex-Colonel Armond Peterson)*. USN designation AGER (environmental research ship). US Army *Camano*-class cargo ships taken over by USN in for signals intelligence service. *Banner* 1965, *Pueblo, Palm Beach* 1967.  
 • 23 Jan 68: *Pueblo* attacked and boarded by North Korean forces in international waters. Captured and turned into museum in Pyongyang.  
 • 1969: *Banner, Palm Beach* decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	16	31	47	56	62
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**Howard O. Lorenzen**

**Displacement:** 9543 lt  
**Size Class:** B/Medium  
**Propulsion:** Diesel-Electric  
**Electrn Cnt:** ?  
**Signature:** Medium/Noisy

**In Class:** 1  
**In Service:** 2014  
**Crew:** 88 + p  
**Acoustic Cnt:** ?  
**Armor Rating:** 0  
**ES:** 3rd Gen

**T-AGM**

**Sensors:**

Cobra King integrated dual-band active phased array radars  
 SIGINT, ELINT

**J**

--

**Remarks:**

Replaces USNS *Observation Island*. Collects exoatmospheric and endoatmospheric data on foreign ballistic missile tests. Mixed civilian and Navy crew, USAF and civilian personnel operate radars and mission equipment. Civilian construction, special damage modifier of -50%.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	52	104	156	187	208
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Arlington**

**Displacement:** 11373 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Loud  
**Weapons:** PW/SW/PA/SW(2)4 Mk33 3in/50//4 Mk34 (1.8)

**In class:** [1]  
**In Service:** 1966 - 70  
**Crew:** 746  
**Armor Rating:** 9/5  
**Cbt Sys:** Gen 2 Manual

**AGMR**

Midship Pad (1)1 HU-2 Seasprite

**Sensors:**

SPS-10

**C**

**B**

**J**

**Remarks:**

*Arlington (Ex-Saipan)*. *Independence*-class light carrier converted to amphibious command ship. Aviation ship, does not suffer auxiliary modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	108	216	323	388	431
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Stalwart**

**Displacement:** 1565 ltshp  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Signature:** Small/Quiet

**In Class:** [18]  
**In Service:** 1984 - 2004  
**Crew:** 36  
**Armor Rating:** 0

**AGOS**

**Sensors:**

Generic x-band, s-band nav radars  
 UQQ-2 SURTASS towed array

**J**

--

**Remarks:**

T-AGOS 1-18. Ocean surveillance vessel, operated by MSC. Normal patrol speed is 3 knots. SURTASS information is transmitted to shore facility for processing. Built to commercial standards, -25% damage modifier.  
 • 1994: T-AGOS 12 Bold fitted with twin line TB-29A with no left/right ambiguity. Four twin-line sets available, cross decked between ships.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	19	38	56	68	75
<b>Surf Speed:</b>	11	8	6	3	0	Sinks

**Impeccable**

**Displacement:** 2809 ltshp  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Signature:** Small/Quiet

**In Class:** 1  
**In Service:** 2001  
**Crew:** 53  
**Armor Rating:** 0

**AGOS**

**Sensors:**

2 Raytheon nav radars  
 UQQ-2 SURTASS or TB-29L towed array

**J**

--

**Remarks:**

T-AGOS 23. Carries either UQQ-2 or TB-29L, not both at same time. Raw SURTASS data is sent via satellite to land-based processing facility. Max speed with towed array deployed is 10 kts (standard is 3 knots). Fitted with fin stabilizers. Built to commercial standards, -25% damage modifier. SWATH hull, -25% damage modifier.  
 • 2003: Fitted with twin line TB-29A with no left/right ambiguity and SQQ-2 active sound source.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	46	69	83	92
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Victorious**

**Displacement:** 3100 ltshp  
**Size Class:** C/Small  
**Propulsion:** Diesel-Electric  
**Signature:** Small/Quiet

**In Class:** 4  
**In Service:** 1991  
**Crew:** 34  
**Armor Rating:** 0

**AGOS**

**Sensors:**

2 Raytheon nav radars  
 UQQ-2 SURTASS

**J**

--

**Remarks:**

T-AGOS 19-22. SURTASS data is not processed onboard, but sent via satellite to land-based processing facility. Max speed with towed array deployed is 10 kts (standard 3 knots). Fitted with fin stabilizers. Built to commercial standards, -25% damage modifier. SWATH hull, -25% damage modifier.

- 2005-09: Fitted with twin line TB-29A with no left/right ambiguity.
- 2011-12: Fitted with SQQ-2 low-frequency active (LFA).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	25	49	74	88	98
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Glover**

**Displacement:** 2620 std  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 1st Gen J  
**Signature:** Small/Noisy  
**Weapons:**

- F(1)1 Mk30 5in/38//Mk56 (1.1)
- F(8)1 Mk16 w/8 ASROC
- PB/SB(3)2 Mk32 324mm TT w/3 Mk44
- Aft Pad (1)2 DASH

**Sensors:**

SPS-10, SPS-40  
 SQS-26

**Remarks:**

Garcia-class frigate commissioned as research vessel for ASW systems. Fitted with fin stabilizers, pump-jet propeller. Single prop, double the speed reduction of Engineering critical hits. No ASROC magazine. Aluminum superstructure, -15% damage modifier. Fitted with prototype NTDS.

- 1967: Mk44 torp replaced by Mk46.
- 1968: Fitted with SQS-35 VDS.
- 1975: Operational with the fleet. Redesignated AGFF, then FF in 1979.
- 1988: Refitted, received LFAS (Low Frequency Active Sonar) and RMASS sonars for trials.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	35	69	104	124	138
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**Haven**

**Displacement:** 11141 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**

Aft Pad(1)1 small helicopter

**Sensors:**

Generic x-band nav radar

**Remarks:**

C4-S-B2 class hospital ships. Auxiliary, -25% damage modifier Single prop, double the speed reduction of Engineering critical hits.

- 25 Aug 50: *Benevolence* lost in a collision with freighter off San Francisco.
- 1953: Fitted with helo pad aft.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	80	160	239	287	319
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Bob Hope**

**Displacement:** 34408 ltshp  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy  
**Sensors:**

Generic x-band nav radar

**AGDE**

**In class:** [1]  
**In Service:** 1965 - 90  
**Crew:** 309  
**Acoustic Cnt:** 1st Gen  
**Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic

C

E

F

B

**ES:** 1st Gen

J

K

**Remarks:**

*Bob Hope, Fisher, Seay, Mendonca, Pillaau, Brittin, Benevidez.* Large Medium-Speed Roll-on Sealift Ships (LMSR). Part of Brigade Afloat Force, carrying US Army heavy equipment for use in Middle and Far East. Operated by civilian contractors. Aft helo pad for large helicopter. Can carry 13260 tons cargo. Can carry 1000 military vehicles on 380,000 sq ft cargo space. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	122	245	367	440	489
<b>Surf Speed:</b>	24	16	12	6	0	Sinks

**Shughart**

**Displacement:** 33971 ltshp  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy

**In Class:** 3  
**In Service:** 1996 (1980)  
**Crew:** 95  
**Armor Rating:** 0

**Sensors:**

Sperry-ARPA nav radar (use generic x-band nav radar)

J

**Remarks:**

*Shughart, Yano, Soderman (ex-Lica Maersk).* Former 3000-TEU container ships. Large Medium-Speed Roll-on Sealift Ships (LMSR). Part of Prepositioning Force, carrying Army heavy equipment. Large helo platform aft of pilothouse. Operated by civilian contractors. Can carry 13260 tons cargo. Civilian construction, -50% damage modifier.

- 2000-1: *Soderman* Converted to Advanced Prepositioning ship, renamed *Gunnery Sergeant Fred W. Stockham*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	121	243	364	437	485
<b>Surf Speed:</b>	24	16	12	6	0	Sinks

**Gordon**

**Displacement:** 33163 ltshp  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy

**In Class:** 2  
**In Service:** 1996  
**Crew:** 95  
**Armor Rating:** 0

**Sensors:**

Sperry-ARPA nav radar (use generic x-band nav radar)

J

**Remarks:**

*Gordon, Gilliland.* Former 3000-TEU container ships. Large Medium-Speed Roll-on Sealift Ships (LMSR). Part of Maritime Prepositioning Force, carrying Army heavy equipment. Helo platform forward of pilot-house. Fitted with fin stabilizers. Operated by civilian contractors. Can carry 13260 tons cargo. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	120	239	359	430	478
<b>Surf Speed:</b>	24	16	12	6	0	Sinks

**SL7**

**Displacement:** 48525 grt  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy

**In Class:** 8  
**In Service:** 1984  
**Crew:** 57  
**Armor Rating:** 0

**Sensors:**

2 Nav radar

J/Intl

**Remarks:**

*Algol, Bellatrix, Denebola, Pollux, Altair, Regulus, Capella, Antares.* Can carry 25000 t cargo. Large midships helo deck. Civilian construction, -50% damage modifier.

- 1 Oct 08: Transferred to Ready Reserve Fleet.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	117	234	351	421	468
<b>Surf Speed:</b>	33	25	17	8	0	Sinks

**James E. Robinson**

**Displacement:** 15589 fl  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy

**In Class:** [1]  
**In Service:** 1950 (1944) - 76  
**Crew:** 99  
**Armor Rating:** 0

**T-AK**

**AK**

**In Class:** 7  
**In Service:** 1998  
**Crew:** 25+300  
**Armor Rating:** 0

J



**Sensors:**

Generic x-band nav radar J

**Remarks:**

VC2-S-AP2 class Victory ship SS Czechoslovakia Victory, acquired by USN in 1950. Single propeller, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier

- 1976: Transferred to National Defense Reserve Fleet.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	60	120	179	215	239
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Charleston****AKA****Displacement:** 13727 lt**In class:** [5]**Size Class:** B/Medium**In Service:** 1968 - 94**Propulsion:** Steam Turbine**Crew:** 336 + 226**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 3 Semi-Automatic

PA/SA/P/S(2)4 Mk33 3in/50//2 Mk56 (1.8) C

Aft Pad (1)1 CH-46 Sea Knight B

4 LCM(8), 5 LCM(6), 2 LCVP or LCPL --

**Sensors:**

SPS-10, SPS-59/LN-66 J

**Remarks:**

*Charleston, Durham, Mobile, St. Louis, El Paso.* Can carry 5280 t cargo in four holds. Helo pad aft, no hangar. Auxiliary, -25% damage modifier.

- 1 Jan 69: Redesignated LKA.
- 1970s: 1st Gen ES, ECM added.
- 1970s: *El Paso* had 1st Gen ACM added.
- 1977 - 78: One Fwd Mk33, Mk56 GFCS removed. AA rating 0.5L.
- Late 80s: F/A(R)2 Mk15 Phalanx Blk 0 (2@4.4A), 2nd Gen ES, 3rd Gen D added.
- Decommed: *Charleston, St. Louis* 1992, *Durham, Mobile, El Paso* 1994.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	100	199	299	358	398
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Tulare****AKA****Displacement:** 9050 lt**In class:** [1]**Size Class:** B/Medium**In Service:** 1956 - 86**Propulsion:** Steam Turbine**Crew:** 393 + 319**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

2F/PA/SA/PQ/SQ(2)6 Mk33 3in/50//2 Mk52 (3.6) C

Aft Pad (1)1 CH-34 Choctaw B

4 LCM(8), 5 LCM(6), 11 LCVP or LCPL --

**Sensors:**

SPS-6, SPS-10 J

**Remarks:**

C4-S-1A. Auxiliary, -25% damage modifier. Helo pad aft. Carries cargo in five holds. Single prop, double the speed reduction of Engineering critical hits.

- 1 Jan 1969: Re-designated LKA.
- 1977 - 78: Fitted with LN-66 radar.
- 1992: Transferred to NDRF. Struck 2011.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	75	151	226	271	301
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Tolland****AKA****Displacement:** 8635 lt**In class:** [3]**Size Class:** B/Medium**In Service:** 1945 - 70**Propulsion:** Steam Turbine**Crew:** 395 + ?**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

2F/P/S(2)4 Mk33 3in/50//2 Mk34 (2.7) C

Aft Pad (1)1 CH-34 Choctaw B

8 LCM(6), 14 LCVP --

**Sensors:**

SPS-6, SPS-10 J

**Remarks:**

*Seminole, Union, Washburn.* Survivors of 32-ship class. Type C2-S-AJ3. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

- 1 Jan 1969: Re-designated LKA.
- 1970: All three decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	79	157	236	283	314
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Andromeda****AKA****Displacement:** 6556 lt**In class:** [30]**Size Class:** B/Medium**In Service:** 1944 - 73**Propulsion:** Steam Turbine**Crew:** 368 + 78**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

A(1)1 Mk24 5in/38//? (1.0) C

PW/SW/PA/SA(2)4 Mk33 3in/50//2 Mk34 (1.8) C

8 LCM(6), 1 LCPL, 13 LCVP --

**Sensors:**

SPS-10 J

**Remarks:**

C2-S-B1 type. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier.

- 1 Jan 1969: Re-designated LKA.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	61	122	182	219	243
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Lewis and Clark****T-AKE****Displacement:** 41592 fl**In class:** 12 + 2**Size Class:** A/Large**In Service:** 2006**Propulsion:** Diesel-Electric**Crew:** 172**Electrn Cnt:** 3rd Gen D**Acoustic Cnt:** 2nd Gen T**Signature:** Large/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** --

Aft Pad (1)2 MH-60S B

**Sensors:**

BridgeMaster E (use Decca 2000 series) J/UK

**Remarks:**

T-AKE 1-14. Single prop, double the speed reduction of Engineering critical hits. Auxiliary, -25% damage modifier. Built to mercantile standards, special damage modifier of -15%.

- 2008+: Estimate fitted with 3rd Gen acoustic countermeasures.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	172	345	517	620	689
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Watson****AKR****Displacement:** 36114 std**In Class:** 8**Size Class:** A/Large**In Service:** 1998**Propulsion:** Gas Turbine**Crew:** 25+300**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

Generic x-band nav radar J

**Remarks:**

*Watson, Sisler, Dahl, Red Cloud, Charlton, Watkins, Pomeroy, Soderman.* Large Medium-Speed Roll-on Sealift Ships (LMSR). Part of Brigade Afloat Force, carrying US Army heavy equipment for use in Middle and Far East. Operated by civilian contractors. Can carry 13260 tons cargo including 58 tanks, 48 tracked vehicles and 900 trucks. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	117	233	350	419	466
<b>Surf Speed:</b>	24	16	12	6	0	Sinks

**Commencement Bay**

**Displacement:** 11373 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Loud  
**Weapons:**  
 2 Elevators  
**Sensors:**  
 Generic x-band nav radar  
**Remarks:**  
 Used as aircraft ferries 1965 to 1970, reclassified to T-AKV. Armament removed before re-activation.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	108	216	323	388	431
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Bogue**

**Displacement:** 9800 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Loud  
**Weapons:**  
 2 Elevators  
**Sensors:**  
 SPS-10  
**Remarks:**  
 Used as aircraft ferries. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.  
 • 2 May 64: *Card* sunk at Saigon, raised and repaired.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	98	195	293	351	390
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**John Lewis**

**Displacement:** 49850 fl  
**Size Class:** A/Large  
**Propulsion:** Diesel/CPP  
**Electrn Cnt:** None  
**Signature:** Large/Noisy  
**Weapons:**  
 P/S(1)2 Mk38 Bushmaster 25mm (est)  
**Sensors:**  
 Generic x-band nav radar  
**Remarks:**  
*John Lewis, Harvey Milk, Earl Warren, Robert F. Kennedy, Lucy Stone, Sojourner Truth.* Provision for point defense weapons and torpedo defense system. Fitted with degaussing system. Helo pad aft. Auxiliary, -25% damage modifier. Built to mercantile standards, -15% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	156	311	467	560	622
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Henry J. Kaiser**

**Displacement:** 9500 lt  
**Size Class:** B/Medium  
**Propulsion:** Diesel/CPP  
**Signature:** Med/Noisy  
**Sensors:**  
 2 Raytheon R series  
**Remarks:**  
 T-AO 187-190, 193-204. Provision for F/A(R)2 Mk15 Phalanx (2@4.4A), acoustic countermeasures and 3rd Gen ES. Helo pad aft, no helicopter refueling facilities. Civil construction, -50% damage modifier.  
 • 1996: *Higgins* to reserve. Sold to Chile in 2009.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	52	104	155	186	207
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**AKV**

**In class:** [19]  
**In Service:** 1965 - 70  
**Crew:** 924  
**Armor Rating:** 0  
**Cbt Sys:** --

--

J

**T-AKV**

**In class:** [4]  
**In Service:** 1958 - 71  
**Crew:** 75  
**Armor Rating:** 0  
**Cbt Sys:** --

--

J

**AO**

**In Class:** 0 + 2 + 4  
**In Service:** 2020  
**Crew:** 125  
**Acoustic Cnt:** 4th Gen T  
**Armor Rating:** 0  
**Cbt Sys:** --

C

J

**Cimarron (ii)**

**Displacement:** 27500 fl  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy  
**Sensors:**  
 SPS-55, LN-66  
**Remarks:**

*Cimarron, Monongahela, Merrimack, Willamette, Platte.* *Cimarron* and *Monongahela* were not completed with Phalanx. Helo pad aft. Four RAS stations to port, three to starboard. *Willamette* and *Platte* have SPS-10 vice SPS-55. Auxiliary, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

• 1990 - 92: Jumboized, with increased fuel and ammo capacity. Displacement 36814 fl. *Cimarron* and *Monongahela* received Phalanx armament.  
 • 1992-93: 2nd Gen D, 2nd Gen ES added.  
 • 1994: SPS-64 replaced LN-66.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	131	262	392	471	523
<b>Dam Pts ('92):</b>	0	159	318	476	572	635
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Shenandoah/Potomac**

**Displacement:** 15739 gwt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar  
**Remarks:**

Laid down as SS *Shenandoah*, completed with aft section of USNS *Potomac* (AO-22). Chartered by MSC in Oct 64. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

• 1964 Chartered and operated by MSC.  
 • 1976: Purchased by US Navy, renamed USNS *Potomac* (T-AO-181).  
 • Mar 85: Transferred to Ready Reserve Fleet as SS *Potomac*.  
 • 1985 - 86: Trials ship for Offshore Product Discharge System (OPDS).

• 1990: Chartered by Navy, transferred to Maritime Prepositioning Force.  
 • 2000: Returned to Ready Reserve Force.  
 • 2006: Transferred to reserve.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	44	88	131	158	175
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Maumee**

**Displacement:** 7800 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar  
**Remarks:**

*Maumee, Potomac, Shoshone, Yukon.* Single prop, double the speed reduction of Engineering critical hits. TS-S-12A. Auxiliary, -25% damage modifier.

• 26 Sep 61: *Potomac* destroyed in pier-side fire and explosions. Rebuilt, listed separately.  
 • Mid-80s: Decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	69	138	207	248	276
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Neosho**

**Displacement:** 11600 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**

**In Class:** [6]  
**In Service:** 1954 - 92  
**Crew:** 324  
**Armor Rating:** 0

**AO****AO**

J

**AO**

C

J

**AO**

J

**AO**

**Weapons:** Cbt Sys: Gen 2 Manual

F/A(1)2 Mk30 5in/38 (2.0) C  
 PW/SW/P/S/PA/SA(2)6 Mk33 3in/50//6 Mk34 (2.7) C

**Sensors:** J  
 SPS-10, Raytheon 1650 (Raytheon R series)

**Remarks:**  
*Neosho, Mississinewa, Hassayampa, Kawishiw, Truckee, Ponchatoula.*  
 Helo pad aft except in *Ponchatoula, Kawishiw*. Auxiliary, -25% damage modifier

- 1969: 5 inch guns removed.
- ? : 3 inch gun battery reduced to P/S(2)2, AA rating 0.9.
- Mid-70s: Disarmed and transferred to MSC.
- Early 90s: Decommed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	89	178	267	320	356
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Mispillion**

**Displacement:** 7470 It **In Class:** [5] AO

**Size Class:** B/Medium **In Service:** 1945 - 91

**Propulsion:** Steam Turbine **Crew:** 290

**Signature:** Med/Noisy **Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 2 Manual

A(1)1 Mk30 5in/38//? (1.0) C

P/S(2)4 Mk1 40mm/60 (0.5L) C

P/S(2)4 Mk24 20mm (0.5L) C

**Sensors:** J  
 Generic x-band nav radar

**Remarks:**  
*Mispillion, Navasota, Passumpsic, Pawcatuck, Waccamaw.* Auxiliary, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

- 1963-64: Class jumboized. Lightship displacement 11000 t. Gun armament PW/SW/PA/SA(1)4 Mk34 3in/50, AA rating 0.9. Vertrep platform added forward.
- 1973-75: Transferred to MSC, disarmed, manning reduced to 110.
- Decommed: *Pawcatuck* 1989, *Mispillion* 1990; *Navasota, Passumpsic, Pawcatuck* 1991.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	133	199	239	265
<b>Dam Pts ('64):</b>	0	86	172	257	309	343
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Ashtabula**

**Displacement:** 7470 **In Class:** [17] AO

**Size Class:** B/Medium **In Service:** 1943 - 92

**Propulsion:** Steam Turbine **Crew:** 372

**Signature:** Med/Noisy **Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 1 Manual

A(1)1 Mk24 5in/38 (0.8) C

PW/SW/PA/SA(2)4 Mk1 40mm/60 (0.5L) C

PW/SW/PA/SA(1)4 Mk10 20mm (0.3L) C

**Sensors:** ES: 2nd Gen J  
 Generic x-band nav radar

**Remarks:**  
 Type T3-S2-A1. Eighteen built, one sunk during WW II. Auxiliary, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

- Three ships jumboized: Lightship displacement 11000 t. Gun armament PW/SW/PA/SA(1)4 Mk34 3in/50, AA rating 0.9. Vertrep platform added forward. *Ashtabula* 1968, *Caloosahatchee* 1966, *Canisteo* 1967.
- Decommed: One in 1969, three in 1970, one in 1972, six in 1973, one in 1975, two in 1982, one in 1989, one in 1990, one in 1992.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	133	199	239	265
<b>Dam Pts ('66):</b>	0	86	172	257	309	343
<b>Surf Speed:</b>	18	14	9	4	0	Sinks

**Suamico**

**Displacement:** 5730 It **In class:** [25] AO

**Size Class:** B/Medium **In Service:** 1942 - 76

**Propulsion:** Steam Turbine **Crew:** 274

**Signature:** Med/Noisy **Armor Rating:** 0

**Sensors:** J  
 Generic x-band nav radar

**Remarks:**  
 T2-SE-A1. Disarmed post-WW II. Operated by MSC as petroleum transports. Auxiliary, -25% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	56	111	167	200	222
<b>Surf Speed:</b>	16	12	8	6	0	Sinks

**Cimarron (i)**

**Displacement:** 7470 **In Class:** [7] AO

**Size Class:** B/Medium **In Service:** 1939 - 74

**Propulsion:** Steam Turbine **Crew:** 304

**Signature:** Med/Noisy **Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 1 Manual

F/A(1)2 Mk30 5in/38 & P&S/A(1)2 Mk24 5in/38 (3.7) C

PW/SW/PA/SA (2)4 Mk1 40mm/60 (0.5L) C

PW/SW/PA/SA (1)4 Mk10 20mm (0.3L) C

**Sensors:** J  
 Generic x-band nav radar

**Remarks:**  
*Cimarron (i), Platte, Sabine, Salamonie, Kaskaskia, Chemung, Guadeloupe.* Type T3-S2-A1. Twelve built, four converted to escort carriers in 1942, one other sunk during WW II. Auxiliary, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

- Decommed: *Cimarron, Salamonie, Kaskaskia* 1969, *Platte, Sabine, Chemung* 1970, *Guadeloupe* 1974.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	66	133	199	239	265
<b>Surf Speed:</b>	18	14	9	4	0	Sinks

**Kennebec**

**Displacement:** 6013 It **In class:** [9] AO

**Size Class:** B/Medium **In Service:** 1961 (1942) - 70

**Propulsion:** Steam Turbine **Crew:** 50

**Signature:** Med/Noisy **Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 2 Manual

F/A(2)4 Mk1 40mm/60 (1.0L) C

**Sensors:** J  
 Generic x-band nav radar

**Remarks:**  
*Kennebec, Merrimack, Kankakee, Mattaponi, Monongahela, Tappahanok, Neches, Enoree, Niobrara.* T2 type. Sixteen built, decommed post-WW II, nine reactivated in 1961 with listed armament. Auxiliary, -25% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	57	115	172	206	229
<b>Surf Speed:</b>	16	12	8	6	0	Sinks

**Supply**

**Displacement:** 19700 It **In Class:** 4 - 2 AOE

**Size Class:** A/Large **In Service:** 1994

**Propulsion:** COGAG **Crew:** 625

**Electr Cnt:** 3rd Gen J&D **Acoustic Cnt:** 2nd Gen T

**Signature:** Large/Noisy **Armor Rating:** 0

**Weapons:** Cbt Sys: Gen 5 Automatic

F(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7M//2 Mk95 D

F/A(R)2 Mk15 Phalanx Blk 0 (2@5.0A) C

P/S(1)4 M2 .50 cal (0.1L) C

PB/SB(1)2 Mk38 Bushmaster 25mm C

Aft Pad(1)3 CH-46 Sea Knight B

**Sensors:** ES: 3rd Gen J

SPS-64, SPS-67, Mk23 TAS

**Remarks:**

Supply, Rainer, Arctic, Bridge. 11 RAS stations. Five FAS, 6 RAS. Can carry 156000 barrels fuel, 250 tons non-reefer bulk, 400 t reefer cargo, 2450 t dry stores, 1800 t ammo. CBR defenses. Improved Sacramento design. Treat as a warship for turning and acceleration and deceleration.

- 2002: MH-60S replaced CH-46.
- Disarmed, transferred to MSC 2001-2004. Crew reduced to 235. Mk23 TAS removed.
- To reserve: Rainer 2015, Bridge 2018.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	127	253	380	455	506
<b>Surf Speed:</b>	26	20	13	6	0	Sinks

**Sacramento**

**AOE**

**Displacement:** 18700 ltshp  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Electrn Cnt:** 2nd Gen J&D  
**Signature:** Large/Loud  
**Weapons:**  
 PW/SW/PA/SA(2)4 Mk33 3in/50 //2 Mk56 (2.1)  
 Aft Pad(1)2 CH-46 Sea Knight  
**Sensors:**  
 SPS-10, SPS-6C (AOE-3, 4), SPS-40A (AOE-1, 2)  
**Remarks:**

**In Class:** [4]  
**In Service:** 1964 - 2005  
**Crew:** 600  
**Acoustic Cnt:** None  
**Armor Rating:** 0  
**Cbt Sys:** Gen 4 Semi-Automatic  
**ES:** 1st Gen  
**J**

*Sacramento, Camden, Seattle, Detroit.* Auxiliary, -25% damage modifier. Treat as a warship for turning, acceleration and deceleration.

- 1976: F(8)1 Mk29 w/8 NATO Sea Sparrow RIM-7H//2 Mk95 replaced PW/SW(2)2 Mk33 3 inch guns. Both Mk56 directors removed. Remaining two guns fire in local control, AA rating 0.3L.
- 1981: PA/SA(2)2 Mk33 3 inch guns replaced by PA/SA(R)2 Mk15 Phalanx Blk 0, AA rating 2@5.0A.
- 1985-87: SPS-6 removed from *Seattle, Detroit*. Mk23 TAS fitted to *Seattle*. SPS-64 added. RIM-7M replaced RIM-7H. Combat system Gen 5 Automatic.
- 1988-89: ECM upgraded to 3rd Gen J&D, ES to 3rd Gen, 2nd Gen acoustic countermeasures added.
- 1999: All have Mk23 TAS added, SPS-40 removed. Disarmed.
- Decommed: *Sacramento* 2004, *Camden, Seattle, Detroit* 2005.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	122	245	367	440	489
<b>Surf Speed:</b>	26	20	13	6	0	Sinks

**Wichita**

**AOR**

**Displacement:** 14054 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 Aft Pad(1)2 CH-46 Sea Knight  
 PW/SW/PA/SA(2)4 Mk33 3in/50//4 Mk56 (1.8)  
**Sensors:**  
 SPS-10  
**Remarks:**

**In Class:** [7]  
**In Service:** 1969 - 96  
**Crew:** 461  
**Armor Rating:** 0  
**Cbt Sys:** Gen 3 Semi-Automatic  
**ES:** 1st Gen  
**J**

*Wichita, Milwaukee, Kansas City, Savannah, Wabash, Kalamazoo, Roanoke.*

- 1987: Mk33 3 inch guns removed. PW/SW(R)2 Mk15 Phalanx Blk 0 (2@5.0A), A(8)1 Mk29 NATO Sea Sparrow w/8 RIM-7M//2 Mk95 installed on all but *Wichita*. ES upgraded to 2nd Gen, ECM upgraded to 2nd Gen J&D. SPS-10 replaced by SPS-64, SPS-67(V)1. Mk23 TAS installed on *Wabash, Kalamazoo*. Combat system Gen 4 Semi-Automatic.
- 1990: 2nd Gen towed acoustic countermeasures added.
- Decommed: *Wichita* 1993; *Milwaukee, Kansas City, Wabash* 1994; *Savannah, Roanoke* 1995; *Kalamazoo* 1996.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	101	202	303	364	404
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Barrett**

**T-AP**

**Displacement:** 17600 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar

**In class:** [1]  
**In Service:** 1951 - 90  
**Crew:** 219 + 2000  
**Armor Rating:** 0

**Remarks:**  
 Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier  
 • 1973: Converted to a training ship for State University of New York maritime College, renamed *Empire State VI*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	72	145	217	260	289
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**General G.O. Squier**

**T-AP**

**Displacement:** 10034 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar

**In class:** [2]  
**In Service:** 1950 (1945) - 67  
**Crew:** 356 + 3000  
**Armor Rating:** 0

**Remarks:**  
 Two units of class, *General LeRoy Eltinge, General R. M. Blatchford*, acquired by MSTs Aug 50. Civilian construction, -50% damage modifier. Single prop, double the speed reduction of Engineering critical hits.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	74	149	223	267	297
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**General John Pope**

**T-AP**

**Displacement:** 11828 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar

**In class:** [11]  
**In Service:** 1949 (1944) - 70s  
**Crew:** 476 + 5500  
**Armor Rating:** 0

**Remarks:**  
 P2-S2-R2. Eleven built, five transferred to US Navy after WW II and transferred to MSTs in 1949. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	83	166	249	299	332
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**General Daniel L. Sultan**

**T-AP**

**Displacement:** 9676 std  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic x-band nav radar

**In class:** [7]  
**In Service:** 1950 (1944) - 70s  
**Crew:** 367 + 4680  
**Armor Rating:** 0

**Remarks:**  
 Seven unnamed Army transports decommissioned and taken over by the US Navy and transferred to the MSTs in 1950. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	49	97	146	175	194
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Paul Revere**

**APA**

**Displacement:** 10709 lt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 PA/SA/PQ/SQ(2)4 Mk33 3in/50//4 Mk34 (1.8)  
 Aft Pad (1)1 CH-46 Sea Knight

**In class:** [2]  
**In Service:** 1958-80  
**Crew:** 539 + 2078  
**Armor Rating:** 0  
**Cbt Sys:** Gen 2 Manual

**Remarks:**

6 LCM(6), 5 LCPL, 10 LCVP

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**Sensors:**SPS-10, SPS-6 (*Paul Revere*)

J

SPS-10, SPS-40 (*Francis Marion*)

J

**Remarks:**

*Paul Revere, Francis Marion.* Converted from C4-S-1A cargo vessels, Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

- 1 Jan 69: Re-designated LPA.

- 1970s: Two Mk33 and all Mk34 radars removed, remaining two Mk33 fire in local control. AA rating 0.3L.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	56	113	169	203	225
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Haskell**

APA

**Displacement:** 6750 lt**In class:** [177]**Size Class:** B/Medium**In Service:** 1944 - 60s**Propulsion:** Steam Turbine**Crew:** 536 + 1560**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

F(4)1 Mk2 40mm/60 &amp;

PW/SW/PA/SA(2)4 Mk1 40mm/60 (1.0L)

C

2 LCM(6), 12 LCVP, 3 LCPU

--

**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Victory ship hull. About fifty remained in service in the mid-1950s. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. Originally fitted with F(1)1 Mk30 5in/38, 20mm, removed in the early 1950s.

- 1 Jan 1969: Re-designated LPA.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	83	124	149	165
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Bayfield**

APA

**Displacement:** 8100 lt**In class:** [34]**Size Class:** B/Medium**In Service:** 1943 - 69**Propulsion:** Steam Turbine**Crew:** 575 + 1226**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

A(2)2 Mk1 40mm/60 (0.5L)

C

**Sensors:**

Generic x-band nav radar

J

**Remarks:**

About six remained in service in the mid-1950s. Civilian construction, -50% damage modifier. Single prop, double the speed reduction of Engineering critical hits. Originally fitted with F/A(1)3 Mk30 5in/38, 20mm, removed in the early 1950s.

- 1 Jan 1969: Re-designated LPA.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	47	94	140	168	187
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Crosley**

APD

**Displacement:** 1450 std**In class:** [51]**Size Class:** D/Small**In Service:** 1944 - 70**Propulsion:** Steam Turbine**Crew:** 207 + 160**Signature:** Small/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

F(1)1 Mk30 5in/38/Mk52 (1.0)

C

4 LCVP

--

**Sensors:**

SPS-5

J

**Remarks:**

About ten remain in service in the mid-1950s. *Rudderow* class DE converted to APD during construction.

- 1 Jan 1969: Designation changed to LPR.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	27	55	82	98	109
<b>Surf Speed:</b>	23	17	12	6	0	Sinks

**Bolster**

ARS

**Displacement:** 1530 std**In Class:** [22]**Size Class:** C/Small**In Service:** 1944**Propulsion:** Diesel**Crew:** 103**Signature:** Small/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** --

P/S(1)2 Mk10 20mm (0.1L)

C

**Sensors:****ES:** 2nd Gen

SPS-10 or SPS-53, SPS-59/LN-66

J

**Remarks:**

About six remain in service in mid-1950s. Four units transferred to NRF. 2 converted to oceanographic ships, 3 transferred to Coast Guard.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	21	43	64	77	85
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Safeguard**

ARS

**Displacement:** 2725 ltshp**In Class:** [4]**Size Class:** C/Small**In Service:** 1985 - 07**Propulsion:** Diesel**Crew:** 87**Signature:** Small/Noisy**Armor Rating:** 0**Sensors:****ES:** 2nd Gen

SPS-64, SPS-69

J

**Remarks:***Safeguard, Grasp, Salvor, Grapple.*

- Transferred to MSC 2006 - 07.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	34	68	101	122	135
<b>Surf Speed:</b>	14	10	7	4	0	Sinks

**Hunley**

AS

**Displacement:** 19000**In Class:** [2]**Size Class:** B/Medium**In Service:** 1961 - 94**Propulsion:** Diesel-Electric**Crew:** 650 + 550**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

P/S(2)2 Mk33 3in/50//2 Mk34 (0.9)

C

**Sensors:**

SPS-10, SPS-59/LN-66

J

**Remarks:**

*Hunley, Holland.* Built to service Polaris missile subs. Helo pad aft. Auxiliary, -25% damage modifier

- ? : Three inch guns replaced by PW/SW/PA/SA(1)4 Mk67 20mm (0.1L).

- By 1980: disarmed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	114	228	341	410	455
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Fulton**

AS

**Displacement:** 9734 std**In Class:** [7]**Size Class:** B/Medium**In Service:** 1941 - 92**Propulsion:** Diesel**Crew:** 1300**Signature:** Med/Noisy**Armor Rating:** 0**Weapons:****Cbt Sys:** Gen 2 Manual

F/A(1)4 Mk30 5in/38/Mk25 (3.9)

C

PW/SW/PA/SA/A(2)5 40mm/60 (0.8L)

C

**Sensors:**

SPS-10, SPS-59/LN-66 (est)

**Remarks:**

*Fulton, Sperry, Bushnell, Howard W. Gilmore, Nereus, Orion, Proteus.* Built with twenty 20mm, removed postwar. 40mm arcs estimated. Auxiliary, -25% damage modifier.

- 1959 - 61: Class modernized to support ballistic missile subs. Displacement 10234 std. Forward 5 inch guns removed, AA rating 2.0.

*Bushnell, Nereus* only have F(1)1 5in/38, AA rating 1.0. PW/SW/PA/SA(1)4 Mk67 20mm (0.1L) added. Helo pad aft.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	73	146	219	263	292
<b>Dam Pts ('60s):</b>	0	75	151	226	271	301
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Barnegat**

**Displacement:** 1766 std  
**In class:** [5]  
**Size Class:** C/Small  
**In Service:** 1943 - 72  
**Propulsion:** Diesel  
**Crew:** 215  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 F(4)1 Mk2 40mm/60 & P/S(2)2 Mk1 40mm/60 (0.8L)  
**Sensors:**  
 SPS-10  
**Remarks:**

*Duxbury Bay, Greenwich Bay, and Valcour* served as flagships for the Middle East Force/Persian Gulf Command, on a rotating basis from 1949 until 1965. Auxiliary, -25% damage modifier.  
 • 1962: *Valcour*; SA radar replaced by SPS-12, Mk2 40mm removed.  
 • Dec 1965 - Jul 1972: *Valcour* redesignated as AGF-1, served as permanent command ship.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	23	47	70	84	93
<b>Surf Speed:</b>	18	12	8	4	0	Sinks

**Guardian**

**Displacement:** 3600 std  
**In Class:** [16]  
**Size Class:** C/Small  
**In Service:** 1957 - 65  
**Propulsion:** Steam Turbine  
**Crew:** 151  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 2 Manual  
 PW/SW(2)2 Mk33 3in/50//Mk56 (0.9)  
**Sensors:**  
 SPS-8, SPS-12, SPS-17A  
**Remarks:**

WW II conversions of Liberty ships to YAGR. Part of the Continental Air Defense. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	25	50	75	90	100
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**US COAST GUARD**

**Berthoff**

**Displacement:** 4600 fl  
**In Class:** 8 + 3  
**Size Class:** C/Small  
**In Service:** 2008  
**Propulsion:** CODOG/ CPP  
**Crew:** 113  
**Electrn Cnt:** 4th Gen J&D  
**Acoustic Cnt:** None  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 5 Automatic

F(1)1 Mk110 57mm//SPQ-9B (2.7)  
 A(R)1 Mk15 Phalanx Blk IA (7.6A)  
 PW/SW/PA/SA(1)4 M2 .50 cal. (0.1L)  
 P/S(1)2 M240B 7.62mm (0.1L)  
 Aft Pad(1)2 MH-65C Dolphin or MH-60T  
**Sensors:**  
 SPS-73, SPS-75, SPQ-9B  
 SPS-79 (use Generic x-band nav radar)  
 4th Gen FLIR  
**Remarks:**

*Berthoff, Watsche, Stratton, Hamilton, James, Munro, Kimball, Midgett, Stone.* National Security Cutter or Legend class. Coast Guard Maritime Security Cutter, Large. Replaces *Hamilton* class. Stern ramp for launching/recovering RHIB. Carries Nulka 4th Gen countermeasure. Fitted with degaussing.  
 • 2019: Fitted for Scan Eagle UAV. Can carry 1 helicopter and 2 Scan Eagle.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	45	90	135	162	180
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Hamilton (378')**

**Displacement:** 2716 std  
**In Class:** 12 - 9  
**Size Class:** C/Small  
**In Service:** 1967  
**Propulsion:** CODOG/ CPP  
**Crew:** 155  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 3 Semi-Automatic  
 F(1)1 Mk30 5in/38//Mk56 (1.0)  
 P/S(1)2 Mk10 20mm (0.2L)  
 PB/SB(3)2 Mk32 324mm TT w/3 Mk46 top  
 PB&SB(2)2 Mk10 Hedgehog  
 Aft Pad (1)1 HH-52  
**Sensors:**  
 2 SPS-51, SPS-29  
 SQS-36  
**Remarks:**

Aluminum superstructure, -15% damage modifier.  
 • Early 70s: Hedgehog removed, SQS-38 replaced SQS-36, PB/SB(1)2 Mk2 81mm Mortar, PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L) added.  
 • Oct 85 - Oct 92: FRAM adding 2nd Gen D ECM, A(R)1 Mk15 Phalanx (4.4A), Mk30 5in replaced by F(1)1 Mk75 76mm/62//Mk92, Radar fit changed to SPS-40 and two SPS-64. Flight deck upgraded for H-60 Jay Hawk. Five fitted with P/S(4) Mk141 w/4 Harpoon IC, including *Mellon*.  
 • 1993-94: Harpoon, SQS-38 and 324mm TT removed.  
 • 1995-96: Fitted with SCCS, combat system Gen 4 Semi-Automatic.  
 • 1997-99: Fitted with SPS-73 replacing two SPS-64.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	35	71	106	127	141
<b>Surf Speed:</b>	29	22	15	7	0	Sinks

**Famous**

**Displacement:** 1200 lt  
**In Class:** 13  
**Size Class:** D/Small  
**In Service:** 1983  
**Propulsion:** Diesel  
**Crew:** 116+24  
**Electrn Cnt:** 2nd Gen D  
**Acoustic Cnt:** None  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 4 Semi-Automatic  
 F(1)1 Mk75 76mm/62//Mk92 (4.5)  
 P/S(1)2 Mk95 .50 cal. (0.1L)  
 Aft Pad(1)1 JJ-65 Dolphin  
**Sensors:**  
 2 SPS-64  
**Remarks:**

Fitted with fin stabilizers. Lively in heavy seas, subtract 1 on the Safe Sea State Table when operating helicopters.  
 • 1997-99: Fitted with SPS-73 replacing both SPS-64.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	26	52	78	94	104
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Heritage**

**Displacement:** 3730 fl  
**In Class:** 0 + 1 + 10  
**Size Class:** C/Small  
**In Service:** 2021  
**Propulsion:** Diesel/ CPP  
**Crew:** 126  
**Electrn Cnt:** 4th Gen J&D  
**Acoustic Cnt:** --  
**Signature:** Small/Noisy  
**Armor Rating:** 0  
**Weapons:**  
**Cbt Sys:** Gen 5 Automatic  
 F(1)1 Mk 110 57mm/70 //SPS-77 & EO (0.7)  
 A(1)1 Mk38 Mod 2 25mm//EO GFC (0.3)  
 P/S(1)2 ROSAM .50 cal//2 EO GFC  
 PW/SW/P/S(1)4 .50 cal (0.1L)  
 Aft Pad(1)1 MH-60T, UAV  
**Sensors:**  
 SPS-77, 2 Generic x-band, s-band nav radars  
 4th Gen FLIR  
**Remarks:**

**Remarks:**

*Argus, Chase, Ingham, Rush, Pickering, Icarus, Active, Diligence, Alert, Vigilant, Reliance.* Offshore patrol cutter or Medium Maritime Security Cutter (WMSM). Fitted with fin stabilizers. 11 planned, possibly up to 25. Ballistic protection for some spaces, Estimated armor 2 for bridge and 57mm.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	46	92	138	166	184
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Ex-USN Casco (311')****Displacement:** 1766 std**Size Class:** C/Small**Propulsion:** Diesel**Signature:** Small/Noisy**Weapons:**

F(1)1 Mk30 5in/38//Mk26 (1.0)

P/S(2)2 Mk1 40mm/60 (0.3L)

PB&amp;SB(24)1 Mk10 Hedgehog w/5 salvoes

(1)4 Mk6 DC proj w/4 Mk14 DC

**Sensors:**

SPS-29, SPS-23

SQS-1

**Remarks:**

- Mid 60s: 40mm guns removed, add PB/SB(1)2 Mk2 81mm Mortar, PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L).
- 1964: Mk6 DC projectors removed, PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp added.
- Early 70s: ASW systems removed.
- Only one left in 1975 as training ship.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	31	62	93	112	124
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Campbell (327') (1947)****Displacement:** 2216 std**Size Class:** C/Small**Propulsion:** Steam Turbine**Signature:** Small/Noisy**Weapons:**

F(1)1 Mk30 5in/38//Mk26 (1.0)

F(2)1 Mk1 40mm/60 (0.3L)

PB&amp;SB(24)1 Mk10 Hedgehog

(1)4 Mk6 DC proj w/4 Mk14 DC

**Sensors:**

SPS-29, SPS-23

SQS-11

**Remarks:**

Configuration as of 1947.

- Mid 60s: 40mm guns removed, add PB/SB(1)2 Mk2 81mm Mortar, PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L).
- 1964: Mk6 DC proj replaced by PB/SB(3)2 Mk32 324mm TT w/ 3 Mk44 torp.
- Early 70s: ASW systems removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	36	73	109	131	145
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Owasco (255')****Displacement:** 1563 std**Size Class:** C/Small**Propulsion:** Steam Turbine**Signature:** Small/Noisy**Weapons:**

F(1)1 Mk30 5in/38//Mk26 (1.0)

F(4)1 Mk2 40mm/60 (0.5L)

PB&amp;SB(24)1 Mk10 Hedgehog

(1)4 Mk6 DC proj w/4 Mk14 DC

**Sensors:**

SPS-29, SPS-23

**WAVP****In Class:** [18]**In Service:** 1946 - 75**Crew:** 132**Armor Rating:** 0**Cbt Sys:** Gen 2 Manual

C

C

E

E

J

K

**WPG****In Class:** [7]**In Service:** 1947 (1937) - 82**Crew:** 128**Armor Rating:** 0**Cbt Sys:** Gen 2 Manual

C

C

E

E

J

K

**WPG****In Class:** 13**In Service:** 1945-1974**Crew:** 139**Armor Rating:** 0**Cbt Sys:** Gen 2 Manual

C

C

E

E

J

SQS-1

K

**Remarks:**

- Mid 60s: 40mm guns removed, add PB/SB(1)2 Mk2 81mm mortar, PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L).
- 1964: Mk6 DC proj replaced by PB/SB(3)2 Mk32 324mm TT w/3 Mk44 torp.
- Early 70s: ASW systems removed.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	29	58	86	104	115
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Reliance (210')****Displacement:** 950 std**Size Class:** D/Small**Propulsion:** CODAG**Signature:** Small/Noisy**Weapons:**

F(1)1 Mk22 3in/50 (0.3L)

P/S(1)2 M2 .50 cal (0.1L)

**Sensors:**

SPS-23

**Remarks:**

- 615-619 are CODAG, the rest. of class is diesel only. Aft pad, no hangar. Aluminum construction, -25% damage modifier.
- 1984 - 98: Modernized with F(1)1 Bushmaster 25mm replacing Mk22, SCCS - Cbt Sys: Gen 4 Semi-Automatic. Estimated SPS-64 replaces SPS-23.
- 1997-99: Fitted with SPS-73 replacing two SPS-64.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	16	31	47	56	62
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Argo class (165')****Displacement:** 337 std**Size Class:** E/VSmall**Propulsion:** Diesel**Signature:** VSmall/Noisy**Weapons:**

F(1)1 Mk22 3in/50 (0.3L)

**Sensors:**

SPS-23

QCU

**Remarks:**

Designed to combat rumrunners during Prohibition.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	10	21	31	37	41
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**Active (125')****Displacement:** 220 std**Size Class:** E/VSmall**Propulsion:** Diesel**Signature:** VSmall/Noisy**Weapons:**

F(1)1 Mk3 40mm/60 (0.1L)

**Sensors:**

SPS-23

**Remarks:**

Designed to combat rumrunners during Prohibition.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	8	16	23	28	31
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**Storis (230')****Displacement:** 1715 std**Size Class:** C/Small**Propulsion:** Diesel**Signature:** Small/Noisy**Weapons:****In Class:** 16 - 2**In Service:** 1964**Crew:** 70**Armor Rating:** 0**Cbt Sys:** Gen 3 Semi-Automatic**WPC**

C

C

J

J

**WPC****In Class:** [6]**In Service:** 1931-1968**Crew:** 55**Armor Rating:** 0**Cbt Sys:** Gen 1 Manual

C

J

K

**WSC****In Class:** [18]**In Service:** 1927-1970**Crew:** 28**Armor Rating:** 0**Cbt Sys:** Gen 1 Manual

C

J

**WAG****In Class:** [1]**In Service:** 1942 - 2007**Crew:** 106**Armor Rating:** 0**Cbt Sys:** Gen 1 Manual

A(1)1 Mk22 3in/50 (0.1L) **C**  
 P/S(1)2 M2 .50 cal. (0.1L) **C**  
Sensors:  
 SPS-23 **J**

Remarks:  
 Light Icebreaker hull.  
 • ? : SPS-23 replaced by SPS-64, Mk22 3in/50 replaced by Mk38 Bushmaster 25mm.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	31	61	92	110	122
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**Cherokee/Navajo class** **WMEC**

**Displacement:** 1731 std **In Class:** [6]  
**Size Class:** C/Small **In Service:** 1940 - 1994?  
**Propulsion:** Diesel **Crew:** 72  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** Gen 1 Manual

F(1)1 Mk22 3in/50 (0.1L) **C**  
 P/S(1)2 M2 .50 cal. (0.1L) **C**  
Sensors:  
 Generic x-band nav radar **J**

Remarks:  
 Steel-hulled tugs.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	31	62	92	111	123
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Island class (110')** **WPB**

**Displacement:** 168 **In Class:** 49 - 12  
**Size Class:** E/VSmall **In Service:** 1985  
**Propulsion:** Diesel **Crew:** 16  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F(1)1 Mk38 Bushmaster 25mm **C**  
 PA/SA(1)2 Mk95 .50 cal. (0.1L) **C**  
Sensors:  
 SPS-73 **J**

Remarks:  
 Replacement for Cape class.  
 • 2002 - 05: Modified to make room for stern launch ramp and mixed-gender berthing. Program stopped after eight ships because of structural problems. All eight decommed Nov 06.  
 • 2015 - 17: Three decommed units purchased by the Sea Shepherd Conservation Society.  
 • 2016: Two units transferred to the Pakistani Maritime security agency.  
 • Sep 16: Two units transferred to the Georgian Coast Guard.  
 • 2017: Two transferred to the Costa Rica Coast Guard.  
 • Oct 19: Two transferred to the Ukraine Navy.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	5	10	14	17	19
<b>Surf Speed:</b>	29	22	15	7	0	Sinks

**Cape Class (95') A-type** **WPB**

**Displacement:** 102 fl **In Class:** [26]  
**Size Class:** F/VSmall **In Service:** 1953 - 90s  
**Propulsion:** Diesel **Crew:** 14  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F/A(2)2 Mk16 20mm (0.7L) **C**  
 P/S(1)2 M2 .50 cal. (0.1L) **C**  
 F(4)2 Mk20 Mousetrap **E**  
 1 Mk14 DC rail w/6 Mk14 DC **E**

Sensors:  
 CR-103 **J**  
Remarks:  
 Aluminum superstructure, -15% damage modifier.  
 • 1964: Named.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	4	7	11	13	14
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Cape Class (95') B-type** **WPB**

**Displacement:** 105 fl **In Class:** [26]  
**Size Class:** F/VSmall **In Service:** 1953 - 90s  
**Propulsion:** Diesel **Crew:** 14  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F(1)1 Mk3 40mm/60 (0.1L) **C**  
 P/S(1)2 M2 .50 cal. (0.1L) **C**  
 F(4)2 Mk20 Mousetrap **E**  
 1 Mk14 DC rail w/6 Mk14 DC **E**

Sensors:  
 CR-103 **J**  
Remarks:  
 Aluminum superstructure, -15% damage modifier.

• 1964: Named.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	4	7	11	13	14
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Cape Class (95') C-type** **WPB**

**Displacement:** 98 fl **In Class:** [26]  
**Size Class:** F/VSmall **In Service:** 1953 - 90s  
**Propulsion:** Diesel **Crew:** 14  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F/A(1)2 Mk3 40mm/60 (0.3L) **C**  
Sensors:  
 CR-103 **J**

Remarks:  
 Aluminum superstructure, -15% damage modifier.  
 • 1964: Named.  
 • 1987 2 Mk64 grenade launchers.

Damage & Speed Breakdown:

<b>Dam Pts:</b>	0	4	7	11	13	14
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Point Class (82')** **WPB**

**Displacement:** 69 std **In Class:** [53]  
**Size Class:** F/VSmall **In Service:** 1960 - 2003  
**Propulsion:** Diesel **Crew:** 10  
**Signature:** VSmall/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F(1)1 Mk16 20mm (0.2L) **C**  
Sensors:  
 CR-103, SPS-53 in 1967 **J**

Remarks:  
 • Mid-60s: F(2)1 Mk2 Mod 1 81mm mortar/M2 .50 cal (piggyback) P/S/PQ/SQ(1)4 M2 .50 cal. (0.1L).  
 • Early 70s: F(2)1 Mk2 Mod 1 81mm mortar/M2 .50 cal (piggyback) or PB/SB(1)2 M2 .50 cal. (0.1L).

Damage & Speed Breakdown:

<b>Dam Pts:</b>	--	--	--	--	--	14
<b>Surf Speed:</b>	23	17	12	6	0	Sinks

**Sentinel Class (154')** **WPC**

**Displacement:** 353 std **In Class:** 34 +  
**Size Class:** D/Small **In Service:** 2012  
**Propulsion:** Diesel **Crew:** 24  
**Signature:** Small/Noisy **Armor Rating:** 0  
**Weapons:** **Cbt Sys:** --

F(1)1 Mk38 Mod 2 25mm//EO GFC **C**  
 PW/SW/PA/SA(1)4 M2 .50 cal. (0.1L) **C**  
Sensors:  
 SPS-78 **J**



**Remarks:**

Fast Response Cutter program, replacement for Island class. Bow thruster. Fitted with stabilizers. Stern launching ramp. Endurance 5 days. Up to 58 may be built.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	11	22	32	39	43
<b>Surf Speed:</b>	28	21	14	7	0	Sinks

**Tanager**

WTR

**Displacement:** 890 std

**In Class:** [1]

**Size Class:** D/Small

**In Service:** 1964 (1945) - 72

**Propulsion:** Diesel

**Crew:** 50 + 80 trainees

**Signature:** Small/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 2 Manual

F(1)1 Mk26 3in/50 (0.5)

PB&SB(24)1 Mk11 Hedgehog

C

**Sensors:**

SPS-23

E

SQS-1

J

K

**Remarks:**

Ex-USN Auk-class fleet minesweeper. To Coast Guard as training ship 1964.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	15	30	44	53	59
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Glacier**

WAGB

**Displacement:** 8449 std

**In Class:** [1]

**Size Class:** B/Medium

**In Service:** 1955 - 87

**Propulsion:** Diesel

**Crew:** 241

**Signature:** Medium/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 2 Manual

F(2)1 Mk38 5in/38//? (2.0)

F/P/S(2)3 Mk33 3in/50//? (1.8)

P/S(2)2 Mk24 20mm (0.3L)

C

C

C

**Sensors:**

SPS-6, SPS-10, SPS-46

J

**Remarks:**

Transferred from USN in 1966. Helo pad aft.

• 1966: 3 inch and 20mm guns removed. Add PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	89	177	266	319	354
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Wind class**

WAGB

**Displacement:** 3500 std

**In Class:** [7]

**Size Class:** C/Small

**In Service:** 1944 - 70s

**Propulsion:** Diesel- Electric

**Crew:** 216

**Signature:** Small/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 1 Manual

PB/SB/PQ/SQ(1)4 M2 .50 cal. (0.1L)

1 J2F Duck

--

B

**Sensors:**

SPS-6, SPS-10, SPS-53

J

**Remarks:**

Helicopter pad aft.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	49	98	147	176	196
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Balsam (180')**

WLB

**Displacement:** 935 std

**In Class:** [35]

**Size Class:** D/Small

**In Service:** 1942 - 2006

**Propulsion:** Diesel

**Crew:** 53

**Signature:** Small/Noisy

**Armor Rating:** 0

**Weapons:**

**Cbt Sys:** Gen 1 Manual

A(1)1 Mk22 3in/50 (0.1L)

C

**Sensors:**

SPS-23

J

**Remarks:**

Ships in Vietnam had no Mk22, added 2F/P/S/A(1)5 M2 .50 cal (0.1L).

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	20	41	61	73	81
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**MARITIME PREPOSITIONING SHIPS**

**Mohegan**

AK

**Displacement:** 11245 fl

**In Class:** 1

**Size Class:** B/Medium

**In Service:** 2008 (1994)

**Propulsion:** ?

**Crew:** 14

**Signature:** Medium/Noisy

**Armor Rating:** 0

**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

Chartered. Dry cargo. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	48	96	144	173	192
<b>Surf Speed:</b>	13	10	7	3	0	Sinks

**Wheat**

AK

**Displacement:** 57075 grt

**In Class:** 1

**Size Class:** A/Large

**In Service:** 2002 (1987)

**Propulsion:** Gas Turbine

**Crew:** 43

**Signature:** Large/Noisy

**Armor Rating:** 0

**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

LCpl Roy M. Wheat. Chartered. Built in Ukraine. Considered difficult to maintain. Aft helo pad. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	131	262	392	471	523
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Martin**

AK

**Displacement:** 39441 grt

**In Class:** 1

**Size Class:** A/Large

**In Service:** 2000 (1979)

**Propulsion:** Diesel

**Crew:** 24

**Signature:** Large/Noisy

**Armor Rating:** 0

**Sensors:**

Generic x-band nav radar

J

**Remarks:**

1st Lt. Harry L. Martin. Chartered. Carries vehicles and ammunition. Aft helo pad. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	102	204	306	368	408
<b>Surf Speed:</b>	21	16	11	5	0	Sinks

**Bobo**

AK

**Displacement:** 19588 lt

**In Class:** 5

**Size Class:** A/Large

**In Service:** 1985

**Propulsion:** Diesel

**Crew:** 37 + 102

**Signature:** Large/Noisy

**Armor Rating:** 0

**Sensors:**

Generic x-band nav radar

J

**Remarks:**

2nd Lt. John P. Bodo, Pfc Dewayne T. Williams, 1st Lt Baldomero Lopez, 1st Lt Jack Lummus, Sgt William R. Button. Chartered. Carries vehicles and equipment. Aft helo pad. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	84	168	252	302	336
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Kocak**

**Displacement:** 19588 t  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy

**In Class:** 3  
**In Service:** 1984  
**Crew:** 118  
**Armor Rating:** 0

**AK**

**Sensors:**

2 Nav radars

**J/Intl**

**Remarks:**

*SGT. Matej Kocak, PFC Eugen A. Obregon, MAJ. Stephn W. Pless.* Chartered. Carries vehicles and equipment (each can carry one quarter USMC MEB equipment). Aft helo pad. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	84	168	252	302	336
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Page**

**Displacement:** 57075 grt  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy

**In Class:** 2  
**In Service:** 2001 (1985)  
**Crew:** 22  
**Armor Rating:** 0

**AKR**

**Sensors:**

Generic x-band nav radar

**J**

**Remarks:**

*LTC John U. D. Page, SGT Edward A. Carter Jr.* Chartered. Carry Army ammunition in 2500 TEU. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	131	261	392	470	522
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Bennett**

**Displacement:** 29223 grt  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy

**In Class:** 1  
**In Service:** 1998 (1984)  
**Crew:** 24  
**Armor Rating:** 0

**AKR**

**Sensors:**

Generic x-band nav radar

**J**

**Remarks:**

*Capt. Steven L. Bennett.* Chartered. Carry USAF ammunition in 1922 TEU. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	84	167	251	301	334
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**American Cormorant**

**Displacement:** 10195 gwt  
**Size Class:** B/Medium  
**Propulsion:** Diesel  
**Signature:** Med/Noisy

**In Class:** 1  
**In Service:** 1975  
**Crew:** ?  
**Armor Rating:** 0

**AK**

**Sensors:**

Generic x-band, sband nav radars

**J**

**Remarks:**

FO/FO cargo ship. Single prop, double the speed reduction of Engineering critical hits.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	41	83	124	149	165
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Meteor**

**Displacement:** 16467 gwt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy

**In Class:** 1  
**In Service:** 1967  
**Crew:** ?  
**Armor Rating:** 0

**WAK**

**Sensors:**

Raytheon 1650, Raytheon 1660 (Raytheon R series)

**J**

**Remarks:**

C4-ST-67A class. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	57	114	171	205	228
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Comet**

**Displacement:** 13792 gwt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy

**In Class:** 1  
**In Service:** 1958  
**Crew:** 44  
**Armor Rating:** 0

**WAK**

**Sensors:**

Raytheon 1650, Raytheon 1660 (Raytheon R series)

**J**

**Remarks:**

C3-ST-14A class. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	51	101	152	182	202
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Cape Banker**

**Displacement:** 6400 gwt  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Signature:** Small/Noisy

**In Class:** 5  
**In Service:** 196x  
**Crew:** 45  
**Armor Rating:** 0

**WAK**

**Sensors:**

2 Nav radar

**J/Intl**

**Remarks:**

C3-S-37d break-bulk cargo ships. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	30	61	91	109	121
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

**Cape Carthage**

**Displacement:** 6595 gwt  
**Size Class:** C/Small  
**Propulsion:** Steam Turbine  
**Signature:** Small/Noisy

**In Class:** 3  
**In Service:** 1962  
**Crew:** 40  
**Armor Rating:** 0

**WAK**

**Sensors:**

Generic x-band nav radar

**J**

**Remarks:**

C3-S-37c break-bulk cargo ships. Three holds. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	31	62	93	112	124
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Cape Commander**

**Displacement:** 8151 gwt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy

**In Class:** 3  
**In Service:** 1962  
**Crew:** 43  
**Armor Rating:** 0

**WAK**

**Sensors:**

Generic x-band nav radar

**J**

**Remarks:**

C4-S-57a break-bulk cargo ships. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	36	72	107	129	143
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Potomac**

**Displacement:** 15739 gwt  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy

**In Class:** 1  
**In Service:** 1964  
**Crew:** 30  
**Armor Rating:** 0

**WAOT**

**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Single prop, double the speed reduction of Engineering critical hits. Carries 200000 barrels of fuel. Part of Afloat Prepositioning Force. Chartered 1964 for the MSC and named *Shenandoah*. Placed in reserve 1978. Trials ship for Offshore Product Discharge System (OPDS) 1985 to 1986. Reactivated for Desert Shield/Desert Storm. Civilian construction, -50% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	55	111	166	199	221
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Military Sealift Command Charters****MT Empire State**

T-AOT

**Displacement:** 49000 grt**In Class:** 2**Size Class:** A/Large**In Service:** 2010 - 15?**Propulsion:** Diesel**Crew:** 21**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

Generic x-band nav radar

J

**Remarks:**

*Empire State, Evergreen State*. Ice-strengthened hull. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	118	236	353	424	471
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**MT Maersk Peary**

T-AOT 5246

**Displacement:** 47876 grt**In Class:** 1**Size Class:** A/Large**In Service:** 2011**Propulsion:** Diesel**Crew:** 21**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Tanker chartered by MSC in 2011. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	116	232	348	418	464
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**MT SLNC Pax**

T-AOT 5356

**Displacement:** 62174 grt**In Class:** 1**Size Class:** A/Large**In Service:** ?**Propulsion:** Diesel**Crew:** 16**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Tanker chartered by MSC. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	138	277	415	498	553
<b>Surf Speed:</b>	15	8	8	4	0	Sinks

**MT SLNC Goodwill**

T-AOT 5419

**Displacement:** 62174 grt**In Class:** 1**Size Class:** A/Large**In Service:** 2016 (?)**Propulsion:** Diesel**Crew:** 22**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Tanker chartered by MSC in 2016. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	138	277	415	498	553
<b>Surf Speed:</b>	15	8	8	4	0	Sinks

**ATB Galveston  
/Petrochem Producer**

T-AOT 5406

**Displacement:** 26884 grt**In Class:** 1**Size Class:** A/Large**In Service:** 2016 (?)**Propulsion:** ?**Crew:** ?**Signature:** A/Large**Armor Rating:** 0**Sensors:**

Generic x-band nav radar

J

**Remarks:**

Tanker chartered by MSC in 2016. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	79	158	237	284	316
<b>Surf Speed:</b>	14	11	7	4	0	Sinks

**Ready Reserve Force****Cape D Class**

Ro-Ro

**Displacement:** 13220 ltshp**In Class:** 5**Size Class:** B/Medium**In Service:** 1973**Propulsion:** Diesel**Crew:** 29**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Raytheon radars

J/Intl

**Remarks:**

*Cape Decision, Cape Diamond, Cape Domingo, Cape Douglas, Cape Ducato*. Civilian construction, -50% damage modifier. 167,339 ft<sup>2</sup> cargo capacity, 378 TEU. Fuel consumption 600 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	48	97	145	174	193
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Cape E Class**

Ro-Ro

**Displacement:** 12533 ltshp**In Class:** 1**Size Class:** B/Medium**In Service:** 1987 (1972)**Propulsion:** Diesel**Crew:** 28**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Edmont*. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 161,352 ft<sup>2</sup> cargo capacity, 446 TEU. Fuel consumption 600 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	63	125	188	225	250
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Cape H Class**

Ro-Ro

**Displacement:** 15000 ltshp**In Class:** 3**Size Class:** B/Medium**In Service:** 1986 (1979)**Propulsion:** Diesel**Crew:** 29**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Henry, Cape Horn, Cape Hudson*. Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 214,365 ft<sup>2</sup> cargo capacity, 446 TEU. Fuel consumption 630 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	70	141	211	253	281
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Cape I Class**

Ro-Ro

**Displacement:** 15000 ltshp**In Class:** 4**Size Class:** B/Medium**In Service:** 1976**Propulsion:** Steam Turbine**Crew:** 25**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Raytheon radars

J/Intl

**Remarks:**

*Cape Inscription, Cape Intrepid, Cape Isabel, Cape Island.* Civilian construction, -50% damage modifier. 149,088 ft<sup>2</sup> cargo capacity. Fuel consumption 1225 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	70	141	211	253	281
<b>Surf Speed:</b>	23	17	12	6	0	Sinks

**Cape K Class****Displacement:** 15723 ltshp**In Class:** 2**Size Class:** B/Medium**In Service:** 1979**Propulsion:** Diesel**Crew:** 27**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Kennedy, Cape Knox.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 146,895 ft<sup>2</sup> cargo capacity. Fuel consumption 570 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	73	145	218	261	290
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Cape L Class****Displacement:** 12000 ltshp**In Class:** 2**Size Class:** B/Medium**In Service:** 1987 (1972) - 06**Propulsion:** Diesel**Crew:** 30**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Lambert (ex-MV Avon Forest), Cape Lobos (ex-MV Laurentian Forest).* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

- 31 Jul 06: Transferred to reserve.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	61	121	182	218	242
<b>Surf Speed:</b>	16	12	8	4	0	Sinks

**Cape O Class****Displacement:** 13166 ltshp**In Class:** 1**Size Class:** B/Medium**In Service:** 1994 (1981)**Propulsion:** Diesel**Crew:** 33**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Orlando.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 118,780 ft<sup>2</sup> cargo capacity. Fuel consumption 480 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	65	129	194	232	258
<b>Surf Speed:</b>	17	13	9	4	0	Sinks

**Cape R Class****Displacement:** 12872 ltshp**In Class:** 3**Size Class:** B/Medium**In Service:** 1994 (1977)**Propulsion:** Diesel**Crew:** 36**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Race, Cape Ray, Cape Rise.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 176,313 ft<sup>2</sup> cargo capacity. Fuel consumption 500 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	63	127	190	228	253
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Cape T Class****Displacement:** 9687 ltshp**In Class:** 3**Size Class:** B/Medium**In Service:** 1994 (1977)**Propulsion:** Diesel**Crew:** 36**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Raytheon radars

J/Intl

**Remarks:**

*Cape Taylor, Cape Texas, Cape Trinity.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. *Cape Trinity* displacement 12,141 t ltshp. 117,887 ft<sup>2</sup> cargo capacity (*Texas, Trinity*), 115,619 ft<sup>2</sup> (*Taylor*). Fuel consumption 401 bbl/day.

**Damage & Speed Breakdown:**

<b>DPTs (Tx, Ty):</b>	0	53	105	158	189	210
<b>DPTs (Tr):</b>	0	61	122	183	220	244
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Cape V Class****Displacement:** 10581 ltshp**In Class:** 2**Size Class:** B/Medium**In Service:** 1994**Propulsion:** Diesel**Crew:** 27**Signature:** Med/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cape Victory, Cape Vincent.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier. 131,265 ft<sup>2</sup> cargo capacity. Fuel consumption 320 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	56	112	167	201	223
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Altair****Displacement:** 28316 ltshp**In Class:** 3**Size Class:** A/Large**In Service:** 1984**Propulsion:** Steam Turbine**Crew:** 62**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Altair (ex-Sea-Land Finance), Antares (ex-Sea-Land Galloway), Pollux (ex-Sea-Land Market).* Built 1973, Avondale conversion to Fast Sealift Ship (FSS) 1984. Civilian construction, -50% damage modifier. 199,362 ft<sup>2</sup> cargo capacity. Fuel consumption 1176 bbl/day for *Altair*, 375 bbls per day for *Antares* and *Pollux*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	108	215	323	387	430
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

**Algol****Displacement:** 29888 ltshp**In Class:** 3**Size Class:** A/Large**In Service:** 1984**Propulsion:** Steam Turbine**Crew:** 62**Signature:** Large/Noisy**Armor Rating:** 0**Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Algol (ex-Sea-Land Exchange), Bellatrix (ex-Sea-Land Trade), Regulus (ex-Sea-Land Commerce).* Built 1973, NASSCO conversion to Fast Sealift Ship (FSS) 1984. Civilian construction, -50% damage modifier. 203,000 ft<sup>2</sup> cargo capacity. Fuel consumption 1176 bbl/day for *Bellatrix*, 535 bbls per day for *Algol* and *Regulus*.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	112	223	335	401	446
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

**Capella**

**Displacement:** 30971 ltshp  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 2  
**In Service:** 1984  
**Crew:** 47  
**Armor Rating:** 0

**Ro-Ro**

J/Intl

**Remarks:**

*Capella (ex-Sea-Land McLean), Denebola (ex-Sea-Land Resource).*  
 Built 1973, Pennship conversion to Fast Sealift Ship (FSS) 1984. Civilian construction, -50% damage modifier. 206,963 ft<sup>2</sup> cargo capacity. Fuel consumption 1190 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	114	228	342	410	456
<b>Surf Speed:</b>	30	23	15	8	0	Sinks

**Admiral W. M. Callaghan**

**Displacement:** 13161 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Gas Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 1  
**In Service:** 1967  
**Crew:** 27  
**Armor Rating:** 0

**Ro-Ro**

J/Intl

**Remarks:**

MSC charter from 1967, then RRF from 1987. Civilian construction, -50% damage modifier. 141,843 ft<sup>2</sup> cargo capacity. Fuel consumption 1260 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	65	129	194	232	258
<b>Surf Speed:</b>	22	17	11	6	0	Sinks

**Cape W Class**

**Displacement:** 21898 ltshp  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Signature:** Large/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 2  
**In Service:** 1994  
**Crew:** 29  
**Armor Rating:** 0

**Ro-Ro**

J/Intl

**Remarks:**

*Cape Washington, Cape Wrath.* Single prop, double the speed reduction of Engineering critical hits. Civilian construction, -50% damage modifier.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	91	181	272	326	362
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Petersburg**

**Displacement:** 14500 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 Generic X-band, S-band nav radars

**In Class:** 1  
**In Service:** 1963  
**Crew:** 41  
**Armor Rating:** 0

**OPDS Tanker**

J/Intl

**Remarks:**

Civilian construction, -50% damage modifier. Offshore Petroleum Discharge System tanker. 268,071 bbls capacity. Fuel consumption 535 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	69	138	206	248	275
<b>Surf Speed:</b>	15	11	8	4	0	Sinks

**Gem State**

**Displacement:** 15325 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 Forward crane, midships crane, aft crane.

**In Class:** 3  
**In Service:** 1965  
**Crew:** 38  
**Armor Rating:** 0

**ACS**

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**Sensors:**

Generic X-band, S-band nav radars

J/Intl

**Remarks:**

*Gem State, Grand Canyon State, Keystone State.* Craneships, T-ACS-1 thru 3. C6-S-MA1qd. Civilian construction, -50% damage modifier. 1,015,000 ft<sup>3</sup> bale capacity, TEU (ammo/non-ammo) 480/584. Fuel consumption 630 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	71	143	214	257	285
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Cornhusker State**

**Displacement:** 13170 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Weapons:**  
 2 Midships cranes

**In Class:** 3  
**In Service:** 1967  
**Crew:** 59  
**Armor Rating:** 0

**ACS****Sensors:**

2 Nav radars

J/Intl

**Remarks:**

*Cornhusker State, Flickertail State, Gopher State.* Craneships, T-ACS-4 thru 6. C5-S-MA73c. Civilian construction, -50% damage modifier. 910,080 ft<sup>3</sup> bale capacity, 711 non-ammo TEU. Fuel consumption 615 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	65	129	194	232	258
<b>Surf Speed:</b>	18	14	9	5	0	Sinks

**Cape F Class**

**Displacement:** 16003 ltshp  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 2  
**In Service:** 1986 (1973)  
**Crew:** 37  
**Armor Rating:** 0

**LASH****Remarks:**

*Cape Farewell, Cape Flattery.* C9-S-81d. Civilian construction, -50% damage modifier. 1,440,000 ft<sup>3</sup> bale capacity, barge complement 85, 1465/1600 ammo/non-ammo TEU, 475/520 ammo/non-ammo FEU. Fuel consumption 1065 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	74	147	221	265	294
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Cape M Class**

**Displacement:** 18880 ltshp  
**Size Class:** A/Large  
**Propulsion:** Steam Turbine  
**Signature:** Large/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 2  
**In Service:** 1986 (1972)  
**Crew:** 34  
**Armor Rating:** 0

**LASH****Remarks:**

*Cape May, Cape Mohican.* C8-S-82a. Single prop, double the speed reduction of Engineering critical hits. Heavy lift barge carrier. Civilian construction, -50% damage modifier. 1,901,359 ft<sup>3</sup> bale capacity, barge complement 24. Fuel consumption 1190 bbl/day.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	82	164	246	295	328
<b>Surf Speed:</b>	19	14	10	5	0	Sinks

**Wright**

**Displacement:** 14329 ltshp  
**Size Class:** B/Medium  
**Propulsion:** Steam Turbine  
**Signature:** Med/Noisy  
**Sensors:**  
 2 Nav radars

**In Class:** 2  
**In Service:** 1986 (1969)  
**Crew:** 41 + 691  
**Armor Rating:** 0

**AVB****Remarks:**

*Wright, Curtiss.* T-AVB-3, 4. Helicopter maintenance support. Helo pads forward and aft. Ro-Ro configuration with Stern ramp. Single prop, double the speed reduction of Engineering critical hits. Civilian

construction, -50% damage modifier. 58,305 ft<sup>2</sup> cargo capacity. Fuel consumption 560 bbl/day.

- Built 1970 as SS *Mormacsun*, a C5-S-78 Ro-Ro design, renamed SS *Young America* (date unknown). Renamed SS *Wright* (T-AVB-3) on 14 May 1986.
- Built 1969 as SS *Great Republic*, renamed USNS *Curtiss* (T-AVB-4) on 14 May 1986.
- 1 Oct 97: Transferred from MSC to RRF.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	68	137	205	246	273
<b>Surf Speed:</b>	23	17	12	6	0	Sinks

**Sea Hunter**

**Displacement:** 102 std  
**Size Class:** E/VSmall  
**Propulsion:** Diesel  
**Signature:** VSmall/Quiet  
**Sensors:**

Furuno FR-2135S, FR-2115 (use Furuno series) **J/Japan**  
 Doppler nav radar (use Generic x-band nav radar) **J/Intl**

**Remarks:**

Trimaran hull. The prototype ACTUV currently doesn't have any acoustic sensors, although the Modular Scalable Sonar System (MS3) hull-mounted sonar is expected to be integrated into the prototype sometime in the near future. Additional sensors also under consideration include EO/IR and LIDAR. GRP construction, -10% damage modifier. Multihull construction, -25% damage modifier. Endurance 60 to 90 days.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	4	7	11	13	12
<b>Surf Speed:</b>	27	20	14	7	0	Sinks

**US Army**

**MSV(L)**

**Displacement:** 120 lt  
**Size Class:** E/VSmall  
**Propulsion:** Diesel waterjet  
**Signature:** VSmall/Noisy  
**Weapons:**

PW/SA(1)2 CROWS II .50 cal mg//2 EO GFC **C**  
 Generic x-band nav radar **J**

**Remarks:**

"Maneuver Support Vessel (Light)." Replacement for LCM(8). Lead vessel named *SSG Elroy F. Wells*. Can carry 1 tank or 2 APC or 82 t cargo. Bow and stern ramps. Range 360 nmi. Amphibious craft, -25% damage modifier. Aluminum construction, -25% damage modifier. Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	2	5	7	8	9
<b>Spd (Loaded):</b>	21	16	11	5	0	Sinks
<b>Spd (Empty):</b>	30	23	15	8	0	Sinks

**LCU-2000**

**Displacement:** 672 lt  
**Size Class:** D/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Sensors:**

2 SPS-64 **J**

**Remarks:**

Bow ramp. Can carry 350 tons cargo or 5 M1 tanks or 24 20-foot ISO containers or 4000 troops. Amphibious craft, -25% damage modifier. Built to commercial standards, -25% damage modifier

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	9	18	26	32	35
<b>Surf Speed:</b>	11	8	6	3	0	Sink

**Patrol USV**

**In Class:** 1  
**In Service:** 2016  
**Crew:** --  
**Armor Rating:** 0  
**ES:** --

**SSG Robert T. Kuroda**

**Displacement:** 2920 std  
**Size Class:** C/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Sensors:**

2 BridgeMaster E (Decca 2000) **J/UK**

**Remarks:**

*SSG Robert T. Kuroda, MG Robert Smalls*. Enhanced LSV design with false bow to improve seakeeping. Ro-Ro design, bow and stern ramps. Can carry 2000 tons cargo or 25 M1 tanks or 50 double-stacked 20-foot ISO containers. Amphibious design, -25% damage modifier. Displacement estimated.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	33	66	98	118	131
<b>Surf Speed:</b>	12	9	6	3	0	Sinks

**General Frank E. Besson, Jr.**

**Displacement:** 1786 std  
**Size Class:** C/Small  
**Propulsion:** Diesel  
**Signature:** Small/Noisy  
**Sensors:**

2 SPS-64 **J**

**Remarks:**

*General Frank E. Besson, Jr., CW3 Harold C. Clinger, General Brehon B. Somervell, Lieutenant General William B. Bunker, Major General Charles P. Gross, SP4 James A. Loux*. Ro-Ro design, bow and stern ramps. Can carry 1815 tons cargo or 25 M1 tanks or 48 double-stacked 20-foot ISO containers. Amphibious design, -25% damage modifier.

- 2009: Fitted with 2 BridgeMaster E (Decca 2000) replacing SPS-64.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	46	91	137	164	182
<b>Surf Speed:</b>	10	8	5	3	0	Sinks

**Special Operations Forces**

**Ocean Trader**

**Displacement:** 20980 grt  
**Size Class:** A/Large  
**Propulsion:** Diesel  
**Electrn Cnt:** ?  
**Signature:** Large/Noisy  
**Weapons:**

4 Combat Craft Assault (CCA) speedboats **A**  
 (1)6 Mk95 Mod 1 .50 cal. **(0.1L)** **C**  
**Sensors:** **ES:** ?  
 Generic x-band nav radar **J**  
 FLIR **--**

**Remarks:**

Ex-m/v *Craigside*. Maersk Ro-Ro ship leased to USN in 2014, converted to SOF mother ship ("Maritime Support Vessel"). Can accommodate 200 troops and 160 vessel and mission support personnel, plus small watercraft. Fitted with secure comms and planning areas, berthing, weapons storage and exercise areas. Endurance 45 days. Rear loading ramp for vehicles. Hardened against EMP. Civilian construction, -50% damage modifier. Can operate UAVs. Helo pad aft for one Large or two Medium helicopters, helo pad forward of bridge.

**Damage & Speed Breakdown:**

<b>Dam Pts:</b>	0	67	134	201	241	268
<b>Surf Speed:</b>	20	15	10	5	0	Sinks

LSV

LSV

WMSL

## Annex C - Naval Guns

Country	Name Bore/Caliber	Shell Type	Short Range			Med Range			Long Range			Extreme Range			Max Alt	Air Rng (kyd)	AA Rating <sup>1</sup>	Notes
			kyds	B-Pen	Dam	kyds	B-Pen	Dam	kyds	B/D-Pen	Dam	kyds	B/D-Pen	Dam				
USA	0.30 cal/7.62mm MGs	Solid	0 - 0.1	1	0.5	0.2 - 0.4	0	0.4	0.5 - 0.6	0/0	0.4	0.7 - 0.7	0/0	0.3	Low	1.0	0.08	
USA	M2 .50 cal	Solid	0 - 0.2	1	0.8	0.3 - 0.5	1	0.7	0.6 - 0.8	1/0	0.6	0.9 - 1	1/0	0.5	Low	2.5	0.08	
USA	Mk95 Mod 1 .50 cal	Solid	0 - 0.2	1	0.8	0.3 - 0.5	1	0.7	0.6 - 0.8	1/0	0.6	0.9 - 1	1/0	0.5	Low	2.5	0.08	
USA	Mk67/Mk68 20mm/80 (Mk16 gun)	AP HE	0 - 0.3 0 - 0.3	2 0	2.2 2.3	0.4 - 0.7 0.4 - 0.7	1 0	1.9 2.0	0.8 - 1.1 0.8 - 1.1	1/0 0/0	1.6 1.8	1.2 - 1.4 1.2 - 1.4	1/1 0/0	1.4 1.6	Low	2.0	0.07	
USA	Mk15 Phalanx Blk 0	APDS	--	--	--	--	--	--	--	--	--	--	--	--	Low	2.4	2.52	A, S, N
USA	Mk15 Phalanx Blk IA	APDS	--	--	--	--	--	--	--	--	--	--	--	--	Low	2.4	3.79	A, S, N
USA	Mk15 Phalanx Blk IB	APDS	0 - 1.2	2	3.0	1.3 - 3	2	2.6	3.1 - 4.8	1/0	2.2	4.9 - 6	1/1	1.9	Low	2.4	3.79	A, S, N
USA	Mk38	APDS	0 - 0.3	3	3	0.4 - 0.8	3	2	0.9 - 1.3	2/1	2	1.4 - 1.6	2/1	2				
	Bushmaster 25mm/87	HE	0 - 0.3	0	3	0.4 - 0.8	0	3	0.9 - 1.3	0/0	2	1.4 - 1.6	0/0	2				
USA	Mk38 Mod 2	HE	0 - 1.5	0	3	1.6 - 3.7	0	3	3.8 - 6	0/0	3	6.1 - 7.5	0/0	2				
	Bushmaster 25mm/87	SAP	0 - 1.5	3	3	1.6 - 3.7	2	3	3.8 - 6	2/1	2	6.1 - 7.5	2/2	2				
		APDS	0 - 1.5	3	0	1.6 - 3.7	3	0	3.8 - 6	2/1	0	6.1 - 7.5	2/2	0				
USA	Mk46 30mm	HE	0 - 1.1	0	4	1.2 - 2.8	0	3	2.9 - 4.4	0/0	3	4.5 - 5.5	0/0	2				
	Bushmaster II	APDS	0 - 1.1	6	4	1.2 - 2.8	5	4	2.9 - 4.4	4/1	3	4.5 - 5.5	3/3	3				
USA	Mk1, 2, 3 40mm/60	HE	0 - 0.5	0	4	0.6 - 1.3	0	3	1.4 - 2.0	0/0	3	2.1 - 2.5	0/0	2				
USA	Mk110 57mm/70	HE	0 - 3.0	1	18	3.1 - 7.6	1	16	7.7 - 12.1	1/0	14	12.2 - 15.1	1/1	13	Med	6.0	0.34	N
		HC	0 - 3.7	1	18	3.8 - 9.3	1	15	9.4 - 14.9	1/0	14	15 - 18.6	1/1	12				
USA	Mk3, 5, 6, 8 3in/50	Com	0 - 3.1	3	12	3.2 - 6.2	2	10	6.3 - 8.3	1/1	9	8.4 - 10.4	1/1	8				
		AP	0 - 3.1	7	11	3.2 - 6.2	4	8	6.3 - 8.3	3/1	7	8.4 - 10.4	2/2	6				
USA	Mk10, 17, 18, 20, 21, 22, 23, 26 3in/50	AP	0 - 4.4	7	11	4.5 - 8.8	4	8	8.9 - 11.7	3/1	7	11.8 - 14.6	2/2	6	Med	5.0	0.28	
		HC	0 - 4.4	1	11	4.5 - 8.8	1	9	8.9 - 11.7	0/0	8	11.8 - 14.6	0/0	7				
		Com	0 - 4.4	3	11	4.5 - 8.8	2	9	8.9 - 11.7	1/1	8	11.8 - 14.6	1/1	7				
USA	Mk27, 33, 34 3in/50	Com	0 - 4.4	3	9	4.5 - 8.8	2	7	8.9 - 11.7	1/1	7	11.8 - 14.6	1/1	6	High	5.0	0.25	
		HC	0 - 4.4	1	10	4.5 - 8.8	1	8	8.9 - 11.7	0/0	7	11.8 - 14.6	0/0	6				
USA	Mk37 3in/70	HE	0 - 5.9	1	18	6 - 11.7	1	15	11.8 - 15.6	1/0	13	15.7 - 19.5	0/1	12	High	9.8	1.27	
USA	Mk75 76mm/62	HE	0 - 6.0	1	18	6.1 - 12.1	1	15	12.2 - 16.1	0/0	14	16.2 - 20.1	0/1	12	Med	7.0	2.25	
USA	Mk2 81mm mortar	HE	0 - 3.0	0	0	3.1 - 6.0	0	0	6.1 - 8	0/0	0	8.1 - 10	0/0	0				
USA	5in/38 various marks	SpCOM	0 - 5.5	7	18	5.6 - 10.9	4	14	11 - 14.6	3/1	12	14.7 - 18.2	2/2	11	High	6.1	0.56	
		COM	0 - 5.5	5	22	5.6 - 10.9	3	19	11 - 14.6	2/1	17	14.7 - 18.2	2/2	15				
		HE	0 - 7.1	2	18	7.2 - 14.3	1	15	14.4 - 19	1/0	14	19.1 - 23.8	1/1	12				
USA	Mk39 5in/54	SpCOM	0 - 7.8	7	18	7.9 - 15.5	4	14	15.6 - 20.7	3/1	12	20.8 - 25.9	2/2	11	High	10.4	0.42	
		HC	0 - 7.8	2	22	7.9 - 15.5	1	19	15.6 - 20.7	1/0	17	20.8 - 25.9	1/1	15				
USA	Mk41 5in/54	SpCOM	0 - 7.8	7	18	7.9 - 15.5	4	14	15.6 - 20.7	3/1	12	20.8 - 25.9	2/2	11	High	10.4	0.42	
		COM	0 - 7.8	5	18	7.9 - 15.5	3	15	15.6 - 20.7	2/1	13	20.8 - 25.9	2/2	12				
		HC	0 - 7.8	2	21	7.9 - 15.5	1	17	15.6 - 20.7	1/0	15	20.8 - 25.9	1/1	14				
USA	Mk42 5in/54	HC	0 - 7.8	2	26	7.9 - 15.5	1	22	15.6 - 20.7	1/0	20	20.8 - 25.9	1/1	18	High	10.4	0.79	
		COM	0 - 7.8	5	18	7.9 - 15.5	3	14	15.6 - 20.7	2/1	13	20.8 - 25.9	2/2	11	High			
		HE	0 - 8.5	2	20	8.6 - 18	1	17	18.1 - 24	1/0	15	24.1 - 30	1/1	13	High			
USA	Mk45 5in/54	HE	0 - 7.6	2	25	7.7 - 15.2	1	21	15.3 - 20.2	1/0	19	20.3 - 25.3	1/1	17	High	10.4	0.56	N
USA	Mk45 Mod 4 5in/62	HE	0 - 7.8	2	24	7.9 - 15.5	1	20	15.6 - 20.7	1/0	18	20.8 - 25.9	1/1	16	High	12.0	0.45	N
USA	Mk10 Mod 4 6in/50	HC	0 - 6.2	2	22	6.3 - 13	1	19	13.1 - 20.8	1/1	17	20.9 - 26	1/1	15				
		APC	0 - 6.2	21	20	6.3 - 13	13	16	13.1 - 20.8	9/3	14	20.9 - 26	7/6	12				
USA	Mk16 6in/47	APC	0 - 6.2	15	18	6.3 - 13	9	14	13.1 - 20.8	7/2	12	20.9 - 26	5/4	11	High	8.0	0.28	
		COM	0 - 5.8	6	20	5.9 - 12	3	16	12.1 - 19.2	3/1	14	19.3 - 24	2/2	12				
		HC	0 - 5.8	1	24	5.9 - 12	1	20	12.1 - 19.2	1/0	18	19.3 - 24	0/1	16				
USA	AGS 155mm/62	HE	0 - 8.5	3	31	8.6 - 22	2	27	22.1 - 38	1/1	24	38.1 - 47.5	1/2	21				N

### Annex C - Naval Guns (continued)

Country	Name <i>Bore/Caliber</i>	Shell <i>Type</i>	Short Range			Med Range			Long Range			Extreme Range			Max Alt	Air Rng (kyd)	AA Rating <sup>1</sup>	Notes
			<i>kyds</i>	<i>B-Pen</i>	<i>Dam</i>	<i>kyds</i>	<i>B-Pen</i>	<i>Dam</i>	<i>kyds</i>	<i>B/D-Pen</i>	<i>Dam</i>	<i>kyds</i>	<i>B/D-Pen</i>	<i>Dam</i>				
USA	Mk6 8in/45	APC	0 - 5	32	21	5.1 - 11.3	22	17	11.4 - 18	15/5	14	18.1 - 22.5	12/9	12				
		CP	0 - 5	10	21	5.1 - 11.3	7	18	11.4 - 18	5/2	16	18.1 - 22.5	3/4	14				
USA	Mk12, 15 8in/55	APC	0 - 6.6	30	24	6.7 - 15	20	19	15.1 - 24	14/5	16	24.1 - 30	11/9	14				
		SpCOM	0 - 6.6	13	24	6.7 - 15	9	19	15.1 - 24	6/2	17	24.1 - 30	5/4	15				
USA	Mk9, 10, 11, 13, 14 8in/55	HC	0 - 6.6	3	26	6.7 - 15	2	22	15.1 - 24	1/1	19	24.1 - 30	1/2	17				
		APC	0 - 7	33	23	7.1 - 16	22	18	16.1 - 25.5	15/5	15	25.6 - 31.9	12/10	13				
USA	Mk16 8in/55	SpCOM	0 - 7	15	24	7.1 - 16	10	19	16.1 - 25.5	7/2	17	25.6 - 31.9	5/4	15				
		Com	0 - 7	10	23	7.1 - 16	7	18	16.1 - 25.5	5/2	16	25.6 - 31.9	4/4	14				
		HC	0 - 7	3	26	7.1 - 16	2	22	16.1 - 25.5	2/1	19	25.6 - 31.9	1/2	17				
USA	Mk71 8in/55 CLGP	APC	0 - 6.6	30	28	6.7 - 15	20	22	15.1 - 24	14/5	18	24.1 - 30	11/9	16				
		HC	0 - 6.6	3	30	6.7 - 15	2	25	15.1 - 24	1/1	22	24.1 - 30	1/2	20				
USA	Mk7 16in/50	HC	0 - 7	3	33	7.1 - 16	2	28	16.1 - 25.6	1/1	25	25.7 - 32	1/2	22				
		HE	0 - 7.9	3	29	8 - 18	2	25	18.1 - 28.8	2/1	22	28.9 - 36	1/2	19				
USA	Mk7 16in/50	APC	0 - 8.5	75	45	8.6 - 21.2	53	35	21.3 - 33.8	38/13	30	33.9 - 42.3	29/24	26				
		HC	0 - 8.5	8	46	8.6 - 21.2	5	39	21.3 - 33.8	4/3	34	33.9 - 42.3	3/5	30				

**Notes and Abbreviations:**

- 1) AA Ratings include the ammunition mods and are per barrel. Rotary cannon are counted as single barrels.
- A: Autonomous gun systems.
- S: Seaskimmer capable, no penalty for engaging VLow air targets
- N: No local control option.



### Annex D1 - Surface Missiles

Country	Name	Guidance/Gen	Air Range (nmi)	ATA Rating	Surf Range (nmi)	Damage	Pen (cm)	Envelope/ Flight Path	Speed (kts)	Sig-nature	IOC	Remarks
Intl	RIM-116A RAM Blk 0	PRH/TIRH/3	0.3 - 5.0	2.5				VLow - Hi	1320	VSm	1993	E
Intl	RIM-116B RAM Blk 1	PRH&IRH/3	0.3 - 5.0	3.0				VLow - Hi	1320	VSm	2000	
Intl	RIM-116B-1 RAM Blk 1A	PRH&IRH/3	0.3 - 5.0	3.0	0.3 - 5.0	17+D6/3	2	VLow - Hi	1320	VSm	2006?	
Intl	RIM-116 RAM Blk 2	I/PRH&IRH/3	0.3 - 7.5	3.5	0.3 - 7.5	17+D6/3	2	VLow - Hi	1320	VSm	May 15	F
Norway	NSM	I&Sat/TIRH/4			1.6 - 108	34+D6/2	15	VLow Cr.	627	Sthy	2012	N, W8
USA	AGM-114L Longbow Hellfire	I/TARH/3			0.3 - 4.9	10	76	Direct	772	VSm		A
USA	BGM-176C Griffin	I/DL/TIIR & SALH/3			? - 8.1	12+D6/3	2	Direct	450	VSm	2014	G
USA	LRLAP	Sat/3			? - 83	17+D6/3	11	Direct	1623	Sthy?	2016	H
USA	LRASM	Sat/DL/TARH&IRH&PRH/4			? - 200	45 + D6	10	Med Cr.	540	Sthy	2020?	
USA	Precision Attack Munition (N-LOS)	I&Sat/M/TSALH&TIRH/3			0.3 - 21.6	13+D6/3	2	Low Cr.	292	Sthy	--	
USA	RGM-6 Regulus I	Cmd/M1			! - 575	50 kT	--	High Cr.	518	Small	1954	
USA	RGM-15A Regulus II	Inertial/M1			! - 1200	50 kT	--	High Cr.	2246	Small	--	C
USA	RGM-66D Standard ARM	PRH/2			3.5 - 35	30+D6/2	5	Direct	1649	VSm		
USA	RGM/UGM-84A Harpoon	I/TARH/2			3 - 65	40+D6/2	9	VLow Cr.	561	VSm	1977 - 85	J
USA	RGM/UGM-84C Harpoon IB	I/TARH/2			3 - 65	40+D6/2	9	VLow Cr.	561	VSm	1982	K
USA	RGM/UGM-84D Harpoon IC	I/TARH/3			3 - 75	40+D6/2	9	VLow Cr.	561	VSm	1985	L, W3
USA	RGM-84F Harpoon ID	I/TARH/3			3 - 130	40+D6/2	9	VLow Cr.	561	Sthy	--	D, M, W3
USA	RGM-84E Harpoon IE SLAM	I/Sat/Cmd/3			3 - 60	40+D6/2	9	VLow Cr.	561	VSm	1984	
USA	RGM/UGM-84M Harpoon III	I&Sat/M/TARH/3			3 - 80	41+D6/2	9	VLow Cr.	561	Sthy	2010	P
USA	RGM-84N Harpoon ER	I/M/TARH/4?			? - 1675			VLow Cr.		VSm		
USA	RGM/UGM-109A Tomahawk Blk I (TLAM-N)	I&TERCOM/D1			50 - 1350	200 kT	--	VLow Cr.	475	VSm	1987 - 91	
USA	RGM/UGM-109B Tomahawk Blk I (TASM)	I/TARH/2			6 - 250	51+D6	11	VLow Cr.	475	VSm	1983 - 95	W5
USA	BGM-109G Gryphon /Tomahawk Blk I (GLCM)	I&TERCOM/D1			50 - 1350	0.2-150 kT	--	VLow Cr.	475	VSm	1983 - 91	
USA	RGM/UGM-109C Tomahawk Blk IIA (TLAM-C)	I&TERCOM/DSMAC/D2			25 - 675	51+D6	11	VLow Cr.	475	VSm	1986 - 02?	
USA	RGM/UGM-109D Tomahawk Blk IIB (TLAM-D)	I&TERCOM/DSMAC/D2			25 - 472	D6+3	11	VLow Cr.	475	VSm	1988 - 02?	Q
USA	RGM/UGM-109C Tomahawk Blk IIIA (TLAM-C)	I&Sat/DSMAC II/D2+			25 - 900	45+D6	10	VLow Cr.	475	Sthy	1993	
USA	RGM/UGM-109D Tomahawk Blk IIIB (TLAM-D)	I&Sat/DSMAC II/D2+			25 - 700	D6+3	11	VLow Cr.	475	Sthy	1994	Q
USA	RGM/UGM-109E Tactical Tomahawk Blk IV	I&Sat/M/DSMAC IAI/T1+			25 - 900	51+D6	11	VLow Cr.	475	Sthy	2004	
USA	RGM/UGM-109E Tactical Tomahawk Blk Va (Maritime Strike Tomahawk)	I&Sat/M/PRH/4			25 - 900	45+D6	10	VLow Cr.	475	Sthy	2023	G
USA	RIM-2A/B Terrier BW-0/1	Beam-Riding/1	3 - 10	0.0				Med - Hi	1033	VSm	1956	R
USA	RIM-2C Terrier BT-3	Beam-Riding/1	3 - 10	0.0				Low - Hi	1180	VSm	1960	
USA	RIM-2D Terrier BT-3A	Beam-Riding/1	3 - 20	0.5	5 - 15	20+D6/3	2	Low - VHi	1180	VSm	1960s	
USA	RIM-2D(N) Terrier BT-3A(N)	Beam-Riding/1	15 - 20	0.0	5 - 15	1.0 kT	--	Low - VHi	1180	VSm	1962-79	
USA	RIM-2E Terrier HT-3	SARH/2	5 - 20	0.5	5 - 20	20+D6/3	2	Low - VHi	1180	VSm	1960s	

### Annex D1 - Surface Missiles (continued)

<i>Country</i>	<i>Name</i>	<i>Guidance/Gen</i>	<i>Air Range (nmi)</i>	<i>ATA Rating</i>	<i>Surf Range (nmi)</i>	<i>Damage</i>	<i>Pen (cm)</i>	<i>Envelope/ Flight Path</i>	<i>Speed (kts)</i>	<i>Sig-nature</i>	<i>IOC</i>	<i>Remarks</i>
USA	RIM-2F Terrier HTR-3	SARH/2	5 - 40	1.0	5 - 25	20+D6/3	2	Low - VHi	1180	VSm	1964	
USA	RIM-7D Sea Sparrow	SARH/2	0.5 - 6	0.5	0.5 - 6	18+D6/3	1	Low - Hi	860	VSm		
USA	RIM-7E Sea Sparrow	SARH/2	0.5 - 6	1.0	0.5 - 6	18+D6/3	1	Low - Hi	860	VSm	1967	
USA	RIM-7H NATO Sea Sparrow	I/M/T SARH/3	0.8 - 12	2.0	0.8 - 10	20+D6/3	2	Low - Hi	1375	VSm	1973	
USA	RIM-7M NATO Sea Sparrow	I/M/T SARH/3	0.5 - 12	2.5	0.5 - 10	21+D6/3	3	VLow - Hi	1650	VSm	1982	
USA	RIM-7P NATO Sea Sparrow	SARH/3	0.5 - 14	3.0	0.5 - 14	21+D6/3	3	VLow - Hi	1650	VSm	1990	
USA	RIM-8A Talos	Beam-Riding/T SARH/1	6 - 50	0.0	6 - 25	37+D6/2	0	Low - VHi	1775	VSm	1955	
USA	RIM-8B Talos	Beam-Riding/1	20 - 50	0.0	20 - 40	1 - 5 kT	--	Low - VHi	1775	VSm	1955	
USA	RIM-8C Talos	Beam-Riding/T SARH/1	7 - 100	0.5	7 - 25	40+D6/2	0	Low - VHi	2075	VSm	1960	
USA	RIM-8D Talos	Beam-Riding/1	20 - 100	0.0	20 - 40	1 - 5 kT	--	Low - VHi	2075	VSm	1955	
USA	RIM-8C(CW) Talos	Beam-Riding/T SARH/2	7 - 100	1.0	7 - 25	40+D6/2	11	Low - VHi	2075	VSm	1962	
USA	RIM-8D(CW) Talos	Beam-Riding/2	20 - 100	1.0	20 - 40	1 - 5 kT	--	Low - VHi	2075	VSm	1962	
USA	RIM-8E Unified Talos	Beam-Riding/T SARH/1	7 - 100	1.0	7 - 25	40+D6/2	0	Low - VHi	2075	VSm	1962	S
USA	RIM-8E Unified Talos (nuclear)	Beam-Riding/1	7 - 100	1.0	7 - 25	1 - 5 kT	--	Low - VHi	2075	VSm	1962	S
USA	RIM-8F Talos	Beam-Riding/T SARH/2	7 - 100	1.0	7 - 25	40+D6/2	0	Low - VHi	2075	VSm	1962	
USA	RIM-8G Unified Talos	Beam-Riding/T SARH/2	7 - 100	1.5	7 - 25	40+D6/2	11	Low - VHi	2075	VSm	1965	S
USA	RIM-8G Unified Talos (nuclear)	Beam-Riding/2	7 - 100	1.5	7 - 25	1 - 5 kT	--	Low - VHi	2075	VSm	1965	S
USA	RIM-8J Unified Talos	Beam-Riding/T SARH/2	7 - 100	1.5	7 - 25	40+D6/2	11	Low - VHi	2075	VSm	1965	S
USA	RIM-8J Unified Talos	Beam-Riding/T SARH/2	7 - 100	1.5	7 - 25	1 - 5 kT	--	Low - VHi	2075	VSm	1965	S
USA	RIM-8H Talos ARM	Beam-Riding/TPRH/1	--	--	7 - 25	40+D6/2	11	Direct	2075	VSm	1967	T
USA	RIM-24A Tartar	SARH/2	1.8 - 7.5	0.5	1.8 - 7.5	21+D6/3	3	Low - Hi	1360	VSm	1962	
USA	RIM-24B Tartar IT	SARH/2	1 - 16	0.5	1 - 16	22+D6/3	3	Low - VHi	1450	VSm	1963	
USA	RIM-24C Tartar TRIP	SARH/2	1 - 18	1.0	1 - 18	22+D6/3	3	Low - VHi	1450	VSm	1968	
USA	RIM-50 Typhoon LR	TVM/2	3 - 110	2.5	3 - 25	24+D6/3	10	VLow - VHi	2632	VSm	1970	U
USA	RIM-50 Typhoon LR (nuclear)	TVM/2	3 - 110	2.5	3 - 25	0.9 kt	--	VLow - VHi	2632	VSm	1970	U
USA	RIM-55 Typhoon MR	TVM/2	3 - 40	2.5	3 - 25	24+D6/2	10	VLow - VHi	2632	VSm	1970	U
USA	RIM-55B Typhoon MR	SARH/2	1 - 40	2.5	1 - 25	24+D6/2	10	VLow - VHi	2632	VSm	1970	
USA	RIM-66A SM1MR Blk II/III	SARH/2	1.5 - 17.5	1.5	1.5 - 17.5	21+D6/3	3	Low - VHi	1240	VSm	1967	
USA	RIM-66A SM1MR Blk IV	SARH/2	2 - 17.5	1.5	2 - 17.5	21+D6/3	3	Low - VHi	1240	VSm	1968	
USA	RIM-66B SM1MR Blk V	SARH/2	1 - 25	2.0	1 - 25	24+D6/3	4	Low - VHi	1650	VSm	1978	
USA	RIM-66E SM1MR Blk VI	SARH/3	2 - 25	2.5	2 - 25	24+D6/3	4	PVLow - VHi	1650	VSm	1983	
USA	RIM-66E SM1MR Blk VIa	SARH/3	3.5 - 25	2.5	3.5 - 25	24+D6/3	4	PVLow - VHi	1650	VSm	1983 - 03	
USA	RIM-66E SM1MR Blk Vīb	SARH/3	3.5 - 25	2.5	3.5 - 25	24+D6/3	4	VLow - VHi	1650	VSm	1983 - 03	
USA	RIM-67A SM1ER Blk II/III	SARH/2	4.5 - 40	1.5	4.5 - 25	24+D6/3	4	Low - VHi	1650	VSm	1969	
USA	SM1ER Blk IV/V	SARH/2	4.5 - 40	2.0	4.5 - 25	24+D6/3	4	Low - VHi	1650	VSm	1978	
USA	RIM-67B Terrier/SM2ER Blk I	I/M/T SARH/2	3 - 60	2.0	3 - 25	24+D6/3	4	Low - VHi	1650	VSm	1980 - 95	
USA	RIM-67C Terrier/SM2ER Blk II	I/M/T SARH/2	4.5 - 40	2.0	4.5 - 25	24+D6/3	4	PVLow - VHi	1650	VSm	1980 - 95	
USA	RIM-67D Terrier/SM2ER Blk III	I/M/T SARH/3	4.5 - 40	2.5	4.5 - 25	24+D6/3	4	VLow - VHi	1650	VSm	1980 - 95	
USA	RIM-66C SM2MR Blk I	I/M/T SARH/2	1.5 - 37.5	2.0	1.5 - 25	24+D6/3	4	Low - VHi	1650	VSm	1980 - 95	
USA	RIM-66G/H/J SM2MR Blk II	I/M/T SARH/2	2 - 60	2.5	2 - 25	26+D6/3	5	VLow - VHi	1980	VSm	1984	
USA	RIM-66K SM2MR Blk III	I/M/T SARH/3	3 - 90	2.5	3 - 25	26+D6/3	5	VLow - VHi	2006	VSm	1990	
USA	RIM-66L SM2MR Blk IIIA	I/M/T SARH/3	3 - 90	3.0	3 - 25	26+D6/3	5	VLow - VHi	2006	VSm	1994	
USA	RIM-66M SM2MR Blk IIIB	I/M/TIRH&T SARH/4	3 - 90	3.5	3 - 25	26+D6/3	5	VLow - VHi	2006	VSm	1999?	
USA	RIM-? SM2MR Blk IIIC	I/M/T SARH&T ARH/5	3 - 90	4.0	3 - 25	26+D6/3	5	VLow - VHi	2006	VSm	dev?	
USA	RIM-72C Sea Chaparral	IRH/2	0.3 - 3.5	1.0				VLow - Med	1434	VSm	1971	
USA	RIM-156A SM2 Aegis Blk IV	I/M/T SARH/4	6 - 130	3.5	3 - 25	26+D6/3	5	VLow - VHi	2006	VSm	2003	

## Annex D1 - Surface Missiles (continued)

Country	Name	Guidance/Gen	Air Range (nmi)	ATA Rating	Surf Range (nmi)	Damage	Pen (cm)	Envelope/ Flight Path	Speed (kts)	Sig-nature	IOC	Remarks
USA	RIM-156B SM2 Aegis ER Blk IVa	I/M/TIRH&TSARH/4	3 - 108	4.0	3 - 25	26+D6/3	5	VLow - VHi	1980	VSm	--	
USA	RIM-161B SM3 Blk IA	I/M/TIIRH/4	270	6.0				RHi only	5830	VSm	2011	B
USA	RIM-161C SM3 Blk IB	I/M/TIIRH/4	432	6.5				RHi only	6805	VSm	2013	B
USA	RIM-161D SM3 Blk II	I/M/TIIRH/	810	6.5				RHi only	8747	VSm	2012+	B
USA	RIM-161 SM3 Blk IIA	I/M/TIIRH/	810	7.0				RHi only	8747	VSm	2018	B
USA	RIM-162 ESSM	SARH/3	0.5 - 18	3.5	0.5 - 18	23+D6/3	4	VLow - Med	2250	VSm	2004	X
USA	RIM-162 ESSM Blk I	SARH/3	0.5 - 18	3.5	0.5 - 18	23+D6/3	4	VLow - Med	2250	VSm		X
USA	RIM-162 ESSM Blk II	SARH/TARH/4	0 - 27	4.0	? - 27	17+D6/3	4	VLow - Hi	2250	VSm	2020	X
USA	RIM-174 SM6 ERAM Blk I	I/M/TSARH&TARH/5	6 - 200	4.5	6 - 200	30+D6/2	4	VLow - RHi	2006	VSm	2013	V
USA	RIM-174 SM6 ERAM Blk IA	I&Sat/M/TSARH&TARH/5	6 - 200	5.0	6 - 200	30+D6/2	4	VLow - RHi	2006	VSm		V
USA	Stinger	IRH/2	0.1 - 3	1.0				VLow - Low	1452	VSm	1981	
USA	Stinger-Post/RMP	IRH/3	0.1 - 3	1.5				VLow - Low	1452	VSm	1987	

**Remarks Key:**

A: Penetration value is not a typo. Tandem HEAT warhead. High ROF, can engage 12 separate targets per Tactical Turn

B: Exo-atmospheric targets only.

C: Canceled 1958.

D: Canceled 1991.

E: Can only attack missiles with TARH seekers.

F: Can attack missiles with LPI seekers.

G: Can be redirected to different target after launch.

H: For 155mm AGS, canceled because of cost.

J: Terminal popup.

K: No terminal popup.

L: Selectable popup.

M: Reattack capability.

N: Terminal maneuvers.

P: Modified Harpoon IC with VLS capability, datalink, Use Link 16 for mid-course guidance. Canceled Apr 09.

Q: Cluster warhead, airburst damage.

R: Subsonic targets only.

S: Warhead can be changed between conventional and nuclear in the magazine.

T: Can swap one of 6 different seeker heads to target various Soviet-built AAA/SAM/Air Search radars in North Vietnam. Can also be beam directed directly to target.

U: 12 targets @ 2 missiles.

V: Can attack both aerodynamic and exo-atmospheric targets.

W#: Number of waypoints the missile may use.

X: "ESSM" stands for "Evolved Sea Sparrow Missile."

## Annex D2 - Land-Based Surface-to-Air Missiles

<u>Country</u>	<u>Name</u>	<u>Guidance /Gen</u>	<u>ATA Rating</u>	<u>Range (nmi)</u>	<u>Min-Max Altitude</u>	<u>Speed (kts)</u>	<u>IOC</u>	<u>Remarks</u>
USA	Bomarc A	Cmd/TARH/1	0.0	216	Med - VHi	1606	1959	
USA	Bomarc B	Cmd/TARH/2	0.0	383	Med - VHi	1721	1961	W40 10 kT warhead
USA	Chaparral	IRH/2	0.5	0.3 - 3.2	NOE - Med	1434	1969	
USA	Imp. Chaparral	IRH/3	1.0	0.3 - 4.0	NOE - Med	1434	1978	
USA	Imp. Chaparral/RSS	IRH/3	1.5	0.3 - 4.0	NOE - Med	1434	Late 80s	
USA	Hawk	SARH/2	0.5	1.0 - 21.6	NOE - High	1350	1960	
USA	Improved Hawk (IHAWK)	SARH/2	1.0	0.8 - 21.6	NOE - VHi	1550	1971	
USA	IHAWK PIP Phase I	SARH/2	1.5	0.8 - 21.6	NOE - VHi	1550	1979	
USA	IHAWK PIP Phase II	SARH/3	2.0	0.8 - 21.6	NOE - VHi	1550	1983	
USA	IHAWK PIP Phase III	SARH/3	2.5	0.8 - 21.6	NOE - VHi	1550	1989	
USA	IHAWK HMSE/XXI	SARH/3	2.5	0.8 - 24.3	NOE - VHi	1550	1994	
USA	Nike-Ajax	Cmd/1	0.0	5.0 - 25.9	High - VHi	1320	1954	
USA	Nike-Hercules (MIM-14A)	Cmd/1	0.5	4 - 75.6	Low - RHi	2008	1958	HE or W31 (5 or 10 kT) warhead
USA	Impr. Nike-Hercules (MIM-14B)	Cmd/2	1.0	4 - 75.6	Low - RHi	2094	1961	
USA	Impr. Nike-Hercules (MIM-14C)	Cmd/2	1.5	4 - 75.6	Low - RHi	2094	1972	
USA	Patriot (MIM-104A/B)	TVM/3	2.5	1.6 - 37	NOE - VHi	3305	1984	
USA	Patriot PAC-1	TVM/3	2.5	1.6 - 37	NOE - VHi	3305	Jul 88	
USA	Patriot PAC-2 (MIM-104C)	TVM/3	3.0	1.6 - 37	NOE - VHi	3305	Sep 90	
USA	Patriot PAC-2+	TVM/3	3.0	1.6 - 37	NOE - VHi	3305	2007?	
USA	Patriot PAC-3 (MIM-104F)	I/M/TARH/4	3.5	1.6 - 27	NOE - High	3305	Dec 95	1st Gen ATBM only, HOJ mode
USA	Patriot PAC-3 MSE	I/M/TARH/4	4.0	1.6 - 40.5	NOE - High	3305	2015	
USA	Patriot GEM (MIM-104D)	TVM/3	3.0	1.6 - 48.1	NOE - VHi	3305	1996	
USA	Patriot GEM+ (MIM-104E)	TVM/3	3.5	1.6 - 48.1	NOE - VHi	3305	2002	
USA	Redeye	IRH/1	0.0	0.1 - 1.6	NOE - Low	1300	1964	Subsonic targets only
USA	Redeye Blk II, III	IRH/2	0.5	0.1 - 1.6	NOE - Low	1300	1967, 68	Subsonic targets only
USA	SLAMRAAM	I/M/TARH/4	4.0	0.5 - 12	NOE - RHi	2640		Land-based AMRAAM
USA	Stinger	IRH/2	1.0	0.1 - 3.0	NOE - Low	1452	1978	
USA	Stinger-POST/RMP	IRH/3	1.5	0.1 - 3.0	NOE - Low	1452	1987	
USA	Stinger Blk I	IRH/3	2.0	0.1 - 3.0	NOE - Low	1452	1995	
USA	Stinger Blk I+	IRH/3	2.5	0.1 - 3.0	NOE - Low	1452	2019	
USA	THAAD	I/M/THIRH/4	--	? - 108	? - RHi	5443	2008	1st Gen ATBM only

## Annex D2a - Surface-to-Air Missile Batteries

<i>Country</i>	<i>System Name</i>	<i>Missile Name</i>	<i>Acquisition Radars</i>	<i>Guidance Radar</i>	<i>Msls/ Lchr</i>	<i>Lchrs/ Btry</i>	<i>Combat Sys Gen</i>	<i>Tgts@msls /Btry</i>	<i>Setup Time (min)</i>	<i>Reload Time (min)</i>	<i>Remarks</i>
USA	Avenger	Stinger	2 MPQ-64	--	8	8	3	8@1	5	6	
USA	Bomarc		SAGE	--	1	4	2	1@1	--	--	
USA	Chaparral/Impr. Chaparral	AIM-9	MPQ-49 FAAR	--	4	4	--	4@1	2	5	B
USA	HAWK		MPQ-35, MPQ-34, MPQ-37	MPQ-33/39	3	3	2	3@1	40	10	
USA	Improved Hawk (IHAWK)		MPQ-50, MPQ-48, MPQ-51	MPQ-46	3	3	3	1@1	40	10	
USA	IHAWK Phase I		MPQ-50, MPQ-55, MPQ-51	MPQ-47	3	3	3	1@1	40	10	
USA	IHAWK Phase II		MPQ-50, MPQ-55, MPQ-51	MPQ-57	3	6	3	2@1	40	10	
USA	IHAWK Phase III		MPQ-50, MPQ-62	MPQ-61	3	6	4	3@1	40	10	
USA	IHAWK Phase III/HMSE		MPQ-50, MPQ-62	MPQ-61	3	6	4	6@1	15	10	
USA	Nike-Ajax		ACQ/LOPAR	TTR, MTR	1	16	2	1@1	--	--	
USA	Nike-Hercules		ACQ/LOPAR, MPQ-43/44								
			HIPAR, TRR	TTR, MTR	1	6	2	1@1	--	--	
USA	Improved Nike-Hercules (1981)		ACQ/LOPAR, MPQ-43/44								
			HIPAR, TRR	TTR, MTR	1	6	3	1@1	--	--	
USA	Patriot		MPQ-53	MPQ-53	4	8	4	9@1	45	12	A, C
USA	Patriot (2003)		MPQ-65	MPQ-65	4	8	4	9@1	45	12	A, C
USA	Redeye		--	--	1	1	--	1@1	--	3	
USA	Stinger		--	--	1	1	--	1@1	--	3	
USA	SLAMRAAM	AMRAAM	MPQ-64	--	5	8	4	8@1	5		
USA	THAAD		TPY-2 GBR	TPY-2 GBR	8	6	5			30	

**Remarks Key:**

A: 120° arc per launcher. US units in Europe and some export customers ((Japan, Netherlands) have 5 vice 8 launchers per battery.

B: Each launcher has 8 reloads.

C: Patriot batteries went to mixed composition n 2000, with (4)6 PAC-2/GEM launchers and (16)2 PAC-3 launchers per battery.

### Annex E - Depth Charges

<u>Country</u>	<u>Name</u>	<u>Weight (Kg)</u>	<u>Class Grouping</u>	<u>Damage Points</u>		<u>Max Depth Band</u>	<u>IOC</u>
				<u>Major</u>	<u>Minor</u>		
USA	Mk9	151	IV	11	6	Deep	1944
USA	Mk14	154	IV	11	6	Int II	Late 1945

### Annex E3 - Ahead-Thrown Weapons

<u>Country</u>	<u>Name</u>	<u>Max. Rng (kyds)</u>	<u>Ph</u>	<u># of Proj</u>	<u>Warhead Damage</u>		<u># of Attacks per Tac Turn</u>	<u>Weapon Type</u>	<u>IOC</u>	<u>Remarks</u>
					<u>(kg)</u>	<u>Points</u>				
Norway	Mk8/10 Terne III	5.4	0.15	6	70	9	3	ASW Mortar	1961	
USA	Mk10/11 Hedgehog	0.2	0.12	24	13.6	17	1	ASW Mortar	Late 43	Fixed in train
USA	Mk15 Hedgehog	0.2	0.12	24	13.6	17	1/2	ASW Mortar	Late 43	Trainable

<u>Country</u>	<u>Name</u>	<u>Wt (kg)</u>	<u>Ph</u>	<u>Damage Points</u>		<u>Type</u>	<u>Sink Rate</u>	<u>Max Depth (DC Zone)</u>	<u>IOC</u>	<u>Remarks</u>
				<u>Lethal</u>	<u>Major</u>					
UK	Double Squid	94	.33	11	6	DC	Fast	Deep	1943	6 projectiles
USA	M108 Weapon Alpha	114	.15	12	6	DC	Fast	Deep	1951	22-round salvo in one minute

### Annex E4 - ASW Standoff Weapons

<u>Country</u>	<u>System Name</u>	<u>Range (nmi)</u>	<u>Speed (knots)</u>	<u>Payload</u>	<u>IOC</u>	<u>Remarks</u>
USA	RUR-5A ASROC Mod 4	0.5 - 5.0	660	Mk46 torpedo	1965-1994	ROF 2/min.
USA	RUM-139A Vertical Launch ASROC	2.5 - 12	660	Mk46 Mod 5A torpedo	1993 - 2001	Mk41 & 48 VLS. Inertial guidance. All units updated to RUM-139B 1996 - 2001
USA	RUM-139B Vertical Launch ASROC	2.5 - 12	660	Mk46 Mod 5A(SW) torpedo	1996	Mk41 & 48 VLS. Inertial guidance.
USA	RUM-139C Vertical Launch ASROC	2.5 - 12	660	Mk54 torpedo	2010	Mk41 & 48 VLS. Inertial guidance.
USA	UUM-44A SUBROC	6 - 25	780	W35 130 kT NDB	1963-92	Inertial guidance. Nuke detonates at 300 m depth or sea floor. Also antisurface use.
USA	UUM-125A/B Sea Lance	5 - 60/30	660	W89 200 kT/Mk50 torp	---	Canceled 1990. Inertial guidance.

Annex F - Torpedoes

Country	Name	Guidance /Gen	Range (nmi)	Speed (kts)	Diam (mm)	Warhead Fuzing	Dam vs. ship	Dam vs. sub	Launch Platforms	IOC	Max Depth	Weight kg	Propulsion	Remarks
USA	Mk14 Mod 0	Gyro/2	2.3	46	533	C	74	--	Sub	1931		1361	Steam	
			4.5	31										
USA	Mk14 Mod 3	Gyro/2	2.3	46	533	C	92	--	Sub	1943		1388	Steam	
			4.5	31										
USA	Mk15 Mod 0	Gyro/2	3.0	45	533	C	73	--	Surf	1935		1560	Steam	
			5.0	34										
			7.5	27										
USA	Mk15 Mod 3	Gyro/2	2.3	45	533	C	99	--	Surf	1943		1742	Steam	
			4.5	34										
			7.0	27										
USA	Mk16 Mod 0	Gyro/2	3.5	46	533	C	100	--	Sub	1940		1766	Peroxide	
USA	Mk16 Mod 1	Gyro/2	5.5	46	533	C	101	--	Sub	1944		1799	Peroxide	
USA	Mk21 Mod 2	Passive/1	3.0	33.5	572	C	74	--	Air, Msl	1946		966	Electric	A
USA	Mk24 Fido	Passive/1	2.0	12	483	C	--	47	Air	1942	Int I	309	Electric	
USA	Mk27 Mod 0	Passive/1	2.5	12	483	C	47	--	Sub	1944		327	Electric	
USA	Mk27 Mod 4	Passive/1	3.1	15.9	483	C	52	52	Sub	1949	Int I	533	Electric	
USA	Mk28	Passive/1	2.0	19.6	533	C	88	--	Sub	1944		1270	Electric	
USA	Mk32	Active/1	4.8	12	483	C	--	49	Surf, Air	1951	Int I	318	Electric	
USA	Mk34 Mod 1	Passive/1	1.8	17	483	C	--	50	Air	1948	Int I	522	Electric	
			6.0	11										
USA	Mk35	Act/Pass/1	7.5	27	533	C	66	66	Surf, Sub	1949	Int III	803	Electric	
USA	Mk37 Mod 0/1	Act/Pass/2	4.0	24	482	I	--	76	Sub	1957	Int III	649	Electric	
			8.5	16						/1960				
USA	Mk37 Mod 2/3	Wire-G/3	4.0	24	482	I	--	76	Sub	1967	Int III	767	Electric	
			8.5	16										
USA	Mk39	Wire-G/1	3.1	15.9	483	C	52	--	Sub	1956		578	Electric	
USA	Mk41	Act/Pass/1	4.0	25	533	C	--	54	Air	1949	Int III	602	Electric	
USA	Mk43	Active/1	2.1	21	324	C	--	44	Surf, Air	1951	Int III	168	Electric	
USA	Mk44	Active/2	3.0	30	324	C	--	44	Surf, Air, Msl	1958	Int III	193	Electric	
USA	Mk45 ASTOR	Wire-G/2	7.5	40	482	--	W34	W34	Sub	1963		1057	Electric	B
USA	Mk46 Mod 0	Act/Pass/1	6.0	45	324	C	--	47	Surf, Air, Msl	1963	Int V	258	Thermal	
USA	Mk46 Mod 2	Act/Pass/2	6.0	45	324	C	--	52	Surf, Air, Msl	1970	Int V	231	Thermal	
USA	Mk46 Mod 5	Act/Pass/3	6.0	45	324	C	--	52	Surf, Air	1979	Int V	231	Thermal	
	(NEARTIP)		8.0	30					Msl					
USA	Mk46	Act/Pass/3	6.0	45	324	C	--	52	Surf, Air,	1990	Int V	231	Thermal	C
	Mod 5A(S)		8.0	30					Msl					
USA	Mk46	Act/Pass/3	6.0	45	324	C	--	52	Surf, Air,	1996	Deep I	231	Thermal	C
	Mod 5A(SW)		8.0	30					Msl					
USA	Mk48 Mod 1	Wire-G/3	11.2	55	533	I	175	124	Sub	1971	Deep I	1560	Thermal	D
			16.9	40										
			17.6	28										

### Annex F - Torpedoes (continued)

<u>Country</u>	<u>Name</u>	<u>Guidance /Gen</u>	<u>Range (nmi)</u>	<u>Speed (kts)</u>	<u>Diam (mm)</u>	<u>Warhead Fuzing</u>	<u>Dam vs. ship</u>	<u>Dam vs. sub</u>	<u>Launch Platforms</u>	<u>IOC</u>	<u>Max Depth</u>	<u>Weight kg</u>	<u>Propulsion</u>	<u>Remarks</u>
USA	Mk48 Mod 3	Dual-Wire/3	11.2	55	533	I	175	124	Sub	1977	Deep I	1560	Thermal	D
			16.9	40										
			17.6	28										
USA	Mk48 Mod 4	Dual-Wire/3	11.2	55	533	I	175	124	Sub	1980	Deep III	1560	Thermal	D
			16.9	40										
			17.6	28										
USA	Mk48 Mod 5 ADCAP	Dual-Wire/4	15	65	533	I	175	124	Sub	1989	Deep III	1597	Thermal	G
			22.6	40										
			25	28										
USA	Mk48 Mod 6 ADCAP	Dual-Wire/4	15	65	533	I	175	124	Sub	1998	Deep III	1597	Thermal	C, H
			22.6	40										
			25	28										
USA	Mk48 Mod 7 CBASS	Dual-Wire/4	15	65	533	I	175	124	Sub	2006	Deep III	1597	Thermal	C, H
			22.6	40										
			25	28										
USA	Mk50 Barracuda	Act/Pass/4	15	55	324	C	--	52	P-3 only	1991-15	Deep V	363	Thermal	C, E
USA	Mk54	Act/Pass/4	12	45	324	C	--	52	Surf, Air	2005	Deep I	285/292	Thermal	C, F
			16	30										

**Remarks Key:**

- A: For Petrel missile
- B: W34 11 kt warhead, command-detonated near target
- C: Shallow-water capable
- D: 40 kt quiet cruise, pumpjet
- E: DE warhead, pumpjet
- F: Weights are for helicopter/fixed wing carriage.
- G: Quiet at 28 kts and 40 kts.
- H: VQuiet at 28 knots, Quiet at 40 knots



## Annex G - Mines

Country	Name	Gen	Type	Fuzing	Max Depth (m)	Weight (kg)	Warhead (kg)	Contact/	Influence Damage			Laying Platform	In Service	Remarks
								Full Infl Damage	Severe	Major	Minor			
USA	Mk6	1	Moored	C	915	?	136	62				Surf	1917 - 70	
USA	Mk13 Mods 1 - 5	1	Bottom	M	40	449	290	129	78	39	19	Air		
USA	Mk16 Mod 1	1	Moored	C	915		272	89				Surf	? - 1985	
USA	Mk16 Mod 2	1	Moored	A	915		272	151	91	45	23	Surf	? - 1985	
USA	Mk25 Mod 1/3	1	Bottom	A	40	896	578	220	132	66	33	Air	? - 1996	
	Mod 2	2	Bottom	P	40	896	578	220	132	66	33	Air	? - 1974	
USA	Mk36 Mod 0/1	1	Bottom	M	120	457	289	156	93	47	23	Air	? - 1974	A, B
	Mod 2			A	45	464							? - 1970	B
	Mod 3			M, P	45	490							? - 1974	B
USA	Mk49 Mod 0	1	Bottom	M	60	907	535	185	111	56	28	Sub	1951?	H
	Mod 1	1		A	60	857								
	Mod 2	2		M, P	45	889								
USA	Mk51	1	Bottom	M	91	2182	1485	293	176	88	44	Surf		C
USA	Mk52 Mod 0	2	Bottom	M, A, P	47	560	283	147	88	44	22	Air	1961	
	Mod 1			A	47	543	283	147	88	44	22		1955-61	
	Mod 2			M	183	568	283	147	88	44	22			
	Mod 3			P, M	47	573	283	147	88	44	22			
	Mod 4			P, A	47	521	283	147	88	44	22		? - 1978	
	Mod 5			M, A	47	571	283	147	88	44	22			
	Mod 6			P, A, M	47	546	283	147	88	44	22		? - 2007	
USA	Mk55		Bottom	M, A, P		990	576					Air, Surf	1961	
	Mod 0	2		P	47		577	211	126	63	32			
	Mod 1	2		A	47	924	577	211	126	63	32		? - 1961	
	Mod 2	2		M	183	957	577	211	126	63	32			
	Mod 3	2		P, M	47	961	577	211	126	63	32			
	Mod 4	2		P, A	47	961	577	211	126	63	32		? - 1976	
	Mod 5	2		M, A	47	965	577	211	126	63	32			
	Mod 6	2		P, A, M	47	960	577	211	126	63	32			
	Mod 7	3		M	183	1023	577	211	126	63	32			
	Mod 11	3		M or M, S	183	1027	577	211	126	63	32			
	Mod 12	3		M	183	1027	577	211	126	63	32			
	Mod 13	3		P, M	183	1031	577	211	126	63	32			
USA	Mk56		Moored	M	365	1010	159	101	61	30	15	Air	1966 - 2002	
USA	Mk57		Moored	M	365	934	154	99	60	30	15	Surf, Sub	1964	
USA	Mk36 DST Mod 3	2	Bottom	M	92	286	87	79	47	24	12	Air	1967	D, Mk82 bomb
	Mod 4-7			M, S	92									
USA	Mk40 DST Mod 3	2	Bottom	M	92	501	202	120	72	36	18	Air	1968?	D, Mk83 bomb
	Mod 4-7			M, S	92									
USA	Mk41 DST Mod 3		Bottom	M	92	949	429	175	105	52	26	Air		D, Mk84 bomb
	Mod 4-7			M, S	92									
USA	Mk60 CAPTOR		Moored	A	915	907	52				10	Sub, Air	1979 -2002	G
USA	Mk62 Mod 1	3	Bottom	M, S	92	227	87	82	49	25	12	Surf, Sub, Air	1980	E, Mk82 bomb
	Mod 2	4		M, S, P										
	Mod 2	4		EP, M, S, P									2018?	F

### Annex G - Mines (continued)

<i>Country</i>	<i>Name</i>	<i>Gen</i>	<i>Type</i>	<i>Fuzing</i>	<i>Max Depth (m)</i>	<i>Weight (kg)</i>	<i>Warhead (kg)</i>	<i>Full Infl Damage</i>	<i>Influence Damage</i>			<i>Laying Platform</i>	<i>In Service</i>	<i>Remarks</i>
								<i>Severe</i>	<i>Major</i>	<i>Minor</i>				
USA	Mk63 Mod 1	3	Bottom	M, S	92	454	202	126	75	38	19	Surf, Sub, Air		E, Mk83 bomb
	Mod 2	4		M, S, P										
	Mod 3	4		EP, M, S, P									2018?	F
USA	Mk64 Mod 1	3	Bottom	M, S	92	907	429	183	110	55	27	Surf, Sub, Air	1983	E, Mk84 bomb
	Mod 2	4		M, S, P										
USA	Mk65	3	Bottom	M, S, P	92	1084	513					Surf, Sub, Air	1983	E
	Mod 0	3		M, S										
	Mod 1	3		M, S, P										
	Mod 3	4		EP, M, S, P	100								2003	F
USA	Mk67 Sub-Launched Mobile Mine	3	Bottom	M, P		753	226	153	92	46	23	Sub	1987	
USA	CDM	4	Bottom	EP, S, M, P	45+			153	92	36	23	Sub	2020	J

**Fuzing Abbreviations:**

- C = Contact
- M = Magnetic
- S = Seismic
- A = Acoustic
- P = Pressure
- EP = Electric Potential

**Remarks Key:**

- A: Improved Mk13 - primary postwar lightweight mine
- B: Torpex fill vice TNT
- C: Harbor defense, detonated on operator command based on mine sensors
- D: Destructor series
- E: Quickstrike series
- F: Capable vs quiet subs, mini-subs, FAC and hovercraft
- G: Deep moored. Mk46 torpedo (mod varies by year), contact damage.
- H: Two can be carried in the space of one torpedo
- J. Planned Clandestine Delivered Mine

## Annex J1 - Naval Radars

Country	System	Function	Detection Range					Gen	IOC	Remarks
			Large	Medium	Small	VSmall	Stealthy			
Canada	LN-66/SP	Nav	40	28	16	9	5	3		
Intl	Nav radar (generic)	Nav	36	25	14	8	4	4		
Japan	Furuno series	Nav	48	28	16	9	5	3		
Nethl	Scout	Nav	24	24	18	10	6	5		LPI
UK	Decca 2000 series	Nav	48	32	18	10	6	4		
USA	BPS-2	AS	70	49	35	14	4	2		Periscope radar
USA	BPS-3	HF	53	37	27	11	3	2		Mounted in sail
USA	BPS-4	AS	21	15	11	4	1.3	2	1952	Periscope radar
USA	BPS-5	SS	38	21	12	7	4	3	1953	Periscope radar
USA	BPS-9	SS	38	21	12	7	4	3	1958	Periscope radar
USA	BPS-12/14	SS	38	21	12	7	4	4		Periscope radar
USA	BPS-15/16	SS	35	19	11	6	3.5	4	1991	Periscope radar
USA	CR-103/SPN-11	SS	20	11	6	4	2.0	3		
USA	Mk23 TAS	LAS	90	63	45	18	5	4	1980	
		SS	25	25	25	14	8			
USA	Mk92 CAS	3D	45	45	35	14	4	3	1978	
		SS, GFC	23	23	23	11	6			
USA	Mk92 CORT	3D, LAS	90	69	49	20	6	4		
		SS, GFC	25	23	23	23	11	6		
USA	Generic Nav X-Band	Nav	44	25	14	8	4	3		
USA	Generic Nav S-Band	Nav	63	35	20	11	6	3		
USA	Raytheon Pathfinder	Nav	35	35	19	11	6	3		
USA	Raytheon R series	Nav	47	27	15	9	5	4		
USA	Raytheon FR series	Nav	95	53	30	17	9	4		
USA	SC-1	AS	60	42	30	12	4	2	1942	
		SS	12	12	10	6	3			
USA	SC-2, SC-3, SC-4, SC-5	AS	80	56	40	16	5	2	1943	
		SS	12	12	10	6	3			
USA	SG-5	AS	10	10	7	3	0.8	2	1945	
		SS	30	30	20	11	6			
USA	SK series	AS	115	81	58	23	7	2	1943	
		SS	18	18	16	9	5			
USA	SP	HF	70	56	40	16	5	2	Late 44	
		SS	35	35	25	14	8			
USA	SR series	AS	110	98	70	28	8	2	Mid-44	
USA	SPG-59	3D, FC	222	155	111	44	13	3	--	Typhoon SAM system
		SS	51	28	16	9	5.1			
USA	SPQ-9A	SS, GFC	20	20	15	9	5	3	1970	
		LAS	20	20	20	8	2			
USA	SPQ-9B	SS, GFC	30	30	20	11	6	4	2002	
		LAS	45	45	45	18	5			
USA	SPQ-9B/PDD	SS	30	30	20	11	6.3	5		
USA	SPS-2	HF	300	210	150	60	18	2	1950s	
USA	SPS-3 (CXRX)	HF	20	14	10	4	1.2	2	Late 50s	
USA	SPS-4	SS	25	25	15	9	5	2	1952	
		LAS	36	28	20	8	2			
USA	SPS-5, 5A, 5B	SS	20	20	16	9	5	2	1952	
USA	SPS-5C, 5D	SS	25	25	20	11	6	2		
USA	SPS-6	LAS	100	70	50	20	6	2		
USA	SPS-6A, B, C, D, E	AS	140	98	70	28	8	2	1953	
USA	SPS-8	HF	120	84	60	24	7	2	1955	
USA	SPS-8A/B	HF	152	107	76	30	9	3	1959	
USA	SPS-10, 10B/C/D/F	SS	48	28	16	9	5	2	1953	B
		LAS	48	40	28	11	3			
USA	SPS-12	AS	135	133	95	38	11	2	1953	
USA	SPS-13	AS, HF	200	196	140	56	17	3	1959	
USA	SPS-17	AS	399	279	200	80	24	2	1957	
USA	SPS-21, 21A, B, C, D	SS	38	21	12	7	3.8	2	1954	

## Annex J1 - Naval Radars (continued)

Country	System	Function	Detection Range					Stealthy	Gen	IOC	Remarks
			Large	Medium	Small	VSmall					
USA	SPS-23	SS	40	28	16	9	5	2	1953		
USA	SPS-26	3D	130	91	65	26	8	3	1957		
USA	SPS-28, 28A, 28B,	SS	40	35	20	11	6	3	1957		
		LAS	100	99	71	28	8				
USA	SPS-29, 29D	AS	270	270	200	80	24	3	1958		
USA	SPS-30	HF	270	270	239	96	29	3	1962		
USA	SPS-32	AS	400	296	211	85	25	3			
USA	SPS-33	3D	250	192	137	55	17	3			
USA	SPS-35	SS	32	19	11	6	3.5	3	1957		
USA	SPS-36	SS	16	16	13	7	4.1	3	1958		
USA	SPS-37	AS	233	170	122	49	15	3	1960		
USA	SPS-37A	AS	300	272	194	78	23	3			
USA	SPS-39/42	3D	160	123	88	35	11	3	1960		
USA	SPS-40A/B	AS	225	167	119	48	14	3	1961		
USA	SPS-40C/D/E	AS	225	167	119	48	14	4	1971		
USA	SPS-41	SS	32	21	12	7	3.8	3	1959		
USA	SPS-43	AS	300	280	200	80	24	3	1961		
USA	SPS-43A	AS	350	256	183	73	22	3			
USA	SPS-46	SS	32	25	14	8	4.4	3	1961		
USA	SPS-48A/C	3D	235	165	118	47	14	3	1965		
USA	SPS-48E/G	3D	250	220	157	63	19	4/5	1990, 2011		
USA	SPS-49(V)1-2	AS	260	210	150	60	18	4	1976		
USA	SPS-49(V)2-4	AS	260	223	160	64	19	4			
USA	SPS-49(V)5-9	AS	260	237	169	68	20	4	1980s		
USA	SPS-49A(V)1	AS	260	237	169	68	20	5	1996		
USA	SPS-51	SS	35	20	11	6	3.5	3			
USA	SPS-52A/B/C	3D	245	242	173	69	21	3	1963		
USA	SPS-53, SPS-60	SS	32	25	14	8	4	3	1967		
USA	SPS-55	SS	48	44	25	14	8	3	1975		
		LAS	40	40	38	15	5				
USA	SPS-58A/C, SPS-65	LAS	35	35	35	19	6	3	1970		
USA	SPS-59/LN-66	Nav	40	32	18	10	6	3			
USA	SPS-63	SS	40	25	14	8	4	4			
USA	SPS-64	Nav	48	35	20	11	6	3			
USA	SPS-65	LAS	35	35	35	19	6	4	1976		
USA	SPS-66	Nav	35	19	11	6	3	4	1987		
USA	SPS-67 (V)1, (V)2	SS	56	44	25	14	8	4	1982		
		LAS	35	35	28	11	3				
USA	SPS-67 (V)3, (V)5	SS	68	53	30	17	9	4	1991		
		LAS	35	35	32	13	4				
USA	SPS-69/71	Nav	44	25	14	8	4	5	1990	G	
USA	SPS-72 (X-band)	Nav	48	32	18	10	6	4	1993	J	
USA	SPS-72 (S-band)	Nav	64	44	25	14	8	4	1993	G	
USA	SPS-73, SPS-78	Nav	32	21	12	7	3.8	5	1996	H	
USA	SPS-75	3D	108	77	55	22	7	6	2008	FRG TRS-3D/16	
		SS	36	36	32	18	10				
USA	SPS-77(V)1	3D	97	77	55	22	7	5	2008	Swedish Sea	
		SS, GFC	32	32	32	22	11			Giraffe AMB	
USA	SPS-80	3D	130	91	65	26	8	6	2019	FRG TRS-4D	
		SS, GFC	36	36	36	22	11				
USA	SPY-1A	3D	200	200	158	63	19	4			
		SS	40	40	25	14	8				
USA	SPY-1B/D	3D	250	250	158	63	19	5			
		SS	40	40	25	14	8				
USA	SPY-1F	3D	185	185	147	59	18	5			
		SS	40	40	25	14	8				
USA	SPY-3	3D	150	150	119	48	14	6		C	
		SS	45	45	30	17	9				

## Annex J1 - Naval Radars (continued)

Country	System	Function	Detection Range					Gen	IOC	Remarks
			Large	Medium	Small	VSmall	Stealthy			
USA	SPY-4	3D	250	250	198	79	24	6	D	
USA	SPY-6(V)1 AMDR	3D, FC	508	508	403	161	48	6	K	
		SS	45	45	45	27	15			
USA	SPY-6(V)2 EASR	3D, FF	250	250	250	106	32	6	E	
		SS	45	45	45	27	15			
USA	SPY-6(V)3 EASR	3D, FC	250	250	250	106	32	6	E	
		SS	45	45	45	27	15			
USA	SPY-6(V)4	3D, FC	450	450	357	143	43	6	E	
		SS	45	45	45	27	15			
USA	SR-3, SR-6	AS	30	30	21	8	2.5	2	1945	
		SS	20	11	6	4	2			
USA	SS-2	SS	36	21	12	7	4	2		
USA	SV-2	AS	22	15	11	4	1	2		

**Remarks Key:**

B: Interferes with SPG-51

C: X-Band Multifunction Radar was the multi-role half of the Dual Band Radar suite that was to be used on the *Zumwalt* class destroyers and *Ford* class carriers. It is focused on horizon search and target illumination, though it has taken on additional roles on *Zumwalt* due to the deletion of the SPY-4. Must be set in either 3D or SS mode. Range of other search mode halved.

D: S-Band component of the Dual Band Radar, hemispheric search radar.

E: Enterprise Air Search Radar.

F: HF only out to 140 nmi. Large radar only deployed on USS *Canberra*.

G: ES will classify as a Generic Raytheon.

H: ES will classify as Generic Furuno.

J: ES will classify as Sperry Marine Generic.

K: Air and Missile Defense Radar

## Annex J2 - Land Radars

Country	System	Function	Detection Range					Gen	IOC	Remarks
			Large	Medium	Small	VSmall	Stealthy			
USA	LOPAR	AS	86	60	43	17	5	2	1950s	Nike-Ajax, Nike-Hercules acquisition
USA	MPQ-33/39 HPI	MFC	--	--	--	--	--	3	1959-78	HAWK
USA	MPQ-34 CWAR	AS	83	58	41	17	5	3	1959-78	HAWK low altitude search
USA	MPQ-35 PAR	AS	54	38	27	11	3.2	3	1959-78	HAWK medium/high altitude search
USA	MPQ-37 ROR	RO	--	--	--	--	--	3	1959-78	HAWK used to defeat ECM
USA	MPQ-43/44 HIPAR	AS	175	144	103	41	12	2	1950s	MPQ-43 is fixed, MPQ-44 transportable
USA	MPQ-46 HPI	MFC	--	--	--	--	--	4	1971	IHAWK & IHAWK Phase I - double power MPQ-33/39
USA	MPQ-48 CWAR	AS	88	62	44	18	5.3	4	1971	IHAWK Acquisition radar (Low Alt)
USA	MPQ-49 FAAR	AS	11	11	10	4	1	4	1975 - 91	Forward Area Alerting Radar
USA	MPQ-50 PAR	3D	45	45	45	24	7.1	4	1971	IHAWK Acquisition radar (Medium to High Alt)
USA	MPQ-51 ROR	RO	--	--	--	--	--	4	1971	IHAWK Phase II (not used by Phase III)
USA	MPQ-53	3D, MFC	92	92	79	32	9.5	4	1985	Phased array, 90° search sector, 120° track, Added NCTR in 1996
USA	MPQ-55 CWAR	AS	45	45	42	17	5.1	4	1979	IHAWK Phase I/II Acquisition radar (Low altitude)
USA	MPQ-57 HPI	MFC	-	--	--	--	--	4	1983	IHAWK Phase II, adds EO backup
USA	MPQ-61 HPI	MFC	-	--	--	--	--	4	1989	IHAWK Phase III
USA	MPQ-62 CWAR	AS	45	45	42	17	5.1	4	1989	IHAWK Phase III Acquisition radar (Low alt)
USA	MPQ-64 Sentinel	3D	40	40	40	17	5.1	5	1999	IHawk XXI radar
USA	MPQ-64F1 Sentinel	3D	65	65	65	32	10	5	2006	
USA	MPQ-65	3D, MFC	92	92	79	32	9.5	5	2003	Can engage 9 targets, 90° search sector, 120° track, NCTR
USA	TPS-32	3D	300	266	190	76	22.8	3	1962	Helicopter transportable, USMC
USA	TPS-43E	3D	240	240	190	76	22.8	3	1968	
USA	TPS-44	AS	202	163	116	46	13.9	3	Late 60s	
USA	TPS-59	3D	243	222	159	63	19.0	4	1984	USMC
USA	TPS-59 Upgrade	3D	243	243	190	76	22.8	5	1996	Adds TBM capability
USA	TPS-63	AS	160	158	113	45	13.5	5	1978	ECCM upgrade in the 1990s to Gen 5.
USA	TPS-70	3D	240	207	148	59	17.8	5	1991?	
USA	TPS-75	3D	240	240	190	76	22.8	5	1988	
USA	TPS-77 MRR	3D	250	250	193	77	23.1	6	2006	Transportable version of FPS-117
USA	TPS-80 G/ATOR	3D	238	166	119	48	14	6	2018	Phased array
USA	TPY-2	3D, FC	856	599	428	171	51.4	6	2006	THAAD. Covers 120°. Modes for detection, terminal guidance. Can't do them both at once.
USA	Trackstar	AS	32	32	23	9	2.8	3	1980s	Chaparral acquisition radar

**Abbreviations:**

FPS are fixed radars

MPQ are mobile radars

TPS are transportable radars

## Annex K1 - Search Sonars

<u>Country</u>	<u>Name</u>	<u>Type</u>	<u>Base Active Range</u>	<u>Base Passive Range</u>	<u>Gen</u>	<u>Freq Band<sup>a</sup></u>	<u>Platform</u>	<u>IOC</u>	<u>Remarks</u>
USA	AMDS	Bow/Sail	1.2	--	6	HF <sup>a</sup>	Sub	2004	Mine detection/under-ice navigation
USA	BQG-1 PUFFS	Deck	--	1.7	3	MF	Sub	1960	WFC passive ranging, localization
USA	BQG-2A/2B MicroPUFFS	Flank		2.5	3	MF	Sub	1963	WFC passive ranging, localization
USA	BQG-4 PUFFS	Deck	--	2.5	3	MF	Sub	1967	WFC passive ranging, localization
USA	BQG-5 WAA/LWAA	Flank	--	5.1	6	LMF-MF	Sub	1987	WFC passive ranging, localization
USA	BQQ-1	Sphere Bow	4.3	2.6	3	LMF <sup>a</sup> -MF	Sub	late 50s	Designation changed to BQQ-2
	Conformal Bow	Bow	--	2.6		LF-LMF			Integrated BQR-7 conformal bow array
USA	BQQ-2	Sphere Bow	4.3	2.6	3	LMF <sup>a</sup> -MF	Sub	1962	Integrated BQS-6/11/12 sphere and BQR-7
	Conformal Bow	Bow	--	2.6		LF-LMF			Integrated BQR-7 conformal bow array
USA	BQQ-5A/B	Sphere Bow	4.3	3.4	5	LMF <sup>a</sup> -MF	Sub	1975	Replaces BQQ-2
	Conformal Bow	Bow	--	2.9		LF-LMF	Sub		Integrated BQR-7 conformal bow array
USA	BQQ-5C/D	Sphere Bow	4.7	3.8	5	LMF <sup>a</sup> -MF	Sub	1988	Part of BSY-1 system
	Conformal Bow	Bow	--	3.2		LF-LMF	Sub		Integrated BQR-7 conformal bow array
USA	BQQ-5E	Sphere Bow	5.1	4.3	6	LMF <sup>a</sup> -MF	Sub	1995	Part of BSY-1 system
	Conformal Bow	Bow	--	3.7		LF-LMF	Sub		Integrated BQR-7 conformal bow array
USA	BQQ-6	Sphere Bow	--	3.8	5	LMF-MF	Sub		Passive BQQ-5 on SSBN 726
	Conformal Bow	Bow	--	3.2		LF-LMF	Sub		Integrated BQR-7 conformal bow array
UUSA	BQQ-10(V)4	Sphere Bow	5.5	5.0	7	LMF <sup>a</sup> -MF	Sub	2007	ARCI <sup>2</sup> Phase IV update for BQQ-5E on 688I and Blk I/II Virginia Class SSN
	Conformal LAB	Bow	--	4.0		LF-LMF			
USA	BQQ-10(V)4	LAB Bow	5.5	5.5	7	LMF <sup>a</sup> -MF	Sub	2013	ARCI <sup>2</sup> Phase IV update for Blk III/IV Virginia class SSN w/Large Aperture Bow array
	Conformal	Bow	--	4.0		LF-LMF			
USA	BQQ-10(V)5	Sphere Bow	6.0	5.5	7	LMF <sup>a</sup> -MF	Sub	2007	ARCI <sup>2</sup> Phase IV update for BSY-2 on Seawolf class SSN
	Conformal	Bow	--	4.6		LF-LMF			
USA	BQQ-10(V)6	Sphere Bow	--	5.0	7	LMF-MF	Sub	2007	ARCI <sup>2</sup> Phase IV update for Ohio SSBN/SSGN
	Conformal	Bow	--	4.0		LF-LMF			
USA	BQR-2/2B	Bow	--	1.3	3	MF	Sub	1962	
USA	BQR-3	Deck	--	0.8	3	MF	Sub		Improved WWII JT
USA	BQR-4	Bow		2.0	3	LF-LMF	Sub		
USA	BQR-7	Bow	--	2.6	3	LF	Sub		Conformal array, also part of BQQ-2/5 system
USA	BQR-15	Towed	--	4.0	4	VLF-LF	Sub	1970?	Short, slow speed towed array
USA	BQR-15 (Shipalt 9080)	Towed	--	8.5	6	VLF-LF	Sub	1986	Long, slow speed towed array
USA	BQR-19	Mast	--	0.3	5	MF	Sub		For collision avoidance
USA	BQR-21 DIMUS	Bow	--	2.3	4	LMF-MF	Sub	1974	BQR-2/2B with added DIMUS processor
USA	BQR-25 STASS	Towed	--	4.3	4	VLF-LF	Sub		Short, slow speed towed array
USA	BQS-2	Bow	1.3	0.5	3	HF <sup>a</sup>	Sub	1954	
USA	BQS-4	Bow	1.7	--	3	MF <sup>a</sup>	Sub		
USA	BQS-6	Bow	4.3	2.6	3	LMF <sup>a</sup> -MF	Sub		Act/pass bow sonar for BQQ-2
USA	BQS-8	Sail	0.6	--	2	HF <sup>a</sup>	Sub		Mine detection/under-ice navigation
USA	BQS-11/12/13	Bow	4.3	2.6	4	LMF <sup>a</sup> -MF	Sub		Act/pass bow sonar for BQQ-5
USA	BQS-14	Sail	0.7	--	3	HF <sup>a</sup>	Sub		Mine detection/under-ice navigation

### Annex K1 - Search Sonars (continued)

<u>Country</u>	<u>Name</u>	<u>Type</u>	<u>Base Active Range</u>	<u>Base Passive Range</u>	<u>Gen</u>	<u>Freq Band<sup>a</sup></u>	<u>Platform</u>	<u>IOC</u>	<u>Remarks</u>
USA	BQS-15/18	Sail	0.8	--	4	HF <sup>a</sup>	Sub		Mine detection/under-ice navigation
USA	BQS-20	Sail	0.9	--	4	HF <sup>a</sup>	Sub		Mine detection/under-ice navigation
USA	BQS-24 MIDAS	Sail	1.0	--	5	HF <sup>a</sup>	Sub		Mine detection/under-ice navigation
USA	BSY-2	Sphere Bow	5.1	5.1	6	LMF <sup>a</sup> -MF	Sub		Seawolf integrated sonar suite.
	Conformal Bow	Bow	--	4.4		LF			
USA	HF Obstacle Avoidance	Bow	0.5	--	3	HF <sup>a</sup>	Sub		Sonar on SDVs (Swimmer Delivery Vehicles)
USA	JT series	Keel	--	0.7	2	LF-MF			
USA	QCJ	Keel	0.6	--	2	HF <sup>a</sup>	Surf	1938	
USA	QCU	Keel	0.5	--	3	HF <sup>a</sup>	Surf	1944	
USA	QDA	Keel	0.5	--	3	HF <sup>a</sup>	Surf	1944	Depth determining sonar. Replaces GB Type 147
USA	QGA/QGB	Keel	0.8	--	3	HF	Surf	1944	
USA	QHB	Keel	0.9	--	3	HF <sup>a</sup>	Surf	1944	
USA	SQG-1	Keel	1.0	--	3	HF <sup>a</sup>	Surf	1950	Attack sonar
USA	SQQ-23 PAIR	B & K	3.0	1.3	3	MF <sup>a</sup>	Surf		Modified SQS-23. Has two domes
USA	SQR-14	Towed	--	6.0	4	VLF-LF	Surf	1968	Long, slow speed towed array
USA	SQR-15	Towed	--	8.5	4	VLF-LF	Surf	1974	Long, slow speed towed array
USA	SQR-18, -18A	Towed	--	4.3	5	VLF-LF	Surf	1976	Short, slow speed towed array
USA	SQR-19(V)1	Towed	--	6.8	5	VLF-LF	Surf	1984	Long, slow speed towed array
USA	SQR-19(V)2, (V)3	Towed	--	7.0	6	VLF-LF	Surf	1987	Long, high speed towed array
USA	SQS-1	Bow	1.0	--	3	HF <sup>a</sup>	Surf		
USA	SQS-4 Mod 1/2	B or V	1.7	--	3	HF <sup>a</sup>	Surf	1954	
USA	SQS-4 Mod 3/4	B or V	1.3	--	3	HF <sup>a</sup>	Surf		
USA	SQS-10/10A	Bow	1.3	--	3	HF <sup>a</sup>	Surf	1951	Modernized QHB
USA	SQS-11/11A	Bow	1.3	--	3	HF <sup>a</sup>	Surf		Modernized QHB
USA	SQS-23	Keel	3.0	0.9	3	HF <sup>a</sup>	Surf		
USA	SQS-26	Bow	3.8	1.7	3	LMF <sup>a</sup> -MF	Surf	1962	CZ, BB capability
USA	SQS-35 IVDS	VDS	2.1	0.4	3	HF <sup>a</sup>	Surf		
USA	SQS-36, -36J	B or V	2.1	0.4	3	HF <sup>a</sup>	Surf, Sub		SQS-35 variant. USCG
USA	SQS-38	Bow	2.1	0.4	4	HF <sup>a</sup>	Surf	1971	SQS-35 variant
USA	SQS-39/40	Bow	2.1	0.4	4	HF <sup>a</sup>	Surf		Numbers relate to different frequencies
USA	SQS-41/42	Bow	1.7	0.4	4	HF <sup>a</sup>	Surf		Numbers relate to different frequencies
USA	SQS-43/44	Bow	2.1	0.4	4	HF <sup>a</sup>	Surf		Numbers relate to different frequencies
USA	SQS-45/46	Bow	1.7	0.4	4	HF <sup>a</sup>	Surf		Numbers relate to different frequencies
USA	SQS-49/50	Bow	2.1	0.4	4	MF <sup>a</sup>	Surf		
USA	SQS-51/52	Bow	1.7	0.4	4	HF <sup>a</sup>	Surf		
USA	SQS-53A	Bow	4.7	2.1	4	LMF <sup>a</sup> -MF	Surf	1972	CZ, BB capability
USA	SQS-53B	Bow	5.1	2.1	4	LMF <sup>a</sup> -MF	Surf		CZ, BB capability
USA	SQS-53C	Bow	5.3	2.3	5	LMF <sup>a</sup> -MF	Surf		CZ, BB capability
USA	SQS-53D	Bow	5.5	2.5	6	LMF <sup>a</sup> -MF	Surf		CZ, BB capability
USA	SQS-56	Keel	3.0	1.3	5	MF <sup>a</sup>	Surf	1977	
USA	SQS-60	Bow	3.5	1.5	7	MF <sup>a</sup>	Surf		



## Annex K1 - Search Sonars (continued)

<u>Country</u>	<u>Name</u>	<u>Type</u>	<u>Base Active Range</u>	<u>Base Passive Range</u>	<u>Gen</u>	<u>Freq Band<sup>a</sup></u>	<u>Plat- form</u>	<u>IOC</u>	<u>Remarks</u>
USA	SQS-61	Bow	2.0	1.0	7	HF <sup>a</sup>	Surf		Mine and obstacle avoidance
USA	STASS	Towed	--	3.5	4	VLF-LF	Sub	1977	Short, slow speed towed array
USA	TB-16	Towed	--	4.3	5	VLF-LF	Sub		Short, slow speed towed array
USA	TB-16A	Towed	--	4.3	5	VLF-LF	Sub	1982	Short, slow speed towed array
USA	TB-16B	Towed	--	4.3	6	VLF-LF	Sub	1987	Short, high speed towed array
USA	TB-16D	Towed	--	4.8	6	VLF-LF	Sub	1988	Short, high speed array. 45/65 produced.
USA	TB-16E	Towed	--	5.0	6	VLF-LF	Sub	1989	Short, high speed array.
USA	TB-16G	Towed	--	5.2	6	VLF-LF	Sub	2003	Short, high speed array.
USA	TB-23	Towed	--	7.5	6	VLF-LF	Sub	1987	Long, slow speed array. 50 Produced
USA	TB-29/29A	Towed	--	10.0	6	VLF-LF	Sub	1993/ 2002	Long, high speed array. Ten TB-29 produced, canceled due to cost. TB-29A is COTS <sup>3</sup> -based.
USA	TB-33	Towed	--	10.5	7	VLF-LF	Sub		Long, high speed array. Fiber optic replacement for TB-29A.
USA	TB-34	Towed	--	6.0	7	VLF-LF	Sub	2010?	Short, high speed array. Fiber optic replacement for TB-16.
USA	TB-37 MFTA <sup>4</sup>	Towed	8.0	8.0	7	VLF-LMF <sup>a</sup>	Surf		Long, high speed towed array

**Note:**

- a) Active sonars have the frequency they transmit on marked with a superscript "a."
- 2) ACRI: Acoustic Rapid COTS<sup>3</sup> Insertion
- 3) COTS: Commercial Off The Shelf
- 4) Multifunction Towed Array

## Annex R - Carrier Air Wing Assignments

This annex is the decades-long work of Andy Doty, a retired US Navy Fire Control Chief. Working from US Navy documents and many other sources, he has collected information on air wing and aircraft detachments aboard US Navy aviation-capable ships from 1955 through to 2020. The information includes dates embarked, unit names, fleet assignments, and where known, aircraft type and number of aircraft in the unit. He also notes if the unit took part in any actions or campaigns, e.g., the Cuban Missile Crisis.

It is intended for scenario designers and players who want to use historical aircraft units and strengths in their scenarios.

This list is not complete. There are gaps in available information, and of course there are always new ships and new deployments to add. If anyone has information they would like to add to this collection, or sees errors, please contact us at [adtrgroup@aol.com](mailto:adtrgroup@aol.com) and we will make sure Chief Doty receives it.

Notation: After the date of the deployment and air group identification (if any), is fleet assignment, followed by squadron designation, and number and type of aircraft assigned. Sometimes, instead of a numbered fleet assignment, there will be a military campaign: CMC (Cuban Missile Crisis), DS (Desert Storm)

### CVE-112 Siboney

Feb 55 - Apr 55: 2nd. VS-39; 5 AF-2S/5 AF-2W/3 S2F-1, HS-3; est6 HO4S-3S

### CVE-116 Badoeng Strait

Apr 55 - Oct 55: 7th. VS-38; 11 S2F-1, HS-2 Det P; 7 HO4S-3S

### CVE-119 Point Cruz

Aug 55 - Feb 56: 7th. VS-25; 12 S2F-1, HS-4; 5 HO4S-3S

### CVHA-1 Thetis Bay

Jul 57 - Dec 57: 7th. HMRL-163; 7 HRS-3

May 59: Redesignated LPH

### LPH-6 Thetis Bay

Apr 59 - Nov 59: 7th. HMRL-261; 16 HUS-1, HMRL-362; 18 HUS-1

Mar 61 - Aug 61: 7th. HMRL-162; 24 HUS-1

Oct 62 - Dec 62: CMC. HMM-261; 24 UH-34D, HMM-265; 14 UH-34D

### CVA-9 Essex

Nov 54 - Jun 55: CVG-2. 7th. VF-24; 14 F9F-6, VF-63; 13 F9F-6, VF-64; 14 F9F-5, VA-65; 5 AD-4/5 AD-4B, VC-3 Det A; 4 F2H-3, VC-11 Det A; 3 AD-4W, VC-35 Det A; 4 AD-5N, VC-61 Det A; 3 F2H-2P, HU-1; est2 HUP-2

Jul 56 - Jan 57: CVG-11. 7th. VF-112; 13 F9F-8, VF-114; 8 F2H-3, VA-113; 13 F9F-8B, VA-115; 14 AD-6, VAW-11 Det C; 2 AD-5W, VAAW-35 Det C; 4 AD-5N, VAH-6 Det C; 2 AJ-2, VFP-61 Det C; 2 F9F-8P, HU-1; est2 HUP-2

Feb 58 - Nov 58: ATG-201. 6th/7th. VF-11; 11 F2H-4, VF-62; 12 FJ-3M, VA-83; 14 A4D-2, VA-105; 14 AD-6, VAW-12 Det 45; 4 AD-5W, VAAW-33 Det 45; 4 AD-5N, VAH-7 Det 45; 5 AJ-2, VFP-62 Det 45; 3 F9F-8P, HU-2 Det 45; 1 HUP-2

May 59 - Jul 59: CVG-10. 2nd. VF-13; 13 F4D-1, VF-62; 14 FJ-3M, VA-106; 12 A4D-2, VA-176; 12 AD-6, VMA-225; 12 A4D-2, VAW-12 Det 45; 3 AD-5W, VAAW-33 Det 45; est3 AD-5Q, VFP-62 Det 45; est3 F9F-8P, HU-2 Det 45; 2 HUP-2

Aug 59 - Feb 60: CVG-10. 6th. VF-13; 11 F4D-1, VF-62; 12 FJ-3M, VA-106; 12 A4D-2, VA-176; 11 AD-6, VMA-225; 12 A4D-2, VAW-12 Det 45; 3 AD-5Q, VAW-33 Det 45; 2 AD-5Q, VFP-62 Det 45; 3 F9F-8P, HU-2 Det 45; 2 HUP-3

Mar 60: Redesignated CVS

## CVS-9 Essex

Jun 60 - Aug 60: CVSG-60. 2nd. VS-34; 3 S2F-1/5 S2F-2S/2 S2F-2, VS-39; 4 S2F-1/5 S2F-2S, HS-9; 13 HSS-1N, VAW-12 Det 45; 4 AD-5W, HU-2; Det 45 1 HUK-1  
 Sep 60 - Dec 60: CVSG-60. 2nd/6th/5th. VS-34; 3 S2F-1/5 S2F-2S /2 S2F-2, VS-39; 4 S2F-1/5 S2F-2S, HS-9; 13 HSS-1, VAW-12 Det 45; 4 AD-5W, HU-2; Det 45 1 HUK-1  
 Mar 61 - May 61: CVSG-60. 2nd. VS-34; 2 S2F-1/7 S2F-2S, VS-39; 3 S2F-1/7 S2F-2S, HS-9; 15 HSS-1, VA-34; 12 A4D-2, VAW-12 Det 45; 4 AD-5W, HU-2 Det 45; 1 HUP-3  
 Oct 61 - Feb 62: CVSG-56. 2nd/6th. VS-24; 2 S2F-1/7 S2F-2S, VS-27; 9 S2F-1/2 S2F-2S, HS-9; 13 HSS-1, VAW-33 Det 45; 4 AD-5W, HU-2 Det 45; 1 HUP-2  
 Mar 62 - Sep 62: FRAM II modernization  
 Oct 62 - Dec 62: CVSG-60. 2nd. VS-34; 10 S-2D, VS-39; 10 S-2D, HS-9; 12 SH-3A, VAW-12 Det 9; 4 E-1B, HU-2 Det 9; est2 UH-25C  
 Jan 63 - Feb 63: CVSG-60. 2nd. VS-34; 10 S-2D, VS-39; 10 S-2D, HS-9; 13 SH-3A, VAW-12 Det 9; 4 E-1B  
 May 67 - Sep 67: CVSG-54. 2nd. VS-22; 10 S-2E, VS-32; 10 S-2E, HS-5; 15 SH-3A, VAW-121 Det 9; 4 E-1B  
 Feb 68 - Jun 68: CVSG-60. 2nd/6th. VS-34; 9 S-2E, VS-39; 10 S-2E, HS-9; 16 SH-3A, VAW-121 Det 9; 4 E-1B

## CVA-10 Yorktown

Jul 54 - Feb 55: CVG-15. 7th. VF-152; 11 F2H-3, VF-153; 16 F9F-6, VF-154; 12 F9F-5, VA-155; 16 AD-6, VC-11 Det D; 3 AD-4W, VC-35 Det D; 4 AD-4N, VC-61 Det D; 3 F9F-6P, HU-1 Det D; est2 HUP-2  
 Mar 56 - Sep 56: ATG-4. 7th. VF-23; 9 F2H-3, VF-94; 14 F9F-8B, VF-214; 12 F9F-8B, VA-216; 8 AD-4B/8 AD-4NA, VC-6 Det K; est2 AJ-2, VC-11 Det K; 1 AD-4Q/3 AD-5W, VC-35 Det K; 4 AD-5N, VC-61 Det K; 3 F2H-2P, HU-1; HUP-2  
 Mar 57 - Aug 57: CVG-19. 7th. VF-191; 16 FJ-3, VF-193; 8 F2H-3, VA-192; 6 F9F-8/9 F9F-8B, VA-195; 1 AD-4Q/14 AD-6, VAW-11 Det F; 3 AD-5W, VAH-6 Det F; 2 AJ-2, VAAW-35 Det F; 4 AD-5N, VFP-61 Det F; 3 F9F-8P, HU-1 Det F; est2 HUP-2

## CVS-10 Yorktown

Nov 58 - May 59: CVS10. 7th. VF-92 Det N; 4 F2H-3, VS-37; 17 S2F-1/3 S2F-2, VAW-11; est3 AD-5W, HS-2; est2 HSS-1  
 Jan 60 - Jul 60: CVS-10. 7th. VS-23; 20 S2F-1, HS-4; 13 HSS-1N, VAW-11 Det T; 4 AD-5W  
 Jul 61 - Mar 62: CVSG-55. 7th. VS-23; 10 S2F-1, VS-25; 8 S2F-1, HS-4; 15 HSS-1N, VAW-11 Det T; 4 AD-5W  
 Oct 62 - Jun 63: CVSG-55. 7th. VS-23; 11 S-2F, VS-25; 11 S-2D, HS-4; 2 SH-34G/16 SH-34J, VAW-11 Det T; 4 EA-1E  
 Oct 64 - May 65: CVSG-55. 7th. VS-23; 10 S-2E, VS-25; 10 S-2E, HS-4; 14 SH-3A, VMA-223 Det T; 4 A-4C, VAW-11 Det T; 5 EA-1E, HU-1 Det T; 2 UH-2B  
 Jan 66 - Jul 66: CVSG-55. 7th. VS-23; 10 S-2E, VS-25; 11 S-2E, HS-4; 17 SH-3A, VAW-11 Det T; 4 E-1B  
 Dec 67 - Jul 68: CVSG-55. 7th. VS-23; 9 S-2E, VS-25; 9 S-2E, HS-4; 17 SH-3D, VAW-111 Det 10; 4 E-1B, HC-7 Det 111; 1 SH-3A  
 Sep 69 - Dec 69: CVSG-56. 2nd. VS-24; 10 S-2E, VS-27; 9 S-2E, VSF-1 Det 10; 3 A-4C, HS-3; 12 SH-3D, VAW-121 Det 10; 4 E-1B

## CVA-11 Intrepid

May 55 - Nov 55: CVG-4. 6th. VF-22; 8 F2H-2/6 F2H-2B, VF-44; 14 F2H-2, VF-173; 12 FJ-3, VA-45; 14 AD-6, VC-4 Det 33; 4 F2H-4, VC-12 Det 33; 3 AD-4W, VC-33 Det 33; 2 AD-4Q/4 AD-5N, VC-62 Det 33; 3 F2H-2P, HU-2 Det 33; 1 HUP-2  
 Mar 56 - Sep 56: CVG-8. 6th. VF-61; 14 F9F-8, VF-82; 11 F2H-4, VA-83; est8 F7U-3M, VA-85; 1 AD-4Q/2 AD-5N/12 AD-6, VC-12 Det 33; est3 AD-5W, VC-33 Det 33; 5 AD-5N, VC-62 Det 33; 3 F2H-2P, VAH-5 Det 33; est4 AJ-2, HU-2 Det 33; 1 HUP-2  
 Jun 58 - Aug 58: CVG-8. 2nd. VF-41; 14 F3H-2N, VF-81; 10 F9F-8/2 F8F-8B, VA-42; 12 AD-6, VAW-12 Det 33; 4 AD-5W, VAAW-33 Det 33; 3 AD-5N, VFP-62 Det 33; 3 F9F-8P, HU-2 Det 33; 1 HUP-2  
 Feb 59 - Aug 59: CVG-6. 6th. VF-33; 12 F11F-1, VF-74; 12 F4D-1, VA-25; 11 AD-6, VA-46; 12 A4D-2, VA-66; 12 A4D-2, VAW-12 Det 33; 2 AD-5W, VAAW-33 Det 33; est3 AD-5N, VFP-62 Det 33; 3 F9F-8P, HU-2 Det 33; 2 HUP-2  
 Aug 60 - Feb 61: CVG-6. 6th. VF-33; 14 F11F-1, VF-74; 13 F4D-1, VA-65; 12 AD-6, VA-66; 11 A4D-2, VA-76; 10 A4D-2, VAW-12 Det 33; 4 AD-5W, VAW-33 Det 33; 3 AD-5Q, VFP-62 Det 33; 3 F8U-1P, HU-2 Det 33; 2 HUP-3  
 Aug 61 - Feb 62: CVG-6. 6th. VF-33; 11 F-8U-1E, 1 F-8A, VF-162; 12 F4D-1, VA-65; 12 AD-6, VA-66; 10 A4D-2, VA-76; 10 A4D-2, VAW-12 Det 33; 4 WF-2, VAW-33 Det 33; 3 AD-5Q, VFP-62 Det 33; 1 F8U-1P, HU-2 Det 33; 2 HUP-3

## CVS-11 Intrepid

Jun 64 - Sep 64: CVSG-56. 6th. VS-24; 10 S-2F, VS-27; 10 S-2E, HS-3; 13 SH-3A, VAW-33 Det 11; 3 EA-1E  
 Mar 65 - Nov 65: FRAM II modernization  
 Apr 66 - Nov 66: CVW-10. 7th. VA-15; 16 A-4B/1 A-4C, VA-95; 18 A-4B, VA-165; 9 A-1H/2 A-1J, VA-176; 12 A-1H, HC-2 Det 11; 3 UH-2A

May 67 - Dec 67: CVW-10. 7th. VF-111; est14 F-8C, VSF-3; est17 A-4B, VA-15; 13 A-4C, VA-34; 14 A-4C, VA-145; 5 A-1H/3 A-1J, VA-165; 9 A-1H/3 A-1J, VAW-33 Det 11; EA-1F, VAW-121 Det 11; 3 E-1B, VFP-63 Det 11; 3 RF-8G, HC-2 Det 11; 1 UH-2A/1 UH-2B  
 Jun 68 - Feb 69: CVW-10. 7th. VF-111 Det 11; 6 F-8C, VA-36; 16 A-4C, VA-66; 16 A-4C, VA-106; 16 A-4E, VAW-121 Det 11; 2 E-1B, VAQ-33 Det 11; 3 EA-1F, VFP-63 Det 11 3 RF-8G, HC-2 Det 11; 2 UH-2A/1 UH-2B  
 Apr 71 - Oct 71: CVSG-56. 2nd/6th. VS-24; 7 S-2E, VS-27; 6 S-2E, VS-31; 7 S-2E, HS-11; 5 SH-3C, VA-45 Det 11; 3 A-4C, VAW-121 Det 11; 3 E-1B  
 Jul 72 - Oct 72: CVSG-56. 2nd. VS-24; 7 S-2G, VS-27; 6 S-2G, VS-31; 7 S-2G, HS-5; 8 SH-3D, HS-11; 8 SH-3D, VAW-121 Det 11; 5 E-1B  
 Nov 72 - May 73: CVSG-56. 6th. VS-24; 6 S-2G, VS-27; 6 S-2G, VS-31; 6 S-2G, HS-11; 8 SH-3D, VA-45 Det 11; 15 A-4E, VAW-121 Det 11; 2 E-1B

#### CVA-12 Hornet

May 54 - Dec 54: CVG-9. 6th. VF-91; 18 F9F-6, VF-93; 10 F9F-5, VF-94; 11 F9F-5, VA-95; 14 AD-6, VC-3 Det M; 4 F2H-3, VC-11 Det M; 3 AD-4W, VC-35 Det M; 4 AD-4N, VC-61 Det M; 3 F2H-2P, HU-1 Det M; est1 HUP-2  
 May 55 - Dec 55: CVG-7. 7th. VF-71; 9 F2H-3, VF-72; 12 F9F-5, VF-73; 12 F9F-6, VA-75; 14 AD-6, VC-6 Det 32; est3 AJ-2, VC-12 Det 32; 3 AD-4N, VC-33 Det 32; 3 AD-5N, VC-62 Det 32; 2 F9F-6P, HU-1; est1 HUP-2  
 Jan 57 - Jul 57: CVG-14. 7th. VF-142; 13 FJ-3M, VF-144; 13 F9F-8, VA-145; 1 AD-4Q/14 AD-6, VA-146; 12 F9F-8/1 F9F-8B, VAH-6 Det F; 3 AJ-2, VAAW-35 Det F; 4 AD-5N, VAW-11 Det F; 3 AD-5W, VFP-61 Det F; 3 F9F-8P, HU-1 Det F; est1 HUP-2  
 Jan 58 - Jul 58: ATG-4. 7th. VF-94; 12 FJ-3M, VF-152; 9 F2H-3, VA-214; 14 FJ-4B, VA-216; 1 AD-5/14 AD-7, VAH-6 Det K; est3 AJ-2, VAW-11 Det K; est3 AD-5W, VAAW-35 Det K; 2 AD-5N, VFP-61 Det K; est3 F9F-8P, HU-1 Det K; est1 HUP-2

#### CVS-12 Hornet

Apr 59 - Oct 59: CVS-12. 7th. VS-38; 18 S2F-1/4 S2F-2, HS-8; 15 HSS-1, VAW-11 Det Q; 1 F2H-3/4 F2H-4  
 May 60 - Dec 60: CVS-12. 7th. VS-37; 9 S2F-1/13 S2F-2, HS-2; 15 HSS-1, VAW-11 Det N; 4 AD-5W  
 Jun 62 - Dec 62: CVSG-57. 7th. VS-35; 10 S-2D, VS-37; 10 S-2D, HS-2; 2 SH-34G/13 SH-3A, VAW-11 Det N; 5 EA-1E  
 Oct 63 - Apr 64: CVSG-57. 7th. VS-35; 9 S-2D, VS-37; 10 S-2D, HS-2; 14 SH-3A, VMA-214 Det N; 4 A-4B, VAW-11 Det N; 5 EA-1E, HU-1 Det N; 1 UH-2A  
 Jun 64 - Feb 65: FRAM II modernization  
 Aug 65 - Mar 66: CVSG-57. 7th. VS-35; 11 S-2D, VS-37; 11 S-2D, HS-2; 16 SH-3A, VAW-11 Det N; 4 E-1B, H&MS-15 Det N; 3 A-4C  
 Mar 67 - Oct 67: CVSG-57. 7th. VS-35; 9 S-2E, VS-37; 10 S-2E, HS-2; 20 SH-3A, VAW-11 Det 12; 4 E-1B, H&MS-15 Det N; 4 A-4C  
 Sep 68 - May 69: CVSG-57. 7th. VS-35; 10 S-2E, VS-37; 10 S-2E, HS-2; 16 SH-3A, VAW-11 Det 12; 4 E-1B, HC-7 Det 107; 1 UH-2A

#### CVA-14 Ticonderoga

Nov 55 - Aug 56: CVG-3. 6th. VF-31; 10 F2H-3, VF-32; 14 F9F-8, VA-35; 5 AD-6, VA-66; 10 F7U-3, VAH-9; est3 AJ-1, VC-12 Det-39; 5 AD-5W, VC-33 Det-39; 1 AD-4Q/3 AD-5N, VC-62 Det-39; 3 F2H-2P, HU-2; 1 HUP-2  
 Sep 57 - Apr 58: CVG-9. 7th. VF-91; 14 FJ-3, VF-122; 9 F3H-2N, VA-93; 12 A4D-1, VA-95; 12 AD-6, VAAW-35 Det M; 4 AD-5N, VAW-11 Det M; 3 AD-5W, VFP-61 Det M; 3 F2H-2P, HU-1; est1 HUP-3  
 Oct 58 - Feb 59: ATG-1. 7th. VF-52; 12; F2H-3, VF-112; 8 F3H-2M, VA-196; 14 AD-6, VAAW-35 Det H; 2 AD-5N, VAH-2 Det H; 4 A3D-2, VAW-11 Det H; 3 AD-5W, VFP-61 Det H; 3 F9F-8P, HU-1; est1 HUP-2  
 Mar 60 - Oct 60: CVG-5. 7th. VF-51; 11 F4D-1, VF-53; 12 F3H-2, VA-52; 10 AD-6, VA-55; 12 A4D-2, VA-56; 12 A4D-2, VAW-4 Det B; est4 A3D-2, VAW-11 Det B; est3 AD-5W, VCP-63 Det B; est3 F8U-1P, HU-1 Det B; 2 HUP-2  
 May 61 - Jan 62: CVG-5. 7th. VF-51; 11 F8U-1, VF-53; 11 F3H-2, VA-52; 10 AD6, VA-55; 11 A4D-2, VA-56; 12 A4D-2, VAH-4 Det B; 2 A3D-2, VAW-11 Det B; 3 WF-2, VCP-61 Det B; est3 A3D-2P, VCP-63 Det B; est3 F8U-1P, HU-1 Det 1B; 1 HUP-3  
 Jan 63 - Jul 63: CVG-5. 7th. VF-51; 11 F-8E, VF-54; 9 F-3B, VA-52; 10 A-1H/2 A-1J, VA-55; 11 A-4C, VA-56; 12 A-4B, VA-146 Det B; 3 A-3B, VFP-63 Det B; 3 RF-8A, VAW-11 Det B; 3 E-1B, HU-1 Det B; est2 UH-2A  
 Apr 64 - Dec 64: CVW-5. 7th. VF-51; 11 F-8E, VF-53; 10 F-8E, VA-52; 10 A-1H/2 A-1J, VA-55; 13 A-4E, VA-56; 13 A-4E, VFP-63 Det B; 3 RF-8A, VAW-11 Det B; 3 E-1B, VAH-4 Det B; est3 A-3B, VAH-13 Det B; est3 EA-1F, HU-1 Det B; est2 HU-2A  
 Sep 65 - May 66: CVW-5. 7th. VF-51; 11 F-8E, VF-53; 12 F-8E, VA-52; 8 A-1H/4 A-1J, VA-56; 15 A-4E, VA-144; 14 A-4C, VAH-4 Det B; 3 A-3B, VAW-11 Det B; 3 E-1B, VFP-63 Det B; 3 RF-8A, HC-1 Det B; est1 UH-2A/est1 UH-2B  
 Oct 66 - May 67: CVG-19. 7th. VF-191; 9 F-8E, VF-194; 6 F-8E, VA-52; 10 A-1H, VA-192; 14 A-4E, VA-195; 11 A-4C, VAH-4 Det E; 3 A-3B, VAW-11 Det E; 2 E-1B, VFP-63 Det E; 3 RF-8G, HC-1 Det E; 1 UH-2A/2 UH-2B

Dec 67 - Aug 68: CVG-19. 7th. VF-191; 11 F-8E, VF-194; 11 F-8E, VA-23; 14 A-4F, VA-192; 13 A-4F, VA-195; 12 A-4C, VAW-33 Det 14; est2 RF-8G, VAH-4 Det 14; 3 KA-3B, VAW-111 Det 14; 3 E-1B, VFP-63 Det 14; 1 RF-8G, VAQ-33 Det 14; 3 EA-1F, HC-1 Det 14; est1 UH-2A/est1 UH-2B  
 Feb 69 - Sep 69: CVW-16. 7th. VF-111; 8 F-8H, VF-162; 10 F-8J, VA-25; 7 A-7A, VA-87; 11 A-7B, VA-112; 7 A-4C, VFP-63 Det 14; 2 RF-8G, VAQ-130 Det 14; 3 EKA-3B, VAW-111 Det 14; 3 E-1B, HC-7 Det 110; 6 SH-3A

#### CVS-14 Ticonderoga

Mar 71 - Jul 71: CVSG-59. 7th/5th. VS-33; 6 S-2E, VS-37; 6 S-2E, VS-38; 6 S-2E, VS-21; 4 S-2E, HS-4; 8 SH-3D, HS-8; 8 SH-3D, VAW-111 Det 4; 4 E-1B  
 May 72 - Jul 72: CVSG-53. 7th. VS-21; 6 S-2E, VS-29; 6 S-2E, VS-33; 5 S-2E, VS-35; 5 S-2E, VS-38; 4 S-2E, HS-4; 5 SH-3D, HS-8; 5 SH-3D, VAW-111 Det 3; 4 E-1B

#### CVA-15 Randolph

Nov 54 - Jun 55: ATG-181. 6th. VF-21; 18 F9F-6, VF-34; 13 F2H-2, VF-41; 11 F2H-3, VA-42; 14 AD-6, VC-12 Det 36; 3 AD-4W, VC-33 Det 36; 1 AD-3Q/1 AD-4Q/3 AD-5N, VC-62 Det 36; 3 F2H-2P, HU-2 Det 36; 1 HUP-2  
 Jul 56 - Feb 57: CVG-4. 6th. VF-62; 2 FJ-3/7 FJ-3M, VF-102; 11 F2H-4, VA-46; 13 F9F-8, VA-176; 11 AD-6, VAAW-33 Det 36; 4 AD-5N, VAH-11 Det 36; est4 AJ-1, VAW-12 Det 36; 4 AD-5W, VFP-62 Det 36; 3 F9F-8P, HU-2; 1 HUP-2  
 Jul 58 - Mar 59: CVG-7. 6th. VF-71; 10 F2H-4, VF-84; 11 FJ-3M, VA-75; 14 AD-6, VA-86; est12 A4D-2, VAAW-33 Det 36; 3 AD-5N, VAW-12 Det 36; 4 AD-5W, VFP-62 Det 36; 3 F9F-8P, HU-2; est1 HUP-3  
 Jun 60 - Feb 61: FRAM II modernization

#### CVS-15 Randolph

Jun 62 - Aug 62: CVSG-58. 6th. VS-26; 10 S-2D, VS-36; 10 S-2D, HS-7; 15 SH-34J, VAW-12 Det 15; 4 E-1B  
 Oct 62 - Nov 62: CVSG-58. CMC. VS-26; 10 S-2D, VS-36; 10 S-2D, HS-7; 13 SH-34J, VAW-12 Det 15; 4 E-1B  
 Jun 65 - Sep 65: CVSG-58. 6th. VS-26; 9 S-2D, VS-36; 9 S-2D, HS-7; 15 SH-3A, VAW-12 Det 15; 4 E-1B  
 May 66 - Sep 66: CVSG-60. 2nd. VS-34; est10 S-2E, VS-39; est10 S-2E, HS-9; 15 SH-3A, VAW-12 Det 15; 4 E-1B  
 Sep 67 - Dec 67: CVSG-56. 6th. VS-24; est10 S-2E, VS-27; 10 S-2E, HS-3; 16 SH-3A, VAW-121 Det 15; est4 E-1B

#### CVA-16 Lexington

May 56 - Dec 56: ATG-1. 7th. VF-52; 8 F2H-3, VF-111; 7 F9F-8/8 F9F-8B, VX-4; 4 F7U-3M, VA-151; 7 F7U-3, VA-196; 16 AD-6; VC-6 Det H; est3 AJ-2, VC-11 Det H; 3 AD-4W, VC-35 Det H; 4 AD-5N, VC-61 Det H; 3 F9F-8P, HU-1 Det H; est1 HUP-3; GMGRU-1 Det H; est2 F9F-6D  
 Apr 57 - Oct 57: CVG-12. 7th. VF-121; 14 FJ-3M, VF-123; 9 F9F-8, VF-124; 9 F3H-2N, VA-125; est6 AD-6/est8 AD-7, VAAW-35 Det G; 4 AD-5N, VAH-6 Det G; 2 AJ-2, VAW-11 Det G; 3 AD-5W, VFP-61 Det G; 3 F9F-8P, HU-1 Det G; est1 HUP-3, GMGRU-1 Det H; 2 FJ-3D  
 Jul 58 - Dec 58: CVG-12. 7th. VF-24; est9 F3H-2M, VF-213; 12 F4D-1, VA-212; 11 AJ-4B, VA-215; 1 AD-5/14 AD-6, VAAW-35 Det L; 4 AD-5N, VAW-11 Det L; 3 AD-5W, VFP-61 Det L; est2 F9F-8P, HU-1 Det L; est1 HUP-2  
 Apr 59 - Dec 59: CVG-21. 7th. VF-211; 12 F11F-1, VF-213; 11 F4D-1, VA-212; 10 FJ-4B, VA-215; 12 AD-6, VA-216; 12 A4D-2, VAAW-35 Det L; est3 AD-5N, VAH-4 Det L; est3 A3D-2, VAW-11 Det LN; 1 AD-5W, VFP-61 Det L; est3 F8U-1P, HU-1 Det L; est1 HUP-2  
 Oct 60 - Jun 61: CVG-21. 7th. VF-211; 12 F8U-1, VF-213; 12 F3H-2, VA-212; 12 FJ-4B, VA-215; 12 AD-6, VA-216; 12 AJ-4B, VAH-4 Det L; 3 A3D-2, VAW-11 Det L; 3 WF-2, VAW-13 Det L; est3 AD-5Q, VCP-63 Det L; 3 F8U-1P, HU-1 Det L; 2 HUP-3  
 Nov 61 - May 62: CVG-14. 7th. VF-141; 12 F3H-2, VMF-323; 11 F8U-2, VA-144; 9 FJ-4B, VA-145; 11 AD-6, VA-146; 11 FJ-4B, VAH-4 Det F; 3 A3D-2, VAW-11 Det F; 3 WF-2, VAW-13 Det F; 2 AD-5Q, VFP-63 Det F; 3 F8U-1P, HU-1 Det F; 2 HUP-3  
 Jan 69: Lexington; Redesignated CVT

#### CVA-18 Wasp

Sep 54 - Apr 55: ATG-1. 7th. VF-52; 12 F9F-2, VF-111; 20 F9F-6, VF-151; 12 F9F-2, VF-194; 16 AD-6, VC-3 Det H; 4 F2H-3, VC-11 Det H; 3 AD-4W, VC-35 Det H; 4 AD-4N, VC-61 Det H; 3 F2H-2P, HU-1 Det 3; est2 HUP-2  
 Apr 56 - Oct 56: CVG-15. 7th. VF-152; 8 F2H-3, VF-153; 2 F9F-8/10 F9F-8B, VA-155; 15 AD-6, VMA-223; 17 F9F-5, VC-11 Det D; 1 AD-4Q/2 AD-5W, VC-35 Det D; 4 AD-5N, VC-61 Det D; 3 F9F-8P, HU-1; est2 HUP-2

## CVS-18 Wasp

May 58 - Oct 58: CVS-18. 6th. VS-31; 20 S2F-1/3 S2F-2, HS-11; 14 HSS-1, VAW-12; est4 AD-5W, VFAW-4; est4 AD-5N, HU-2 Det 48; 1 HUP-2  
 Jun 61 - Aug 61: CVSG-52. 6th. VS-28; 6 S2F-1/4 S2F-1S, VS-31; 4 S2F-1/6 S2F-2, HS-11; 7 HSS-1/6 HSS-1N, VAW-12 Det 48; 4 AD-5W, HU-2 Det 48; 1 HUP-3  
 Feb 62 - Jun 62: CVSG-52. 6th. VS-28; 3 S2F-1/3 S2F-1S/2 S2F-1S1, VS-31; 3 S2F-1/6 S2F-1S/1 S2F-1S1, HS-11; 13 HSS-1N, VA-64 Det 48; 4 AD4-2, VAW-33 Det 48; 4 AD-5W  
 Oct 62 - Nov 62: CVSG-52. CMC. VS-28; 9 S-2F, VS-31; 3 S-2B/7 S-2F, HS-3; 13 SH-3A, VAW-33 Det 18; 3 EA-1E  
 Sep 64 - Dec 64: CVSG-52. 6th. VS-28; 10 S-2E, VS-31; 10 S-2E, HS-11; 16 SH-3A, VAW-33 Det 18; 4 EA-1E  
 Jan 67 - Mar 67: FRAM II modernization  
 Aug 68 - Dec 68: CVSG-52. 2nd/6th. VS-28; 8 S-2E, VS-31; 8 S-2E, VS-24 Det 18; 1 S-2E, HS-11; 16 SH-3A, VAW-121 Det 18; 5 E-1B, VSF-1; est4 A-4C  
 Apr 69 - Jul 69: CVSG-54. 2nd/6th. VS-22; 7 S-2E, VS-32; 8 S-2E, HS-5; est6 SH-3D, VAW-121 Det 18; 2 E-1B  
 May 70 - Sep 70: CVSG-54. 2nd. VS-22; 7 S-2E, VS-28; 6 S-2E, VS-32; 5 S-2E, HS-5; 7 SH-3D, HS-7; 6 SH-3D, VAW-121 Det 18; 5 E-1B  
 Jan 71 - Mar 71: CVSG-54. 2nd/6th. VS-22; 6 S-2E, VS-28; 7 S-2E, VS-32; 6 S-2E, HS-5; 6 SH-3D, HS-7; 4 SH-3D

## CVA-19 Hancock

Aug 59 - Jan 60: CVG-15. 7th. VF-151; 11 F2H-2, VF-154; 11 F8U-1E, VA-152; 11 AD-6, VA-153; 12 A4D-2, VA-155; 12 A4D-2, VAH-4 Det D; est4 A3D-2, VCP-61 Det D; est4 F8U-1P, VAW-11 Det D; est3 AD-5N, HU-1 Det D; est1 HUP-3  
 Jul 60 - Mar 61: CVG-11. 7th. VF-111; 10 F11F-1, VF-114; 11 F3H-2, VA-112; 12 A4D-2, VA-113; 11 A4D-2, VA-115; 10 AD-7, VAH-4 Det C; est3 A3D, VAW-13 Det C; 3 WF-2  
 Feb 62 - Aug 62: CVG-21. 7th. VF-211; 9 F-8A, VA-215; 9 A-1H/3 A-1J, VAH-4 Det L; 2 A-3B, VFP 63 Det L; 3 F-8AP, VAW 11 Det L; 2 E-1B, VAW 13 Det L; 2 EA-1F, HU-1 Det L; 2 UH-25C  
 Jun 63 - Dec 63: CVG-21. 7th. VF-211; 11 F-8A, VF-213; 10 F-3B, VA-212; 11 A-4B, VA-215; 9 A1-H/3 A1-J, VA-216; 12 A-4C, VAH-4 Det L; 3 A-3B, VFP-63 Det 6; 2 RF-8A, VAW-11 Det 6; 5 E-1B, HU-1 Det L; 2 UH-25B  
 Oct 64 - May 65: CVW-21. 7th. VF-214; 11 F-8C, VF-211; 10 F-8E, VA-212; 11 A-4E, VA-215; 9 A-1H/2 A-1J, VA-216; 12 A-4C, VAH-4 Det L; 3 A-3B, VAW-11 Det L; 3 E-1B, VFP-63 Det L; 3 RF-8A, HU-1 Det L; 2 UH-2A, 1 UH-2B  
 Nov 65 - Aug 66: CVW-21. 7th. VF-211; 9 F-8E, VF-24; 12 F-8C, VA-212; 13 A-4E, VA-215; 8 A-1H/4 A-1J, VA-216; 13 A-4C, VAW-11 Det L; 3 E-1B, VFP-63 Det L; 2 RF-8A, HC-1 Det L; 2 UH-2A/1 UH-2B  
 Jan 67 - Jul 67: CVW-5. 7th. VF-51; 10 F-8E, VF-53; 10 F-8E, VA-93; 13 A-4E, VA-94; 7 A-4C, VA-115; 12 A-1H, VAH-4 Det B; est3 A-3B, VAW-11 Det 31; 2 E-1B, VFP-63 Det B; 3 RF-8G, HC-1 Det B; est1 UH-2A/est1 UH-2B  
 Jul 68 - Mar 69: CVW-21. 7th. VF-24; 13 F-8H, VF-211; 10 F-8H, VA-55; 14 A-4F, VA-163; 14 A-4E, VA-164; 14 A-4E, VAW-111 Det 19; 3 E-1B, VFP-63 Det 19; 2 RF-8G, VAW-13 Det 19; 3 EKA-3B, HC-1 Det 19; 4 UH-2C  
 Aug 69 - Apr 70: CVW-21. 7th. VF-24; 11 F-8H, VF-211; 10 F-8J, VA-55; 14 A-4F, VA-164; 14 A-4F, VA-212; 14 A-4F, VAW-111 Det 19; 3 E-1B, VFP-63 Det 19; 2 RF-8G, HC-1 Det 19; 3 UH-2C  
 Oct 70 - Jun 71: CVW-21. 7th. VF-24; 13 F-8J, VF-211; 12 F-8J, VA-55; 12 A-4F, VA-164; 14 A-4F, VA-212; 14 A-4F, VAQ-129 Det 62; 3 EKA-3B, VAW-111 Det 19; 3 E-1B, VFP-63 Det 19; 3 RF-8G, HC-1 Det 7; 3 UH-2C  
 Jan 72 - Oct 72: CVW-21. 7th. VF-24; 10 F-8J, VF-211; 10 F-8J, VA-55; 10 A-4F, VA-164; 11 A-4F, VA-212; 14 A-4F, VFP-63 Det 1; 3 RF-8G, VAQ-135 Det 5; 3 EKA-3B, VAW-111 Det 2; 2 E-1B, HC-1 Det 7; 2 SH-3G  
 May 73 - Jan 74: CVW-21. 7th/5th. VF-24; 7 F-8J, VF-211; 10 F-8J, VA-55; 14 A-4F, VA-164; 14 A-4F, 2 TA-4F, VA-212; 14 A-4F, VFP-63 Det 1; 2 RF-8G, VAQ-135 Det 5; 3 EKA-3B, VAW-111 Det 2; 3 E-1B, HC-1 Det 3; 3 SH-3G, HC-7 Det 110; 2 HH-3A  
 Mar 75 - Oct 75: CVW-21. 7th. VF-24; 10 F-8J, VF-211; 8 F-8J, VA-55; 14 A-4F, VA-164; 14 A-4F, 2 TA-4F, VA-212; 14 A-4F, RVAW-110 Det 6; 3 E-1B, VFP-63 Det 1; 2 RF-8G, HC-1 Det 1; 3 SH-3G

## CVA-20 Bennington

Oct 55 - Mar 56: ATG-201. 7th. VF-13; 14 F9F-8, VA-36; 14 F9F-5, VA-105; 14 AD-6, VC-4 Det-30; 4 F2H-4, VC-12 Det-30; 1 AD-4Q/3 AD-5W, VC-33 Det-30; 4 AD-5N, VC-62 Det-30; 3 F9F-6P, HU-2 Det-30; est1 HUP-2  
 Oct 56 - May 57: ATG-181. 7th. VF-21; est14 FJ-3M, VF-41; est12 F2H-3, VF-174; est14 F9F-8B, VA-42; est14 AD-6, VAAW-33 Det-30; est3 AD-5N, VAH-6 Det-N; 2 AJ-2, VAW-12 Det-30; est4 AD-5W, VFP-62 Det-30; est3 F9F-8P, HU-1; est1 HUP-2  
 Aug 58 - Jan 59: ATG-4. 7th. VF-111; 13 FJ-3M, VA-55; 12 FJ-4B, VA-152; 12 F2H-3, VA-216; 13 AD-6, VAAW-35 Det K; 4 AD-5N, VAH-16 Det K; est4 AJ-2, VAW-11 Det K; est3 AD-5W, VFP-61; est3 F9F-8P, HU-1 Det 14; est1 HUP-2

## CVS-20 Bennington

Oct 60 - Feb 61: CVSG-59. 7th. VS-33; 2 S2F-1/9 S2F-1S, VS-38; 2 S2F-1/8 S2F-1S, HS-8; 15 HSS-1, VAW-11 Det Q; 4 AD-5W

Jan 62 - Jul 62: CVSG-59. 7th. VS-33; 11 S2F-1S, VS-38; 9 S2F-1, HS-8; 1 HSS-1/16 HSS-1N, VAW-11 Det Q; 5 AD-5W

Sep 62 - May 63: FRAM II modernization

Feb 64 - Aug 64: CVSG-59. 7th. VS-33; 10 S-2E, VS-38; 10 S-2E, HS-8; 14 SH-3A, VAW-11 Det Q; 5 EA-1E, VA-93 Det Q; 4 A-4B, HU-1 Det Q; est1 UH-2A

Mar 65 - Oct 65: CVSG-59. 7th. VS-33; 10 S-2E, VS-38; 10 S-2E, HS-8; 16 SH-3A, VAW-11 Det Q; 4 E-1B, VA-113 Det Q; 4 A-4B

Nov 66 - May 67: CVSG-59. 7th. VS-33; 11 S-2E, VS-38; 11 S-2E, HS-8; 22 SH-3A, VAW-11 Det Q; 4 E-1B

May 68 - Nov 68: CVSG-59. 7th. VS-33; 10 S-2E, VS-38; 9 S-2E, HS-8; 14 SH-3A, VAW-111 Det 20; 4 E-1B

## CVA-21 Boxer

Jun 55 - Feb 56: CVG-14. 7th. VF-142; 20 F9F-6, VF-144; 1 F9F-4/17 F9F-5, VA-145; 8 AD-4/8 AD-4B, VC-11 Det F; 3 AD-4N/1 AD-4Q, VC-35 Det F; 3 AD-5N, VC-61 Det F; 3 F9F-5P, HU-1 Det 19; est1 HUP-2

Nov 55: Redesignated CVS-21

## CVS-21 Boxer

Jul 56 - Jan 57: CVS-21. 7th. VS-23; 11 S2F-1/10 S2F-2, HS-4; est14 HSS-1, VAW-11 Det F; est3 AD-5W

Jan 59: Redesignated LPH-4

## LPH-4 Boxer

Jun 61 - Aug 61: DR. HMRL-263; 20 HUS-1/2 HUS-3

Oct 62 - Dec 62: CMC. HMM-263; 24 UH-34D, VMO-1; 5 O-1C/6 O-1B/8 OH-43D

Apr 65 - June 65: DR: HMM-264; 20 UH-34D

Aug 65 - Oct 65: 6th/5th/7th. Transported units for Army

Apr 66 - Jul 66: 6th/5th/7th. HMM-265; est21 CH-46A

## CVA-31 Bon Homme Richard

Aug 56 - Feb 57: CVG-21. 7th. VF-211; 15 FJ-3M, VF-213; 8 F2H-3, VA-212; 8 F7U-3M, VA-215; 18 AD-6, VAAW-35 Det L; 4 AD-5N, VAH-6 Det L; est2 AJ-2, VAW-11 Det L; 3 AD-5W, VFP-61 Det L; 3 F2H-2P, HU-1; est1 HUP-2

Jul 57 - Dec 57: CVG-21. 7th. VF-141; 11 F4D-1, VF-51; 13 FJ-3, VA-54; 6 AD-6/7 AD-7, VA-56; 12 F9F-8B, VAAW-35 Det B; 4 AD-5N, VAH-2 Det B; est3 A3D-2, VAW-11 Det B; 3 AD-5W, VFP-61 Det B; 3 F9F-8P, HU-1; est1 HUP-2

Nov 58 - Jun 59: CVG-19. 7th. VF-191; 7 F11F-1, VF-193; 9 F3H-2, VA-192; 12 FJ-4B, VA-195; 11 AD-6/1 AD-7, VAAW-35 Det E; 3 AD-5N, VAH-2 Det E; est3 A3D-2, VAW-11 Det E; est3 AD-5W, VFP-61 Det E; est3 F9F-8P, HU-1; est1 HUP-2

Nov 59 - May 60: CVG-19. 7th/5th. VF-191; 12 F11F-1, VF-193; 12 F3H-2, VA-192; 12 A4D-2, VA-195; 12 A4D-2, VA-196; 10 AD-6, VAH-4 Det E; 2 A3D-2, VAW-11 Det E; est3 AD-5W, VCP-63 Det E; est3 F8U-1P, HU-1; est1 HUP-2

Apr 61 - Dec 61: CVG-19. 7th. VF-191; 8 F8U-1, VF-193; 10 F3H-2, VA-192; 11 A4D-2N, VA-195; 12 A4D-2N, VA-196; 12 AD-6, VAH-4 Det E; est3 A3D-2, VAW-11 Det E; 3 WF-2/2 AD-5Q, VCP-61 Det E; 3 F8U-1P, HU-1; est1 HUP-3

Jul 62 - Feb 63: CVG-19. 7th. VF-191; 12 F8U-1, VF-193; 9 F3H-2, VA-192; 12 A4D-2N, VA-195; 12 A4D-2N, VA-196; 5 AD-2/2 AD-7, VAH-4 Det E; est3 A3D-2, VAW-11 Det E; est3 WF-2, VFP-63 Det E; 3 F8U-1P, HU-1; est1 HUP-3

Jan 64 - Nov 64: CVW-19. 7th/5th. VF-191; 14 F-8E, VF-194; 11 F-8C, VA-192; 12 A-4C, VA-195; 12 A-4C, VA-196; 3 A-1J/9 A-1H, VAH-4 Det E; 3 A-3B, VAW-11 Det E; 3 E-1B, VFP-63 Det E; est3 RF-8A, HU-1 Det E; est1 UH-2A, VAP-61 Det E; est3 RA-3B, VQ-1 Det E est3 EA-3B

Apr 65 - Jan 66: CVW-19. 7th. VF-191; 11 F-8E, VF-194; 11 F-8E, VA-192; 13 A-4C, VA-195; 13 A-4C, VA-196; 12 A-1H, VAW-11 Det E; 3 E-1B, VAW-13 Det E; est3 EA-1F, VFP-63 Det E; 3 RF-8A, HU-1 Det E; 2 UH-2A/1 UH-2B, VQ-1 Det E; est3 EA-3B

Jan 67 - Aug 67: CVW-21. 7th. VF-24; 13 F-8C, VF-211; 10 F-8E, VA-76; 14 A-4C, VA-212; 14 A-4E, VA-215; 8 A-1H/2 A-1J, VAH-4 Det 31; est3 A-3B, VAW-11 Det L; 3 E-1B, VFP-63 Det L; 3 RF-8G, HC-1 Det L; 2 UH-2B, VAW-13 Det 31; est3 EA-1F

Jan 68 - Oct 68: CVW-5. 7th. VF-51; 13 F-8H, VF-53; 13 F-8E, VA-93; 15 A-4F, VA-94; 16 A-4E, VA-212; 12 A-4F, VAW-111 Det 31; 3 E-1B, VAW-13 Det 31; est3 EKA-3B, VFP-63 Det 31; 4 RF-8G, HC-1 Det 31; 3 UH-2C

Mar 69 - Oct 69: CVW-5. 7th. VF-51; 12 F-8J, VF-53; 12 F-8J, VA-22; 8 A-4F, VA-94; 6 A-4E, VA-144; 8 A-4E, VFP-63 Det 31; 3 RF-8G, VAQ-130 Det 31; est3 EKA-3B, VAW-111 Det 31; est3 E-1B, HC-1 Det 31; 2 UH-2C, HC-7 Det 110; est5 SH-3A  
 Apr 70 - Nov 70: CVW-5. 7th. VF-51; 7 F-8J, VF-53; 8 F-8J, VA-22; 11 A-4F, VA-94; 12 A-4C, VA-144; 14 A-4F, VFP-63 Det 31; 2 RF-8G, VAQ-130 Det 31; 2 EKA-3B, VAW-111 Det 14; 3 E-1B, HC-1 Det 3; 2 UH-2C

#### CVA-33 Kearsarge

Oct 54 - May 55: CVG-11. 7th. VF-112; 16 F9F-6, VF-113; 11 F9F-2, VF-114; 10 F9F-5, VA-115; 16 AD-6, VC-3 Det C; 7 F2H-3, VC-11; Det C; 3 AD-4W, VC-35 Det C; 4 AD-5N, VC-61 Det C; 3 F9F-6P, HU-1; est1 HUP-2  
 Oct 55 - May 56: CVG-5. 7th. VF-54; 18 AD-6, VF-91; 19 F9F-8, VF-141; 10 F2H-3, VC-11; Det B; 1 AD-4Q/3 AD-5W, VC-35 Det B; 4 AD-5N, VC-61 Det B; 2 F2H-2P, HU-1; est1 HUP-2  
 Aug 57 - Apr 58: ATG-3. 7th. VF-53; 13 FJ-3M, VF-194; 8 F2H-3, VA-26; 12 F9F-8B, VA-96; 8 AD-6/6 AD-7, VAH-6 Det J; 4 AJ-2, VAAW-35 Det J; 4 AD-5N, VAW-11 Det J; 3 AD-5W, VFP-61 Det J; 3 F9F-8P, HU-1; est1 HUP-2

#### CVS-33 Kearsarge

Sep 59 - Mar 60: CVSG-53. 7th. VS-21; 2 S2F-1/14 S2F-1S/3 S2F-2, HS-6; 12 HSS-1/3 HSS-1N, VAW-13 Det A; 3 AD-5W  
 Mar 61 - Nov 61: CVSG-53. 7th. VS-21; 4 S2F-1/7 S2F-1S, VS-29; 3 S2F-1/8 S2F-1S, HS-6; 10 HSS-1/6 HSS-1N, VAW-11 Det R; 6 AD-5W  
 Apr 63 - Dec 63: CVSG-53. 7th. VS-21; 1 S-2B/9 S-2F, VS-29; 1 S-2A/2 S-2B/8 S-2F, HS-6; 13 SH-3A, 2 SH-34G, VA-22 Det R; 4 A-4B, VAW-11 Det R; 2 EA-1E  
 Jun 64 - Dec 64: CVSG-53. 7th. VS-21; 10 S-2F, VS-29; 10 S-2F, HS-6; 14 SH-3A, VAW-11 Det R; 5 EA-1A, VA-153 Det R; 4 A-4B  
 Jun 66 - Dec 66: CVSG-53. 7th. VS-21; 10 S-2E, VS-29; 10 S-2E, HS-6; 14 SH-3A, VAW-11 Det R; 4 E-1B  
 Aug 67 - Apr 68: CVSG-53. 7th. VS-21; 9 S-2E, VS-29; 10 S-2E, HS-6; 15 SH-3A, VAW-111 Det 33; 4 E-1B  
 Mar 69 - Sep 69: CVSG-53. 7th. VS-21; 6 S-2E, VS-29; 6 S-2E, HS-6; 14 SH-3A, VAW-111 Det 33; 4 E-1B, HC-7 Det 110; 5 SH-3A

#### CVA-34 Oriskany

Mar 55 - Sep 55: CVG-19. 7th. VF-191; 22 F9F-6, VF-192; 16 F9F-5, VF-193; 9 F2H-3, VA-195; 15 AD-6, VC-11 Det E; 3 AD-4W, VC-35 Det E; 3 AD-5N, VC-61 Det E; 3 F2H-2P, HU-1; est1 HUP-2  
 Feb 56 - Aug 56: CVG-9. 7th. VF-93; 1 F9F-8/22 F9F-8B, VF-194; 8 F2H-3, VA-95; 15 AD-6, VC-11 Det M; 1 AD-4Q/3 AD-5W, VC-35 Det M; 4 AD-5N, VC-6; est3 AJ-2, VC-61 Det M; 3 F9F-6P, HU-1; est1 HUP-2  
 May 60 - Dec 60: CVG-14. 7th. VF-141; 12 F3H-2, VF-142; 12 F8U-2, VA-144; 12 FJ-4B, VA-145; 10 AD-6, VA-146; 11 FJ-4B, VCP-63 Det F; est3 F8U-1P, VAH-4 Det F; est3 A3D-2, HU-1 Det F; 2 HUP-2  
 Jun 62 - Dec 62: CVG-16. 7th. VF-161; 8 F3H-2M, VMF-232; 13 F8U-1E, VA-163; 12 A4D-2, VA-164; 12 A4D-2, VA-165; 11 AD-6, VAH-4 Det G; 3 A3D-2, VFP-63 Det G; 2 F8U-1P, VAW-11 Det G; 3 WF-2, HU-1 Det G; est2 HUP-3  
 Aug 63 - Mar 64: CVW-16. 7th. VF-161; 11 F-3B, VF-162; 11 F-8A, VA-163; 12 A-4B, VA-164; 12 A-4B, VA-165; 9 A-1H/3 A-1J, VAH-4 Det G; 2 A-3B, VFP-63 Det G; 3 RF-8A, VAW-11 Det G; 3 E-1B, HU-1 Det G; 2 UH-2A, VQ-1 Det G; est3 EA-3B  
 Apr 65 - Dec 65: CVW-16. 7th. VF-162; 11 F-8E, VMF(AW)-212; 12 F-8E, VA-152; 2 A-1J/9 A-1H, VA-163; 13 A-4E, VA-164; 13 A-4E, VAW-11 Det G; 3 E-1B, VFP-63 Det G; 3 RF-8A, VMCJ-1 Det G; est3 EF-10B, VQ-1 Det G; est3 EA-3B, VAW-13 Det G; est3 EA-1F, HC-1 Det G; 2 UH-2A, 1 UH-2B  
 May 66 - Nov 66: CVW-16. 7th. VF-111; 11 F-8E, VF-162; 4 F-8E, VA-152; 12 A-1H, VA-163; 10 A-4E, VA-164; 12 A-4E, VAH-4 Det G; 3 A-3B, VAW-11 Det G; est3 E-1B, HC-1 Det G; 1 UH-2A, 2 UH-2B, VFP-63 Det G; est3 RF-8G, VAP-61 Det G; est3 RA-3B  
 Jun 67 - Jan 68: CVW-16. 7th. VF-111; 13 F-8C, VF-162; 9 F-8E, VA-152; 9 A-1H/3 A-1J, VA-163; 10 A-4E, VA-164; 11 A-4E, VFP-63 Det G; 3 RF-8G, VAH-4 Det G; 2 KA-3B, VAW-111 Det 34; 3 E-1B, VAW-13 Det G; est3 EA-1F, VAP-61 Det G; est3 RA-3B, HC-1 Det 34; 1 UH-2A/2 UH-2B  
 Apr 69 - Nov 69: CVW-19. 7th. VF-191; 9 F-8J, VF-194; 7 F-8J, VA-23; 14 A-4F, VA-192; 11 A-4F, VA-195; 12 A-4E, VAW-111 Det 34; 2 E-1B, VFP-63 Det 34; 3 RF-8G, VAQ-130 Det 34; est3 EKA-3B, HC-1 Det 34; 3 UH-2C  
 May 70 - Dec 70: CVW-19. 7th. VF-191; 11 F-8J, VF-194; 12 F-8J, VA-153; 15 A-7A, VA-155; 12 A-7B, VAQ-130 Det 34; 2 EKA-3B, VAW-111 Det 34; 3 E-1B, VFP-63 Det 34; 4 RF-8G, HC-1 Det 6; 3 UH-2C  
 May 71 - De 71: CVW-19. 7th. VF-191; 10 F-8J, VF-194; 10 F-8J, VA-153; 12 A-7A, VA-155; 12 A-7B, VA-215; 10 A-7B, VAQ-130 Det 3; 2 EKA-3B, VFP-63 Det 34; 3 RF-8G, VAW-111 Det 2; 3 E-1B, HC-1 Det 5; 2 UH-2C, HC-7 Det 110; 2 HH-3A  
 Jun 72 - Mar 73: CVW-19. 7th. VF-191; 11 F-8J, VF-194; 11 F-8J, VA-153; 12 A-7A, VA-155; 8 A-7B, VA-215; 13 A-7B, VAW-111 Det 6; 3 E-1B, VAQ-130 Det 3; 3 EKA-3B, VFP-63 Det 4; 4 RF-8G, HC-1 Det 5; 3 SH-3G



Oct 73 - Jun 74: CVW-19. 7th. VF-191; 9 F-8J, VF-194; 10 F-8J, VA-153; 11 A-7B, VA-155; 11 A-7B, VA-215; 11 A-7B, VFP-63 Det 4; 2 RF-8G, VAW-111 Det 6; 2 E-1B, VAQ-130 Det 3; 3 EKA-3B, HC-1 Det 1; 3 SH-3G  
 Sep 75 - Mar 76: CVW-19. 7th. VF-191; 10 F-8J, VF-194; est7 F-8J, VA-153; 9 A-7B, VA-155; 11 A-7B, RVAW-110 Det 4; est3 E-1B, VFP-163; Det 4; 2 RF-8G, HC-6; 6 SH-3A

#### CVS-37 Princeton

Nov 54 - May 55: CVS-37. 7th. VS-23; 16 S2F-1, VS-37; 8 AF-2S/8 AF-2W, HS-4 Det N; est10 HO4S-3S, VC-3 Det N; 3 F4U-5N, VC-11 Det N; est3 AD-5W  
 Jan 56 - Aug 56: CVS-37. 7th. VS-20; 12 S2F-1/4 S2F-2, VS-21; 12 S2F-1/4 S2F-2, HS-2 Det N; est10 HO4S-3S, VC-11 Det N; est3 AD-5W  
 Jul 57 - Feb 58: CVS-37. 7th. VS-38; 18 S2F-1/4 S2F-2, HS-8; 14 HSS-1, VAW-11 Det Q; est3 AD-5W  
 Jun 58 - Dec 58: CVS-37. 7th. VS-23; 17 S2F-1/5 S2F-2, HS-4; 13 HSS-1, VAW-11 Det T; est3 AD-5W

#### LPH-5 Princeton

Feb 60 - Jul 60: 7th. HMRL-362; 19 UH-34D  
 Sep 61 - Jun 62: 7th. HMM-261; 23 HUS-1, HMM-362; 24 HUS-1  
 Feb 63 - Oct 63: 7th. HMM-163; 20 UH-34D  
 Sep 64 - May 65: 7th. HMM-162; 32 UH-34D  
 Feb 66 - Sep 66: 7th. HMM-364; 19 UH-34D  
 Jan 67 - Jun 67: 7th. HMM-164; 21 CH-46A  
 May 68 - Dec 68: 7th. HMM-362; 24 UH-34D

#### CVA-38 Shangri La

Jan 56 - Jun 56: ATG-3. 7th. VF-53; 16 F9F-8, VF-92; 8 AD-4B/7 AD-4NA, VF-122; 14 F9F-8, VC-3 Det J; 4 F2H-3, VC-6 Det J; est3 AJ-2, VC-11 Det J; 1 AD-4Q/3 AD-5W, VC-35 Det J; 4 AD-5N, VC-61 Det J; 3 F2H-2P, HU-1; est1 HUP-2  
 Nov 56 - May 57: CVG-2. 7th. VF-24; 13 FJ-3M, VF-64; 8 F2H-3, VA-63; 1 F9F-8/9 F9F-8B, VA-65; 1 AD-4Q/10 AD-6, VAAW-35 Det A; 4 AD-5N, VAW-11 Det A; 3 AD-5W, VX-4 Det A; 3 F7U-3M, VFP-61; Det A; 3 F9F-8P, HU-1; est1 HUP-2  
 Mar 58 - Nov 58: CVG-11. 7th. VF-114; 9 F3H-2N, VA-113; 12 A4D-1, VA-115; 15 AD-6, VA-156; 10 F11F-1, VAAW-35 Det C; 4 AD-5N, VAH-4 Det C; 4 A3D-2, VAW-11 Det C; est3 AD-5W, VFP-61 Det C; est3 F9F-8P, HU-1; est1 HUP-2  
 Mar 59 - Oct 59: CVG-11. 7th. VF-111; 13 F11F-1, VF-114; 14 F3H-2N, VA-113; 12 A4D-2, VA-115; 11 AD-7, VAAW-35 Det C; 4 AD-5N, VAH-4 Det C; 4 A3D-2, VAW-11 Det C; est3 AD-5W, VFP-61 Det C; est3 F8U-1P, HU-1; est1 HUP-2  
 May 60 - Jul 60: CVG-11. 2nd. VF-13; 12 F4D-1, VF-62; 14 F8U-1, VA-12; 14 A4D-2, VA-106; 10 A4D-2, VA-176; 11 AD-6, VAW-12 Det 44; est3 AD-5W, VAW-33 Det 44; est3 AD-5Q, VFP-62 Det 44; 2 F8U-1P, HU-2; est1 HUP-3  
 Feb 61 - May 61: CVG-10. 6th. VF-13; 13 F4D-1, VF-62; 15 F8U-1, VMA-225; 12 A4D-2N, VA-46; 12 A4D-2N, VA-106; 11 A4D-2, VA-176; 12 AD-6, VAW-12 Det 44; 4 AD-5W, VAW-33 Det 44; 4 AD-5Q, VFP-62 Det 44; 2 F8U-1P, HU-2 Det 44; 2 HUP-3,  
 Feb 62 - Aug 62: CVG-10. 6th. VF-13; 9 F4D-1, VMF-251; 12 F8U-1E, VA-176; 11 AD-6, VA-46; 11 A4D-2N, VA-106; 12 A4D-2, VFP-62 Det 44; 2 F8U-1P, VAW-12 Det 44/38; est3 E-1B, VAW-33 Det 44/38; est1, HU-2 2 HUP-3  
 Oct 63 - May 64: CVW-10. 6th. VF-13; 12 F-3B, VF-62; 12 F-8E, VA-46; 12 A-4C, VA-106; 12 A-4C, VA-176; 12 A-1H, VAW-12 Det 38; est3 E-1B, VAW-33 Det 38; est3 EA-1F, VFP-62 Det 38; 3 RF-8A, HU-2 Det 38; est1UH-2A  
 Feb 65 - Sep 65: CVW-10. 6th. VF-13; 10 F-8E, VF-62; 10 F-8E, VA-46; 13 A-4C, VA-106; 14 A-4C, VA-176; 12 A-1H, VAH-1; est3 A-3D, VAW-12 Det 38; est3 E-1B, VAW-33 Det 38; est3 EA-1F, VFP 62 Det 38; 3 RF-8A, HU-2 Det 38; 3 UH-2A  
 Sep 66 - May 67: CVW-8. 6th. VF-13; 9 F-8D, VF-62; 6 F-8D, VSF-1; est4 A-4B, VA-81; 11 A-4C, VA-83; 12 A-4C, VAW-12 Det 38; est3 E-1B, VFP-62 Det 38; 3 RF-8A, HC-2 Det 38; 2 UH-2A/1 UH-2B  
 Nov 67 - Aug 68: CVW-8. 6th. VF-13; 10 F-8C, VF-62; 12 F-8C, VA-81; 4 A-4C, VA-83; 9 A-4C/1 A-4E, VA-95; 8 A-4B, VAW-121 Det 38; est3 E-1B, VFP-62 Det 38; 3 RF-8G, HC-2 Det 38; 3 UH-2A  
 Jan 69 - Jul 69: CVW-8. 6th. VF-13; 10 F-8, VF-62; 9 F-8, VA-12; 12 A-4C, VA-72; 14 A-4B, VA-172; 14 A-4B, VAW-121 Det 38; 3 E-1B, VFP-63 Det 38; est3 RF-8G, HC-2 Det 38; 2 UH-2A/1 UH-2B  
 Mar 70 - Dec 70: CVW-8. VF-111; 9 F-8H, VF-162; 6 F-8H, VA-12; 10 A-4C, VA-152; 10 A-4E, VA-172; 10 A-4C, VAH-10 Det 38; 2 KA-3D, VFP-63 Det 38; 3 RF-8G, VAW-121 Det 38; 2 E-1B, HC-2 Det 38; 3 UH-2C

## CVA-39 Lake Champlain

Sep 54 - Apr 55: CVG-8. 6th. VF-61; 16 F9F-6, VF-82; 3 F2H-B/6 F2H-2N, VF-84; 17 F9F-5, VA-85; 16 AD-6, VC-4 Det 34; 3 F2H-4, VC-5; est3 AJ-1, VC-8 Det 34; est3 AJ-1, VC-12; 3 AD-4W, VC-33 Det 34; 1 AD-3Q/1AD-4NL/3 AD-4N/1 AD-4Q, VC-62 Det 34; 3 F2H-2P, HU-2 Det 34; est1 HUP-2

Sep 55 - Mar 56: CVG-6. 6th. VF-33; 14 FJ-3, VF-74; 1 F9F-6/16 F9F-8, VMA-324; 5 AD-4/11 AD-4B, VA-25; 12 AD-6, VAH-7 Det 34; 2 AJ-2, VC-4 Det 34; 4 F2H-4, VC-12; 3 AD-5W, VC-33 Det 34; 4 AD-5N/1 AJ-2/2 AD-3Q, VC-62 Det 34; 3 F2H-2P, HU-2 Det 34; est1 HUP-2

Jan 57 - Jul 57: ATG-82. 6th. VF-81; 3 F9F-8/10 F9F-8B, VMFAW-533; est10 F2H-4, VA-16; est11 AD-6, VAAW-33 Det 34; 3 AD-5N, VAH-7 Det 34; 4 AJ-2, VAW-12 Det 34; 3 AD-5W, VFP-62 Det 34; 3 F9F-8P, HU-2 Det 34; 1 HUP-2

## CVS-39 Lake Champlain

Jun 59 - Sep 59: CVS-39. 6th. VS-30; 16; S2F-1/2 S2F-2, HS-1; est8 HSS-1, VAW-12; 4 AD-5W, HU-2; 1 HUK-1

Jun 60 - Aug 60: CVSG-54. 2nd. VS-22; 4 S2F-1/4 S2F-1S/2 S2F-2, VS-32; 3 S2F-1/6 S2F-1S, HS-5; 5 HSS-1/8 HSS-1N, VAW-12 Det 34; 1 AD-5W

Jun 61 - Aug 61: CVSG-54. 2nd. VS-22; 5 S2F-1/5 S2F-1S, VS-32; 3 S2F-1/8 S2F-1S, HS-5; 16 HSS-1N, VAW-12 Det 34; 4 AD-5W, HU-2 Det 34; 1 HUP-2

Oct 62 - Nov 62: CVSG-54. CMC. VS-22; 1 S2F-1S/10 S2F-2, VS-32; 3 S2F-1S/7 S2F-2, HS-5; 17 HSS-1N, VAW-33 Det 39; 5 AD-5W

Sep 63 - Nov 63: CVSG-52. 2nd. VS-28; 10 S-2E, VS-31; 10 S-2E, HU-11; 14 SH-3A, VAW-33 Det 39; 4 EA-1E

Oct 64 - Nov 64: CVSG-54. 6th. VS-22; 10 S-2F, VS-32; 11 S-2F, HS-5; 14 SH-3A, VAW-33 Det 39; 2 EA-1E

## CVS-40 Tarawa

Aug 57 - Oct 57: CVS-40. 2nd. VS-32; 16 S2F-1/4 S2F-2, HS-1; 14 HSS-1, VFAW-4 Det 38; 4 AD-5, HU-2 Det 38; 1 HUP-2

Jul 58 - Oct 58: CVS-40. 2nd. VS-32; est16 S2F-1/est4 S2F-2, HS-5; 11 HSS-1, VAW-12; est4 AD-5W, VFAW-4; est4 AD-5N

Mar 59 - May 59: CVS-40. 2nd. VS-27; est15 S2F-1/est4 SF2-2, HS-3; est14 HSS-1, VAW-12; est4 AD-5W

Aug 59 - Oct 59: CVS-40. 2nd. VS-39; 19 S2F-1/3 S2F-2, HS-9; 14 HSS-1, VAW-12; est4 AD-5W

## CVA-41 Midway

Dec 54 - Jul 55: CVG-1. 6th. VF-12; 17 F2H-2, VF-101; 6 F2H-2/6 F2H-2B, VF-174; 25 F9F-6, VA-15; 17 AD-6, VC-4 Det 35; 4 F2H-4, VC-12 Det 35; 3 AD-4W, VC-33 Det 35; 4 AD-5N, VC-62 Det 35; 2 F2H-2P, HU-2; est2 HUP-2

Aug 58 - Mar 59: CVG-2. 7th. VF-64; 7 F3H-2, VF-211; 10 F8U-1, VA-63; 12 FJ-4B, VA-65; 1 AD-5/10 AD-6, VAH-2; 7 A3D-2, VAH-8; 7 A3D-2, VAAW-35; 3 AD-5N, VAW-11; 2 AD-5W, VFP-61 Det A; 3 F8U-1P, HU-1; est2 HUP-2

Aug 59 - Mar 60: CVG-2. 7th. VF-21; 12 F-3B, VF-24; 11 F-8A, VA-22; 11 AF-1E, VA-23; 10 AF-1E, VA-25; 12 A-1J, VAH-8; 9 A-3B, VAW-11 Det A; est3 AD-5W, VCP-63 Det A; est3 F-8AP

Feb 61 - Sep 61: CVG-2. 7th. VF-24; 13 F-8C, VF-21; 11 F-3B, VA-23; 11 A-4B, VA-22; 12 A-4B, VA-25; 12 A-1J, VAH-8; 9 A-3B, VCP-63 Det A; 3 F-8AP, VAW-11 Det A; 3 E-1B

Apr 62 - Oct 62: CVG-2. 7th. VF-21; 12 F-3B, VF-24; 13 F-8C, VMA-211; 24 A-4B, VA-22; 12 A-4C, VA-23; 12 A-4B, VA-25; 8 A-1H/4 A-1J, VAH-8; 8 A-3B, VAW-13 Det A; est3 EA-1F, VFP-63 Det A; 3 F-8AP, VAW-11 Det A; 4 E-1B, HU-1 Det A; est2 UH-25C

Nov 63 - May 64: CVW-2. 7th. VF-21; 11 F-4B, VF-24; 12 F-8C, VA-22; 10 A-4C, VA-23; 12 A-4E, VA-25; 8 A-1H/4 A-1J, VAH-8; 8 A-3B, VAW-11 Det A; 4 E-1B, VFP-63 Det A; 2 RF-8A, HU-1 Det 1A; 1 UH-2A

Mar 65 - Nov 65: CVW-2. 7th. VF-21; 12 F-4B, VF-111; 10 F-8D, VA-22; 13 A-4C, VA-23; 10 A-4E, VA-25; 10 A-1H/1 A-1J, VAH-8; 8 A-3B, VAW-11 Det A; 4 E-1B, VAW-13 Det A; est3 EA-1F, VAP-61 Det A; est3 RA-3B, VFP-63 Det A; 2 RF-8A, HU-1 Det A; 3 UH-2A, VQ-1 Det A; est3 EA-3B

Apr 71 - Nov 71: CVW-5. 7th. VF-151; 11 F-4B, VF-161; 9 F-4B, VA-56; 8 A-7B, VA-93; 10 A-7B, VA-115; 10 A-6A/4 KA-6D, VAQ-130 Det 2; 4 EKA-3B, VFP-63 Det 3; 3 RF-8G, VAW-115; 2 E-2B, HC-1 Det 8; 3 SH-3G, HC-7 Det 110; 2 HH-3A

Apr 72 - Mar 73: CVW-5. 7th. VF-151; 8 F-4B, VF-161; 11 F-4B, VA-56; 11 A-7B, VA-93; 12 A-7B, VA-115; 9 A-6A/5 KA-6D, VAQ-130 Det 2; 2 EKA-3B, VFP-63 Det 3; 2 RF-8G, VAW-115; 3 E-2B, HC-1 Det 2; 4 SH-3G, HC-7 Det 110; 4 HH-3A

Sep 73 - Oct 73: CVW-5. 7th. VF-151; 13 F-4N, VF-161; 13 F-4N, VA-56; 13 A-7A, VA-93; 13 A-7A, VA-115; 10 A-6A/4 KA-6D, VFP-63 Det 3; 3 RF-8G, VAW-115; 4 E-2B, HC-1 Det 2; 5 SH-3G, VMCJ-1 Det 101; 5 EA-6A

Jan 74 - Mar 74: CVW-5. 7th. VF-151; 11 F-4N, VF-161; 11 F-4N, VA-56; 12 A-7A, VA-93; 11 A-7A, VA-115; 7 A-6A/3 A-6B/5 KA-6D, VAW-115; 4 E-2B, VFP-63 Det 3; 2 RF-8G, HC-1 Det 2; 5 SH-3G, VMCJ-1 Det 101; est3 EA-6A/est3 RF-4B, VQ-1 Det ?; est3 EA-3B

Oct 74 - Dec 74: CVW-5. 7th. VF-151; 8 F-4N, VF-161; 8 F-4N, VA-56; 13 A-7A, VA-93; 12 A-7A, VA-115; 8 A-6A/3 A-6B/4 KA-6D, VAW-115; 4 E-2B, HC-1 Det 2; 6 SH-3G, VMCJ-1 Det 101; est3 EA-6A/est3 RF-4B, VQ-1 Det ?; est3 EA-3B

Jan 75 - Feb 75: CVW-5. 7th. VF-151; 9 F-4N, VF-161; 12 F-4N, VA-56; 12 A-7A, VA-93; 13 A-7A, VA-115; 7 A-6A/2 A-6B/4 KA-6D, VAW-115; 4 E-2B, HC-1 Det 2; 4 SH-3G, VMFP-3 Det ?; est3 RF-4B, VMAQ-2 Det ?; est3 EA-6B, VMCJ-1 Det 101; 3 EA-6A/3 RF-4B  
 Mar 75 - May 75: CVW-5. 7th. VF-151; 9 F-4N, VF-161; 12 F-4N, VA-56; 12 A-7A, VA-93; 13 A-7A, VA-115; 7 A-6A/2 A-6B/4 KA-6D, VAW-115; 4 E-2B, HC-1 Det 2; 4 SH-3G, VMFP-3 Det ?; est3 RF-4B, VMAQ-2 Det ?; est3 EA-6B, VMCJ-1 Det 101; 3 EA-6A/3 RF-4B  
 Mar 76 - May 76: CVW-5. 7th. VF-151; 11 F-4N, VF-161; 11 F-4N, VA-56; 10 A-7A, VA-93; 12 A-7A, VA-115; 6 A-6A/3 A-6B/4 KA-6D, VAW-115; 3 E-2B, VMFP-3 Det ?; est4 RF-4B, VMAQ-2 Det ?; est4 EA-6B, HC-1 Det 2; 4 SH-3G  
 Dec 78 - Jun 79: CVW-5. 7th. VF-151; F-4N, VF-161; F-4N, VA-56; A-7E, VA-93; A-7E, VA-115; A-6E/KA-6D, VAW-115; E-2B, VMFP-3 Det ?; RF-4B, VMAQ-2 Det ?; EA-6B, HC-1 Det 2; SH-3G  
 Sep 79 - Feb 80: CVW-5. 7th/5th. VF-151; F-4J, VF-161; F-4J, VA-56; A-7A, VA-93; A-7A, VA-115; A-6E/KA-6D, VAW-115; E-2B, VMFP-3 Det ?; RF-4B, VMAQ-2 Det ?; EA-6B, HC-1 Det 2; SH-3G  
 Jan 84 - May 84: CVW-5. 7th/5th. VF-151; F-4S, VF-161; F-4S, VA-56; A-7A, VA-93; A-7A, VA-115; A-6E/KA-6D, VAW-115; E-2B, VMFP-3 Det ?; RF-4B, VAQ-136 Det ?; EA-6B, HC-1 Det 2; SH-3G  
 May 85 - Oct 85: CVW-5. 7th/5th. VF-151; F-4S, VF-161; F-4S, VA-56; A-7A, VA-93; A-7A, VA-115; A-6E/KA-6D, VAW-115; E-2B, VAQ-136 Det ?; EA-6B, HS-12; SH-3H  
 Apr 87 - Jul 87: CVW-5. 7th. VFA-151; F/A-18A, VFA-192; F/A-18A, VFA-195; F/Q-18A, VA-115; A-6E, VAQ-136; EA-6B, VAW-115; E-2B, HS-12; SH-3H  
 Oct 87 - Apr 88: CVW-5. 7th. VFA-151; F/A-18A, VFA-192; F/A-18A, VFA-195; F/Q-18A, VA-115; A-6E, VA-185; A-6E, VAQ-136; EA-6B, VAW-115; E-2B, HS-12; SH-3H  
 Aug 89 - Dec 89: CVW-5. 7th/5th. VFA-151; F/A-18A, VFA-192; F/A-18A, VFA-195; F/Q-18A, VA-115; A-6E, VA-185; A-6E, VAQ-136; EA-6B, VAW-115; E-2B, HS-12; SH-3H  
 Oct 90 - Apr 91: CVW-5. DS. VFA-151; F/A-18A, VFA-192; F/A-18A, VFA-195; F/A-18A, VA-185; A-6E/KA-6D, VA-115; A-6E/KA-6D, VAW-115; E-2C, VAQ-136; EA-6B, HS-12; SH-3H, VRC-50 Det ?; US-3A/C-2A  
 Apr 92: Decommissioned

#### CVA-42 Franklin D. Roosevelt

Jul 57 - Apr 58: CVG-17. 6th. VF-74; 12 F4D-1, VF-171; 12 F2H-3/1 F2H-3M, VF-173; 12 FJ-3M, VA-172; 10 F2H-2/1 F2H-2B, VA-175; 15 AD-6, VAW-12; est3 AD-5W, VAH-3; 8 A3D-1, VAAW-33; est3 AD-5N, VFP-62 Det 37; 3 F2H-2P, HU-2 Det 37; 1 HUP-2  
 Feb 59 - Sep 59: CVG-1. 6th. VF-14; 16 F3H-2, VMFAW-114; 12 F4D-1, VA-15; 12 AD-6, VA-172; 12 A4D-2, VAAW-33; est3 AD-5N, VAH-11; est4 A3D-3, VAAW-33; est3 AD-5N, VFP-62 Det 37; 2 F8U-1P, HU-2; est1 HUP-2  
 Jan 60 - Aug 60: CVG-1. 6th. VF-11; 12 F-8A, VF-14; 12 F-3B, VA-15; 12 A-1H, VA-46; 12 A-4B, VA-172; 12 A-4B, VAH-11; 7 A-3B, VFP-62 Det 37; 1 RF-8A  
 Feb 61 - Aug 61: CVG-1. 6th. VF-11; 13 F-8A, VF-14; 12 F-3B, VA-12; est12 A-4B, VA-15; 12 A-1H, VA-172; 12 A-4B, VAH-11; 9 A-3B, VAW-12 Det 37; 3 E-1B, VFP-62 Det 37; 2 RF-8A  
 Sep 62 - Apr 63: CVG-1. 6th. VF-11; 10 F-8E, VF-14; 10 F-3B, VA-12; 12 A-4C, VA-15; 12 A-1H, VA-172; 12 A-4C, VAH-11; 6 A-3B, VFP-62 Det 42; 3 RF-8A, VAW-12 Det 42; 3 E-1B, HU-2 Det 42; est2 UH-2A  
 Apr 64 - Dec 64: CVW-1. 6th. VF-11; 11 F-8E, VF-14; 12 F-4B, VA-12; 12 A-4C, VA-15; 12 A-1H, VA-172; 12 A-4C, VAH-11; 6 A-3B, VFP-62 Det 42; 3 RF-8A, VAW-12 Det 42; 3 E-1B, HU-2 Det 42; 3 UH-2A  
 Jun 65 - Dec 65: CVW-1. 6th. VF-11; 11 F-4B, VF-14; 9 F-4B, VA-12; 15 A-4E, VA-172; 16 A-4C, VAH-10; 6 A-3B, VAW-12 Det 42; 3 E-1B, VQ-2; est3 EA-3B, VFP-62 Det 42; 3 RF-8G, HC-2 Det 42; 2 UH-2A/1 UH-1B  
 Jun 66 - Feb 67: CVW-1. 2nd/5th/7th. VF-14; 11 F-4B, VF-32; 9 F-4B, VA-12; 12 A-4E, VA-72; est12 A-4E, VA-172; 12 A-4C, VAH-10; 4 A-3B, VAW-12 Det 42; 3 E-1B, VFP-62 Det 42; 4 RF-8G, HC-2 Det 42; 2 UH-2A/1 UH-2B, VQ-1 Det 42; est3 EA-3B, VAW-13 Det 42; est3 EA-1F  
 Aug 67 - May 68: CVW-1. 6th. VF-14; 12 F-4B, VF-32; 10 F-4B, VA-12; 14 A-4C, VA-72; 14 A-4B, VA-172; 13 A-4C, VAH-10 Det 42; 2 KA-3B, VAW-121 Det 42; E-1B, VQ-2; est3 EA-3B, VFP-62 Det 42; 3 RF-8G, HC-2 Det 42; 3 UH-2A  
 Jan 70 - Jul 70: CVW-6. 6th. VF-41; 8 F-4J, VF-84; 8 F-4J, VA-15; 11 A-7B, VA-176; 9 A-6A, VA-215; 9 A-7B, VAW-121 Det 42; 2 E-1B, HC-2 Det 42; 1 UH-2A, 2 UH-2B, VFP-63 Det 42; 2 RF-8G, VAQ-130 Det 42; 2 EKA-3B  
 Jan 71 - Jul 71: CVW-6. 6th. VF-41; 11 F-4J, VF-84; 11 F-4J, VA-15; 12 A-7B, VA-87; 10 A-7B, VAW-121 Det 42; 2 E-1B, HC-2 Det 42; 3 HH-2D, VFP-63 Det 42; 2 RF-8G, VAQ-135 Det 1; 3 EKA-3B  
 Feb 72 - Dec 72: CVW-6. 6th. VF-41; 11 F-4J, VF-84; 12 F-4J, VA-15; 12 A-7B, VA-87; 10 A-7B, VA-176; 6 A-6/2 A-6C/2 KA-6D, VAW-121 Det 42; 3 E-1B, HC-2 Det 42; 3 SH-3G, VFP-63 Det 42; est3 RF-8G  
 Sep 73 - Mar 74: CVW-6. 6th. VF-14; 12 F-4B, VF-32; 12 F-4B, VA-15; 11 A-7B, VA-87; 12 A-7B, VA-176; 6 A-6A/3 A-6B/4 KA-6D, HC 2 Det 42; 3 SH-3G  
 Jan 75 - Jul 75: CVW-6. 6th. VF-41; 11 F-4N, VF-84; 10 F-4N, VA-87; 12 A-7B, VA-176; 4 A-6C/2 KA-6D, VAW-121 Det 42; 3 E-1B, HC-2 Det 42; 4 SH-3G

Sep 76 - Apr 77: CVW-19. 6th. VF-51; 10 F-4N, VF-111 est11 F-4N, VA-153; est10 A-7B, VA-155; est11 A-7B, VA-215; est10 A-7B, VMA-231; AV-8A, RVAW-110; est3 E-1B, HC-1 Det ?; est3 SH-3G  
 Oct 77: Decommissioned

#### CVA-43 Coral Sea

Apr 55 - Sep 55: CVG-17. 6th. VF-171; 12 F2H-3, VF-172; 12 F2H-2, VMF-122; 20 FJ-2, VA-175; 14 AD-6, VC-12 Det 31; 3 AD-5W, VC-33 Det 31; 4 AD-5N/2 AD-5Q, VC-62 Det 31; 3 F2H-2P, VC-8 Det 31; est4 AJ-2, HU-2 Det 31; 1 HUP-2  
 Aug 56 - Feb 57: CVG-10. 6th. VF-11; 9 F2H-4, VF-103; 12 F9F-8B, VA-104; 11 AD-6, VA-106; 12 F9F-8B, VFP-62 est3 F2H-2P, VAAW-33; 1 AD-5N, VAW-12; 3 AD-5W, HU-2; 2 HUP-2  
 Sep 60 - May 61: CVG-15. 7th. VF-151; 12 F-3B, VF-154; 12 F-8B, VMA-121; 18 A-4B, VMA-334; est12 A4D, VA-152; 12 A-1H, VA-153; 12 A-4B, VA-155; 12 A-4B, VAH-2; 10 A-3B, VAW-13 Det D; 3 E-1B, VCP-61 Det D; est3 F-8AP, HU-1 Det D; est3 UH-25B  
 Dec 61 - Jul 62: CVG-15. 7th. VF-151; 13 F-3B, VF-154; 14 F-8D, VA-152; 11 A-1H, VA-153; 10 A-4C, VA-155; 12 A-4B, VAH-2; 9 A3D, VAW-11 Det D; 4 E-1B, VAW-13 Det C; 2 EA-1F, VFP-63 Det A; 3 F-8AP, HU-1 Det D; est3 UH-25B  
 Mar 63 - Nov 63: CVG-15. 7th. VF-151; 12 F-3B, VF-154; 13 F-8D, VA-152; 9 A-1H/3 A-1J, VA-153; 10 A-4C, VA-155; 11 A-4B, VAH-2; 9 A-3B, VFP-63 Det D; 3 RF-8A, VAW-11 Det D; 4 E-1B, HU-1 Det D; 2 UH-25B  
 Dec 64 - Nov 65: CVW-15. 7th. VF-151; 12 F-4B, VF-154; 12 F-8D, VA-153; 14 A-4C, VA-155; 13 A-4E, VA-165; 10 A-1H/2 A-1J, VFP-63 Det D; 3 RF-8A, VAW-11 Det D; 4 E-1B, VAH-2; 8 A-3B, HC-1 Det D; 2 UH-2A, VAP-61 Det D; est3 RA-3B, VQ-1 Det D; est3 EA-3B, VAW-13 Det D; est3 EA-1F, VMCJ-1 Det D; est3 RF-8A  
 Jul 66 - Feb 67: CVW-2. 7th. VF-21; 10 F-4B, VF-154; 9 F-4B, VA-22; 10 A-4C, VA-23; 12 A-4E, VA-25; 12 A-1H, VAW-11 Det A; 4 E-2A, VAH-4 Det A; 4 A-3B, VFP-63 Det A; 3 RF-8G, HC-1 Det A; 1 UH-2A/2 UH-2B, VQ-1 Det A; est3 EA-3B, VAP-61 Det A; est3 RA-3B  
 Jul 67 - Apr 68: CVW-15. 7th. VF-151; 9 F-4B, VF-161; 10 F-4B, VA-25; 7 A-1H/5 A-1J, VA-153; 11 A-4E, VA-155; 12 A-4E, VAH-2 Det 43; est3 KA-3B, VAW-116; 4 E-2A, VFP-63 Det 43; 3 RF-8G, HC-1 Det 43; 3 UH-2A, VAW-13 Det 43; est3 EA-1F, VAP-61 Det 43; est3 RA-3B  
 Sep 68 - Apr 69: CVW-15. 7th. VF-151; 13 F-4B, VF-161; 13 F-4B, VA-25; 12 A-7B, VA-52; 9 A-6A, VA-153; 14 A-4F, VA-216; 15 A-4C, VAH-2 Det 43; 1 KA-3B, VAH-10 Det 43; est3 KA-3B, VAW-116; 4 E-2A, VAW-13 Det 43; est3 EKA-3B, VFP-63 Det 43; 4 RF-8G, VAQ-13 Det 43 est3; 2 EKA-3B, HC-1 Det 43; est3 UH-2C  
 Sep 69 - Jul 70: CVW-15. 7th. VF-151; 10 F-4B, VF-161; 12 F-4B, VA-82; 11 A-7A, VA-86; 10 A-7A, VA-35; 9 A-6A, VAW-116; 3 E-2A, VAQ-135; 1 KA-3B/2 EKA-3B, VFP-63 Det 43; 2 RF-8G, HC-1 Det 9; 2 UH-2C  
 Nov 71 - Jul 72: CVW-15. 7th. VF-51; 8 F-4B, VF-111; 10 F-4B, VA-22; 12 A-7E, VA-94; 12 A-7E, VMA(AW)-224; 9 A-6A/3 KA-6D, VFP-63 Det 5; 3 RF-8G, VAW-111 Det 4; 2 E-1B, VAQ-135 Det 3; 3 EKA-3B, HC-1 Det 6; 3 SH-3G, HC-7 Det 110; 3 HH-3A  
 Mar 73 - Nov 73: CVW-15. 7th. VF-51; 1 F-4B, VF-111; 6 F-4B, VA-22; 11 A-7E, VA-94; 12 A-7E, VA-95; 5 A-6A/3 A-6B/5 KA-6D, VAQ-135 Det 3; 3 EKA-3B, VAW-111 Det 4; 3 E-1B, VFP-63 Det 5; est3 RF-8G, HC-1 Det 6; 4 SH-3G, HC-7 Det 110; est3 HH-3A  
 Dec 74 - Jul 75: CVW-15. 7th. VF-51; 11 F-4N, VF-111; 4 F-4N, VA-22; 10 A-7E, VA-94; 3 A-7E, VA-95; 3 A-6A/2 KA-6D, VFP-63 Det 5; est3 RF-8G, RVAW-110 Det 3; est3 E-1B, HC-1 Det 2; est3 SH-3G  
 Feb 77 - Oct 77: CVW-15. 7th. VF-191; F-4J, VF-194; F-4J, VA-22; A-7E, VA-94; A-7E, VA-95; VFP-62; RF-8G, VMAQ-2; EA-6B, VQ-1; EA-3B, A-6E, VAW-114; E-2B, HC-1; SH-3G  
 Nov 79 - Jun 80: CVW-14. 7th/5th. VMFA-323; F-4N, VMFA-531; F-4N, VA-196; A-6E, VA-27; A-7E, VA-97; A-7E, VAW-113; E-2B, VFP-63; RF-8G, HC-1; SH-3G  
 Aug 81 - Mar 82: CVW-14. 7th/5th. VF-21; F-4N, VF-154; F-4N, VA-27; A-7E, VA-97; A-7E, VA-196; A-6E, VAW-113; E-2B, VFP-63; RF-8G, HC-1; SH-3G  
 Mar 83 - Sep 83: CVW-14. World. VF-21; F-4N, VF-154; F-4N, VA-27; A-7E, VA-97; A-7E, VA-196; A-6E, VAW-113; E-2B, HS-12; SH-3H  
 Oct 85 - May 86: CVW-13. 6th. VFA-131; F/A-18A, VFA-132; F/A-18A, VMFA-314; F/A-18A, VMFA-323; F/A-18A, VA-55; A-6E, VAQ-135; EA-6B, VAW-127; E-2C, VQ-2; EA-3B, HS-17; SH-3H  
 Sep 87 - Mar 88: CVW-13. 6th. VFA-131; F/A-18A, VFA-136; F/A-18A, VFA-137; F/A-18A, VA-55; A-6E, VA-65; A-6E, VAQ-133; EA-6B, VAW-127; E-2C, HS-17; SH-3H  
 May 89 - Sep 89: CVW-13. 6th. VFA-132; F/A-18A, VFA-137; F/A-18A, VMFA-451; F/A-18A, VA-55; A-6E, VA-65; A-6E, VAQ-133; EA-6B, VAW-127; E-2C, HS-17; SH-3H  
 Apr 90: Decommissioned

#### CVS-45 Valley Forge

Jun 60 - Aug 60: CVSG-5. 2nd/7th. VS-24; 3 S2F-1/6 S2F-2, VS-27; 3 S2F-1/7 S2F-2, HS-3; 14 HSS-1, VAW-12 Det 52; 4 AD-5W, HU-2 Det 52; 1 HUK-1  
 (This is her only "cruise" from 1955 on. All others are in and out of port for a month or less)

## LPH-8 Valley Forge

Oct 61 - Dec 61: DR. HMRL-263; 20 HUS-1/2 HUS-3  
 Apr 62 - Dec 62: 7th. HMM-162; 25 UH-34D  
 Mar 64 - Nov 64: 7th. HMM-361; 24 UH-34D  
 Aug 65 - Apr 66: 7th. HMM-362; 19 UH-34C  
 Sep 66 - Dec 66: 7th  
 Nov 67 - Aug 68: 7th. HMM-165; 19 CH-46A  
 Jan 69 - Sep 69: 7th

## CV-47 Philippine Sea

Apr 55 - Nov 55: ATG-2. 7th. VF-123; 17 F9F-2, VF-143; 17 F9F-6, VA-55; 12 AD-6, VC-11 Det 1; 3 AD-4W, VC-35 Det 1; 4 AD-5N, VC-61 Det 1; 3 F9F-5P, HU-1 Det 16; est1 HUP-2

## CVS-47 Philippine Sea

Jan 57 - Aug 57: CVS-47. 7th. VS-37; 13 S2F-1/8 S2F-2, HS-2; 15 HSS-1, VAW-11; est3 AD-5W  
 Jan 58 - Jul 58: CVS-47. 7th. VS-21; 15 S2F-1/8 S2F-2, HS-6; 16 HSS-1, VAW-11; est3 AD-5W

## CVA-59 Forestal

Oct 55: Commissioned

Jan 56 - Mar 56: ATG-181. 2nd. VF-21; 14 FJ-3, VF-41; 10 F2H-3, VA-42; 1 AD-5/14 AD-6, VA-86; 13 F7U-3M, VAH-7 Det 42; 5 AJ-2, VC-12 Det 42; 3 AD-5W, VC-33 Det 42; 4 AD-5N, HU-2 Det 42, est1 HUP-2

Jan 57 - Jul 57: CVG-1. 6th. VF-14; est11 F3H-2N, VF-84; est13 FJ-3M, VA-15; est12 AD-6, VA-76; 11 F9F-8B, VAAW-33 Det 42; 4 AD-5N, VAH-1 Det 42; est4 A3D-1, VAW-12 Det 42; 4 AD-5W, VFP-62 Det 42; 2 F2H-2P, HU-2 Det 42; 1 HUP-2

Aug 57 - Nov 57: CVG-1. 2nd. VF-14; 12 F3H-2N, VF-84; 14 FJ-3M, VA-15; 13 AD-6, VA-76; est2 F9F-8/est10 F9F-8B, VAAW-33 Det 42; 5 AD-5N, VAH-1 Det 42; est4 A3D-1, VAW-12; 5 AD-5W, VFP-62 Det 42; est2 F2H-2P, HU-2 Det 42; 2 HUP-2

Sep 58 - Mar 59: CVG-10. 6th. VF-102; est15 F4D-1, VF-103; est14 F8U-1, VA-12; 16 A4D-2, VAAW-33; 3 AD-5N, VAH-5; 12 A3D-2, VAW-12 Det 42; 3 AD-5W, VFP-62 Det 42; 3 F8U-1P, HU-2 Det 42; est2 HUP-2

Jul 59 - Nov 59: CVG-8. 2nd. VF-102; 6 F4D-1, VF-103; 4 F8U-1, VA-81; 12 A4D-2, VA-83; 12 A4D-2, VA-85; 12 AD-6, VAH-5; 10 A3D-2, VAW-12 Det 42; 1 AD-5W, VAW-33 Det 42; 3 AD-5Q, VFP-62 Det 42; 3 F8U-1P, HU-2 Det 42; est2 HUP-2

Jan 60 - Aug 60: CVG-8. 6th. VF-102; 14 F4D-1, VF-103; 15 F8U-2, VA-81; 12 A4D-2, VA-83; 12 A4D-2, VA-85; 12 AD-6, VAH-5; 10 A3D-2, VAW-12 Det 42; 4 AD-5W, VAW-33 Det 42; 3 AD-5Q, VFP-62 Det 42; 3 F8U-1P, HU-2 Det 42; 2 HUP-2

Feb 61 - Aug 61: CVG-8. 6th. VF-102; 12 F4D-1, VF-103; 12 F8U-2, VA-81; 12 A4D-2, VA-83; 12 A4D-2N, VA-85; 10 AD-6, VAH-5; 11 A3D-2, VFP-62 Det 42; 3 F8U-1P, VAW-12 Det 42; 5 WF-2, VAW-33 Det 42; 3 AD-5Q, HU-2 Det 42; 2 HUP-3

Aug 62 - Mar 63: CVW-8. 6th. VF-74; 14 F-4B, VF-103; 12 F-8C, VA-81; 12 A-4B, VA-83; 12 A-4C, VA-85; 11 A-1H, VAH-5; 13 A-3B, VFP-62 Det 59; 3 F-8AP VAW-12 Det 59; 4 E-1B

Jul 64 - Mar 65: CVW-8. 6th. VF-74; 11 F-4B, VF-103; F-8C, VMA-331; est13 A-4E, VA-81; 12 A-4E, VA-83; 13 A-4E, VA-85; 9 A-6A, VAH-6; est6 RA-5C, VAW-12 Det 59; 4 E-1B, VAW-33 Det 59; 3 EA-1F, HU-2 Det 59; 3 UH-2A, VFP-62 Det 59; 3 RF-8A

Aug 65 - Apr 66: CVW-8. 6th. VF-74; 10 F-4B, VMF(AW)-451; 10 F-8D, VA-65; 8 A-6A, VA-81; 13 A-4E, VA-83; 13 A-4C, VA-112; 14 A-4C, RVAH-11; 6 A-3B, VAW-12 Det 59; 4 E-1B, VQ-2; est2 EA-3B, VFP-62 Det 59; 3 RF-8A

Jun 67 - Sep 67: CVW-17. 7th. VF-11; 10 F-4B, VF-74; 8 F-4B, VA-46; 14 A-4E, VA-65; 9 A-6A, VA-106; 10 A-4E, RVAH-11; 4 RA-5C, VAW-123; 4 E-2A, VAH-10 Det 59; 3 KA-3B, HC-2 Det 59; 3 UH-2A, VAP-61 Det 59; est2 RA-3B

Jul 68 - Apr 69: CVW-17. 6th. VF-11; 12 F-4B, VF-74; 8 F-4B, VA-15; 13 A-4C, VA-34; 12 A-4C, VA-152; est14 A-4B, RVAH-12; 4 RA-5C, VAH-10 Det 59; 3 A-3B VAW-123; 4 E-2, HC-2 Det 59; 1 UH-2A, 2 UH-2B

Dec 69 - Jul 70: CVW-17. 6th. VF-11; 6 F-4B, VF-74; 10 F-4B, VA-36; 13 A-4C, VA-66; 10 A-4C, RVAH-13; 4 RA-5C, HS-11; 7 SH-3D, VAW-126; 2 E-2A

Jan 71 - Jul 71: CVW-17. 6th. VF-11; 11 F-4B, VF-74; 11 F-4B, VA-81; 11 A-7E, VA-83; 10 A-7E, VA-85; 9 A-6A/4 KA-6D, RVAH-7; 2 RA-5C, HS-3; 6 SH-3D VAW-126; 2 E-2B, VMCJ 2 Det A; 3 EA-6B

Sep 72 - Jul 73: CVW-17. 6th. VF-11; 12 F-4J, VA-81; 12 A-7E, VA-83; 12 A-7E, VA-85; 8 A-6E/4 KA-6D, RVAH-7; est2 RA-5C, HS-3; 7 SH-3D, VAW-126; 4 E-2B, VAQ-135; est2 EA-6/est2 EA-6A, VMCJ-2; est4 RF-4B  
 Mar 74 - Sep 74: CVW-17. 6th. VF-11; 12 F-4J, VF-74; 11 F-4J, VA-81; 9 A-7E, VA-83; 9 A-7E, VA-85; 9 A-6E/3 KA-6D, RVAH-6; 2 RA-5C, HS-3; 8 SH-3D VAW-126; 4 E-2  
 Mar 75 - Sep 75: CVW-17. 6th. VF-11; 11 F-4J, VF-74; 12 F-4J, VA-81; 12 A-7E, VA-83; 12 A-7E, VA-85; 8 A-6E/4 KA-6D, RVAH-7; 3 RA-5C, HS-3; 8 SH-3D  
 Jun 75: Reclassified CV  
 Apr 78 - Oct 78: CVW-17. 6th. VF-11; F-4J, VF-74; F-4J, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAQ-130; EA-6B, VAW-116; E-2B, VQ-2; EA-3B, VS-30; S-3A, HS-2; SH-3D  
 Nov 79 - May 80: CVW-17. 6th. VF-11; F-4J, VF-74; F-4J, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAQ-133; EA-6B, VAW-125; E-2C, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3D  
 Mar 81 - Sep 81: CVW-17. 6th/2nd. VF-74; F-4J, VMFA-115; F-4J, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAQ-130; EA-6B, VAW-125; E-2C, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3H  
 Jun 82 - Nov 82: CVW-17. 6th/2nd. VF-74; F-4S, VF-103; F-4S, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAQ-130; EA-6B, VAW-125; E-2C, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3H  
 Jan 83 - May 85: SLEP  
 Jun 86 - Nov 86: CVW-6. 6th. VF-11; F-14A, VF-31; F-14A, VA-37; A-7E, VA-105; A-7E, VA-176; A-6E, VAQ-132; EA-6B, VAW-122; E-2C, VQ-2; EA-3B, VS-28; S-3A, HS-15; SH-3H  
 Apr 88 - Oct 88: CVW-6. 2nd/6th/5th. VF-11; F-14A, VF-31; F-14A, VA-37; A-7E, VA-105; A-7E, VA-176; A-6E, VAQ-132; EA-6B, VAW-122; E-2C, VS-28; S-3A, HS-15; SH-3H  
 Nov 89 - Apr 90: CVW-6. 6th. VF-11; F-14A, VF-31; F-14A, VA-37; A-7E, VA-105; A-7E, VA-176; A-6E, VAQ-142; EA-6B, VAW-122; E-2C, VS-28; S-3A, HS-15; SH-3H  
 May 91 - Dec 91: CVW-6. 6th. VF-11; F-14A, VF-31; F-14A, VFA-132; F/A-18A, VFA-137; F/A-18A, VA-176; A-6E/KA-6D, VAW-122; E-2C, VAQ-133; EA-6B, VS-28; S-3B, HS-15; SH-3H  
 Feb 92: Reclassified CVT  
 Sep 93: Decommissioned

#### CVA-60 Saratoga

Apr 56: Commissioned  
 Aug 59 - Feb 60: CVG-3. 6th. VF-31; 14 F-3B, VF-32; 14 F-8B, VA-34; 12 A-4B, VA-35; 12 A-1H, VA-36; 13 A-4B, VAH-9; 10 A-3B, VAW-12 Det 43; 3 EA-1E, VAW-33 Det 43; 3 EA-1F, VFP-62 Det 43; 3 F-8AP, HU-2 Det 43; 1 UH-25B  
 Aug 60 - Feb 61: CVG-3. 6th/2nd. VF-31; 13 F-3B, VF-32; 10 F-8B, VA-34; 12 A-4B, VA-35; 12 A-1H, VA-36; 12 A-4B, VAH-9; 12 A-3B, VAW-12 Det 43; 5 E-1B, VAW-33 Det 43; est4 EA-1F, VFP-62 Det 43; 3F-8AP  
 Nov 61 - May 62: CVG-3. 6th. VF-31; 12 F-3B, VF-32; 13 F-8D, VA-34; 11 A-4B, VA-35; 12 A-1H, VA-36; 12 A-4C, VAH-9; 12 A-3B, VFP-62 Det 43; 3 F-8AP, VAW-12 Det 43; 4 E-1B, HU-2 Det 43; 2 UH-25C  
 Mar 63 - Oct 63: CVG-3. 6th. VF-31; 14 F-3B, VF-32; 14 F-8D, VA-34; 12 A-4C, VA-35; 11 A-1H, VA-36; 12 A-4C, VAH-9; 12 A-3B, VFP-62 Det 60; 3 RF-8A, VAW-12 Det 60; 4 E-1B, VQ-2; EA-3B, HU-2 Det 60; 2 UH-25B  
 Nov 64 - Jul 65: CVW-3. 6th. VF-31; 11 F-4B, VF-32; 12 F-8D, VA-34; 14 A-4C, VA-35; 12 A-1H, VA-36; 14 A-4C, RVAH-9; 6 RA-5C, VAW-12 Det 60; 4 E-1B, HU-2 Det 60; 3 UH-2A  
 Mar 66 - Oct 66: CVW-3. 6th. VF-31; 10 F-4B, VF-103; 11 F-4B, VA-34; 13 A-4C, VA-46; 14 A-4C, VA-106; 12 A-4C, RVAH-12; 4 RA-5C, VAW-12 Det 60; 1 E-1B, HC 2 Det 60; 3 UH-2B, VQ-2; EA-3A  
 May 67 - Dec 67: CVW-3. 6th. VF-31; 11 F-4B, VF-103; 12 F-4B, VA-44; A-4C, VA-176; 18 A-1H, VA-216; 20 A-4B, RVAH-9; 5 RA-5C, VAW-121 Det 60; 4 E-1B, HC-2 Det 60; 3 UH-2A  
 Jul 69 - Jan 70: CVW-3. 6th. VF-31; 9 F-4J, VF-103; 8 F-4J, VF-33; F-4, VA-46; 12 A-7B, VA-113; 11 A-7B, VA-75; 9 A-6A, RVAH-?; RA-5C, VAW-?; est4 E-2  
 Jun 70 - Nov 70: CVW-3. 6th. VF-31; 10 F-4J, VA-37; 12 A-7A, VA-75; 5 A-6A, 2 A-6B, VA-105; A-7A, HC-2 Det 60; 3 HH-2D  
 Jun 71 - Oct 71: CVW-3. 2nd/6th. VF-31; 10 F-4J, VF-103; 10 F-4J, VA-37; 12 A-7A, VA-75; 7 A-6A, 1 A-6B/4 KA-6D, VA-105; 12 A-7A, VAW-123; 4 E-2B  
 Mar 72 - Feb 73: CVW-3. 2nd/5th/7th. VF-31; 11 F-4J, VF-103; 10 F-4J, VA-37; 9 A-7A, VA-75; 8 A-6A, 2 A-6B, 4 KA-6D, VA-105; 8 A-7A, RVAH-1; 3 RA-5C, HS-7; 5 SH-3D, VAW-123; 4 E-2B, VMCJ-2 Det ?; EA-6A, HC-7 Det ?; est3 HH-3A  
 Sep 74 - Mar 75: CVW-3. 6th. VF-31; 8 F-4J, VF-103; 6 F-4J, VA-37; 13 A-7E, VA-75; 8 A-6E, 4 KA-6D, VA-105; 11 A-7E, RVAH-2 Det ?; 2 RA-5C  
 Jun 75: Reclassified CV  
 Jan 76 - Jul 76: CVW-3. 6th. VF-31; F-4J, VF-103; F-4J, VA-37; A-7E, VA-75; A-6E, VA-105; A-7E, VAQ-131; EA-6B, VAW-123; E-2C, VFP-63 Det 3; RF-8G, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H

Jul 77 - Dec 77: CVW-3. 6th. VF-31; F-4J, VF-103; F-4J, VA-37; A-7E, VA-75; A-6E, VA-105; A-7E, VAQ-138; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H  
 Oct 78 - Apr 79: CVW-3. 6th. VF-31; F-4J, VF-103; F-4J, VA-37; A-7E, VA-75; A-6E, VA-105; A-7E, VAQ-136; EA-6B, VAW-123; E-2C, RVAH-12; RA-5C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H  
 Mar 80 - Aug 80: CVW-3. 6th. VF-31; F-4J, VF-103; F-4J, VA-37; A-7E, VA-75; A-6E, VA-105; A-7E, VAW-123; E-2C, RVAH-12; RA-5C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H  
 Oct 80 - Feb 83: SLEP  
 Apr 84 - Oct 84: CVW-17. 6th. VF-74; F-14A, VF-103; F-14A, VA-81; A-7E, VA-83; A-7E, VMAAW-533; A-6E, VAW-125; E-2C, VMAQ-2; EA-6B, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3H  
 Aug 85 - Apr 86: CVW-17. 6th/5th. VF-74; F-14A, VF-103; F-14A, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAW-125; E-2C, VAQ-137; EA-6B, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3H  
 Jun 87 - Nov 87: CVW-17. 6th. VF-74; F-14A, VF-103; F-14A, VA-81; A-7E, VA-83; A-7E, VA-85; A-6E, VAW-125; E-2C, VAQ-137; EA-6B, VQ-2; EA-3B, VS-30; S-3A, HS-3; SH-3H  
 Aug 90 - Mar 91: CVW-17. DS. VF-74; F-14A+, VF-103; F-14A+, VFA-81; F/A-18C, VFA-83; F/A-18C, VA-35; A-6E/KA-6D, VAW-125; E-2C, VAQ-132; EA-6B, HS-3; SH-3H, VS-30; S-3B  
 May 92 - Nov 92: CVW-17. 6th. VF-74; F-14B, VF-103; F-14B, VFA-81; F/A-18C, VFA-83; F/A-18C, VA-35; A-6E/KA-6D, VAW-125; E-2C, VAQ-132; EA-6B, HS-9; SH-3H, VS-30; S-3B  
 Jan 94 - Jun 94: CVW-17. 6th. VF-74; F-14B, VF-103; F-14B, VFA-81; F/A-18C, VFA-83; F/A-18C, VA-35; A-6E/KA-6D, VAW-125; E-2C, VAQ-132; EA-6B, HS-15; SH-3H, VS-30; S-3B  
 Aug 94: Decommissioned

#### CVA-61 Ranger

Aug 57: Commissioned

Jan 59 - Jul 59; CVG-14. 7th. VF-141; F4D-1, VF-142; F8U-1, VA-116; FJ-4B, VA-145; AD-6, VA-146; FJ-4B, VAAW-35; AD-5N, VAH-6; A3D-2, VAW-11; AD-5W, VFP-61; F8U-1P  
 Feb 60 - Aug 60; CVG-9. 7th. VF-91; 13 F-8C, VF-92; 10 F-3B, VA-93; 11 A-4B, VA-94; 12 A-4B, VA-95; 12 A-1J, VAH-6; 10 A-3B, VAW-13 Det M; 2 EA-1F/3 EA-1E  
 Aug 61 - Mar 62; CVG-9. 7th. VF-91; 12 F-8C, VF-92; 13 F-3B, VA-93; 11 A-4C, VA-94; 12 A-4C, VA-95; 12 A-1J, VAH-6; 12 A-3B, VAW-11 Det M; 5 E-1B, VAW-13 Det M; 2 EA-1F, VFP-63 Det M; 3 F-8AP, HU-1 Det 1M; 2 UH-25C  
 Nov 62 - Jun 63; CVG-9. 7th. VF-91; 13 F-8C, VF-92; F3H, VF-96; 14 F-4B, VA-93; 13 A-4C, VA-94; 12 A-4C, VA-95; 5 A-1J/6 A-1J, VAH-6; 8 A-3B, VAW-11 Det M; 4 E-1B, VAW-13; EA-1F, VFP-63 Det M; 3 RF-8A  
 Aug 64 - May 65; CVW-9. 7th. VF-92; 12 F-4B, VF-96; 11 F-4B, VA-93; 12 A-4C, VA-94; 12 A-4C, VA-95; 1 A-1J/11 A-1H, RVAH-5; RA-5C, VAH-2 Det M; A-3B, VAW-11 Det M; 4 E-1B, VFP-63 Det M; 3 RF-8A, HU-1 Det M; 2 UH-2A, VAP-61 Det ?; RA-3B, VQ-1 Det ?; EA-3B  
 Dec 65 - Aug /66; CVW-14. 7th. VF-142; 13 F-4B, VF-143; 11 F-4B, VA-145; 5 A-1H, 4 A-1J, VA-146; 6 A-4C, VA-55; 8 A-4E, RVAH-9; RA-5C, VAH-2 Det F; 3 A-3B, VAW-11 Det F; 4 E-2A, HC-1 Det F; UH-2A, VQ-1 Det ?; EA-3B, VAP-61 Det ?; RA-3B  
 Nov 67 - May 68; CVW-2. 7th. VF-21; 12 F-4B, VF-154; 13 F-4B, VA-22; 13 A-4C, VA-147; 14 A-7A, VA-165; 12 A-6A, RVAH-6; RA-5C, VAW-115; E-2A, VAH-4 Det 61; 2 KA-3B, HC-1 Det 61; UH-2A/UH-2C, VAW-13 Det 61; 1 KA-3B/3 EKA-3B, VAP-61 Det 61; RA-3B  
 Oct 68 - May 69; CVW-2. 7th. VF-21; F-4J, VF-154; F-4J, VA-165; A-6A, VA-147; A-7A, VA-155; 14 A-4F, VAW-115; E-2A, RVAH-9; RA-5C, VAH-10 Det 61; KA-3B, VAQ-130 Det 61; EKA-3B, HC-1 Det 61; UH-2C, HS-2; SH-3A, HC-7 Det 110; SH-3A  
 Oct 69 - Jun 70; CVW-2. 7th. VF-21; 11 F-4J, VF-154; 10 F-4J, VA-56; 11 A-7B, VA-93; 12 A-7B, VA-196; 13 A-6A, RVAH-5; RA-5C, VAQ-134; EKA-3B/KA-3B, VAW-115; 4 E-2A, HC-1 Det 8; SH-3A, VC-3 Det ?; 147SK Fire drones  
 Oct 70 - Jun 71; CVW-2. 7th. VF-21; 10 F-4J, VF-154; 11 F-4J, VA-25; 9 A-7E, VA-56; 10 A-7B, VA-93; 7 A-7B, VA-113; 8 A-7E, VA-145; 5 A-6A/6 A-6C, RVAH-1; RA-5C, VAQ-134; 1 KA-3B/3 EKA-3B, VAW-115; 2 E-2B, HC-1 Det 1; SH-3G, HC-7 Det 110; 4 SH-3A  
 Nov 72 - Jun 73; CVW-2. 7th. VF-21; 13 F-4J, VF-154; 12 F-4J, VA-25; 12 A-7E, VA-113; 11 A-7E, VA-145; 7 A-6A/2 A-6B/6 KA-6D, RVAH-5; RA-5C, VAW-111 Det 1; 2 E-1B, VAQ-130 Det 4; EKA-3B, HC-1 Det 4; 4 SH-3G, HC-7 Det 110; HH-3A, VQ-1 Det ?; EA-3B  
 May 74 - Oct 74; CVW-2. 7th. VF-21; 12 F-4J, VF-154; F-4J, VA-25; 10 A-7E, VA-113; 11 A-7E, VA-145; 9 A-6A/5 KA-6D, RVAH-13; RA-5C, VAW-112; 4 E-2B, HC-1 Det 4; SH-3G, VQ-1 Det 61; EA-3B  
 Jun 75: Reclassified CV

Jan 76 - Sep 76; CVW-2. 7th/5th. VF-21; F-4J, VF-154; F-4J, VA-25; A-7E, VA-113; A-7E, VA-145; A-6A/KA-6D, VAQ-135; EA-6B, RVAH-5; RA-5C, VAW-112; E-2B, HS-4; SH-3D, VQ-1; EA-3B  
 Feb 79 - Sep 79; CVW-2. 7th. VF-21; F-4J, VF-154; F-4J, VA-113; A-7E, VA-145; A-6E/KA-6D, VA-25; A-7E, VAQ-137; EA-6B, VAW-117; E-2B, VQ-1; EA-3B, VS-29; S-3A, HS-4; SH-3D  
 Sep 80 - May 81; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-25; A-7E, VA-113; A-7E, VA-145; A-6E/KA-6D, VAQ-137; EA-6B, VAW-117; E-2C, VQ-1; EA-3B, VS-37; S-3A, HS-2; SH-3H  
 Apr 82 - Oct 82; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-25; A-7E, VA-113; A-7E, VA-145; A-6E/KA-6D, VAQ-137; EA-6B, VAW-116; E-2C, VQ-1; EA-3B, VS-21; S-3A, HS-2; SH-3H  
 Jul 83 - Feb 84; CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-192; A-7E, VA-195; A-7E, VA-165; A-6E/KA-6D, VAQ-138; EA-6B, VAW-112; E-2C, VQ-1; EA-3B, VS-33; S-3A, HS-8; SH-3H  
 Jul 87 - Dec 87; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-145; A-6E, VMAAW-121; A-6E/KA-6D, VAQ-131; EA-6B, VAW-116; E-2C, VQ-1; EA-3B, VS-38; S-3A, HS-14; SH-3H  
 Feb 89 - Aug 89; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-145; A-6E, VMAAW-121; A-6E/KA-6D, VAQ-131; EA-6B, VAW-116; E-2C, VS-38; S-3A, HS-14; SH-3H  
 Dec 90 - Jun 91; CVW-2. DS. VF-1; F-14A, VF-2; F-14A, VA-155; A-6E, VA-145; A-6E/KA-6D, VAW-116; E-2C, VAQ-131; EA-6B, HS-14; SH-3H, VS-38; S-3A, VRC-30 Det ?; C-2A  
 Aug 92 - Jan 93; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-155; A-6E, VA-145; A-6E/KA-6D, VAW-116; E-2C, VAQ-131; EA-6B, HS-14; SH-3H, VS-38; S-3A, VRC-30 Det ?; C-2A  
 Jul 93: Decommissioned

#### CVA-62 Independence

Jan 59: Commissioned

Aug 60 - Mar 61; CVG-7. 6th. VF-41; 14 F3H2, VF-84; 13 F-8C, VA-72; 12 A-4B, VA-75; 12 A-1H, VA-86; 12 A-4B, VAH-1; 14 A3D, VFP-62 Det 41; 3 F-8AP, VMA(AW)-224; A-4B

Aug 61 - Dec 61; CVG-7. 6th. VF-41; 12 F-3B, VMF-115; 18 F-6A, VF-84; 12 F-8C, VA-72; 12 A-4C, VA-75; 12 A-1H, VA-86; 9 A-4C, VAH-1; A-3B, VAW-33 Det 41; 3 EA-1F, VAW-12 Det 41; 4 E-1B, VFP-62 Det 41; 1 F-8AP

Apr 62 - Aug 62; CVG-7. 6th. VF-84; 12 F-8C, VA-72; 12 A-4C, VA-75; 11 A-1H, VA-86; 11 A-4B, VAH-1; 12 A-3B, VMF(AW)-115; 15 F-6A, VFP-62 Det 41; 3 F-8AP, VAW-12 Det 41; 4 E-1B, VAW-33 Det 41; 3 EA-1F

Oct 62 - Nov 62; CVG-7. CMC. VF-41; F-4B, VF-84; 11 F-8C, VA-72; A-4C, VA-75; 11 A-1H, VA-86; A-4C, VAH-1; A-5A, VFP-62 Det 62; RF-8A  
 VAW-12; E-1B, VAW-33 Det 41; EA-1E, HU-2 Det ?; UH-2A

Aug 63 - Mar 64; CVW-7. 6th. VF-41; 12 F-4B, VF-84; 13 F-8C, VMA-324; 11 A-4B, VA-72; 12 A-4C, VA-86; 12 A-4C, VAH-1; 12 A-5A, VFP-62 Det 62; 2 RF-8A,  
 VAW-12 Det 62; 4 E-1B, VAW-33 Det 41; EA-1F, HU-2 Det 62; 3 UH-2A

Sep 64 - Nov 64; CVW-7. 2nd/6th. VA-72; A-4E, VFP-62 Det 62; 2 RF-8A, VAW-33 Det 62; 1 EA-1F

May 65 - Dec 65; CVW-7. 7th. VF-41; 12 F-4B, VF-84; 12 F-4B, VA-72; 14 A-4E, VA-75; 12 A-6A, VA-86; 14 A-4E, RVAH-1; 6 RA-5C, VAH-4; A-3B, VAW-12 Det 62; 4 E-1B, HU-2 Det 62; 3 UH-2A, VAW-13 Det; EA-1F, VQ-1 Det ?; EA-3B, VAP-61 Det ?; RA-3B

Jun 66 - Feb 67; CVW-7. 6th. VF-41; 10 F-4B, VF-84; 9 F-4B, VMA-324; 14 A-4, VA-72; A-4E, VA-75; 8 A-6A, VA-86; 14 A-4E, RVAH-1; RA-5C,  
 VAW-12 Det 62; 4 E-1B, HC-2 Det 62; 1 UH-2A, VAW-33 Det 62; VQ-2; EA-3B, VFP-62 Det ?; RF-8A

Apr 68 - Jan 69; CVW-7. 6th. VF-41; 12 F-4J, VF-84; F-4B, VSF-1; 14 A-4C, VA-46; VA-64; 14 A-4C, VA-76; 14 A-4C, VAH-10 Det 62; 3 KA-3B, RVAH-7; 5 RA-5C, HC-2 Det 62; 1 UH-2A/2 UH-2B, VAQ-33; TA-4F

Jun 70 - Jan 71; CVW-7. 6th. VF-33; 12 F-4J, VF-102; 11 F-4J, VA-65; 11 A-6A, RVAH-11; 4 RA-5C, VAW-122; 3 E-2A

Sep 71 - Mar 72; CVW-7. 2nd/6th. VF-33; 9 F-4J, VF-102; 10 F-4J, VA-65; 6 A-6A/3 KA-6D, VA-66; 8 A-7E, VA-12; 9 A-7E, RVAH-12; 2 RA-5C, VAW-122; 3 E-2B

Jun 73 - Jan 74; CVW-7. 6th. VF-33; 11 F-4J, VF-102; 12 F-4J, VA-12; 11 A-7E, VA-65; 9 A-6E, 4 KA-6D, VA-66; 12 A-7E, RVAH-14; 3 RA-5C, HS-5; 8 SH-3, VAW-124; 4 E-2, VAQ-33

Jul 74 - Jan 75; CVW-7. 6th. VF-33; 10 F-4J, VF-102; 10 F-4J, VA-12; 9 A-7E, VA-65; 9 A-6E/4 KA-6D, VA-66; 11 A-7E, RVAH-9; RA-5C, VAQ-132; EA-6B, VQ-2; EA-3B, VAW-122; 4 E-2B, VS-31; S-2G, HS-5; 8 SH-3D

Jun 75: Reclassified CV

Oct 75 - Apr 76; CVW-7. 2nd/6th. VF-33; F-4J, VF-102; F-4J, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, RVAH-13; RA-5C, VAQ-132; EA-6B, VQ-2; EA-3B, VAW-117; E-2B, HS-5; SH-3D



Mar 77 - Oct 77: CVW-7. 6th. VF-33; F-4J, VF-102; F-4J, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, RVAH-12; RA-5C, VAQ-136; EA-6B, VQ-2; EA-3B, VAW-117; E-2B, VS-31; S-3A, HS-5; SH-3D

Jun 79 - Dec 79: CVW-6. 6th. VF-33; F-4J, VF-102; F-4J, VA-15; A-7E, VA-176; A-6E/KA-6D, VA-87; A-7E, VAQ-130; EA-6B, VQ-2; EA-3B, VAW-122; E-2C, VQ-2; EA-3B, VS-28; S-3A, HS-15; SH-3H

Nov 80 - Jun 81: CVW-6. 6th/5th. VF-33; F-4J, VF-102; F-4J, VA-15; A-7E, VA-176; A-6E/KA-6D, VA-87; A-7E, VAQ-131; EA-6B, VQ-2; EA-3B, VAW-122; E-2C, VQ-2; EA-3B, VFP-63; RF-8G, VS-28; S-3A, HS-15; SH-3H

Jun 82 - Dec 82: CVW-6. 6th. VF-14; F-14A, VF-32; F-14A, VA-15; A-7E, VA-176; A-6E/KA-6D, VA-87; A-7E, VAQ-131; EA-6B, VQ-2; EA-3B, VAW-122; E-2C, VQ-2; EA-3B, VS-28; S-3A, HS-15; SH-3H

Oct 83 - Apr 84: CVW-6. 2nd/6th. VF-14; F-14A, VF-32; F-14A, VA-15; A-7E, VA-176; A-6E/KA-6D, VA-87; A-7E, VAQ-131; EA-6B, VQ-2; EA-3B, VAW-122; E-2C, VQ-2; EA-3B, VS-28; S-3A, HS-15; SH-3H

Oct 84 - Feb 85: CVW-6. 6th/5th. VF-14; F-14A, VF-32; F-14A, VA-15; A-7E, VA-176; A-6E/KA-6D, VA-87; A-7E, VAQ-131; EA-6B, VQ-2; EA-3B, VAW-122; E-2C, VQ-2; EA-3B, VS-28; S-3A, HS-15; SH-3H

Apr 85 - Jun 88: SLEP

Jun 90 - Dec 90: CVW-14. 7th/5th. VF-21; F-14A, VF-154; F-14A, VFA-25; F/A-18C, VFA-113; F/A-18C, VA-196; A-6E/KA-6D, VAQ-139; EA-6B, VAW-113; E-2C, VS-37; S-3A, HS-8; SH-3H

Aug 91 - Sep 91: CVW-5. 7th. VF-154; F-14A, VF-21; F-14A, VFA-192; F/A-18C, VFA-195 F/A-18C, VA-115; A-6E/KA-6D, VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-12; SH-3H, VRC-30 Det ?; US-3A/C-2A

Apr 92 - Oct 92: CVW-5. 7th/5th. VF-154; F-14A, VF-21; F-14A, VFA-192; F/A-18C, VFA-195 F/A-18C, VA-115; A-6E/KA-6D, VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-12; SH-3H

Nov 93 - Mar 94: CVW-5. 7th/5th. VF-154; F-14A, VF-21; F-14A, VFA-192; F/A-18C, VFA-195 F/A-18C, VA-115; A-6E/KA-6D, VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-12; SH-3H, VRC-30 Det ?; C-2A

Aug 95 - Nov 95: CVW-5. 7th/5th. VF-154; F-14A, VF-21; F-14A, VFA-192; F/A-18C, VFA-195 F/A-18C, VA-115; A-6E/KA-6D, VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-14; SH-3H, VQ-5 Det A; ES-3A, VRC-30 Det 5; C-2A

Feb 97 - Jun 97: CVW-5. 6th/5th. VF-154; F-14A, VFA-27; F/A-18C, VFA-192; F/A-18C, VFA-195 F/A-18C, VAW-115; E-2C, VAQ-136; EA-6B, VQ-5 Det 5; ES-3A, VS-21; S-3B, HS-14; SH-3H, VRC-30 Det 5; C-2A

Jan 98 - Jun 98: CVW-5. 5th. VF-154; F-14A, VFA-27; F/A-18C, VFA-192; F/A-18C, VFA-195 F/A-18C, VAW-115; E-2C, VAQ-136; EA-6B, VQ-5 Det 5; ES-3A, VS-21; S-3B, HS-14; SH-3H, VRC-30 Det 5; C-2A

Sep 98: Decommissioned

#### CVA-63 Kitty Hawk

Apr 61: Commissioned

Nov 61 - Jan 61: CVG-11. 2nd/3rd. VF-142; 11 F-8A, VA-113; 13 A-4C, VA-115; 11 A-1H, VAH-13; 12 A-3B, VFP-63 Det C; 2 F-8AP, HU-1 Det C; 2 UH-25C

Sep 62 - Feb 63: CVG-11. 7th. VF-111; 14 F-8D, VF-114; 12 F-4B, VA-112; 13 A-4C, VA-113; 13 A-4C, VA-115; 11 A-1H, VAH-13; A-3, VAW-11 Det C; 3 E-1B, VFP-63 Det C; 3 RF-8A

Oct 63 - Jul 64: CVG-11. 7th. VF-114; 12 F-4B, VF-111; 13 F-8D, VA-112; 12 A-4C, VA-113; 12 A-4C, VA-115; 12 A-1H, VAH-13; 12 A-3B, VFP-63 Det C; 3 RF-8A, VAW-11 Det C; 4 E-1B, HU-1 Det C; 2 UH-2A, VQ-1 Det C; EA-3B, VAP-61 Det C; RA-3B

Oct 65 - Jul 66: CVG-11. 7th. VF-213; 2 F-4B, 7 F-4G, VA-85; 8 A-6A, VA-113; 13 A-4C, VA-115; 7 A-1H/5 A-1J, RVAH-13; RA-5C, VAH-4 Det C; 1 A-3B, VAW-11 Det C; 4 E-2A, HC-1 Det C; 2 UH-2A/1 UH-2B, VAP-61 Det C; RA-3B, VQ-1 Det C; EA-3B

Sep 66 - Jun 67: CVG-11. CVW-11. 7th. VF-213; 13 F-4B, VF-114; F-4B, VA-85; 2 A-6A, VA-112; 15 A-4C, VA-144; 13 A-4C, RVAH-13; RA-5C, VAH-4 Det C; 3 KA-3B, VAW-11 Det C; 4 E-2A, HC-1 Det C; UH-2A/ UH-2B, VQ-1 Det C; EA-3B, VAP-61 Det C; RA-3B

Nov 67 - Jun /68: CVW-11. 7th. VF-114; 12 F-4B, VF-213; 13 F-4B, VA-75; 11 A-6A/3 A-6B, VA-112; 12 A-4C, VA-144; 12 A-4E, RVAH-11; RA-5C, VAH-4 Det 63; 5 KA-3B, VAW-13 Det 63; 1 KA-3B, 5 EKA-3B, VAW-114; 3 E-2A, HC-1 Det 63; 3 UH-2C,

Dec /68 - Sep 69: CVW-11. 7th. VF-114; 11 F-4B, VF-213; 11 F-4B, VA-37; 14 A-7A, VA-65; 11 A-6A/2 A-6B, VA-105; 11 A-7A, RVAH-11; 5 RA-5C, VAQ-131; 2 KA-3B, 3 EKA-3B, VAW-114; 3 E-2A, HC-1 Det 63; UH-2C, HC-7 Det 110; SH-3A

Nov 70 - Jul 71: CVW-11. 7th. VF-114; F-4J, VF-213; 11 F-4J, VA-192; 9 A-7E, VA-195; 11 A-7E, VA-52; 7 A-6A/1 A-6B, RVAH-6; 2 RA-5C, VAQ-133; 2 EKA-3B, 1 KA-3B, VAW-114; 3 E-2B, HC-1 Det 2; 3 UH-2C, HC-7 Det 110; SH-3A

Feb 72 - Nov 72; CVW-11. 7th. VF-114; 11 F-4J, VF-213; 12 F-4J, VA-52; 8 A-6A, 3 A-6B/2 KA-6D, VA-192; 11 A-7E, VA-195; 13 A-7E, RVAH-7; 4 RA-5C, VAW-114; 3 E-2B, VQ-135 Det 1; 3 EKA-3B, HC-1 Det 1; 3 SH-3G, HC-7 Det 7; HH-3A

Nov 73 - Jul 74; CVW-11. 7th/5th. VF-114; 10 F-4J, VF-213; 10 F-4J, VA-192; 13 A-7E, VA-195; 11 A-7E, VA-52; 10 A-6A/3 KA-6D, VAQ-136; 4 EA-6B, RVAH-7; 2 RA-5C, VAW-114; 4 E-2B, VS-37; 8 S-2G, VS-38; 7 S-2G, HS-4; 10 SH-3D, VQ-1 Det 63; EA-3B

May 75 - Dec 75; CVW-11. 7th. VF-213; 7 F-4J, VF-114; 5 F-4J, VA-52; 10 A-6E/3 KA-6D, VA-192; 10 A-7E, VA-195; 12 A-7E, HS-8; 8 SH-3D, VS-37; 9 S-2G, VS-38; 9 S-2G, VAQ-136; 4 EA-6B, VAW-114; 4 E-2B, RVAH-6; RA-5C, VQ-1; EA-3

Jun 75: Reclassified CV

Oct 77 - May 79; CVW-11. 7th. VF-114; F-14A, VF-213; F-14A, VA-52; A-6E/KA-6D, VA-192; A-7E, VA-195; A-7E, RVAH-7; RA-5C, VAQ-131; EA-6B, VAW-122; E-2C, VQ-1; EA-3B, VS-33; S-3A, HS-8; SH-3D

May 79 - Feb 80; CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-52; A-6E/KA-6D, VA-22; A-7E, VA-94; A-7E, VAQ-135; EA-6B, VAW-114; E-2C, VFP-62; RF-8G, VQ-1; EA-3B, VS-21; S-3A, HS-8; SH-3H

Apr 81 - Nov 81; CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-52; A-6E/KA-6D, VA-22; A-7E, VA-94; A-7E, VAQ-135; EA-6B, VAW-114; E-2C, VFP-63; RF-8G, VQ-1; EA-3B, VS-29; S-3A, HS-4; SH-3H

Jan 84 - Aug 84; CVW-2. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-145; A-6E/KA-6D, VA-146; A-7E, VA-147; A-7E, VAQ-130; EA-6B, VAW-116; E-2C, VQ-1; EA-3B, VS-38; S-3A, HS-2; SH-3H

Jul 85 - Dec 85; CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-165; A-6E/KA-6D, VA-146; A-7E, VA-147; A-7E, VAQ-130; EA-6B, VAW-112; E-2C, VQ-1; EA-3B, VS-33; S-3A, HS-2; SH-3H

Jan 87 - Jun 87; CVW-9. World. VF-24; F-14A, VF-211; F-14A, VA-165; A-6E/KA-6D, VA-146; A-7E, VA-147; A-7E, VAQ-130; EA-6B, VAW-112; E-2C, VQ-1; EA-3B, VS-33; S-3A, HS-2; SH-3H

Nov 87 - Apr 91: SLEP

Oct 91 - Dec 91; CVW-15. 2nd/7th. VF-51; F-14A, VF-111; F-14A, VFA-87; F/A-18A, VFA-27; F/A-18A, VA-52; A-6E/KA-6D, VAW-114; E-2C+, VAQ-134; EA-6B, VS-37; S-3A, HS-4; SH-60F/HH-60H, VRC-30 Det ?; C-2A

Nov 92 May 93; CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VFA-97; F/A-18A, VFA-27; F/A-18A, VA-52; A-6E/KA-6D, VAW-114; E-2C, VAQ-134; EA-6B, VS-37; S-3A, HS-4; SH-60F/HH-60H, VRC-30 Det ?; C-2A

Jun 94 - Dec 94; CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VFA-97; F/A-18A, VFA-27; F/A-18A, VA-52; A-6E/KA-6D, VAW-114; E-2C, VAQ-134; EA-6B, VS-37; S-3A, HS-4; SH-60F/HH-60H, VRC-30 Det C; C-2A

Apr 96 - Oct 96; CVW-11. 7th. VF-213; F-14A, VFA-22; F/A-18C, VFA-94; F/A-18C, VFA-97; F/A-18C, VAW-117; E-2C, VAQ-135; EA-6B, VQ-5 Det B; ES-3A, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-30 Det 2; C-2A

Oct 96 - Apr 97; CVW-5. 7th/5th. VF-213; F-14A, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VFA-97; F/A-18A, VAW-117; E-2C, VAQ-135; EA-6B, VQ-5 Det B; ES-3A, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-30 Det 2; C-2A

Mar 99 - Aug 99; CVW-5. 7th/5th. VF-154; F-14A, VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A

Apr 00- Jun 00; CVW-5. 7th/5th. VF-154; F-14A, VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A

Sep 00- Nov 00; CVW-5. 7th/5th. VF-154; F-14A, VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A

Mar 01- Jun 01; CVW-5. 7th. VF-154; F-14A, VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A

Oct 01- Dec 01; CVW-5. 7th/5th. VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A

Jan 03 - May 03; CVW-5. 7th/5th. VF-154; F-14A, VFA-27; F/A-18C(N), VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-135; EA-6B, VS-21; S-3B, HS-14; SH-60F/HH-60H, VRC-40 Det 5; C-2A. (My last deployment)

May 05 - Aug 05; CVW-5. 7th. VFA-27; F/A-18E, VFA-102; F/A-18F, VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, HS-14; SH-60F/HH-60H, HSL-51 Det 3; SH-60B, VRC-40 Det 5; C-2A

May 09: Decommissioned

## CVA-64 Constellation

Oct 61: Commissioned

Jul 62 - Sep 62; CVG-5. 2nd/7th. VF-51; 12 F-8D, VA-55; 12 A-4C, VA-56; 12 A-4C, VA-113; 12 A-4C, VAH-10 Det B; 4 A-3B, VFP-63 Det B; 2 F-8AP,

Feb 63 - Sep 63; CVW-14. 7th. VF-141; 13 F-4B, VF-143; 13 F-4B, VA-144; 12 A-4C, VA-145; 8 A-1H/3 A-1J, VA-146; 12 A-4C, VAH-10; 12 A-3B, VFP-63 Det F; 1 RF-8A, VAW-11 Det F; 4 E-1B, HU-1 Det F; 1 UH-25B, 1 CH-19

May 64 - Feb 65; CVW-14. 7th. VF-142; 12 F-4B, VF-143; 12 F-4B, VA-144; 13 A-4C, VA-145; 3 A-1J/8 A-1H, VA-146; 12 A-4C, VAH-10; 12 A-3B, VAW-11 Det F; 4 E-1B, VFP-63 Det F; 3 RF-8A, HU-1 Det F; 2 UH-2A, VAP-61 Det ?; RA-3B, VQ-1; EA-3B, VF-51; F-8E, VMCJ-1 Det; RF-8A

May 66 - Dec 66; CVW-15; 7th. VF-151; 11 F-4B, VF-161; 10 F-4B, VA-65; 9 A-6A, VA-153; 15 A-4C, VA-155; 13 A-4E, RVAH-6; RA-5C, VAH-8; 4 A-3B, VAW-11 Det D; E-2A, HC-1 Det D; 2 UH-2A/1 UH-2B, VQ-1 Det ?; EA-3B, VAP-61 Det ?; RA-3B, VAW-13 Det ?; EA-1F, HS-6 Det ?; SH-3A

Apr 67 - Dec 67; CVW-14. 7th. VF-142; 11 F-4B, VF-143; 11 F-4B, VA-55; A-4C, VA-65; A-6A, VA-146; 13 A-4C, VA-196; 9 A-6A, RVAH-12; 5 RA-5C, VAH-8; KA-3B, VAW-113; 4 E-2A, HC-1 Det 64; UH-2A/ UH-2B, VAP-61 Det ?; RA-3B, VQ-1 Det ?; EA-3B, VAQ-13 Det ?; EA-1F

May 68 - Jan 69; CVW-14. 7th. VF-142; 11 F-4B, VF-143; 10 F-4B, VA-27; 13 A-7A, VA-97; 12 A-7A, VA-196; 8 A-6A/3 A-6B, RVAH-5; RA-5C, VAH-2 Det 64; 2 KA-3B, VAH-10 Det 64; KA-3B, VAW-13 Det 64; EKA-3B, VAW-113; 4 E-2A, HC-1 Det 64; 3 UH-2C

Aug 69 - May 70; CVW-14. 7th. VF-142; 13 F-4J, VF-143; 12 F-4J, VA-27; 15 A-7A, VA-85; 12 A-6A, 2 A-6B, VA-97; 13 A-7A, RVAH-7; 5 RA-5C, VAW-113; 4 E-2A, VAQ-133; 3 EKA-3B/2 KA-3B, HC-1 Det 5; 2 SH-3A, HC-7 Det 110; 4 SH-3A

Oct 71 - Jun 72; CVW-9. 7th. VF-92; 10 F-4J, VF-96; 12 F-4J, VA-146; 11 A-7E, VA-147; 11 A-7E, VA-165; 10 A-6A, 3 KA-6D, RVAH-11; 5 RA-5C, VAQ-130 Det 1; 3 EKA-3B, HC-1 Det 3; 3 SH-3G, VAW-116; 4 E-2B

Jan 73 - Oct 73; CVW-9. 7th. VF-92; 9 F-4J, VF-96; 9 F-4J, VA-146; 12 A-7E, VA-147; 11 A-7E, VA-165; 9 A-6A/6 KA-6D, HS-6 Det 1; 4 SH-3G, VAQ-134; 4 EA-6B VAW-116; 4 E-2B, RVAH-12; 4 RA-5C, VQ-1 Det ?; EA-3B, HC-3 Det 105; 2 CH-46D

Jun 74 - Dec 74; CVW-9. 7th/5th. VF-92; 11 F-4J, VF-96; 9 F-4J, VA-146; 10 A-7E, VA-147; 10 A-7E, VA-165; 8 A-6A/5 KA-6D, RVAH-5; 3 RA-5C, VAW-112; 3 E-2B, VAQ-131; 4 EA-6B, HS-6; 8 SH-3A, VQ-1 Det 64; EA-3B

Jun 75: Reclassified CV

Apr 77 - Nov 77; CVW-9. 7th. VF-24; F-14A, VF-211; F-14A, VA-146; A-7E, VA-147; A-7E, VA-165; A-6E/KA-6D, VAW-126; E-2B, VAQ-132; EA-6B, VFP-63; RF-8G, VQ-1; EA-3B, VS-21; S-3A, HS-6; SH-3A

Sep 78 - May 79; CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-146; A-7E, VA-147; A-7E, VA-165; A-6E/KA-6D, VAW-126; E-2B, VAQ-132; EA-6B, VFP-63; RF-8G, VQ-1; EA-3B, VS-37; S-3A, HS-6; SH-3A

Feb 80 - Oct 80; CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-146; A-7E, VA-147; A-7E, VA-165; A-6E/KA-6D, VAW-116; E-2B, VAQ-?; EA-6B, VFP-63; RF-8G, VQ-1; EA-3B, VS-38; S-3A, HS-6; SH-3H

Oct 81 - May 82; CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-146; A-7E, VA-147; A-7E, VA-165; A-6E/KA-6D, VAQ-134; EA-6B, VAW-112; E-2B, VQ-1; EA-3B, VS-38; S-3A, HS-8; SH-3H

Feb 85 - Aug 85; CVW-14. 7th/5th. VF-21; F-14A, VF-154; F-14A, VFA-25; F/A-18A, VA-113; F/A-18A, VA-196; A-6E/KA-6D, VAQ-196; EA-6B, VAW-113; E-2B, VQ-1; EA-3B, VS-37; S-3A, HS-8; SH-3H. Philip 1985

Apr 87 - Oct 87; CVW-14. 7th/5th. VF-21; F-14A, VF-154; F-14A, VFA-25; F/A-18A, VA-113; F/A-18A, VA-196; A-6E/KA-6D, VAQ-139; EA-6B, VAW-113; E-2C, VQ-1; EA-3B, VS-37; S-3A, HS-8; SH-3H

Dec 88 - Jun 89; CVW-14. 7th/5th. VF-21; F-14A, VF-154; F-14A, VFA-25; F/A-18A, VA-113; F/A-18A, VA-196; A-6E/KA-6D, VAQ-139; EA-6B, VAW-113; E-2C, VS-37; S-3A, HS-8; SH-3H

Jul 90 - Mar 93: SLEP

Nov 94 - May 95; CVW-2. 7th/5th. VF-2; F-14D, VFA-137; F/A-18C(N), VFA-151; F/A-18C(N), VMFA-323; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, VQ-5 Det ?; ES-3A, VS-38; S-3B, HS-2; SH-60F/HH-60H

Apr 97 - Oct 97; CVW-2. 7th/5th. VF-2; F-14D, VFA-137; F/A-18C(N), VFA-151; F/A-18C(N), VMFA-323; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, VQ-5 Det C; ES-3A, VS-38; S-3B, HS-2; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Jun 99 - Dec 99; CVW-2. 7th. VF-2; F-14D, VFA-137; F/A-18C(N), VFA-151; F/A-18C(N), VMFA-323; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, VS-38; S-3B, HS-2; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Mar 01 - Sep 01; CVW-2. 7th/5th. VF-2; F-14D, VFA-137; F/A-18C(N), VFA-151; F/A-18C(N), VMFA-323; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, VS-38; S-3B, HS-2; SH-60F/HH-60H, HSL-47 Det 4; SH-60B, VRC-30 Det 2; C-2A

Nov 02 - Jun 03; CVW-2. 7th/5th. VF-2; F-14D, VFA-137; F/A-18C(N), VFA-151; F/A-18C(N), VMFA-323; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, VS-38; S-3B, HS-2; SH-60F/HH-60H, HSL-47 Det 4; SH-60B, VRC-40 Det 2; C-2A

Aug 03: Decommissioned

CVAN-65 Enterprise

Nov 61: Commissioned

Aug 62 - Oct 62; CVG-6; 6th. VF-33; 12 F-8E, VF-102; 10 F-4B, VA-65; 13 A-1H, VA-66; 11 A-4C, VA-76; 12 A-4C, VFP-62 Det 65; 3 F-8AP, VAW-12 Det 65; 4 E-1B

Oct 62 - Dec 62; CVG-6; CMC. VF-33; 12 F-8E, VF-102; 15 F-4B, VA-64; 12 A-4C, VA-65; 12 A-1H, VA-66; 12 A-4C, VA-76; 12 A-4C, VFP-62 Det 59; 3 RF-8A, VAW-12 Det 65; 6 E-1B, HU-2 Det 65; 2 UH-25B

Feb 63 - Sep 63; CVG-6; 6th. VF-33; 13 F-8E, VF-102; 13 F-4B, VA-64; 12 A-4C, VA-65; 12 A-1H, VA-66; 12 A-4C, VA-76; 12 A-4C, VAH-7; 10 A-5A, VAW-33 Det 65; 3 EA-1F, HU-2 Det 65; 2 UH-2B, VAW-12 Det 65; 4 E-1B, VFP-62 Det 65; 3 RF-8A

Feb 64 - Oct 64; CVW-6; 6th. VF-33; 14 F-8E, VF-102; 12 F-4B, VA-65; 12 A-1H, VA-64; 12 A-4C, VA-66; 12 A-4C, VA-76; 12 A-4C, VAH-7; 10 A-5A, VFP-62 Det 65; 3 RA-8A, VAW-12 Det 65; 4 E-1B, VAW-33 Det 65; 3 EA-1F, HU-2 Det 65; 4 UH-2A

Nov 64 - Jul 65: Refueled

Oct 65 - Jun 66; CVW-9. 2nd/5th/7th. VF-92; 10 F-4B, VF-96; F-4B, VA-36; 12 A-4C, VA-76; 13 A-4C, VA-93; A-4C

VA-94; 14 A-4C, RVAH-7; 6 RA-5C, VAH-4 Det M; 3 A-3B, VAW-11 Det M; E-1B, HC-1 Det M; UH-2A, VQ-1 Det ?; EA-3B, VAP-61 Det ?; RA-3B

Nov 66 - Jul 67; CVW-9. 7th. VF-92; 12 F-4B, VF-96; 9 F-4B, VA-35; 9 A-6A, VA-56; 13 A-4C, VA-113; 14 A-4C, RVAH-7; 3 RA-5C, VAH-2 Det M; 5 A-3B, VAQ-11 Det M; 4 E-2A, VAP-61 Det ?; RA-3B, HC-1 Det M; 1 UH-2A/2 UH-2B, VQ-1 Det ?; EA-3B

Jan 68 - Jul 68; CVW-9. 7th. VF-92; 13 F-4B, VF-96; 13 F-4B, VA-35; 11 A-6A/3 A-6B, VA-56; 13 A-4E, VA-113; 12 A-4F, RVAH-1; 6 RA-5C, VAH-2 Det 65; 2 KA-3B, VAW-13 Det 65; 1 EKA-3B, VAW-112; 3 E-2A, HC-1 Det 65; 4 UH-2C, HC-7 Det 111; SH-3A

Jan 69 - Jul 69; CVW-9. 7th. VF-92; 11 F-4J, VF-96; 11 F-4J, VA-145; 8 A-6A, VA-146; 13 A-7B, VA-215; 11 A-7B, VAQ-132; 2 EKA-3B/2 KA-3B, VAW-112; 4 E-2A, RVAH-6; RA-5C, HC-1 Det 65; 2 UH-2C

Aug 69 - Jan 71: Refueled

Jun 71 - Feb 72; CVW-14. 7th/5th. VF-143 P; 10 F-4J, VF-142; 6 F-4J, VA-97; 6 A-7E, VA-27; 9 A-7E, VA-196; 9 A-6A, 2 A-6B/2 KA-6D, RVAH-5; RA-5C

VAW-113; E-2B, VAQ-130 Det 4; 2 EKA-3B, HC-1 Det 4; 3 SH-3G

Sep 72 - Jun 73; CVW-14. 7th. VF-143; 12 F-4J, VF-142; 10 F-4J, VA-27; 11 A-7E, VA-97; 11 A-7E, VA-196; 5 A-6E/4 KA-6D, VAW-113; 4 E-2B, VAQ-131; 4 EA-6B, RVAH-13; RA-5C, HS-2 Det 1; SH-3G

Sep 74 - May 75; CVW-14. 7th/5th. VF-1; 9 F-14A, VF-2; 10 F-14A, VA-27; 7 A-7E, VA-97; 6 A-7E, VA-196; 1 A-6A/1 KA-6D, VAQ-137; EA-6B, HS-2; 1 SH-3D

VAW-113; 1 E-2B, RVAH-12; RA-5C, VQ-1 Det 65; EA-3B

Jun 75: Reclassified CVN

Jul 76 - Mar 77; CVW-14. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-27; A-7E, VA-97; A-7E, VA-196; A-6E/KA-6D, VAQ-134; EA-6B, VAW-113; E-2B, VQ-1; EA-3B, RVAH-1; RA-5C, VS-29; S-3A, HS-2; SH-3D, HC-3; UH-46D

Apr 78 - Oct 78; CVW-14. 7th/5th. VF-1; F-14A, VF-2; F-14A, VA-27; A-7E, VA-97; A-7E, VA-196; A-6E/KA-6D, VAQ-134; EA-6B, VAW-113; E-2B, VQ-1; EA-3B, RVAH-1; RA-5C, VS-38; S-3A, HS-2; SH-3D

Sep 82 - Apr 83; CVW-11. 7th. VF-114; F-14A, VF-213; F-14A, VA-22; A-7E, VA-94; A-7E, VA-95; A-6E/KA-6D, VAQ-133; EA-6B, VAW-117; E-2C, VQ-1; EA-3B, VS-37; S-3A, HS-6; SH-3H

May 84 - Dec 84; CVW-11. 7th/5th. VF-114; F-14A, VF-213; F-14A, VA-22; A-7E, VA-94; A-7E, VA-95; A-6E/KA-6D, VAQ-133; EA-6B, VAW-117; E-2C, VQ-1; EA-3B, VS-21; S-3A, HS-6; SH-3H

Jan 86 - Aug 86; CVW-11. World. VF-114; F-14A, VF-213; F-14A, VA-22; A-7E, VA-94; A-7E, VA-95; A-6E/KA-6D, VAQ-133; EA-6B, VAW-117; E-2C, VQ-1; EA-3B, VS-21; S-3A, HS-6; SH-3H

Jan 88 - Jul 88; CVW-11. 7th/5th. VF-114; F-14A, VF-213; F-14A, VA-22; A-7E, VA-94; A-7E, VA-95; A-6E/KA-6D, VAQ-135; EA-6B, VAW-117; E-2C, VS-21; S-3A, HS-6; SH-3H

Sep 89 - Mar 90; CVW-11. World. VF-114; F-14A, VF-213; F-14A, VA-22; A-7E, VA-94; A-7E, VA-95; A-6E/KA-6D, VAQ-135; EA-6B, VAW-117; E-2C, VS-21; S-3A, HS-6; SH-3H

Oct 90 - Sep 94: Refueled

Jun 96 - Dec 96; CVW-17. 6th/5th. VF-103; F-14B, VFA-81; F/A-18C, VFA-83; F/A-18C, VA-75; A-6E/KA-6D, VAW-125; E-2C, VAQ-132; EA-6B, VQ-6 Det C; ES-3A, VS-30; S-3B, HS-15; SH-60F/HH-60H, VRC-40 Det 2; C-2A

Nov 98 - May 99; CVW-3. 6th/5th. VF-32; F-14B, VFA-37; F/A-18C(N), VFA-105; F/A-18C(N), VMFA-312; F/A-18C(N), VAW-126; E-2C, VAQ-130; EA-6B, VS-22; S-3B, HS-7; SH-60F/HH-60H, VQ-6 Det A; ES-3A, VRC-40 Det 4; C-2A

Apr 01 - Nov 01; CVW-8. 6th/5th. VF-14; F-14B, VF-41; F-14B, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3B, HS-3; SH-60F/HH-60H, VRC-40 Det 5; C-2A

Oct 03 - Feb 04: CVW-1. 5th. VF-211; F-14A, VFA-82; F/A-18C(N), VFA-86; F/A-18C, VMFA-312; F/A-18A+, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-60F/HH-60H, VRC-40 Det 2; C-2A  
 May 06 - Nov 06: CVW-1. 6th/5th/7th. VFA-86; F/A-18C(N), VFA-136; F/A-18C, VFA-211; F/A-18F, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-60F/HH-60H, VRC-40 Det 2; C-2A  
 Jul 07 - Dec 07: CVW-1. 6th/5th. VFA-86; F/A-18C(N), VFA-136; F/A-18C, VFA-211; F/A-18F, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, HS-11; SH-60F/HH-60H, VRC-40 Det 4; C-2A  
 Apr 08 - Apr 10: Refit  
 Jan 11 - Jul 11: CVW-1. 6th/5th. VFA-11; F/A-18F, VFA-136; F/A-18E, VFA-211; F/A-18F, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, HS-11; SH-60F/HH-60H, VRC-40 Det 2; C-2A  
 Mar 12 - Nov 12: CVW-1. 6th/5th. VFA-11; F/A-18F, VFA-136; F/A-18E, VFA-211; F/A-18F, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, HS-11; SH-60F/HH-60H, VRC-40 Det 1; C-2A  
 Dec 12: Decommissioned

#### CVA-66 America

Jan 65: Commissioned  
 Nov 1965 - Jul 66: CVW-6. 6th. VF-33; 11 F-4B, VF-102; 10 F-4B, VA-64; A-4C, VA-66; 16 A-4C, RVAH-5; 5 RA-5C, VAW-12 Det 66; 4 E-1B, VAW-33 Det 66; 4 EA-1F  
 Jan 1967 - Sep 67: CVW-6. 6th. VF-33; 11 F-4B, VF-102; 8 F-4B, VA-36; 14 A-4C, VA-64; 14 A-4C, VA-66; 15 A-4C, RVAH-5; 6 RA-5C, VAW-12; 4 E-1B, VAW-33; 3 EA-1F  
 Jan 67 - Sep 67: CVW-6. 6th. VF-33; 11 F-4B, VF-102; 8 F-4B, VA-36; 14 A-4C, VA-64; 14 A-4C, VA-66; 15 A-4C, RVAH-5; 6 RA-5C, VAW-12 Det 66; 4 E-1B, VAW-33 Det 66; 3 EA-1F  
 Apr 68 - Dec 68: CVW-6. 7th. VF-33; 12 F-4J, VF-102; 12 F-4J, VA-82; 12 A-7A, VA-86; 11 A-7A, VA-85; 11 A-6A, VAW-122; 4 E-2A, RVAH-13; RA-5C, VAH-10 Det 66; KA-3B, VAW-13 Det 66; EKA-3B, HC-2 Det 66; 2 UH-2A, 1 UH-2B  
 Apr 70 - Dec 70: CVW-9. World. VF-92; 9 F-4J, VF-96; 10 F-4J, VA-146; 12 A-7E, VA-147; 14 A-7E, VA-165; 4 A-6A/1 A-6B/8 A-6C, RVAH-12; 5 RA-5C, VAW-124; 4 E-2A, VAQ-132; 3 EKA-3B/2 KA-3B, HC-2; 3 UH-2C  
 Jul 71 - Dec 71: CVW-8. 6th. VF-101 Det 66; 7 F-4J, VMFA 333; 10 F-4J, VA-35; 6 A-6A/2 A-6B/4 A-6C/3 KA-6D, VA-82; 11 A-7E, VA-86; 11 A-7E, RVAH 13; 4 RA-5Cs, VAH-124; 4 E-2B, HC-2 Det 66; 3 HH-2D  
 Jun 72 - Mar 73: CVW-8; 7th. VF-74; F-4J, VA-35; 6 A-6A, 3 A-6C/5 KA-6D, VA-82; 12 A-7C, VA-86; 12 A-7C, RVAH-6; 3 RA-5C, VAW-124; 4 E-2B, VMFA-333; 12 F-4J, VAQ-132; 4 EA-6B, HC-2 Det 66; 3 SH-3G, HC-7 Det 110; HH-3A  
 Jan 74 - Aug 74: CVW-8; 6th. VF-142; 12 F-4J, VF-143; 12 F-4J, VA-85; 11 A-6E/4 KA-6D, VA-86; 12 A-7C, VA-35; 11 A-6E/4 KA-6D, RVAH 1; 3 RA-5C, HC 2 Det 66; 3 SH-3G, VAQ 133; 4 EA-6B  
 Jun 75: Reclassified CV  
 Apr 76 - Oct 76: CVW-6. 6th. VF-142; F-14A, VF-143; F-14A, VA-15; A-7E, VA-87; A-7E, VA-176; A-6E/KA-6D, VAQ-137; EA-6B, VAW-124; E-2B, VFP-63; RF-8G, VS-28; S-3A, HS-15; SH-3D  
 Sep 77 - Apr 78: CVW-6. 6th. VF-142; F-14A, VF-143; F-14A, VA-15; A-7E, VA-87; A-7E, VA-176; A-6E/KA-6D, VAQ-137; EA-6B, VAW-124; E-2B, VFP-63; RF-8G, VS-28; S-3A, HS-15; SH-3D  
 Mar 79 - Sep 79: CVW-11. 6th. VF-114; F-14A, VF-213; F-14A, VA-95; A-6E/KA-6D, VA-192; A-7E, VA-195; A-7E, VAQ-131; EA-6B, VAW-124; E-2B, VFP-63; RF-8G, VQ-2; EA-3B, VS-33; S-3A, HS-12; SH-3H  
 Apr 81 - Nov 81: CVW-11. 6th/5th. VF-114; F-14A, VF-213; F-14A, VA-95; A-6E/KA-6D, VA-192; A-7E, VA-195; A-7E, VAQ-133; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-33; S-3A, HS-12; SH-3H  
 Dec 82 - Jun 83: CVW-1. 6th/5th. VF-33; F-14A, VF-102; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAQ-136; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-32; S-3A, HS-11; SH-3H  
 Apr 84 - Nov 84: CVW-1. 6th/5th. VF-33; F-14A, VF-102; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAQ-135; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-32; S-3A, HS-11; SH-3H  
 Aug 85 - Oct 85: CVW-1. 2nd. VF-33; F-14A, VF-102; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAQ-135; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-32; S-3A, HS-11; SH-3H  
 Mar 86 - Sep 86: CVW-1. 6th. VF-33; F-14A, VF-102; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VMAQ-2; EA-6B, VAW-123; E-2C, VQ-2; EA-3B, VS-32; S-3A, HS-11; SH-3H

May 89 - Nov 89: CVW-1. 6th/5th. VF-33; F-14A, VF-102; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VA-85; A-6E/KA-6D, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-3H  
 Dec 90 - Apr 91: CVW-1. DS. VF-102; F-14A, VF-33; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VA-85; A-6E/KA-6D, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-3H  
 Aug 91 - Oct 91: CVW-1. 2nd. VF-102; F-14A, VF-33; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VA-85; A-6E/KA-6D, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-3H  
 Dec 91 - Jun 92: CVW-1. 2nd/6th/5th. VF-102; F-14A, VF-33; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VA-85; A-6E/KA-6D, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-3H  
 Aug 93 - Feb 94: CVW-1. 6th. VF-102; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VA-85; A-6E/KA-6D, VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-3H, HMM-162 Det A; CH-46E, VRC-40 Det 3; C-2A  
 Aug 94 - Feb 95: CVW-1. 6th. VF-102; F-14A, VFA-82; F/A-18C, VFA-86; F/A-18C, VMFA-251; F/A-18C, VAW-123; E-2C, VMAQ-3; EA-6B, VS-32; S-3B, HS-11; SH-3H, VQ-6 Det A; ES-3A, VRC-40 Det 4; C-2A  
 Aug 95 - Feb 96: CVW-1. 6th/5th. VF-102; F-14B, VFA-82; F/A-18C, VFA-86; F/A-18C, VMFA-251; F/A-18C, VAW-123; E-2C, VMAQ-3; EA-6B, VQ-6 Det A; ES-3A, VS-32; S-3B, HS-11; SH-3H, VRC-40 Det 4; C-2A  
 Aug 96: Decommissioned

## CVA-67 John F. Kennedy

Sep 68: Commissioned

Apr 69 - Dec 69: CVW-1. 6th. VF-14; 9 F-8H, VF-32; 10 F-4B, VA-81; 12 A-4C, VA-83; 14 A-4C, VA-95; 12 A-4C, RVAH 14; 5 RA-5C, VAQ-33 Det 67; 3 EA-1F, VAW-121 Det 67; 3 E-1B

Sep 70 - Mar 71: CVW-1. 2nd/6th. VF-32; 10 F-4B, VA-34; 5 A-6A/2 A-6B, VA-46; 10 A-7B, VA-72; 11 A-7B, RVAH-14; 3 RA-5C, HC-2 Det 67; 3 HH-2D

Dec 71 - Oct 72: CVW-1. 2nd/6th. VF-14; 8 F-4J, VF-32; 11 F-4B, VA-34; 5 A-6A/3 A-6B/3 A-6C/2 KA-6D, VA-46; 9 A-7B, VA-72; 12 A-7B, RVAH-14; 3 RA-5C, VAW-125 Det 67; 2 E-2B

Apr 73 - Dec 73: CVW-1. 6th. VF-14; 12 F-4B, VF-32; 12 F-4B, VA-34; 5 A-6A/3 A-6B/3 A-6C/4 KA-6D, VA-46; 12 A-7B, VA-72; 12 A-7B, RVAH-11; 2 RA-5C, VAW-125 Det 67; 4 E-2B, HC-2 Det 67; 4 SH-3G

Jun 75 - Jan 76: CVW-1. 6th. VF-14; 10 F-14A, VF-32; 12 F-14A, VA-34; 3 A-6B/5 A-6E/3 KA-6D, VA-46; 12 A-7B, VA-72; 9 A-7B

Jun 75: Reclassified CV

Jan 77 - Aug 77: CVW-1. 6th. VF-14; F-14A, VF-32; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7B, VA-72; A-7B, VAQ-133; EA-6B, VAW-125; E-2C, VQ-2; EA-3B, VFP-63; RF-8G, VS-32; S-3A, HS-11; SH-3D

Jun 78 - Feb 79: CVW-1. 6th. VF-14; F-14A, VF-32; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAQ-133; EA-6B, VAW-125; E-2C, VQ-2; EA-3B, VFP-63; RF-8G, VS-32; S-3A, HS-11; SH-3D

Aug 80 - Mar 81: CVW-1. 6th/5th. VF-14; F-14A, VF-32; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAQ-138; EA-6B, VAW-126; E-2C, VQ-2; EA-3B, VS-32; S-3A, HS-11; SH-3D

Jan 81 - Jul 82: CVW-3. 6th/5th. VF-11; F-14A, VF-31; F-14A, VA-75; A-6E/KA-6D, VA-37; A-7E, VA-75; A-7E, VAQ-138; EA-6B, VAW-126; E-2C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H

Sep 83 - May 84: CVW-3. 2nd/6th. VF-11; F-14A, VF-31; F-14A, VA-75; A-6E/KA-6D, VA-85; A-6E/KA-6D, VAQ-137; EA-6B, VAW-126; E-2C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H

Aug 86 - Mar 87: CVW-3. 6th. VF-14; F-14A, VF-32; F-14A, VA-66; A-7E, VA-75; A-6E/KA-6D, VMAAW-533; A-6E, VAQ-140; EA-6B, VAW-126; E-2C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H

Aug 88 - Feb 89: CVW-3. 6th. VF-14; F-14A, VF-32; F-14A, VMAAW-533; A-6E, VAQ-130; EA-6B, VAW-126; E-2C, VQ-2; EA-3B, VS-22; S-3A, HS-7; SH-3H

Aug 90 - Mar 91: CVW-3. DS. VF-14; F-14A, VF-32; F-14A, VA-46; A-7E, VA-72; A-7E, VA-75; A-6E/KA-6D, VAW-126; E-2C, VAQ-130; EA-6B, HS-7; SH-3H, VS-22; S-3B

Oct 92 - Apr 93: CVW-3. 6th. VF-14; F-14A, VF-32; F-14A, VFA-37; F/A-18C(N), VFA-105; F/A-18C(N), VA-75; A-6E/KA-6D, VAW-126; E-2C, VAQ-130; EA-6B, HS-7; SH-3H, VS-22; S-3B, VRC-30 Det 1; C-2A

Apr 97 - Oct 97: CVW-1. 6th/5th. VF-14; F-14A, VF-41; F-14A, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VAW-124; E-2C, VAQ-141; EA-6B, VQ-6 Det 4; ES-3A, VS-24; S-3B, HS-3; SH-60F/HH-60H, VRC-40 Det 4; C-2A

Sep 99 - Mar 00: CVW-1. 6th/5th. VF-102; F-14B, VFA-82; F/A-18C(N), VFA-86; F/A-18C, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-60F/HH-60H, VRC-40 Det 2; C-2A

Feb 02 - Aug 02: CVW-7. 6th/5th. VF-11; F-14B, VF-144; F-14B, VFA-131; F/A-18C(N), VFA-136; F/A-18C(N), VAW-121; E-2C, VAQ-140; EA-6B, VS-31; S-3B, HS-5; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Jun 04 - Dec 04: CVW-17. 6th/5th. VF-103; F-14B, VFA-34; F/A-18C(N), VFA-81; F/A-18C, VFA-83; F/A-18C(N), VAW-125; E-2C, VAQ-132; EA-6B, VS-30; S-3B, HS-15; SH-60F/HH-60H, VRC-40 Det 4; C-2A

Mar 07: Decommissioned

CVAN-68 Nimitz

May 75: Commissioned

Jun 75: Reclassified CVN

Jun 75 - Sep 75: CVW-8. 2nd. VF-31; F-4J, VMFA-333; F-4J, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, RVAH-9; RA-5C, VAW-116; E-2B, VAQ-130; EA-6B, HS-15; SH-3D, VRC-40 Det ?; C-1A

Jul 76 - Feb 77: CVW-8. 6th. VF-74; F-4J, VMFA-333; F-4J, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, RVAH-9; RA-5C, VAW-116; E-2B, VAQ-130; EA-6B, HC-2; SH-3G, VQ-2; EA-3B

Dec 77 - Jul 78: CVW-8. 6th/2nd. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, RVAH-6; RA-5C, VAW-112; E-2B, VAQ-135; EA-6B, VQ-2; EA-3B, VS-24; S-3A, HS-9; SH-3H

Sep 79 - May 80: CVW-8. 2nd/6th/5th. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, VAW-112; E-2B, VAQ-134; EA-6B, VQ-2; EA-3B, VFP-63; RF-8G, VS-24; S-3A, HS-9; SH-3H, HC-16; HH-46A

Aug 81 - Feb 82: CVW-8. 6th. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, VAW-124; E-2C, VMAQ-2; EA-6B, VQ-2; EA-3B, VS-24; S-3A, HS-9; SH-3H

Nov 82 - May 83: CVW-8. 6th/2nd. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, VAW-124; E-2C, VAQ-135; EA-6B, VQ-2; EA-3B, VS-24; S-3A, HS-9; SH-3H

Mar 85 - Oct 85: CVW-8. 6th/2nd. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, VAW-124; E-2C, VAQ-138; EA-6B, VQ-2; EA-3B, VS-24; S-3A, HS-9; SH-3H

Dec 86 - Jul 87: CVW-8. 6th/2nd/7th. VF-41; F-14A, VF-84; F-14A, VA-35; A-6E/KA-6D, VA-82; A-7E, VA-86; A-7E, VAW-124; E-2C, VAQ-138; EA-6B, VQ-2; EA-3B, VS-24; S-3A, HS-9; SH-3H

Sep 88 - Mar 89: CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VA-146; A-7E, VA-147; A-7E, VA-165; A-6E/KA-6D, VAW-112; E-2C, VAQ-138; EA-6B, VS-33; S-3A, HS-2; SH-3H

Feb 91 - Aug 91: CVW-9. DS. VF-211; F-14B, VF-24; F-14B, VFA-146; F/A-18C(N), VFA-147; F/A-18C(N), VA-165; A-6E/KA-6D, VAW-112; E-2C+, VAQ-138; EA-6B, VS-33; S-3A, HS-2; SH-3H

Feb 93 - Jul 93: CVW-9. 5th. VF-24; F-14A, VF-211; F-14A, VFA-146; F/A-18C(N), VFA-147; F/A-18C(N), VA-165; A-6E/KA-6D, VAW-112; E-2C, VAQ-138; EA-6B, VS-33; S-3B, HS-2; SH-60F/HH-60H

Nov 95 - May 96: CVW-9. 7th/5th. VF-24; F-14A, VF-211; F-14A, VFA-146; F/A-18C(N), VFA-147; F/A-18C(N), VA-165; A-6E/KA-6D, VAW-112; E-2C, VAQ-138; EA-6B, VQ-5 Det C; ES-3A, VS-33; S-3B, HS-8; SH-60F/HH-60H, VRC-30 Det 4; C-2A

Sep 97 - Mar 98: CVW-9. 7th/5th. VF-211; F-14A, VFA-146; F/A-18F, VFA-147; F/A-18C(N), VMFA-314; F/A-18C, VAW-112; E-2C, VAQ-138; EA-6B, VQ-5 Det D; ES-3A, VS-33; S-3B, HS-8; SH-60F/HH-60H, VRC-30 Det 4; C-2A

May 98 - Jun 01: Refueled

Mar 03 - Nov 03: CVW-11. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F,

VFA-94; F/A-18C(N), VFA-97; F/A-18A, VAW-117; E-2C, VAQ-135; EA-6B, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-40 Det 3; C-2A

May 05 - Nov 05: CVW-11. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-94; F/A-18C(N), VMFA-232; F/A-18C(N), VAW-117; E-2C, VAQ-135; EA-6B, HS-6; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Apr 07 - Sep 07: CVW-? CVW-11. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-81; F/A-18C, VMFA-232; F/A-18A+, VAW-117; E-2C-2000, VAQ-135; EA-6B, HS-6; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Jan 08 - Jun 08: CVW-? CVW-11. 7th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-81; F/A-18C, VMFA-232; F/A-18A+, VAW-117; E-2C-2000, VAQ-135; EA-6B, HS-6; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Jul 09 - Mar 10: CVW-? CVW-11. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-86; F/A-18C(N), VFA-97; F/A-18C(N), VAW-117; E-2C-2000, VAQ-135; EA-6B, HS-6; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Mar 13 - Dec 13: CVW-? CVW-11. 7th/5th/6th. VFA-154; F/A-18F, VFA-146; F/A-18C, VFA-147; F/A-18E, VMFA-323; F/A-18C(N), VAW-117; E-2C-2000, VAQ-142; EA-6B, HSM-75; MH-60R, HSC-6; MH-60S, VRC-30 Det 3, C-2A

Jan 15 - Oct 16: Refit

Jun 17 - Dec 17: CVW-? CVW-11. 7th/5th. VFA-154; F/A-18F, VFA-146; F/A-18E, VFA-147; F/A-18E, VMFA-323; F/A-18C(N), VAW-121; E-2D, VAQ-142; HSM-75; HSC-8; VRC-30 Det 3, C-2A

Mar 18 - May 19: Refit

CVN-69 Dwight D. Eisenhower

Oct 77: Commissioned

Jan 79 - Jul 79: CVW-7. 6th. VF-142; F-14A, VF-143; F-14A, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, VAW-121; E-2C, VAQ-138; EA-6B, VQ-2; ES-3A, VS-31 S-3A, HS-5; SH-3D

Apr 80 - Dec 80: CVW-7. 5th. VF-142; F-14A, VF-143; F-14A, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, VAW-121; E-2C, VAQ-132; EA-6B, VQ-2; ES-3A, VS-31 S-3A, HS-5; SH-3H, HC-16; UH-46A

Jan 82 - Jul 82: CVW-7. 6th. VF-142; F-14A, VF-143; F-14A, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, VAW-121; E-2C, VAQ-132; EA-6B, VQ-2; ES-3A, VS-31 S-3A, HS-5; SH-3H

Apr 83 - Nov 83: CVW-7. 6th. VF-142; F-14A, VF-143; F-14A, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, VAW-121; E-2C, VAQ-132; EA-6B, VQ-2; ES-3A, VS-31 S-3A, HS-5; SH-3H

Oct 84 - May 85: CVW-7. 6th. VF-142; F-14A, VF-143; F-14A, VA-12; A-7E, VA-65; A-6E/KA-6D, VA-66; A-7E, VAW-121; E-2C, VAQ-132; EA-6B, VQ-2; ES-3A, VS-31 S-3A, HS-5; SH-3H

Feb 88 - Aug 88: CVW-7. 6th. VF-142; F-14A, VF-143; F-14A, VA-34; A-6E/KA-6D, VA-46; A-7E, VA-72; A-7E, VAW-121; E-2C, VAQ-140; EA-6B, VS-31 S-3A, HS-5; SH-3D

Mar 90 - Sep 90: CVW-7. 6th/5th. VF-142; F-14A+, VF-143; F-14A+, VA-34; A-6E/KA-6D, VFA-131; F/A-18A, VFA-136; F/A-18A, VAW-121; E-2C, VAQ-140; EA-6B, VS-31 S-3A, HS-5; SH-3D

Sep 91 - Apr 92: CVW-7. DS. VF-143; F-14B, VF-142; F-14B, VFA-131; F/A-18C(N), VFA-136; F/A-18C(N), VA-34; A-6E/KA-6D, VAW-121; E-2C, VAQ-140; EA-6B, VS-31; S-3B, HS-5; SH-3H

Oct 94 - Apr 95: CVW-3. 6th. VF-32; F-14A, VFA-37; F/A-18C(N), VFA-105; F/A-18C(N), VA-75; A-6E/KA-6D, VAW-126; E-2C, VAQ-130; EA-6B, VS-22; S-3B, HS-7; SH-3H, VQ-6 Det C; ES-3A

Jun 98 - Dec 98: CVW-17. 6th/5th. VF-103; F-14B, VFA-34; F/A-18C(N), VFA-81; F/A-18C(N), VFA-83; F/A-18C(N), VAW-125; E-2C, VAQ-132; EA-6B, BQ-6 Det D; ES-3A, VS-30; S-3B, HS-15; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Feb 00 - Aug 00: CVW-7. 6th/5th. VF-11; F-14B, VF-143; F-14B, VFA-131; F/A-18C(N), VFA-136; F/A-18C(N), VAW-121; E-2C, VAQ-140; EA-6B, VS-31; S-3B, HS-5; SH-60F/HH-60H, VRC-30 Det 3; C-2A

May 01 - Mar 05: Refueled

Oct 06 - May 07: CVW-7. 6th/5th. VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-131; F/A-18C(N), VFA-143; F/A-18E, VAW-125; E-2C-2000, VAQ-140; EA-6B, HS-5; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Feb 09 - Jul 09: CVW-7. 6th/5th. VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-131; F/A-18C(N), VFA-143; F/A-18E, VAW-125; E-2C, VAQ-140; EA-6B, HS-5; SH-60F/HH-60H, VRC-40 Det 2; C-2A.

Jan 10 - Jul 10: CVW-7. 6th/5th. VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-131; F/A-18C(N), VFA-143; F/A-18E, VAW-121; E-2C-2000, VAQ-140; EA-6B, HS-5; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Jun 12 - Dec 12: CVW-7. 6th/5th. VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-131; F/A-18C(N), VFA-143; F/A-18E, VAW-121; E-2C, VAQ-140; EA-6B, HS-5; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Feb 13 - Jul 13: CVW-7. 6th/5th. VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-131; F/A-18C(N), VFA-143; F/A-18E, VAW-121; E-2C, VAQ-140; EA-6B, HS-5; SH-60F/HH-60H, VRC-40 Det 2; C-2A.

Sep 13 - Aug 15: Refit

Jun 16 - Dec 16: CVW-3. 6th/5th. VFA-32; F/A-18F, VFA-83; F/A-18E, VFA-105; F/A-18E, VFA-131; F/A-18C(N), VAW-123; E-2C, VAQ-130; EA-18G, HSM-74; MH-60R, HSC-7; MH-60S, VRC-40 Det 2; C-2A

Aug 17 - Mar 19: Refit

Jan 20: CVW-3. 6th/5th. VFA-32; F/A-18F, VFA-83; F/A-18E, VFA-105; F/A-18E, VFA-131; F/A-18E, VAW-123; E-2C-2000, VAQ-130; EA-18G, HSM-74; MH-60R, HSC-7; MH-60S, VRC-40 Det 2; C-2A



## CVN-70 Carl Vinson

Mar 82: Commissioned

Mar 83 - Oct 83: CVW-15. World. VF-51; F-14A, VF-111; F-14A, VA-37; A-7E, VA-52; A-6E/KA-6D, VA-105; A-7E, VAW-114; E-2C, VAQ-134; EA-6B, VS-29 S-3A, HS-4; SH-3H

Oct 84 - May 85: CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-27; A-7E, VA-52; A-6E/KA-6D, VA-97; A-7E, VAW-114; E-2C, VQ-1; EA-3B, VS-29 S-3A, HS-4; SH-3H

Aug 86 - Feb 87: CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-27; A-7E, VA-52; A-6E/KA-6D, VA-97; A-7E, VAW-114; E-2C, VAQ-134; EA-6B, VQ-1; EA-3B, VS-29 S-3A, HS-4; SH-3H. (My first deployment, FF-1041 Bradley)

Jun 88 - Dec 88: CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-27; A-7E, VA-52; A-6E/KA-6D, VA-97; A-7E, VAW-114; E-2C, VAQ-134; EA-6B, VS-29 S-3A, HS-4; SH-3H

Feb 90 - Jul 90: CVW-15. 7th/5th. VF-51; F-14A, VF-111; F-14A, VA-27; A-7E, VA-52; A-6E/KA-6D, VA-97; A-7E, VAW-114; E-2C, VAQ-134; EA-6B, VS-29 S-3A, HS-4; SH-3H

Sep 90 - Apr 93: Overhaul

Feb 94 - Aug 94: CVW-14. 7th/5th. VF-11; F-14D, VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VAW-113; E-2C, VAQ-139; EA-6B, VQ-5 Det D; ES-3A, VS-35 S-3B, HS-4; SH-60F/HH-60H

May 96 - Nov 96: CVW-14. 7th/5th. VF-11; F-14D, VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VAW-113; E-2C, VAQ-139; EA-6B, VQ-5 Det D; ES-3A, VS-35 S-3B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Nov 98 - May 99: CVW-11. 7th. VF-213; F-14D, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VFA-97; F/A-18A, VAW-117; E-2C, VAQ-135; EA-6B, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-30 Det 2; C-2A

Jul 01 - Jan 02: CVW-11. 7th/5th. VF-213; F-14D, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VFA-97; F/A-18A, VAW-117; E-2C, VAQ-135; EA-6B, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Feb 03 - Sep 03: CVW-9. 7th. VFA-22; F/A-18C(N), VFA-146; F/A-18C, VFA-147; F/A-18C, VMFA-314; F/A-18C, VAW-112; E-2C, VAQ-138; EA-6B, VS-33; S-3B, HS-8; SH-60F/HH-60H, VRC-30 Det 4; C-2A

Feb 05 - Jul 05: CVW-9. 7th/5th/2nd. VFA-146; F/A-18C, VFA-146; F/A-18C, VFA-147; F/A-18C(N), VFA-154; F/A-18F, VMFA-323; F/A-18C(N), VAW-112; E-2C, VAQ-138; EA-6B, VS-33; S-3B, HS-8; SH-60F/HH-60H, VRC-30 Det 4; C-2A

Nov 05 - Jul 09: Refueled

Nov 10 - Jun 11: CVW-17. 7th/5th. VFA-22; F/A-18F, VFA-25; F/A-18C(N), VFA-81; F/A-18E, VFA-113; F/A-18C(N), VAW-125; E-2C-2000, VAQ-134; EA-6B, HS-15; SH-60F/HH-60H, VRC-40 Det 3; C-2A.

Nov 11 - May 12: CVW-17. 7th/5th. VFA-22; F/A-18F, VFA-25; F/A-18C(N), VFA-81; F/A-18E, VFA-113; F/A-18C(N), VAW-125; E-2C, VAQ-134; EA-6B, HS-15; SH-60F/HH-60H, VRC-40 Det 5; C-2A

Aug 14 - Jun 15: CVW-17. 7th/5th. VFA-22; F/A-18F, VFA-81; F/A-18E, VFA-94; F/A-18C(N), VFA-113; F/A-18C(N), VAW-116; E-2C-2000, VAQ-139; EA-18G, HSC-15; MH-60S, HSM-73; MH-60R, VRC-30 Det 1; C-2A

Jan 17 - Jun 17: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-192; F/A-18E, VAW-113; E-2C-2000, VAQ-136; EA-18G, HSC-4; MH-60S, HSM-78; MH-60R, VRC-30 Det 2; C-2A

Jan 18 - Apr 18: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-192; F/A-18E, VAW-113; E-2C-2000, VAQ-136; EA-18G, HSC-4; MH-60S, HSM-78; MH-60R, VRC-30 Det 2; C-2A

Feb 19: Enters refit

## CVN-71 Theodore Roosevelt

Oct 86: Commissioned

Dec 88 - Jun 89: CVW-8. 6th. VF-41; F-14A, VF-84; F-14A, VFA-15; F/A-18A, VFA-87; F/A-18A, VA-35; A-6E/KA-6D, VA-36; A-6E/KA-6D, VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3A, HS-9; SH-3H

Dec 90 - Jun 91: CVW-8. DS. VF-41; F-14A, VF-84; F-14A, VFA-15; F/A-18A, VFA-87; F/A-18A, VA-65; A-6E, VA-36; A-6E, VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3B, HS-9; SH-3H, VRC-40 Det ?; C-2A

Mar 93 - Sep 93: CVW-8. 6th. VF-84; F-14A, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VMFA-312; F/A-18C(N), VA-36; A-6E/KA-6D, VAW-124 E-2C, VAQ-141; EA-6B, HS-3; SH-60F/HH-60H, HMH-362; CH-53D/UH-1N, VRC-40 Det 2; C-2A

Mar 95 - Sep 95: CVW-8. 6th/5th. VF-41; F-14A, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VMFA-312; F/A-18C(N), VAW-124 E-2C, VAQ-141; EA-6B, VAQ-209 Det ?; EA-6B, VQ-6 Det D; ES-3A, VS-24; S-3B, HS-3; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Nov 96 - May 97: CVW-3. 6th/5th. VF-32; F-14A, VFA-37; F/A-18C(N), VFA-105; F/A-18C(N), VMFA-312; F/A-18C(N), VAW-126 E-2C, VAQ-130; EA-6B, VQ-6 Det D; ES-3A, VS-22; S-3B, HS-7; SH-60F/HH-60H, VRC-40 Det 3; C-2A

Mar 99 - Sep 99: CVW-8. 6th/5th. VF-41; F-14D, VF-14; F-14D, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3B, HS-3; SH-60F/HH-

60H, VRC-40 Det 1; C-2A

Sep 01 - Mar 02: CVW-1. 5th. VF-102; F-14D, VFA-82; F/A-18C(N), VFA-86; F/A-18C, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, VS-32; S-3B, HS-11; SH-60F/HH-60H, VRC-40 Det 2; C-2A

Feb 03 - May 03: CVW-8. 6th. VF-213; F-14D, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VFA-201; F/A-18A+, VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3B, HS-3; SH-60F/HH-60H, VRC-40 Det 5; C-2A

Sep 05 - Mar 06: CVW-8. 6th/5th. VF-31; F-14D, VF-213; F-14D, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VAW-124; E-2C, VAQ-141; EA-6B, VS-24; S-3B, HS-3; SH-60F/HH-60H, VRC-40 Det 1; C-2A

Sep 08 - Apr 09: CVW-8. 2nd/5th. VFA-15 F/A-18C(N), VFA-31; F/A-18E, VFA-87 F/A-18C(N), VFA-213; F/A-18F, VAW-124; E-2C, VAQ-141; EA-6B, HS-3; SH-60F/HH-60H, VRC-40 Det 1; C-2A

Aug 09 - Aug 13: Refueled

Mar 15 - Nov 15: CVW-11. 5th/6th/7th. VFA-11; F/A-18F, VFA-136; F/A-18E, VFA-211; F/A-18F, VMFA-251; F/A-18C(N), VAW-125; E-2D, VAQ-137; EA-18G, HS-11; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Oct 17 - May 18: CVW-17. 7th/5th. VFA-22; F/A-18F, VFA-94; F/A-18F, VFA-113; F/A-18E, VMFA-312; F/A-18C(N), VAW-116; E-2C-2000, VAQ-139; EA-18G, HSM-73; MH-60R, HSC-6; MH-60S, VRC-30 Det 1; C-2A

Jan 20 - : CVW-11. 7th. VFA-31; F/A-18E, VFA-87; F/A-18E, VFA-146; F/A-18E, VFA-154; F/A-18F, VAW-115; E-2C-2000, VAQ-142; EA-18G, HSM-75; MH-60R, HSC-8; MH-60S, VRC-30 Det 3; C-2A

CVN-72 Abraham Lincoln

Nov 89: Commissioned

May 91 - Nov 91: CVW-9. 7th/5th. VF-114; F-14A, VF-213; F-14A, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VA-95; A-6E/KA-6D, VAW-117; E-2C+, VAQ-135; EA-6B, VS-29; S-3A, HS-6; SH-60F/HH-60H

Jun 93 - Dec 93: CVW-11. 7th/5th. VF-213; F-14A, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VMFA-314; F/A-18A, VA-95; A-6E/KA-6D, VAW-117; E-2C, VAQ-135; EA-6B, VS-29; S-3B, HS-6; SH-60F/HH-60H

Apr 95 - Oct 95: CVW-11. 7th/5th. VF-213; F-14A, VFA-22; F/A-18C(N), VFA-94; F/A-18C(N), VA-95; A-6E/KA-6D, VAW-117; E-2C, VAQ-135; EA-6B, VQ-5 Det B; ES-3A, VS-29; S-3B, HS-6; SH-60F/HH-60H, VRC-30 Det 3; C-2A

Jun 98 - Dec 98: CVW-14. 7th/5th. VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C, VAQ-139; EA-6B, VQ-5 Det B; ES-3A, VS-35; S-3B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Aug 00 - Feb 01: CVW-14. 7th/5th. VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C, VAQ-139; EA-6B, VS-35; S-3B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Jul 02 - May 03: CVW-14. 7th/5th. VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C, VAQ-139; EA-6B, VS-25; S-3B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Oct 04 - Mar 05: CVW-2. 7th. VFA-2; F/A-18F, VFA-82; F/A-18C(N), VFA-137; F/A-18E, VFA-151; F/A-18C(N), VAW-116; E-2C, VAQ-131; EA-6B, HSL-47; SH-60B, HS-2; SH-60F/HH-60H, VRC-30 Det 4; C-2A

Feb 06 - Aug 06: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-151; F/A-18C(N), VAW-116; E-2C-2000, VAQ-131; EA-6B, HSL-47; HS-2; SH-60F/HH-60H, VRC-30 Det 2; C-2A

Mar 08 - Oct 08: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-151; F/A-18C(N), VAW-116; E-2C-2000, VAQ-131; EA-6B, HSL-47; HS-2; SH-60F/HH-60H, VRC-30 Det 2; C-2A

Sep 10 - Mar 11: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-151; F/A-18C(N), VAW-116; E-2C-2000, VAQ-131; EA-6B, HSL-47; HSM-77; MH-60R, HSC-12; MH-60S, VRC-30 Det 2; C-2A

Dec 11 - Aug 12: CVW-2. 7th. VFA-2; F/A-18F, VFA-34; F/A-18C(N), VFA-137; F/A-18E, VFA-151; F/A-18C(N), VAW-116; E-2C-2000, VAQ-131; EA-6B, HSM-77; MH-60R, HSC-12; MH-60S, VRC-30 Det 2; C-2A

Mar 13 - May 17: Refueled

CVN-73 George Washington

Jul 92: Commissioned

May 94 - Nov 94: CVW-7. 6th. VF-142; F-14B, VF-143; F-14B, VFA-131; F/A-18C(N), VFA-136; F/A-18C(N), VA-34; A-6E/KA-6D, VAW-121; E-2C, VAQ-140; EA-6B, VQ-6 Det B; ES-3A, VS-31; S-3B, HS-5; SH-60F/HH-60H

Jan 96 - Jul 96: CVW-7. 6th/5th. VF-143; F-14B, VFA-131; F/A-18C(N), VFA-136; F/A-18C(N), VA-34; A-6E/KA-6D, VAW-121; E-2C, VAQ-140; EA-6B, VQ-6 Det B; ES-3A, VS-31; S-3B, HS-5; SH-60F/HH-60H, VRC-40 Det 1; C-2A  
 Oct 97 - Apr 98: CVW-1. 6th/5th. VF-102; F-14B, VFA-82; F/A-18C(N), VFA-86; F/A-18C, VMFA-251; F/A-18C(N), VAW-123; E-2C, VAQ-137; EA-6B, VQ-6 Det B; ES-3A, VS-32; S-3B, HS-11; SH-60F/HH-60H, VRC-40 Det 1; C-2A  
 Jun 00 - Dec 00: CVW-17. 6th/5th. VF-103; F-14B, VFA-34; F/A-18C(N), VFA-81; F/A-18C, VFA-83; F/A-18C, VAW-125; E-2C, VAQ-132; EA-6B, VS-30; S-3B, HS-15; SH-60F/HH-60H, VRC-40 Det 4; C-2A  
 Jun 02 - Dec 02: CVW-17. 6th/5th. VF-103; F-14B, VFA-34; F/A-18C(N), VFA-81; F/A-18C, VFA-83; F/A-18C(N), VAW-125; E-2C, VAQ-132; EA-6B, VS-30; S-3B, HS-15; SH-60F/HH-60H, VRC-40 Det 4; C-2A  
 Jan 04 - Jul 04: CVW-7. 6th/5th. VF-11; F-14B, VF-143; F-14B, VFA-131; F/A-18C, VFA-136 F/A-18C(N), VAW-121; E-2C, VAQ-140; EA-6B, VS-31; S-3B, HS-5; SH-60F/HH-60H, VRC-30 Det 3; C-2A  
 Jun 09 - Sep 09: CVW-5. 7th. VFA-27; F/A-18E, VFA-102; F/A-18F, VFA-192; F/A-18C(N), VFA-195; F/A-18C(N), VAW-115; E-2C, VAQ-136; EA-6B, HSL-51; HS-14; SH-60F/HH-60H, VRC-30 Det 5; C-2A  
 Jun 10 - Nov 10: CVW-?. 7th. VFA-27; VFA-102; VFA-115; VFA-195; VAW-115; VAQ-136; HSL-51; HS-14; VRC-30  
 Jun 11 - Aug 11: CVW-?. 7th. VFA-27; VFA-102; VFA-115; VFA-195; VAW-115; VAQ-136; HSL-51; HS-14; VRC-30  
 Jun 13 - Dec 13: CVW-?. 7th. VFA-27; VFA-102; VFA-115; VFA-195; VAW-115; VAQ-141; HSM-77; HSC-2; VRC-30  
 May 14 - Nov 14: CVW-?. 7th. VFA-27; VFA-102; VFA-115; VFA-195; VAW-115; VAQ-141; HSM-77; HSC-2; VRC-30  
 May 15 - Aug 15: CVW-?. 7th. VFA-27; VFA-102; VFA-115; VFA-195; VAW-115; VAQ-141; HSM-77; HSC-2; VRC-30

#### CVN-74 John C. Stennis

Dec 95: Commissioned

Feb 98 - Aug 98: CVW-7. 6th/5th/7th. VF-11; 12 F-14B, VF-143; 12 F-14B, VFA-131; 12 F/A-18C(N), VFA-136; 12 F/A-18C(N), VAW-121; 4 E-2C, VAQ-140; 4 EA-6B, VQ-6 Det C; 2 ES-3A, VS-31; 8 S-3B, HS-5; 5/3 SH-60F/HH-60H, VRC-40 Det 2; 2 C-2A  
 Jan 00 - Jul 00: CVW-9. 5th. VF-211; 12 F-14A, VFA-146; 12 F/A-18C, VFA-147; 12 F/A-18C, VMFA-314; 12 F/A-18C, VAW-112; 4 E-2C, VAQ-138; 4 EA-6B, VS-33; 8 S-3B, HS-8; 4/4 SH-60F/HH-60H, VRC-30 Det 4; 2 C-2A  
 Nov 01 - May 02: CVW-9. 5th. VF-211; F-14A, VFA-146; F/A-18C, VFA-147; F/A-18C, VMFA-314; F/A-18C, VAW-112; 4 E-2C, VAQ-138; 4 EA-6B, VS-33; 8 S-3B, HS-8; 4/4 SH-60F/HH-60H, VRC-30 Det 4; 2 C-2A  
 May 04 - Nov 04: CVW-14. 7th. VF-31; F-14D, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-115; E-2C, VAQ-139; EA-6B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A  
 Jan 07 - Aug 07: CVW-? CVW-9. 7th/5th. VFA-146; F/A-18C, VFA-147; F/A-18C(N), VFA-154; F/A-18F, VMFA-323; F/A-18C(N), VAW-112; E-2C, VAQ-138; EA-6B, VS-31; S-3B, HS-8; SH-60F/HH-60H, VRC-30 Det 4; C-2A  
 Jan 09 - Jul 09: CVW-? CVW-9. 7th. VFA-146; F/A-18C, VFA-147; F/A-18E, VFA-154; F/A-18F, VMFA-323; F/A-18C(N), VAW-112; E-2C-2000, VAQ-138; EA-6B, HSM-71; MH-60R, HSC-8; MH-60S, VRC-30 Det 4, C-2A  
 Jul 11 - Mar 12: CVW-? CVW-9. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-97; F/A-18C(N), VFA-192; F/A-18C(N), VAW-112; E-2C-2000, VAQ-138; EA-18G, HSM-71 MH-60R; HSC-8 MH-60S; VRC-30 Det 4; C-2A  
 Aug 12 - May 13: CVW-? CVW-9. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-97; F/A-18C(N), VFA-192; F/A-18C(N), VAW-112; E-2C-2000, VAQ-133; EA-6B, HSM-71; MH-60R, HSC-8; MH-60S, VRC-30 Det 4; C-2A  
 Jan 16 - Aug 16: CVW-? CVW-9. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-97; F/A-18E, VFA-151; F/A-18E, VAW-112; E-2C-2000, VAQ-133; EA-18G, HSM-71; MH-60R, HSC-14; MH-60S, VRC-30 Det 4; C-2A  
 Oct 18 - May 19: CVW-? CVW-9. 7th/5th. VFA-14; F/A-18E, VFA-41; F/A-18F, VFA-97; F/A-18E, VFA-151; F/A-18E, VAW-117; E-2C-2000, VAQ-133; EA-18G, HSM-71; MH-60R, HSC-14; MH-60S, VRC-30 Det 4; C-2A

#### CVN-75 Harry S. Truman

Jul 98: Commissioned

Nov 00 - May 01: CVW-3. 6th/5th. VF-32; 11 F-14B, VFA-37; 12 F/A-18C(N), VFA-105; 12 F/A-18C(N), VMFA-312; 12 F/A-18C(N), VAW-126; 4 E-2C, VAQ-130; 4 EA-6B, VS-22; 8 S-3B, HS-7; SH-60F/HH-60H, VRC-40 Det 1; 2 C-2A

Dec 02 - May 03: CVW-3. 6th/5th. VF-32; F-14B, VFA-37; F/A-18C(N), VFA-105; F/A-18C(N), VMFA-115; F/A-18A+, VAW-126; 4 E-2C, VAQ-130; 4 EA-6B, VS-22; 8 S-3B, HS-7; 4/3 SH-60F/HH-60H, VRC-40 Det 1; 2 C-2A

Oct 04 - Apr 05: CVW-3. 6th/5th. VF-32; 10 F-14B, VFA-37; 12 F/A-18C(N), VFA-105; 12 F/A-18C(N),

VMFA-115; 12 F/A-18A+, VAW-126; 4 E-2C, VAQ-130; 5 EA-6B, VS-22; 8 S-3B, HS-7; 4/3 SH-60F/HH-60H, HC-4 Det; 2 MH-53E, VRC-40 Det 1; C-2A

Nov 07 - Jun 08: CVW-3. 6th/5th. VFA-11; F/A-18F, VFA-32; F/A-18F, VFA-37; F/A-18C(N), VFA-105; F/A-18E, VAW-126; E-2C-2000, VAQ-130; EA-6B, HS-7; SH-60F/HH-60H, VRC-40 Det 5; C-2A

May 10 - Dec 10: CVW-3. 6th/5th. VFA-32; 12 F/A-18F, VFA-37; 10 F/A-18C(N), VFA-105; 12 F/A-18E, VMFA-312; 11 F/A-18C(N), VAW-126; 4 E-2C-2000, VAQ-130; 4 EA-6B, HS-7; 4 SH-60F, 3 HH-60H, VRC-40 Det 4; 2 C-2A

Jul 13 - Apr 14: CVW-3. 6th/5th. VFA-32; 12 F/A-18F, VFA-37; 10 F/A-18C(N), VFA-105; 12 F/A-18E, VMFA-312; 10 F/A-18C(N), VAW-126; 4 E-2C, VAQ-130; 5 EA-6B, HSC-7; 8 MH-60S, HSM-74; 9 MH-60R, VRC-40 Det 4; 2 C-2A

Nov 15 - Jul 16: CVW-7. 6th/5th. VFA-25; F/A-18E, VFA-83; F/A-18C(N), VFA-103; F/A-18F, VFA-143; F/A-18E, VAW-117; E-2C-2000, VAQ-140; EA-18G, HSC-5; MH-60S, HSM-72; MH-60R, VRC-30 Det 3, C-2A

Apr 18 - Jul 18: CVW-7. 6th. VFA-11; F/A-18F, VFA-81; F/A-18E, VFA-136; F/A-18E, VFA-211; F/A-18F, VAW-126; E-2D, VAQ-137; EA-18G, HSC-11; MH-60S, HSM-72; MH-60R, VRC-40 Det 1; C-2A

Aug 18 - Dec 18: CVW-7. 2nd/6th. VFA-11; F/A-18F, VFA-81; F/A-18E, VFA-136; F/A-18E, VFA-211; F/A-18F, VAW-126; E-2D, VAQ-137; EA-18G, HSC-11; MH-60S, HSM-72; MH-60R, VRC-40 Det 1, C-2A

Nov 19 on: CVW-1. 5th/6th. VFA-11; F/A-18F, VFA-81; F/A-18E, VFA-136; F/A-18E, VFA-211; F/A-18F, VAW-126; E-2D, VAQ-137; EA-18G, HSC-11; MH-60S, HSM-72; MH-60R, VRC-40 Det 1, C-2A

#### CVN-76 Ronald Reagan

Jul 03: Commissioned

Jan 06 - Jul 06: CVW-14. 7th/5th. VFA-22; F/A-18E, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C-2000, VAQ-139; EA-6B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Jan 07 - Apr 07: CVW-14. 7th. VFA-22; F/A-18E, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C-2000, VAQ-139; EA-6B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

May 08 - Nov 08: CVW-14. 7th/5th. VFA-22; F/A-18F, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C-2000, VAQ-139; EA-6B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

May 09 - Oct 09: CVW-14. 7th/5th. VFA-22; F/A-18F, VFA-25; F/A-18C(N), VFA-113; F/A-18C(N), VFA-115; F/A-18E, VAW-113; E-2C-2000, VAQ-139; EA-6B, HS-4; SH-60F/HH-60H, VRC-30 Det 1; C-2A

Feb 11 - Sep 11: CVW-14. 7th/5th. VFA-146; 15 F/A-18C, VFA-147; 13 F/A-18E, VFA-154; 12 F/A-18F, VMFA-323; 11 F/A-18C(N), VAW-113; 4 E-2C-2000, VAQ-139; 4 EA-6B, HS-4; 5 SH-60F, 3 HH-60H, VRC-30 Det 1; 2 C-2A

Oct 15 - Dec 15: CVW-5. 7th. VFA-27; 13 F/A-18E, VFA-102; 13 F/A-18F, VFA-115; 11 F/A-18E, VFA-195; 11 F/A-18E, VAW-115; 4 E-2C-2000, VAQ-141; 6 EA-18G, HSC-2 HSC-12; 10 MH-60S, HSM-77; 8 MH-60R, VRC-30 Det 5; 2 C-2A

May 17 - Aug 17: CVW-5. 7th. VFA-27; 13 F/A-18E, VFA-102; 13 F/A-18F, VFA-115; 11 F/A-18E, VFA-195; 11 F/A-18E, VAW-125; 4 E-2C-2000, VAQ-141; 6 EA-18G, HSC-2; HSC-2; 10 MH-60S, HSM-77; 8 MH-60R, VRC-30 Det 5; 3 C-2A

May 19 - Aug 19: CVW-?. 7th. VFA-27 VFA-102; VFA-115; VFA-195; VAW-125; VAQ-141; HSC-2; HSM-77; VRC-30

#### CVN-77 George H. W. Bush

Jan 09: Commissioned

May 11 - Dec 11: CVW-8. 2nd/6th/5th. VFA-31; F/A-18E, VFA-213; F/A-18F, VFA-15; F/A-18C(N), VFA-87; F/A-18A+, VAW-124; E-2C, VAQ-141; EA-18G, HSM-70; MH-60R, HSC-9; MH-60S, VRC-40 Det 1; C-2A

Feb 14 - Nov 14: CVW-8. 2nd/6th/5th. VFA-31; F/A-18E, VFA-213; F/A-18F, VFA-15; F/A-18C(N), VFA-87; F/A-18C(N), VAW-124; E-2C, VAQ-134; EA-18G, HSM-70; MH-60E, HSC-9; MH-60S, VRC-40 Det 2; C-2A

Jan 17 - Aug 17: CVW-8. 6th/5th. VFA-31; F/A-18E, VFA-213; F/A-18F, VFA-37; F/A-18C(N), VFA-87; F/A-18E, VAW-124; E-2C, VAQ-131; EA-18G, HSM-70; MH-60R, HSC-9; MH-60S, VRC-40 Det 1, C-2A

Feb 19: Enters refit

LPH-2 Iwo Jima

Apr 62 - Aug 62: 7th

Aug 63 - Apr 64: 7th

Apr 65 - Nov 65: 7th. HMM-163; UH-34D

Jul 66 - Apr 67: 7th

Oct 67 - Jun 68; 7th. HMM-361; UH-34D

Jan 68 - May 68; 7th. HMM-363; UH-34D

Jun 69 - Jun 69; 7th. HMM-265; CH-46

Feb 73 - Feb 73; 7th. HMM-164; CH-53, CH-46, UH-1

LPH-3 Okinawa

Oct 62 - Dec 62: CMC. HMM-264: 24 UH-34D

Mar 67- Dec 67: 7th. HMM-163; UH-34D

Jun 68 - Aug 68: 7th. HMM-362: UH-34D

Oct 68 - Oct 68: 7th. HMM-363: UH-34D

Oct 68 - Mar 69: 7th. HMM-362: UH-34D

Mar 72 - Jun 72: 7th. HMM-164: CH-46, CH-53, UH-1E

LPH-7 Guadalcanal

Feb 64 - May 64: 2nd

Aug 67 - Dec 67: 2nd

LPH-9 Guam

Nov 65 - Mar 66: 2nd

Nov 66 - Apr 67: 2nd

LPH-10 Tripoli

May 67 - Dec 67: 7th. HMM-265; CH-46, HMM-262; CH-46

Jul 68 - Dec 68; 7th. HMM-265; CH-46

Dec 68 - Jun 69; 7th. HMM-164; CH-46

1971: Tripoli; HMM-165; 6 CH-53D/12 CH-36D/4 UH-1E. Indo-Pak

Apr 72 - Jun 72; 7th. HMM-165; CH-46, CH-53, UH-1E

LPH-11 New Orleans

LPH-12 Incheon

LHA-1 Tarawa

Mar 79 - Sep 79: 7th. HMM-262; 4 CH-53D/8 CH-46F/1 UH-1N, HMH-463; HMA-169; VMA-231

LHA-2 Saipan

Jul 1979: Nicaragua

LHA-3 Belleau Wood

LHA-4 Nassau

## LHA-5 Peleliu

Oct 1979: Nassau; Cuba (not fully qualified)

## LHA-6 America

- Typical: 12 MV-22B, 10 F-35B, 4 CH-53E/K, 4 AH-1Z, 4 UH-1Y, 4 MH-60S
- As CVL: 20 F-35B, 4 MH-60S

## LHA-7 Tripoli

## LHA-8 Bougainville

## LHD-1 Wasp

Jun 91 - Dec 91: 6th/5th. HMM-162; VMM-233  
 Jan 93 - Sep 93: 6th/5th. HMM-263  
 Aug 95 - Feb 96: 6th. HMM-264; VMA-231  
 Feb 98 - Jul 98: 6th. HMM-264; HMH-464; HML/A-267; VMA-231  
 Feb 00 - Aug 00: 6th. HMM-263; HMH-464; HML/A-269; VMA-542  
 Feb 02 - Aug 02: 6th/5th. HMM-261; HMH-461; HML/A-167; VMA-542  
 Feb 04 - Sep 04: 6th/5th. HMM-266; VMA-542; HC-8  
 Jun 16 - Dec 16: 6th/5th. VMM-264; HML/A-467; VMA-542; HSC-22  
 Aug 18 - Oct 18: 7th. VMM-262; VMFA-121; HSC-25  
 Jan 19 - Apr 19: 7th. VMM-262; VMM-268; VMFA-121; HSC-25  
 May 19 - Aug 19: 7th. VMM-265; VMFA-121; HSC-25

## LHD-2 Essex

Oct 94 - Apr 95: 7th/5th. HMM-161  
 Oct 96 - Apr 97: 7th/5th. HMM-166  
 Jun 98 - Dec 98: 7th/5th. HMM-163  
 Feb 03 - May 03: 7th. HMM-262  
 Aug 03 - Nov 03: 7th. HMM-262  
 Mar 04 - Jun 04: 7th. HMM-265  
 Aug 04 - Apr 05: 7th/5th. HMM-262; HMM-265; HM-15; HSC-25  
 Jan 06 - Jun 06: 7th. HMM-262  
 Jan 07 - Apr 06: 7th. HMM-265; VMA-214  
 Jan 08 - Jun 08: 7th. HMM-265; VMA-513; HSC-25  
 Sep 08 - Dec 08: 7th. HMM-262; HMM-265; VMA-233  
 Jan 09 - May 09: 7th. HMM-262; VMA-211  
 Jun 09 - Aug 09: 7th. HMM-262; VMA-211  
 Jan 10 - Mar 10: 7th. HMM-265; VMA-311; HSC-25  
 Sep 10 - Dec 10: 7th. HMM-262; VMA-542  
 Jan 11 - Apr 11: 7th. HMM-262; VMA-211; VMA-542; HSC-25  
 Sep 11 - Dec 11: 7th. HMM-265; VMA-214; HSC-25  
 Feb 12 - Apr 12: 7th. HMM-265; VMA-311; HSC-25  
 May 15 - Dec 15: 7th/5th. VMM-161; VMA-311; HSC-21  
 Jul 18 - Mar 19: 7th/5th. VMM-166; HMH-361; HML/A-469; VMFA-211; HSC-21

## LHD-3 Kearsarge

Mar 95 - Sep 95: 6th/5th. HMM-263; HMH-464; VMA-231  
 Mar 95 - Sep 95: 2nd/6th. HMM-261; HMH-461; HML/A-167; VMA-233  
 Apr 99 - Oct 99: 6th. HMM-365; HMH-464; HML/A-269; VMA-231  
 Apr 01 - Oct 01: 6th. HMM-266; HMH-461; HML/A-167  
 Jan 03 - Jul 03: 6th/5th. HMM-162; HMM-365; HMH-464; HML/A-269; VMA-233; VMA-542; HC-8  
 Jun 04 - Aug 04: 6th/5th. HMM-263; HC-8  
 Mar 05 - Sep 05: 6th/5th. HMM-162; HMH-464; HML/A-269; VMA-231; HC-28  
 Jul 07 - Feb 08: 6th/5th. HMM-261; HMH-461; HML/A-269; VMA-223; HSC-22  
 Aug 10 - May 11: 6th/5th. VMM-266; VMA-542; HSC-22  
 Mar 13 - Nov 13: 6th/5th. VMM-266; VMA-231; HSC-28  
 Oct 15 - May 16: 6th/5th. VMM-162; VMA-233; HSC-28  
 Dec 18 - Jul 19: 6th/5th. VMM-264; VMA-231; HSC-26

## LHD-4 Boxer

Mar 97 - Sep 97: 7th/5th. HMM-161; HMH-361; HML/A-267; VMA-513  
 Dec 98 - Jun 99: 7th/5th. HMM-364; HMH-361; HML/A-267; VMA-214; HC-11  
 Mar 01 - Sep 01: 7th/5th. HMM-268; HMH-361; HML/A-267  
 Jan 03 - Jul 03: 7th/5th. HMM-165; HMM-268; HMH-465; HML/A-169; HML/A-267; VMA-211; VMA-311  
 Jan 04 - Apr 04: 7th/5th. HMH-466; HC-11  
 Apr 05 - Sep 06: 7th. HSC-25  
 Sep 06 - May 07: 7th/5th. HMM-165; HMH-465; HML/A-267; VMA-311  
 Jan 09 - Aug 09: 7th/5th. HMM-163; HMH-466; HML/A-267; VMA-214; HSC-21  
 Feb 11 - Sep 11: 7th/5th. HMM-163; VMA-211; HSC-23  
 Aug 13 - Apr 14: 7th/5th. VMM-166; VMA-214; HSC-21  
 Feb 16 - Sep 16: 7th/5th. VMM-166; HMH-465; VMA-214; HSC-23

## LHD-5 Bataan

Sep 99 - Mar 00: 6th. HMH-261; HMH-461; HML/A-167; VMA-233  
 Sep 01 - Apr 02: 6th/5th. HMM-365; HMH-464; HML/A-269; VMA-233; HC-6  
 Jan 03 - Jun 03: 6th/5th. HMM-162; HMM-365; HMH-464; HML/A-269; VMA-233; VMA-542  
 Jan 04 - Mar 04: 6th/5th. HMM-162; HML/A-167; VMA-542; HC-6  
 Jan 07 - Jul 07: 6th/5th. HMM-264  
 May 09 - Dec 09: 6th/5th. VMM-263; HSC-22  
 Mar 11 - Feb 12: 6th/5th. VMM-263; HMH-366; HML/A-167; VMA-231; HSC-28  
 Feb 14 - Oct 14: 6th/5th. VMM-263; VMA-223; HSC-22  
 Mar 17 - Sep 17: 6th/5th. VMM-365; HMH-461; VMA-223; HSC-26

## LHD-6 Bonhomme Richard

Jan 00 - Jul 00: 7th/5th. HMM-166  
 Dec 01 - Jun 02: 7th/5th. HMM-165  
 Jan 03 - Jul 03: 7th/5th. HMM-165; HMM-268; HMH-465; HMLA-169; HMLA-267; VMA-311; VMA-211  
 Dec 04 - Jun 05: 7th/5th. HMM-165  
 Apr 07 - Nov 07: 7th/5th. HMM-163; HMH-466; HML/A-267; VMA-513; HSC-23  
 Sep 09 - Apr 10: 7th/5th. HMM-166  
 Aug 12 - Dec 12: 7th. HMM-262; VMA-542; HSC-25  
 Jan 13 - Mar 13: 7th. HMM-262; VMA-513; HSC-25

Jun 13 - Sep 13: 7th. HMM-265; HMH-722; HML/A-369; VMA-513; HSC-25  
Feb 14 - May 14: 7th. VMM-265; HMH-722; HML/A-469; VMA-223; HSC-25  
Jan 15 - Apr 15: 7th. VMM-262; VMA-231; HSC-25  
Jun 15 - Sep 15: 7th. VMM-265; VMA-311; HSC-25  
Jan 16 - Mar 16: 7th. VMM-265; VMA-214; HSC-25  
Aug 16 - Nov 16: 7th. VMM-262; VMA-542; HSC-25  
Feb 17 - Apr 17: 7th. VMM-262; VMA-311; HSC-25  
Jun 17 - Sep 17: 7th. VMM-265; VMA-311; HSC-25  
Jan 18 - Apr 18: 7th. VMM-262; HMH-466, HML/A-369; HSC-22

#### LHD-7 Iwo Jima

Mar 03 - Oct 03: 6th/5th. HMM-264  
Jun 06 - Dec 06: 6th/5th. HMM-365  
Aug 08 - Mar 09: 6th/5th. HMM-264; HSC-26  
Jul 10 - Nov 10: 2nd. HMM-774  
Mar 12 - Dec 12: 6th/5th. VMM-261; VMA-542; HSC-22  
Dec 14 - Jul 15: 6th/5th. VMM-365; VMA-231; HSC-28  
Feb 18 - Aug 18: 6th/5th. VMM-162; VMA-542; HSC-28

#### LHD-8 Makin Island

Oct 09: Commissioned  
Nov 11 - Jun 12: 7th/5th. HMM-268; AV-8B, HMH-461; HMLA-367; AH-1Z, VMA-214; HSC-23  
Jul 14 - Feb 15: 7th/5th. VMM-163; MV-22B, VMA-211; HSC-23  
Oct 16 - May 17: 7th/5th. VMM-163; MV-22B, HML/A-369; VMA-311; HSC-21.



## Annex W Environment

The weather, lighting conditions, and sonar conditions may be specified by a scenario, agreed on by both players, or randomly generated. The parts of a complete environment description are: The time of day, sea state, wind direction, clouds, visibility, and sonar conditions.

### Time of Day

Time is recorded using the 24-hour military clock: midnight is 0000 or 2400 hours; noon is 1200 hours; 7:30 PM is 1930 hours. Noon is 1200 hours. 1959 hours (7:59 PM) is followed by 2000 hours.

Generate a random time of day by using D6 rolls. First roll for the quarter of the day, rerolling a 5 or 6. Then roll again, adding that number to the value for the quarter in parentheses. This is the hour of the day in military time.

### RANDOM TIME GENERATION

<u>Die Roll</u>	<u>Quarter</u>
1	First (0)
2	Second (6)
3	Third (12)
4	Fourth (18)
5	Reroll
6	Reroll

### Sea State & Wind Speed

Sea State is a standard method of describing wave height. The table below provides a method for determining wave height. Sea state can affect gunnery, flight operations, or other naval evolutions.

### RANDOM SEA STATE & WIND

<u>D100 Roll</u>	<u>Height of Seas (ft)</u>	<u>Wind (kts)</u>	<u>Beaufort Scale</u>	<u>Sea State</u>	<u>Description</u>
01-05	Dead Calm	0	0 & 1	0	Glassy
06-10	0	5	2	1	Rippled
11-20	2	10	3	2	Wavelets
21-40	4	15	4	3	Slight
41-60	6	20	5	4	Moderate
61-85	9.5	25	6	5	Rough
86-90	13.5	30	7	6	Very Rough
91-92	18	40	8	6	Very Rough
93-94	23	45	9	6	Very Rough
95-96	29	50	10	7	High Seas
97-98	37	60	11	8	Very High Seas
99-00	45	65+	12	9	Phenomenal

### Wind Direction

Wind direction is given as a number in degrees ranging from 000 to 359, usually stated in relation to true north. This is the direction the wind is blowing from. A wind from 000°T means that the wind is blowing directly north to south.

Generate the wind randomly by rolling D6 and subtracting one. Multiply the remainder times sixty, then add D6 times ten to this result. For example, if the two D6 rolls are 3, then 5, the direction is  $((3-1)*60)+(5*10) = 120+50 = 170^{\circ}T$ .

### Cloud Generation

1) Roll D6 for the number of cloud layers. If the scenario starts after 1200 and before 2400, add one to the die roll.

1-2	No Clouds
3-5	One Layer
6	Two Layers

2) Roll for the altitude band of each layer

1	Low	(0-2000 m)	Starts at 1000 m alt
2-4	Medium	(2001-7500)	Starts at (D6+1)*1000 m
5-6	High	(7501-13500)	Starts at (D6+6)*1000 m

3) Roll for the thickness of each layer, then for the coverage of the layer

		Scattered	Intermittent	Broken	Overcast
1-3	1,000 meters	1-4	5-7	8-9	0
4	2,000 meters	1-3	4-6	7-8	9-0
5	4,000 meters	1	2-3	4-7	8-0
6	10,000 meters - -	1-4	6-0		

If the thickness exceeds the thickness of the altitude band, it joins the next altitude band.

Scattered clouds block 25% of the visual LOS, Intermittent block 50%, Broken block 75%, and Overcast completely block line of sight.

**Visibility**

This describes the distance at which objects can be seen. With 100% visibility, objects can be seen at maximum possible distance, but haze, smoke, fog, or precipitation can reduce the value. Roll randomly on the following table to find out the visibility.

**RANDOM VISIBILITY TABLE**

<i>Die Roll</i>	<i>%</i>	<i>Clear</i>	<i>Clear</i>	<i>Day</i>	<i>Night</i>
<i>D100</i>	<i>Visibility</i>	<i>Day</i>	<i>Night</i>	<i>Precip</i>	<i>Precip</i>
01-02	100	Unlimited			
03-05	90	Unlimited			
06-10	80	V Clear			
11-20	70	V Clear			
21-35	60	Clear			
36-50	50	Clear	Full Moon		
51-65	40	Clear	Gibbous		
66-80	30	Lt Haze	Quarter	Misty	
81-90	20	Hazy	Crescent	Light	
91-95	10	Lt Fog	New Moon	Interm	Misty
96-98	5	Thick Fog	Lt Fog	Heavy	Light
99-00	2	Dense Fog	Thick Fog		Interm-Hvy

**Sonar Conditions**

Sonar detection ranges are affected by the water's temperature, precipitation, and other factors. The listed range may be either decreased or increased. Randomly determine the sonar range multiplier by rolling 7+D6 and multiplying it times 10%. This yields a factor between 80% and 130%. This applies equally to all sonars used by both sides in a game, since the water conditions affect both sides.

## Annex Y - List of Ship Classifications

- G Suffix to a ship class indicating and area defense SAM of at least 10 nmi range (e.g. DDG, SSG, CG)
- N Suffix to a ship class designation indicating nuclear propulsion (e.g. SSN, CGN)

### Combatants

#### Aviation Ships

- CV multi-purpose aircraft carrier  
 CVA attack aircraft carrier  
 CVH helicopter carrier  
 CVL Light aircraft carrier  
 CVN multi-purpose aircraft carrier (nuclear)  
 CVS ASW aircraft carrier

#### Surface Combatants

- BB battleship  
 BC battle cruiser  
 BCGN guided missile battle cruiser (nuclear)  
 CA heavy cruiser (gun)  
 CG guided missile cruiser  
 CGH guided missile helicopter carrier  
 CGN guided missile cruiser (nuclear)  
 DD destroyer  
 DDG guided missile destroyer  
 FF frigate  
 FFG guided missile frigate  
 FFL corvette (light frigate)

#### Submarines

- SS submarine  
 SSA auxiliary submarine  
 SSB ballistic missile submarine  
 SSBN ballistic missile submarine (nuclear)  
 SSC coastal submarine  
 SSG guided missile submarine  
 SSGN guided missile submarine (nuclear)  
 SSM minisubmarine  
 SSN submarine (nuclear)  
 SSP submarine (air-Independent propulsion)

#### Patrol Combatants

- PG patrol gunboat  
 PHM guided missile patrol combatant (hydrofoil)

#### Amphibious Warfare Type Ships

- LCC amphibious command ship  
 LHA amphibious assault ship (general purpose)  
 LHD amphibious assault ship (multi-purpose)  
 LKA amphibious cargo ship  
 LPA amphibious transport  
 LPD amphibious transport dock  
 LPH amphibious assault ship (helicopter)  
 LSD dock landing ship

- LSL Landing ship, logistic  
 LST tank landing ship

#### Combat Logistics Ships

- AE ammunition ship  
 AEFS fleet replenishment ship  
 AF store ship  
 AFS combat store ship  
 AO oiler  
 AOF(L) large fleet tanker  
 AOF(S) small fleet tanker  
 AOE fast combat support ship  
 AOR replenishment oiler  
 AOS Support tanker

#### Mine Warfare Ships

- MCS mine countermeasures support ship  
 MHC mine hunter, coastal  
 MHS mine hunting ship  
 MM Minelayer  
 MSB minesweeping boat  
 MSD minesweeping drone  
 MSF fleet minesweeper  
 MSI inshore minesweeper  
 MSS specialized minesweeper

#### Patrol Craft

- ATC mini-armored troop carrier  
 PB patrol boat  
 PC coastal patrol craft  
 PBR river patrol craft  
 PCF patrol craft (fast patrol combatant)  
 PM river monitor  
 PS large patrol ship  
 PT torpedo boat  
 PTG guided missile patrol craft

#### Amphibious Warfare Ships and Craft

- LCUA landing craft, air cushion  
 LCFS fire support landing craft  
 LCM medium landing craft  
 LCP personnel landing craft  
 LCU utility landing craft  
 LCVP vehicle/personnel landing craft  
 LKA amphibious cargo ship  
 LPA amphibious transport  
 LPD dock landing ship  
 LSDV swimmer delivery vehicle  
 LSM medium landing ship  
 LSSC light SEAL support craft  
 LST tank landing ship  
 LWT amphibious warping tug  
 MSSC medium SEAL support craft  
 SLWT side loading warping tug  
 SWCL special warfare craft, light

## Annex Y - List of Ship Classifications

SWCM special warfare craft, medium

HSS Helicopter support ship

### Auxiliaries

#### Mobile Logistics Ships

AD destroyer tender  
 AE ammunition ship  
 AF stores ship  
 AR repair ship  
 AO oiler  
 AOR replenishment oiler  
 AW water tanker

#### Support Type Ships

ACS auxiliary crane ship  
 AEM missile tender  
 AFT transport stores ship  
 AG miscellaneous auxiliary  
 AGB icebreaker  
 AGE experimental auxiliary  
 AG/FF frigate/FAC support ship  
 AGDS deep submergence support ship  
 AGF miscellaneous command ship  
 AGP patrol craft tender  
 AGM missile range instrumentation ship  
 AGOR oceanographic research ship  
 AGOS ocean surveillance ship  
 AGS surveying ship  
 AGSS auxiliary research submarine  
 AH hospital ship  
 AK cargo ship  
 AKR vehicle cargo ship  
 AOG gasoline tanker  
 AOT transport oiler  
 AP transport  
 APA Amphibious transport  
 AR repair ship  
 ARR nuclear propulsion repair ship  
 ARC cable repairing ship  
 ARL repair ship, small  
 ARS salvage ship  
 AS submarine tender  
 ASR submarine rescue ship  
 ATA ocean tug  
 ATF fleet ocean tug  
 ATS salvage and rescue ship  
 AVB aviation logistic support ship  
 AVM guided missile ship  
 AVT auxiliary aircraft landing training ship

### Support Craft/Service Craft

#### Tugs (self-propelled)

YTB large harbor tug  
 YTL small harbor tug  
 YTM medium harbor tug

#### Tankers (self-propelled)

YO fuel oil barge  
 YOG gasoline barge  
 YW water barge

#### Lighters and Barges (self-propelled)

YF covered lighter  
 YFU harbor utility cart

#### (non-self-propelled)

YC open car lighter  
 YCF car float  
 YCV aircraft transportation lighter  
 YFN covered lighter  
 YFNB large covered lighter  
 YFNX lighter (special-purpose)  
 YFRN refrigerated covered lighter  
 YFRT range tender  
 YGN garbage lighter  
 YON gasoline barge  
 YOS oil storage barge  
 YSR sludge removal barge  
 YWN water barge

#### Other Craft (self-propelled)

DSRV deep submergence rescue vehicle  
 DSV deep submergence vehicle  
 NR submersible research vehicle (nuclear propelled)  
 YAG miscellaneous auxiliary service craft  
 YFB ferry boat or launch  
 YTT torpedo trials craft  
 YM dredge  
 YP patrol craft, training

#### Unclassified Miscellaneous

IX unclassified miscellaneous unit

## Annex Z - Conversion Factors & Scales

One Tactical Turn equals 3 minutes.

One Intermediate Turn equals 30 minutes, or 10 tactical turns.

Speed in knots/120 = nautical miles covered in one Incremental Move Phase.

Speed in knots/20 = nautical miles covered in one Tactical turn.

Speed in knots/2 = nautical miles covered in one Intermediate turn.

**A ship's damage points** are based on its standard displacement (submerged displacement for subs).

Sometimes a ship's displacement is not provided as a standard displacement.

Multiply GRT by 75%, to approximate standard displacement.

Multiply full load (fl) displacements by .85 to approximate standard displacement.

Multiply lightship (ltshp) displacements by 1.13 to approximate standard displacement.

DP = 0.177 x (Displ)<sup>0.80</sup> (2006 Standard)

DP = .85 x (Displ)<sup>0.667</sup> (2012 Standard)

Merchant/civilian ships (minimal DC fittings, large cargo holds, no transverse bulkheads): -50%

Merchants converted to warships (involving reconstruction): -35%

Warships built to mercantile standards (implying less watertight compartmentalization and lower shock criteria):

laid down before 1990: -25%

laid down 1990 and after: -15%

Materials other than steel used in a large part of the ship's construction:

Titanium: +15%

GRP: -10%

Aluminum superstructure: -15%

Aluminum hull & superstructure: -25%

Wood: -25%

Submarines (less reserve buoyancy): -50%

Hovercraft/SES: -30%

Multihull (catamaran, trimaran, SWATH) -25%

Supertankers: -75%

National modifier: -10%

Fleet Auxiliary or Amphibious ship or Minelayer (cargo holds): -25%

Laid down before 1925: -15%

Special damage modifiers listed in the remarks have already been factored into the damage point value.

The damage point/speed levels are computed at 25, 50, 75, 90, and 100 percent of total damage.

### Trilogy Ship Size classes:

<u>Size Class</u>	<u>Signature</u>	<u>Displacement</u>
A	Large	18001+
B	Medium	5501 - 18000
C	Small	1501 - 5500
D	Small	351 - 1500
E	VSmall	101 - 350
F	VSmall	21 - 100
G	Stealthy	<= 20

### Damage points from above water weapon impacts:

Blast energy = 0.6 x W x TE x 4132

Fragment Energy = (1/2 x Fragment mass x Composite velocity<sup>2</sup>)/1000

Fragment mass = m x p

where m is case weight (warhead weight - explosive filler weight)

where p is 90% for AP warheads, 70% for SAP warheads, 50% for HE warheads

Composite velocity = 2500 x (1/(m/W + 0.5))

Residual Mass Energy = (1/2 x .33 x Weapon weight x impact velocity<sup>2</sup>)/1000

Bombs, Shells = 0.5 \* (Blast Energy + Fragment Energy)<sup>1/3</sup>

Missiles = 0.5 \* (Blast Energy + Fragment Energy + Residual Mass Energy)<sup>1/3</sup>

**Damage points from underwater weapon impacts:**

Depth Charges and Influence Mines

Severe =  $.6 \times (W \times TE)^{1/2}$

Major =  $.3 \times (W \times TE)^{1/2}$

Minor =  $.15 \times (W \times TE)^{1/2}$

Contact Damage =  $12.1 \times (W \times TE)^{1/3}$

Influence Damage =  $7.6 \times (W \times TE)^{1/2}$

W = warhead explosive filler weight in kilograms

TE = TNT equivalence factor

- Lightweight Torpedoes (e.g., UK Stingray) with directed-energy (shaped charge) warheads should use the equation for influence damage

**Harpoon V AA Strengths** are based on:

Gun AA Strength \* number of barrels \* number of mounts \* Fire Control modifier \* Ammunition modifier

The **Gun AA Strength** is found in Annex CThe **number of barrels** is per mount. Rotaries are entered as single barrelsThe **number of mounts** is not based on the total number on the ship, but on the number that can bear to either side.

Examples:

P/S(1)2 = 1, since a single mount fires to either side.

2F/P/S(1)4 = 3, since three can fire to either side.

F/A(1)2 = 2

These examples assume a single radar directing mounts. If the F/A(1)2 mounts had two radars, then the ship can engage two targets, and the number of mounts would be 1, and each would fire at half the total value. In the Annex A listing, the strength would be listed as "(2@nn.n)", since the player can take two shots.

*General Rule:* If the AA guns have overlapping arcs, then divide the guns between the available radars and use that for the number mounts. List the AA strength in Annex A as "(number of radars@mounts assigned to each radar)"

The **fire control** modifier is based on the combat system/gunnery standard:

<u>Combat System</u>	<u>Gun Std</u>	<u>FC Modifier*</u>
Gen 1 Manual	GS IV	1.50
Gen 2 Manual	GS V	1.75
Gen 3 Semi-Automatic	GS V	1.75
Gen 4 Semi-Automatic	GS VI	2.0
Gen 5 Automatic	GS VI	2.0
Gen 6 Automatic	GS VI	2.0
Local control (no radar)		0.5

The **ammunition modifier** allows for several different types:

Standard impact- or time-fuzed AA shells	1.0
Proximity-fuzed shells	2.0
Armor-Piercing Discarding Sabot	1.5
Guided shells	3.0
AHEAD or 3P ammunition	4.0

Autonomous mounts have an "A" suffix.

Mounts without a radar director have an "L" suffix, as well as the 0.5 modifier.

**Armor Equivalents:**

Here is a list of armor equivalents for other building materials in terms of Class B armor. In other words, the number presented is the amount of the material in centimeters that is required to equal one centimeter of Class B deck armor.

Material Thickness in cms	
Reinforced Concrete (3,000 psi)	18
Reinforced Concrete (5,000 psi)	15
Stone/Brick Masonry	20
Wood	45
Sand	70
Bare Soil	120
Soil with plants	80

You can combine different types of materials (sand on top of concrete for example) by adding up the equivalent armor ratings and multiplying by 0.85.

*Example:* Hardened bunker: 3 ft Reinforced concrete (5000 psi), with 5 ft of sand on top.

Reinforced concrete thickness =  $(3 \times 12 \times 2.54) = 91.4$  cm

Reinforced concrete armor rating =  $91.4/15 = 6.1$

Sand thickness =  $(5 \times 12 \times 2.54) = 152.4$  cm

Sand armor rating =  $152.4/70 = 2.2$

Bunker Armor Rating =  $(6.1 + 2.2) \times 0.85 = 7.1$  or 7. If the combination results in an armor thickness less than the largest component (concrete in this example) than simply use that components armor rating as the structures armor rating. The other material is not thick enough to provide any additional protection.

**Aircraft Damage Values:**

$(\text{Empty Weight in kg}^{1/3}) * (\text{Engine Factor}^{1/2}) * \text{Construction Factor} * \text{Armor Factor}$

Engine factor: The number of separate engines is multiplied by 1.0, podded engines are multiplied by 0.75, tandem engines are treated as a single engine.

Construction Factor

Wood and Fabric: 0.5

Mixed metal, wood, fabric construction: 0.65

Monocoque construction, no self-sealing tanks: 0.8

Helicopters: 0.8

Monocoque construction, with self-sealing tanks: 1.0

Armor Factor:

1.0: normal construction

1.1: Armored against 7.62mm fire

1.2: Armored against 12.7mm fire

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