USS STURGEON SSN637

Sponsor: *Mrs. Everett M. Dirksen*

- **Keel Laid:** *August 10, 1963*
- **Commissioned:** *March 3, 1967*
- **First CO:** *LCDR. Curtis B. Shellman, Jr.*

Launched:
February 26, 1966

SSN-637 Sturgeon class

STURGEON class submarines were built for anti-submarine warfare in the late 1960s and 1970s. Using the same propulsion system as their smaller predecessors of the SSN-585 Skipjack and SSN-594 Permit classes, the larger Sturgeons sacrificed speed for greater combat capabilities.

They are equipped to carry the HARPOON missile, the TOMAHAWK cruise missile,and the MK-48 and ADCAP torpedoes. Torpedo tubes are located amidships to accomodate the bow-mounted sonar. The sail-mounted dive planes rotate to a vertical position for breaking through the ice when surfacing in Arctic regions.

Beginning with SSN-678 Archerfish units of this class had a 10-foot longer hull, giving them more living and working space than previous submarines of the Sturgeon Class.

A total of six Sturgeon-class boats were modified to carry the SEAL Dry Deck Shelter [DDS], one in 1982 and five between 1988 and 1991. The are SSN 678-680, 682, 684, 686 are listed as "DDS Capable" -- either permanently fitted with the DDS or trained with them. In this configuration they are primarily tasked with the covert insertion of special forces troops from an attached Dry Deck Shelter (DDS). The Dry Deck Shelter is a submersible launch hanger with a hyperbaric chamber that attaches to the ship's Weapon Shipping Hatch. The DDS provides the most tactically practical means of SEAL delivery due to its size, capabilities, and location on the ship.

Rapidly being phased out in favor of the LOS ANGELES and SEAWOLF Classes of attack submarines, this venerable and flexible workhorse of the submarine attack fleet continues to operate in the forward areas of the world to this day.

Attracting little publicity during its heyday, this class of ship was the platform of choice for many of the Cold War missions for which submarines are now famous. After a 5-year study was completed on the SSN-637 class submarine, the design life was extended from 20 years to 30 years, with a possible extension to 33 years on a case-by-case basis. However, many boats of this class were retired prior to this limit in order to avoid expensive reactor refueling operations.

Specifications

Displacement4,250 tons standard, except SSN 678-687 4,460 tons
4,780 tons submerged, except SSN 678-687 4,960 tons

Length292 feet
302 feet SSN 678-687

Beam32 feet

Draft28.8 feet

SpeedOfficial: 20-plus knots
Actual: 25 knots

Operating Depthofficial: "greater than 400 feet"

Actual: 1300 feet [400 meters] test depth
Actual: 1900 feet [600 meters] collapse depth
Power PlantOne S5W nuclear reactor,
two steam turbines, 15,000 shp, one shaft
ArmamentMK 48 Torpedoes, four torpedo tubes
UUM-44A SUBROC
UGM-84A/C Harpoon
MK 57 deep water mines
MK 60 CAPTOR mines
Radars BPS-14/15 surface search
Sonars BQQ-5 multi-function bow mounted
BQR-7 passive in submarines with BQQ-2
BQR-26 in SSN 666
BQS-6 active in submarines with BQQ-2
BQS-12 active on SSN 637-664
BQS-13 active on SSN 665-687
TB-16 or TB-23 towed array
EW Systems WLQ-4(V)
WLR-4(V)
WLR-9
Unit Cost$320 million [1990 prices]
Unit Operating Cost
Annual Average $11,000,000 [source: [FY1996 VAMOSC]
BuilderSSNs 637, 650, 667, 669, 673-676, 678, 679, 681, 684, General Dynamics' Electric Boat Division; 638, 649, General Dynamics' Quincy Shipbuilding Division; 639, 647, 648, 652, 680, 682, 683, Ingalls Shipbuilding; 646, 660, Portsmouth Naval Shipyard; 662, 665, 666, 672, 677, San Francisco Naval Shipyard; 651, 653, 661, 663, 664, 668, 670, 686, 687, Newport News Shipbuilding

Ships
NameNumberBuilderHomeportOrderedCommissionedDecommissioned
SHORT HULL
Sturgeon SSN-637Electric Boat Charleston 30 Nov 196103 Mar 196701 Aug 1994

Whale SSN-638Quincy Groton30 Nov 196112 Oct 196825 Jun 1996
Tautog SSN-639Ingalls Pearl Harbor30 Nov 196117 Aug 196831 Mar 1997
Grayling SSN-646Portsmouth NSY Charleston 05 Sep 196211 Oct 196918 Jul 1997
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Pargo SSN-650Electric Boat Bremerton26 Mar 196305 Jan 196814 Apr 1995

Queenfish SSN-651Newport NewsPearl Harbor26 Mar 196306 Dec 196614 Apr 1992
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Parche SSN-683Ingalls San Diego25 Jun 196817 Aug 1974 ? 2003
Cavalla SSN-684Electric Boat Pearl Harbor24 Jul 196809 Feb 197330 Mar 1998
L. Mendel RiversSSN 686 Newport NewsNorfolk01 Jul 196901 Feb 1975 2001
Richard B. Russell SSN-687Newport News Vallejo25 Jul 196916 Aug 197524 Jun 1994

Sources and Resources

SSN 666 Hawkbill inactivates after 28 years of service COMSUBPAC Press Release August 27th, 1999 -- USS Hawkbill, the last active Sturgeon-Class Pacific Fleet submarine, has been stationed in Pearl Harbor since 1975.

Bates returns for good COMSUBPAC Press Release July, 1999 - USS William H. Bates (SSN 680), a fast-attack submarine homeported in Pearl Harbor, Hawaii, returned home from it's final deployment on July 19, and will inactivate later this summer.

FY1996 Ships Class Average Report Navy Visibility and Management of Operating and Support Costs (VAMOSC)

SSN 637 STURGEON class

Updated November 28, 1999

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Beam	32 feet

Speed	Official: 20-plus knots Actual: 25 knots
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Armament	MK 48 Torpedoes, four torpedo tubes UUM-44A SUBROC UGM-84A/C Harpoon MK 57 deep water mines MK 60 CAPTOR mines
Radars	BPS-14/15 surface search
Sonars	BQQ-5 multi-function bow mounted BQR-7 passive in submarines with BQQ-2 BQR-26 in SSN 666 BQS-6 active in submarines with BQQ-2 BQS-12 active on SSN 637-664 BQS-13 active on SSN 665-687 TB-16 or TB-23 towed array
EW Systems	WLQ-4(V) WLR-4(V) WLR-9
Unit Cost	$320 million [1990 prices]
Unit Operating Cost Annual Average	$11,000,000 [source: [FY1996 VAMOSC]
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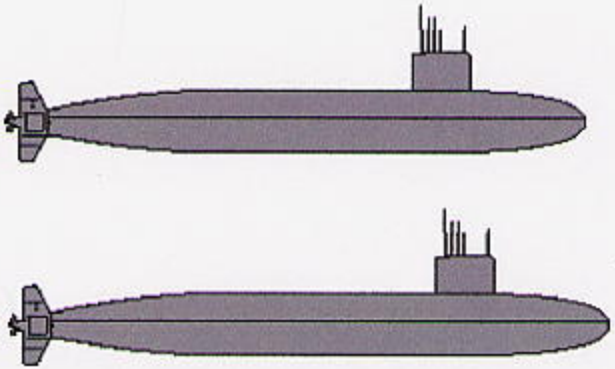
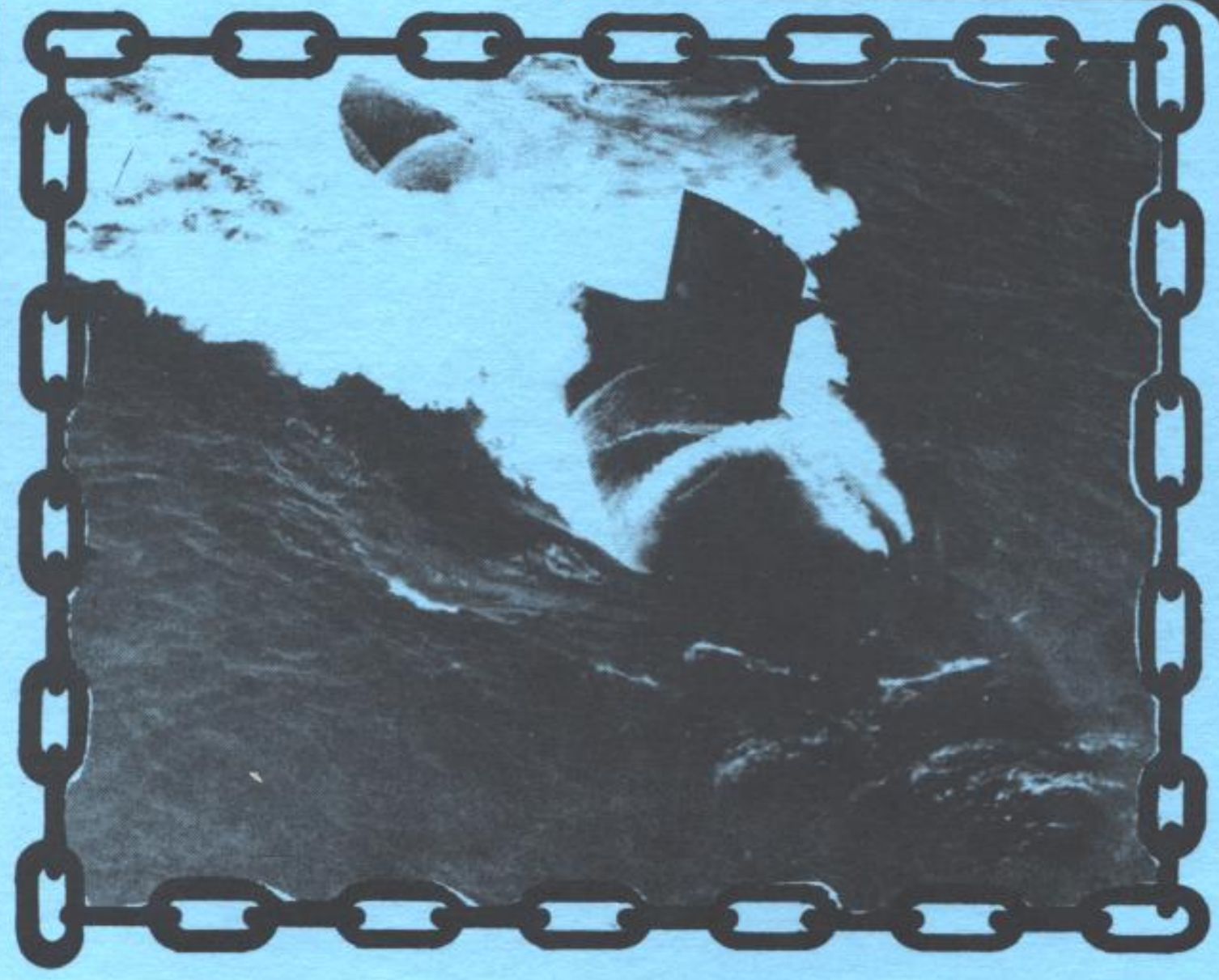


WELCOME ABOARD



USS STURGEON [SSN 637]

USS STURGEON

SSN-637

FIRST IN HER CLASS

KEEL LAID	**AUGUST 10, 1963**
LAUNCHED	**FEBRUARY 26, 1966**
COMMISSIONED	**MARCH 3, 1967**
SPONSORED BY	**MRS. EVERETT DIRKSON**
LENGTH	**292 FEET**
BEAM	**32 FEET**
DISPLACEMENT	**4250 TONS**
SPEED	**IN EXCESS OF 20 KNOTS**
DEPTH	**IN EXCESS OF 400 FEET**

GENERAL INFORMATION

Welcome aboard the USS STURGEON! We hope your visit on board our fine ship is both enjoyable and informative. Do not hesitate to ask your escort any questions you may have. You will find the crew members eager to assist you in any way they can.

RADIATION SAFETY

You will receive no measurable radiation exposure during your tour of the ship forward of the engineering spaces. Observe and remain clear of all designated radiation areas. These areas are clearly marked with yellow and magenta signs, ropes or ribbons.

CAUTION

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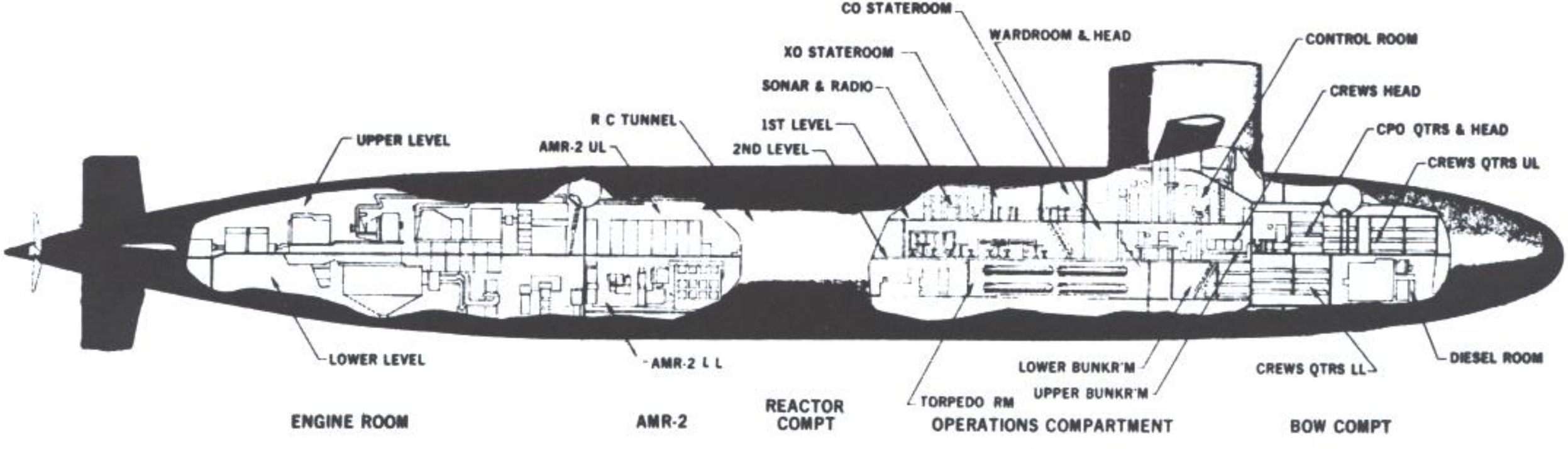
SECURITY

Most features of the ship are classified. Information concerning speed, depth, weapons, fire control, sonar, ECM and the propulsion plant cannot be discussed. Only authorized personnel are permitted in certain security areas including Sonar Control, Radio, ECM Room, Nucleonics Laboratory and the Engineering Spaces.

SHIP'S DIAGRAM



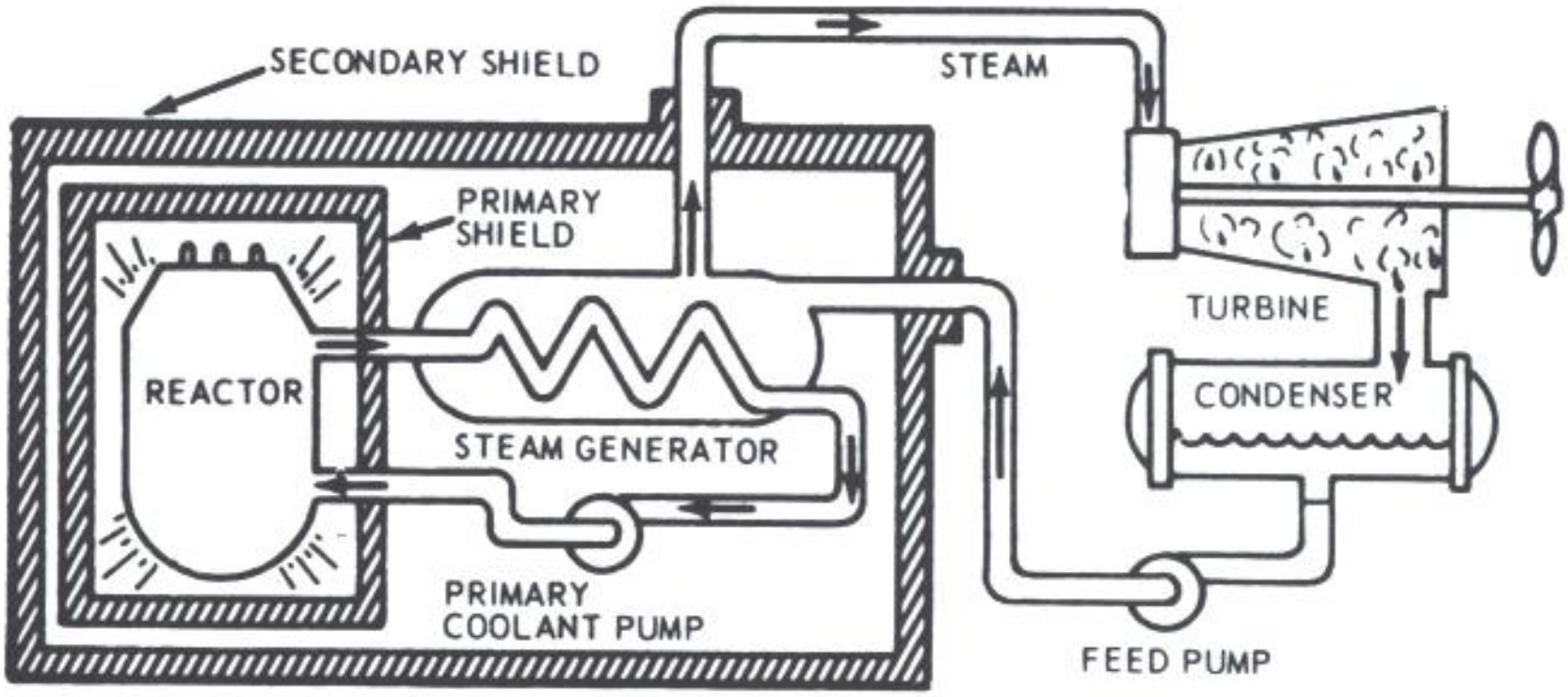
THE POWER PLANT

The power plant of a nuclear submarine is based upon a nuclear reactor which provides heat for the generation of steam. This, in turn, drives the main propulsion turbines and the ship's turbo-generators for electric power.

The primary system is a circulating water cycle and consists of the reactor, primary coolant pumps and steam generators. Heat produced in the reactor by nuclear fission is transferred to the circulating primary coolant water which is pressurized to prevent boiling. This water is then pumped through the steam generator and back into the reactor by the primary coolant pumps for reheating in the next cycle.

In the steam generator, the heat of the pressurized water is transferred to a secondary system to boil water into steam. This secondary system is isolated from the primary system.

From the steam generators, steam flows to the engine room where it drives the turbo-generators, which supply the ship with electricity, and the main propulsion turbines, which drive the propeller. After passing through the turbines, the steam is condensed and the water is fed back to the steam generators by the feed pumps.



There is no step in the generation of this power which requires the presence of air or oxygen. This fact alone allows the ship to operate completely independent from the earth's atmosphere for extended periods of time.

During the operation of the nuclear power plant, high levels of radiation exist around the reactor and personnel are not permitted to enter the reactor compartment. Heavy shielding protects the crew so that the crew member receives less radiation on a submerged patrol than he would receive from natural sources ashore.

HISTORY OF USS STURGEON (SSN 637)

USS STURGEON (SSN 637) is the third ship of the line to bear the name STURGEON and is the lead ship of the STURGEON class of nuclear attack submarines.

USS STURGEON is named for a tough-skinned family of large fish that are an important source of caviar and isinglass. The STURGEON has a bony-plated elongated body, a shark-like tail, and adapts itself to either salt or fresh water. It is widely distributed on both the Atlantic and Pacific coasts, in the Mississippi Valley and in the Great Lakes regions.

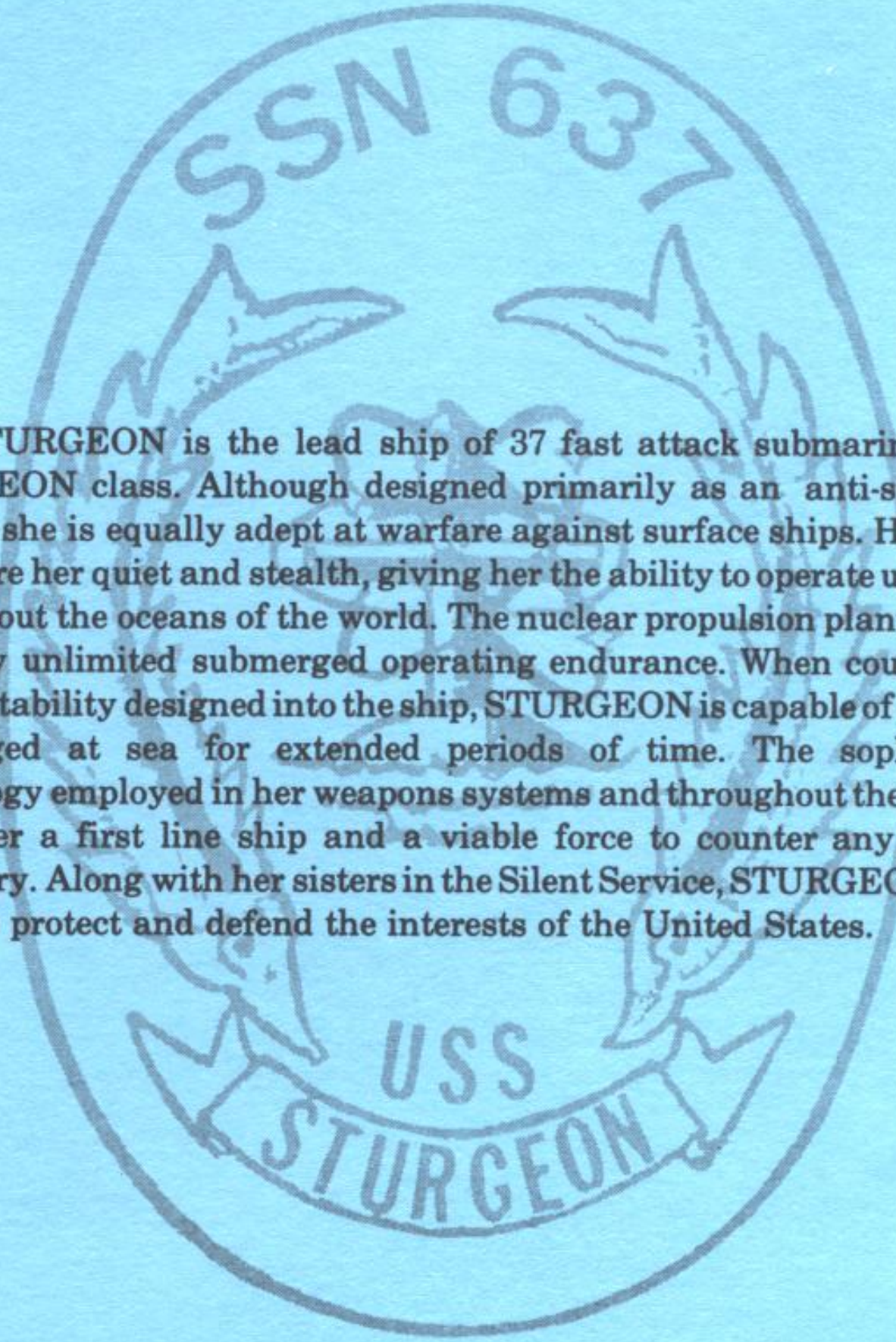
The first STURGEON (SS-25) was built by the Fall River Shipbuilding Company, in Quincy, Massachusetts. She was renamed E-2 and commissioned under the command of Ensign Clarence N. Hinkamp in February of 1912. As a unit of the Atlantic Submarine Flotilla, STURGEON completed four war patrols off Cape Hatteras, helping guard the entrance to Chesapeake Bay. She was commended by the Chief of Naval Operations for two of these patrols. STURGEON was decommissioned in October 1921.

The second STURGEON (SS-187) was built by the Mare Island Navy Yard, Vallejo, California. She was commissioned 25 June 1938 under the command of Lt. Arthur D. Barnes, USN. STURGEON had just arrived as a unit of Squadron TWO of the Asiatic Fleet when the Japanese made their attack on Pearl Harbor. STURGEON made a total of eleven war patrols and was responsible for sinking 41,350 tons of enemy shipping. She received ten battle stars for these patrols. She was decommissioned at Boston Navy Yard in November 1945 and was struck from the Navy list in 1948.

The keel of USS STURGEON (SSN 637) was laid on 10 August 1963 at Electric Boat Division of General Dynamics Corp., Groton, Connecticut. STURGEON was launched on 26 February 1966 under the sponsorship of Mrs. Everett McKinley Dirkson, wife of U. S. Senate Minority Leader Dirkson of Illinois.

STURGEON was placed in commission on 3 March 1967. Dr. Glen T. Seaborg, Chairman of the U. S. Atomic Energy Commission, delivered the commissioning address, stressing the importance of nuclear power in both its military and civilian aspects. STURGEON operated as a unit of Submarine Squadron TEN and Submarine Development Group TWO prior to being transferred to Submarine Squadron FOUR homeported in Charleston, South Carolina, in June 1976.

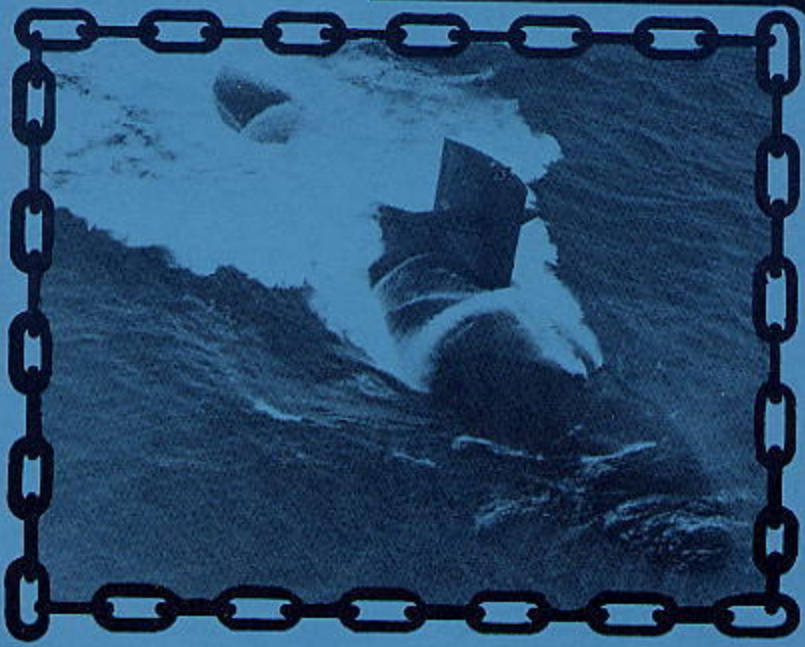
STURGEON combines the endurance and environmental independence of nuclear power with deep submergence, high speed, quietness and the most advanced electronics and weapons capabilities. These characteristics make her one of the Navy's most effective anti-submarine warfare weapons.



USS STURGEON is the lead ship of 37 fast attack submarines of the STURGEON class. Although designed primarily as an anti-submarine weapon she is equally adept at warfare against surface ships. Her largest assets are her quiet and stealth, giving her the ability to operate undetected throughout the oceans of the world. The nuclear propulsion plant provides virtually unlimited submerged operating endurance. When coupled with the habitability designed into the ship, STURGEON is capable of operating submerged at sea for extended periods of time. The sophisticated technology employed in her weapons systems and throughout the ship help make her a first line ship and a viable force to counter any potential adversary. Along with her sisters in the Silent Service, STURGEON stands ready to protect and defend the interests of the United States.


UNITED STATES SHIP
STURGEON
(SSN637)

WELCOME ABOARD

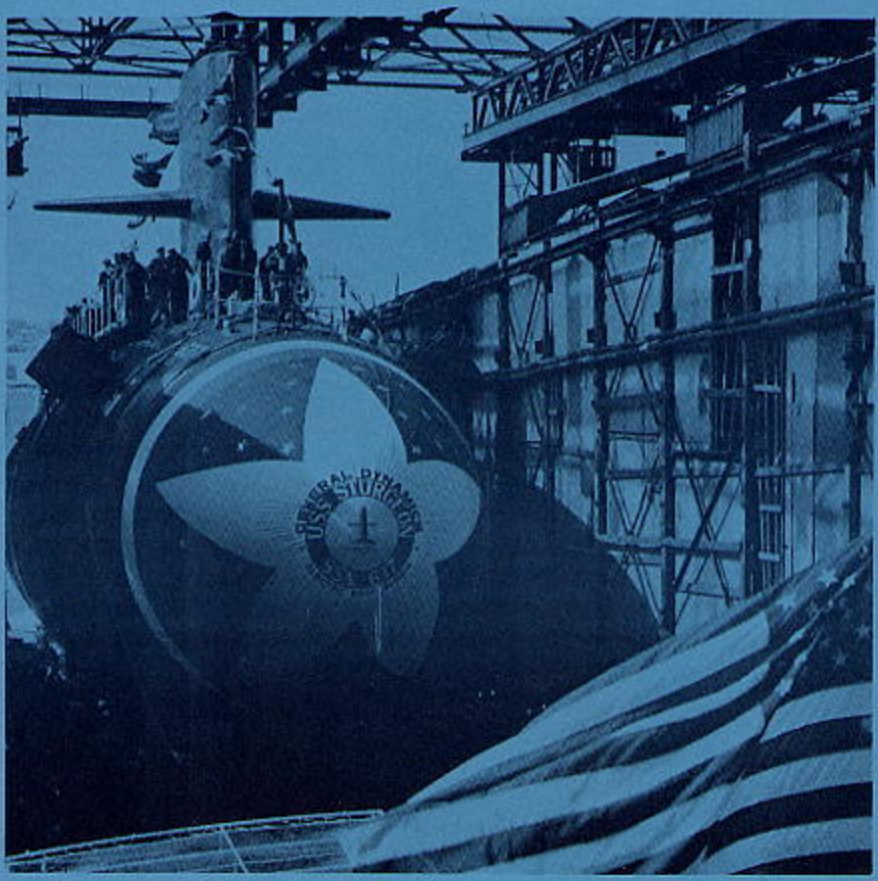


USS STURGEON [SSN 637]

USS STURGEON

SSN-637

FIRST IN HER CLASS



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COMMANDER CHARLES E. ARMITAGE
UNITED STATES NAVY

Commander Armitage was born in Milwaukee, Wisconsin, in 1945. He is a native of Rome, New York. He graduated from the University of Maine in 1967, having earned a Bachelor of Science degree in Chemical Engineering. Upon graduation, he was commissioned in the United States Navy under the Reserve Officer Candidate Program.

Commander Armitage attended Naval Submarine School in New London, Connecticut, during which time he was selected for the Naval Nuclear Propulsion Program. He subsequently completed courses of instruction at Nuclear Power School, Mare Island, California, and at Nuclear Power Training Unit, Idaho Falls, Idaho. He reported to USS LAPON (SSN 661) in 1969. Following a four year tour, he reported to USS SAM HOUSTON (SSBN 609) (GOLD) as Engineer Officer. During this tour, he reported for temporary duty to USS SIMON BOLIVAR (SSBN 641) (GOLD) as Engineer Officer completing one strategic deterrent patrol. While serving on USS SAM HOUSTON, he participated in post overhaul shakedown operations, an inter-fleet transfer and one strategic deterrent patrol. Following a three year tour, Commander Armitage reported to USS NARWHAL (SSN 671) and served as Navigator and Operations Officer for a period of twenty months.

In May 1978, Commander Armitage reported as Executive Officer, USS HENRY CLAY (SSBN 625) (GOLD) where he served for forty-one months, completing six strategic deterrent patrols. He commenced Prospective Commanding Officer training in September 1981, before reporting to USS STURGEON in April 1982.

Commander Armitage is entitled to wear the Navy Commendation Medal with Gold Star, the Navy Achievement Medal with Gold Star, the Presidential Unit Commendation, the Meritorious Unit Commmendation, the Battle Efficiency "E" (two awards), the Navy Expeditionary Medal, and the National Defense Medal.

Commander Armitage, his wife Barbara and their two children, Amy and Matthew reside in Mount Pleasant, South Carolina.

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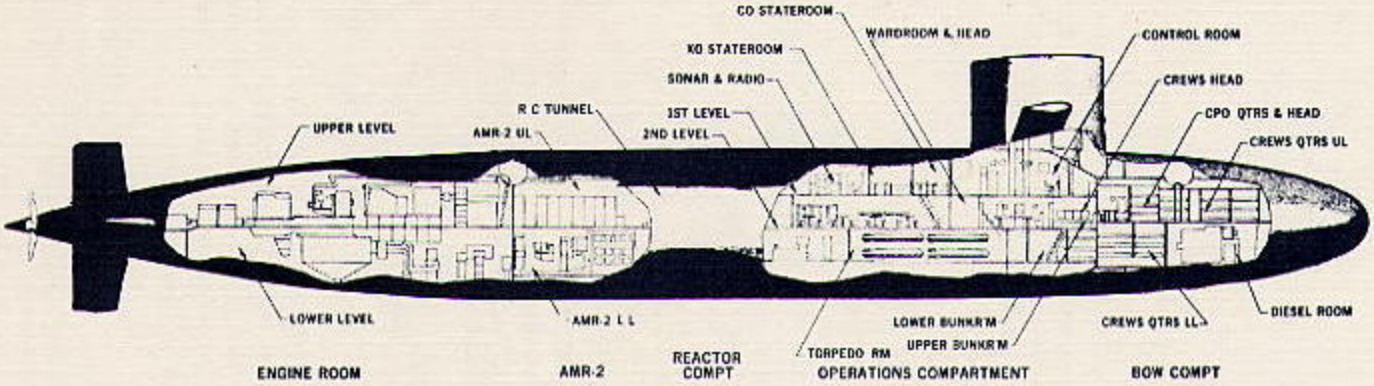

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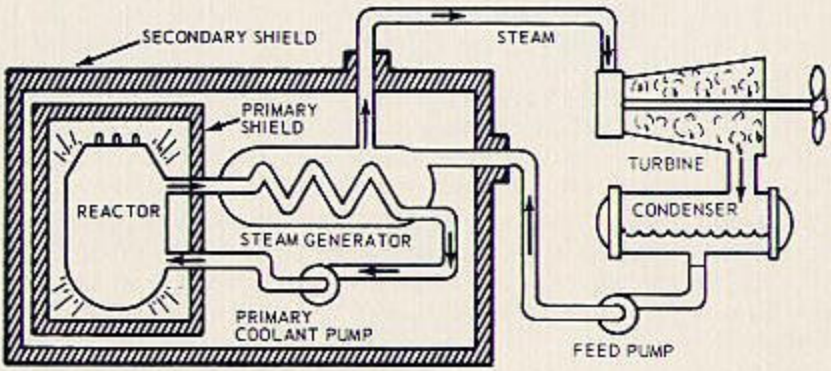

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During the operation of the nuclear power plant, high levels of radiation exist around the reactor and personnel are not permitted to enter the reactor compartment. Heavy shielding protects the crew so that the crew member receives less radiation on a submerged patrol than he would receive from natural sources ashore.

HISTORY OF USS STURGEON (SSN 637)

USS STURGEON (SSN 637) is the third ship of the line to bear the name STURGEON and is the lead ship of the STURGEON class of nuclear attack submarines.

USS STURGEON is named for a tough-skinned family of large fish that are an important source of caviar and isinglass. The STURGEON has a bony-plated elongated body, a shark-like tail, and adapts itself to either salt or fresh water. It is widely distributed on both the Atlantic and Pacific coasts, in the Mississippi Valley and in the Great Lakes regions.

The first STURGEON (SS-25) was built by the Fall River Shipbuilding Company, in Quincy, Massachusetts. She was renamed E-2 and commissioned under the command of Ensign Clarence N. Hinkamp in February of 1912. As a unit of the Atlantic Submarine Flotilla, STURGEON completed four war patrols off Cape Hatteras, helping guard the entrance to Chesapeake Bay. She was commended by the Chief of Naval Operations for two of these patrols. STURGEON was decommissioned in October 1921.

The second STURGEON (SS-187) was built by the Mare Island Navy Yard, Vallejo, California. She was commissioned 25 June 1938 under the command of Lt. Arthur D. Barnes, USN. STURGEON had just arrived as a unit of Squadron TWO of the Asiatic Fleet when the Japanese made their attack on Pearl Harbor. STURGEON made a total of eleven war patrols and was responsible for sinking 41,350 tons of enemy shipping. She received ten battle stars for these patrols. She was decommissioned at Boston Navy Yard in November 1945 and was struck from the Navy list in 1948.

The keel of USS STURGEON (SSN 637) was laid on 10 August 1963 at Electric Boat Division of General Dynamics Corp., Groton, Connecticut. STURGEON was launched on 26 February 1966 under the sponsorship of Mrs. Everett McKinley Dirkson, wife of U. S. Senate Minority Leader Dirkson of Illinois.

STURGEON was placed in commission on 3 March 1967. Dr. Glen T. Seaborg, Chairman of the U. S. Atomic Energy Commission, delivered the commissioning address, stressing the importance of nuclear power in both its military and civilian aspects. STURGEON operated as a unit of Submarine Squadron TEN and Submarine Development Group TWO prior to being transferred to Submarine Squadron FOUR homeported in Charleston, South Carolina, in June 1976.

STURGEON combines the endurance and environmental independence of nuclear power with deep submergence, high speed, quietness and the most advanced electronics and weapons capabilities. These characteristics make her one of the Navy's most effective anti-submarine warfare weapons.

USS STURGEON is the lead ship of 37 fast attack submarines of the STURGEON class. Although designed primarily as an anti-submarine weapon she is equally adept at warfare against surface ships. Her largest assets are her quiet and stealth, giving her the ability to operate undetected throughout the oceans of the world. The nuclear propulsion plant provides virtually unlimited submerged operating endurance. When coupled with the habitability designed into the ship, STURGEON is capable of operating submerged at sea for extended periods of time. The sophisticated technology employed in her weapons systems and throughout the ship help make her a first line ship and a viable force to counter any potential adversary. Along with her sisters in the Silent Service, STURGEON stands ready to protect and defend the interests of the United States.


UNITED STATES SHIP
STURGEON (SSN637)

COMMANDER CHARLES E. ARMITAGE
UNITED STATES NAVY

Commander Armitage was born in Milwaukee, Wisconsin, in 1945. He is a native of Rome, New York. He graduated from the University of Maine in 1967, having earned a Bachelor of Science degree in Chemical Engineering. Upon graduation, he was commissioned in the United States Navy under the Reserve Officer Candidate Program.

Commander Armitage attended Naval Submarine School in New London, Connecticut, during which time he was selected for the Naval Nuclear Propulsion Program. He subsequently completed courses of instruction at Nuclear Power School, Mare Island, California, and at Nuclear Power Training Unit, Idaho Falls, Idaho. He reported to USS LAPON (SSN 661) in 1969. Following a four year tour, he reported to USS SAM HOUSTON (SSBN 609) (GOLD) as Engineer Officer. During this tour, he reported for temporary duty to USS SIMON BOLIVAR (SSBN 641) (GOLD) as Engineer Officer completing one strategic deterrent patrol. While serving on USS SAM HOUSTON, he participated in post overhaul shakedown operations, an inter-fleet transfer and one strategic deterrent patrol. Following a three year tour, Commander Armitage reported to USS NARWHAL (SSN 671) and served as Navigator and Operations Officer for a period of twenty months.

In May 1978, Commander Armitage reported as Executive Officer, USS HENRY CLAY (SSBN 625) (GOLD) where he served for forty-one months, completing six strategic deterrent patrols. He commenced Prospective Commanding Officer training in September 1981, before reporting to USS STURGEON in April 1982.

Commander Armitage is entitled to wear the Navy Commendation Medal with Gold Star, the Navy Achievement Medal with Gold Star, the Presidential Unit Commendation, the Meritorious Unit Commmendation, the Battle Efficiency "E" (two awards), the Navy Expeditionary Medal, and the National Defense Medal.

Commander Armitage, his wife Barbara and their two children, Amy and Matthew reside in Mount Pleasant, South Carolina.

GENERAL INFORMATION

Welcome aboard the USS STURGEON! We hope your visit on board our fine ship is both enjoyable and informative. Do not hesitate to ask your escort any questions you may have. You will find the crew members eager to assist you in any way they can.

RADIATION SAFETY

You will receive no measurable radiation exposure during your tour of the ship forward of the engineering spaces. Observe and remain clear of all designated radiation areas. These areas are clearly marked with yellow and magenta signs, ropes or ribbons.

CAUTION

Do not operate any switches, valves or equipment. Improper operation of the ship's systems can result in personnel injury and equipment damage. Your escort or other members of the crew will assist you with any questions or difficulties you have.

SECURITY

Most features of the ship are classified. Information concerning speed, depth, weapons, fire control, sonar, ECM and the propulsion plant cannot be discussed. Only authorized personnel are permitted in certain security areas including Sonar Control, Radio, ECM Room, Nucleonics Laboratory and the Engineering Spaces.

SHIP'S DIAGRAM