A Visitor’s Guide to the Submarine Force Museum and Historic Ship Nautilus (SSN-571)
Construction of USS NAUTILUS (SSN-571) was made possible by the successful development of a nuclear-propulsion plant by a group of scientists and engineers at the Naval Reactors Branch of the Atomic Energy Commission, under the leadership of Captain Hyman G. Rickover. Her keel was laid on 14 June 1952 at the Electric Boat Division of General Dynamics Corporation in Groton, Connecticut. President Harry S. Truman laid the first keel plate, onto which a shipyard worker welded his chalked initials.

On 21 January 1954, Mrs. Dwight D. Eisenhower broke the traditional bottle of champagne across NAUTILUS’s bow as she slid down the ways into the Thames River. On the morning of 17 January 1955, the boat’s commanding officer, Commander Eugene P. Wilkinson, ordered all lines cast off and signaled the historic message: “UNDERWAY ON “NUCLEAR POWER.” Over the next several years, NAUTILUS shattered all submerged speed and distance records.

On 23 July 1958, NAUTILUS departed Pearl Harbor, Hawaii, under orders, classified Top Secret, to conduct “Operation Sunshine,” the first crossing of the geographic North Pole by any vessel. At 11:15 PM on 3 August, commanding officer Commander William R. Anderson announced to his crew of 116 men, “For the world, our Country, and the Navy—the North Pole.” NAUTILUS had accomplished the “impossible.”

In the spring of 1966 NAUTILUS again entered the record books when she logged her 300,000th mile underway. During the ensuing fourteen years the boat was involved in a variety of developmental testing programs while continuing to serve alongside many of the modern nuclear-powered submarines that had been built as a result of her success.

NAUTILUS was decommissioned on 3 March 1980. (For that reason, she is now technically known as “Historic Ship” or “HS” rather than “USS,” which is reserved for vessels in active service.) In recognition of her pioneering role in the practical use of nuclear power, NAUTILUS was designated a National Historic Landmark by the Secretary of the Interior on 20 May 1982. Following an extensive conversion at Mare Island Naval Shipyard in California, she was towed to Groton, Connecticut, arriving on 6 July 1985. On 11 April 1986, the 86th birthday of the Submarine Force, NAUTILUS was opened to the general public as part of the Submarine Force Museum.
The History of the Submarine Force Museum

The Electric Boat Division of General Dynamics Corporation in Groton, Connecticut, founded the Submarine Library in 1955. The library collected books, photographs, and a wide range of artifacts from employees who had served as submariners in World War II.

By 1964, E.B. had run out of space for the ever-expanding collection and so donated it to the U.S. Navy, which moved it to a building on Submarine Base New London. But within 20 years it became clear that even that space was not large enough. In 1986, the Submarine Force Library and Museum was moved to its current location adjacent to the base. An addition to the original museum building was opened in 2000.

The 27,000-square-foot facility maintains the world’s finest collection of submarine artifacts. It is the only submarine museum operated by the United States Navy, and as such is the primary repository for artifacts, documents, and photographs relating to U.S. Submarine Force history. The Museum traces the development of the “Silent Service” from David Bushnell’s Turtle, used in the Revolutionary War, to the nuclear-powered subs of today.
Outside Exhibits

< Standing next to the Museum’s main gate is the sail of USS GEORGE WASHINGTON (SSBN-598), commissioned in 1959, which was the Navy’s first sub specifically designed to carry ballistic missiles. Painted on the side of the sail is one missile for each of the boat’s successful deterrence patrols. The sail was trucked to the site in pieces after the boat was decommissioned (1985) and cut up for recycling (1986).

> NAUTILUS propellers: These are the original propellers that were used to drive NAUTILUS through the water.

< STURGEON anchor: USS STURGEON (SSN-637), commissioned in 1967, was the lead submarine in her class. This anchor fit into a specially-designed recess on the bottom of the boat that preserved the smooth surface of her hull. The anchor itself tips the scales at 2,816 pounds, but that’s far less than the length of chain which connected it to the sub, which weighed in at 5,089 pounds.
**<Hull rings:** Just outside the entrance to the Museum are two rings which represent the diameters of the Navy’s first submarine, USS HOLLAND (SS-1), commissioned in 1900, and its largest submarine, USS OHIO (SSBN/GN-726), commissioned in 1981. The rings are 10 feet and 42 feet in diameter, respectively.

**<Missile-tube hatch:** This is the hatch that closed over Missile Tube 3, one of 16 onboard USS SAM RAYBURN (SSBN-635) that held POSEIDON Submarine Launched Ballistic Missiles (SLBMs). The locking ring at the hatch’s base could be “unscrewed” to allow it to open. The red plastic dome prevented seawater from entering the tube; it broke open when the missile was launched.

**<5-inch deck gun:** This is an original deck gun that was mounted on the deck of USS FLASHER (SS-249) during World War II. The entire gun was made of corrosion-resistant steel so that it could withstand repeated submersion in saltwater. This model of gun came into service in 1944 and was intended to replace all earlier guns used on fleet submarines. This was the last type of deck gun ever mounted on American submarines. (Today’s boats do not carry deck guns.)
Midget Submarines

< Swimmer Delivery Vehicle (SDV): Since World War II submarines have worked together with Underwater Demolition Teams (UDTs), commonly known as “SEALs” (Sea-Air-Land), in a variety of clandestine operations. Carried in a special watertight tank “piggybacked” to a submarine, the SDV gave SEAL teams a greater range of stealth, mobility, and endurance.

> X-1: This experimental boat was the first midget sub built for the Navy. X-1 served in a research capacity in extensive tests designed to allow the navy to evaluate its ability to defend harbors against very small submarines. Further tests conducted with X-1 helped to determine the offensive capabilities and limitations of this type of submersible. Because she was never commissioned, the use of “USS” (United States Ship) before her name would be incorrect.

< Japanese Type A: During World War II these two-man boats, code-named “Mato,” were piggybacked to mother ships, usually larger submarines, which carried them to their areas of operation. Matos were used throughout the war and were present at the attack on Pearl Harbor. (Research conducted after the war indicates that one Mato successfully hit USS WEST VIRGINIA (BB-48) with one of its torpedoes.) The two protrusions on the bow, or front, are torpedoes. Contrary to popular belief, Matos were not meant to be “kamikaze,” or suicide, subs. This particular boat was part of a 1944 war-bond fundraising effort.
Missiles

> HARPOON: The HARPOON was originally developed in the 1970s as an anti-submarine missile for the Navy’s P-3 Orion aircraft. By 1981 it was the premier long-range, anti-ship missile used by navies around the world. A turbojet that burned a kerosene-based fuel propelled the missile. American submarines no longer carry HARPOONs.

< TOMAHAWK: The TOMAHAWK cruise missile was loaded onto an American sub for the first time in 1982. Fired from under the water, the TOMAHAWK, upon reaching the surface, opens a set of wings and flies to its target under computer and satellite control. It has a range of over 800 miles and is still carried on subs today.

> POLARIS (A-3): This missile was carried by LAFAYETTE- and BENJAMIN FRANKLIN-class submarines and had a range of nearly 3,000 miles. The missile comprises four sections: the nose cone (warhead), the equipment (guidance), and the first and second stage boosters.

< POLARIS (A-1): This was the first type of missile ever launched from a submerged submarine. It was a two-stage ballistic missile that had a range of 1,400 miles. (Unlike guided missiles, such as HARPOONs and TOMAHAWKs, which are guided throughout the course of their flight, ballistic missiles are guided in only the initial and final stages. During the middle portion of the flight they fly and fall according to the laws of gravity.)
Indoor Exhibits

Note: To the right of the main entrance are the bathrooms, drinking fountains, and elevator. Because of the elevator’s small size and relatively slow speed, we ask that only those unable to walk up the stairs use it.

Technology Wing

Note: This section of the Museum is to the left when you walk in the main entrance.

< Consoles: These panels, taken from Cold-War-era subs after their decommissionings, operated combat systems and sonar.

> Missile tube locking ring: This locking ring secured the outer hatch on the top of a missile tube; it is 72 inches in diameter. (See one in place atop the missile-tube section outside, near the deck gun.) This ring came from one of the sixteen tubes aboard USS JAMES K. POLK (SSBN-645).

< Missile tube section: A portion of an actual missile tube that held POSEIDON and POLARIS missiles. (The hatch was used to access the missile for maintenance and systems inspections.) The monitor within the hatch shows video footage of real missile launches.

> City Beneath the Sea: This cutaway model of a LOS-ANGELES class fast-attack submarine gives visitors a sense of the scale and layout of the boat. (This particular model is of an “improved” 688; the final 23 boats of the class are of this type. They are quieter than the first batch of 688s and carry more advanced weapons systems. In addition, their diving planes are on the bow, not the sail, and the sail is reinforced to make it easier for the boat to surface through ice.) Compare it to the cutaway model of the World-War-II-era sub hanging from the ceiling over the second deck.
Main Hall

< Control room: In the alcove just to the right of the docent desk is a mockup of a sub’s control room comprising pieces from three different subs. Visitors are invited to sit in the chairs, turn the knobs, and press the buttons.

> World War II attack center: In the second alcove is the attack center, which houses three working periscopes and a Torpedo Data Computer, which was used by wartime submariners to zero in on targets. Visitors are invited to look through the scopes, each of which rotates 360 degrees.

< On the right side of the main hall is the Model Wall, which displays models, all built to the same scale, of each class of American submarine from 1900 to the present. Particularly significant are:
--USS HOLLAND (SS-1): The navy’s first sub.
--USS ALBACORE (SS-569): The first sub with a teardrop-shaped hull, which made it more efficient underwater than on the surface.
--USS NAUTILUS (SSN-571): The first nuclear-powered submarine.
--USS SKIPJACK (SSN-585): The first sub to combine a nuclear-propulsion plant with a teardrop-shaped hull.

> USS GROTON (SSN-694) bow cover: On the upper left as you walk down the main hall is the cover that sheathed the bow of GROTON when she was launched in 1976.
Medal of Honor Gallery

Housed in the third alcove is an exhibit, dedicated on 7 December 2004, which honors the men who have received the nation’s highest award for personal valor while serving onboard submarines. These include one enlisted Sailor, one pioneering commanding officer from the early days of American submarines, and seven submarine C.O.’s from World War II. The gallery also includes two prints.

< “Vera Cruz,” Henry Reuterdahl (1871-1925), circa 1920:
Reuterdahl, a native of Sweden who moved to America in the 1890s, was known for his paintings of naval battles, including several from the Spanish-American War. He headed the Navy’s recruitment-poster project during World War I, overseeing the development of the many posters and films that inspired young men to enlist in the Navy.

> “USS GROWLER,” McClelland Barclay (1891-1943):
This is a print of a painting, held in the collection, that was given to the Museum by Commodore James Fife. In 1943, USS GROWLER (SS-215) rammed a Japanese vessel in the course of a battle, seriously damaging her bow. (Her commanding officer, Howard Gilmore, who was fatally wounded in the attack, would be awarded the Medal of Honor posthumously.) Australian shipyard workers in Brisbane repaired the damage and painted a kangaroo on the bow. The boat, nicknamed the “Kangaroo Express,” was lost with all hands the following year.

< Hanging above the gallery are both a crew copy (pictured) and an original USS BARB (SS-220) battle flag. The original was hand sewn by Petty Officer First Class John Higgins, a BARB crewmember, and records the sub’s accomplishments up to November of 1944. The copy is one of a set of replicas that were made professionally after the war’s end and given to each member of the crew.
Torpedoes & Other Armaments

< **Whitehead Mark 3 torpedo (1894-1922):** The first self-propelled torpedo. (The word “torpedo” derives from the name of the torpedo fish, a type of ray that stuns its prey with an electric shock.)

> **Mark 14 torpedo (1931-1980):** The standard torpedo used in World War II. Early issues with its Mark VI exploder caused many torpedoes to miss, explode prematurely, or literally run into their targets without detonating.

< **Mark 37 torpedo (1957-1987):** An electrically-propelled torpedo developed after World War II. (Note: The green torpedo below the Mark 14 is another version of a Mark 37 torpedo.)

> **Mark 48 torpedo (1972-present):** The torpedo carried on subs today. After launching, it can be guided by its mother sub via a wire that connects the two throughout the weapon’s journey to its target. The torpedo can also search for a target using its own active and passive sensors and, if it misses on the first pass, can circle around for a second attempt.

< **Mark 49 antisubmarine mine:** This mine (the black weapon in the photo) was typically launched from a sub, but could be launched from the air.

> **UUM-44 SUBROC (1965-1989):** This rocket was launched from a sub’s torpedo tube, flew through the air, and then dove back into the water to explode near its target.

< **20-mm machine gun:** Mounted on the decks of World-War-II-era subs, these guns were used to defend against attacks from surface vessels and aircraft. They fired about 450 rounds per minute.
Large-Scale Exhibits

< **Turtle**: This is a full-size replica of *Turtle*, a sub designed and built by Connecticut’s David Bushnell. Its attack on a British warship in 1776 was unsuccessful, but it did demonstrate the submarine’s potential uses in combat. *Turtle* was the first practical submarine and the first used to attack an enemy vessel.

> **McCann diving chamber**: Invented in the early 1930s, this diving chamber was designed to rescue the crews of sunken submarines. It could bring up eight men at a time from depths of up to several hundred feet. In 1939, a chamber like this one was used to rescue 33 survivors from USS SQUALUS (SS-192) after she sank off the coast of New Hampshire.

< **Submarine messenger buoy**: In the past, submarines carried buoys like this one that could be released to mark the sub’s position in the case of a submerged emergency. The buoy, which was connected to the sub at one end by a cable, also contained a telephone that could be used to communicate with survivors.

> **Elevator**: This unusual-looking piece of specially-constructed equipment was used to lower President Kennedy and his bad back onto USS THOMAS A. EDISON (SSBN-610) for an official visit in 1962.
Wall Murals

< This black-and-white mural in the main hallway shows **USS TUNNY (SSG-282)** launching a **REGULUS cruise missile**. TUNNY, one of America’s first nuclear-deterrence subs, was specially modified to carry these missiles, which were used by the navy from 1955-1964 until they were replaced by the first generation of POLARIS.

> This is perhaps the most famous image of **USS HOLLAND (SS-1)**, the navy’s first sub. The Electric Boat crew is in control of the vessel, known as *Holland VI* until her commissioning in 1900, as she cruises off what is probably Long Island, mid-1899.

< The fast-attack submarine **USS COLUMBUS (SSN-762)** **conducting an emergency surface training exercise** off the coast of Oahu, Hawaii, 4 June 1998. In an emergency blow, large volumes of compressed air are blasted into all of a submarine’s ballast tanks in order to bring the boat to the surface as quickly as possible.

Battle Flags

< Displayed in the Museum are a number of examples of **battle flags**, both Japanese and American. Crews flew the flags, most of which were made during World War II, when returning to homeport following a war patrol. They used a variety of colors, themes, symbols, and fanciful designs to display their accomplishments and pride in their boat.
Second Deck

Submarine model: This 50-foot-long model of USS GATO (SS-212) is an example of the type of submarine that was used by the navy during World War II. Compare it to the cutaway model of a modern LOS-ANGELES class sub in the “City Beneath the Sea” exhibit.

Photo wall: This large display comprises 58 lighted panels of photos taken throughout the submarine force’s history. Subjects range from the ceremonial—christening a sub—to the everyday—a boat’s basketball team and Sailors with their pet dog.

NAUTILUS Room: This space contains artifacts, photographs, and documents related to the history of the world’s first nuclear-powered submarine. It also affords a beautiful view of NAUTILUS and the Thames River.
Historic Ship NAUTILUS (SSN-571)

Historic Ship NAUTILUS, decommissioned in 1980, is now permanently moored to the pier at the east end of the Museum. In the glass deckhouse on the bow you will be given an audio wand that will describe each section of the submarine as you move along the tour route. The tour is currently offered in English, Spanish, Chinese and Japanese. English-language transcripts are available for people with hearing impairments.

There are a few things visitors should know about NAUTILUS before they come aboard.

1. Due to its unique construction the boat is not accessible to visitors with mobility restrictions. Visitors must be able to ascend and descend several sets of staircases, including one very steep set, and climb through hatches that are a foot or more off the ground.

2. Visitors who have struggled with claustrophobia should be aware that the spaces inside the sub can be tight and since much of the tour route requires guests to walk single file, there is no quick and easy way to exit if the situation becomes overwhelming. We suggest that concerned guests evaluate their level of comfort when they reach the torpedo room, the first stop on the tour, and turn back if necessary.

3. Children’s groups should have, at minimum, one adult at the front of the group and a second at the rear. If chaperones prefer that children not receive the handheld wands they may notify the Sailor on duty in the deckhouse. Please ask children not to run or use loud voices while inside the submarine. You may also want to remind them to duck as they pass through the hatches so as not to run into the solid-steel frames.

Frequently-Asked Questions

1. What are NAUTILUS’s dimensions? How big was her crew?
   NAUTILUS is 320 feet long and 28 feet in diameter. Submerged, she displaced about 4,100 tons. She carried a crew of 11 officers and 105 enlisted men.

2. How deep could she go? How fast could she travel through the water?
   About 700 feet and about 20 knots (23 miles per hour).

3. How far does she extend below the surface of the river? Is she floating or does she sit on the bottom?
   About 21 feet. She floats so that she may rise and fall with tides and storm surges.

4. Were the glass deckhouse and staircases there when the boat was in active service?
   No, both features— as well as the Plexiglas walls that define the tour route and the grating that covers the overhead, or ceiling— were added when NAUTILUS was configured for public access. NAUTILUS crewmembers entered and exited the sub by climbing up and down vertical ladders.

5. What are the numbers and letters painted on the side of her sail?
   The numbers, “571,” together make up NAUTILUS’s hull number. The letters stand for awards the boat’s crew received. The white “E” is for battle efficiency (excellence in combat readiness). The red “E” is for engineering excellence. The red “A” is for anti-submarine warfare excellence.

6. What is the red, yellow, and blue flag that flies from the aft end of her sail?
   It is a Presidential Unit Citation, an award given to an entire crew for “gallantry, determination, and esprit de corps in accomplishing its mission under extremely difficult and hazardous conditions.” NAUTILUS’s was the first crew to receive the award in peacetime; it was given to them after their trip under the North Pole.
Locations on the Tour Route

**Torpedo room:** NAUTILUS was capable of carrying up to 24 torpedoes. Crewmembers lived and worked alongside their weapons—you can see racks, or bunks, along one wall and a toilet, sink, and shower as you move up the stairs to the next stop on the tour. (The bathroom spaces had doors and were not open to view when the boat was in service.)

**Wardroom & officers’ berthing:** The Wardroom was where the boat’s officers ate, held meetings and training, and relaxed. Two or three officers shared each of the surrounding staterooms. Only the commanding officer and executive officer had private rooms.

**Attack center:** The attack center contains the periscopes. Here the officers and crew planned and directed the sub’s movements and actions. Close by are the navigation center, the sonar room, and the ship’s office.

**Control room:** The first space on the lower level is the control room. From here the crew drove the boat and maintained the desired depth by controlling the amount of water in each ballast tank. The radio room is nearby.

**Crew’s mess:** This was the crew’s dining area; it could seat 36 people at a time. The crew also used it for recreation, training, and religious services.

**Crew’s quarters:** Each crewmember had his own bunk, known as a rack. There was storage space under the racks in which Sailors could store their personal possessions. See the raised rack in the torpedo room for a look at how small that space actually was.

**Chief petty officer quarters:** Chief petty officers are the senior enlisted personnel on a submarine; they have their own separate living and dining area. On NAUTILUS it is off of crew’s mess.

**Galley:** The galley, or kitchen, aboard NAUTILUS prepared a meal for 100 men every six hours. Crewmembers could, however, get a snack if they got hungry between meals—coffee, an ice-cream machine, and “bug juice,” the Navy’s version of Kool-Aid, were always available.

**Scullery:** The scullery is the space in which all food-related items—pots, pans, dishes, silverware, etc.—were cleaned. The round container on the countertop is actually a dishwasher.
## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AGSS</td>
<td>The portion of a <strong>hull number</strong> designating a vessel as an auxiliary sub designed for research.</td>
</tr>
<tr>
<td>APSS/ASSP/LPSS</td>
<td>The portion of a <strong>hull number</strong> designating a vessel as a transport sub. LPSS designates a vessel as an amphibious transport sub.</td>
</tr>
<tr>
<td>Attack center</td>
<td>Into this critical location flow data from the boat’s sensors and status reports for evaluation; from it issue the commands that direct the submarine and its weapons.</td>
</tr>
<tr>
<td>Ballast tank</td>
<td>A compartment within a <strong>boat</strong> or <strong>ship</strong> that holds water. In subs ballast tanks are used to alter the boat’s buoyancy and make it submerge (take in water) or surface (expel water). Types of ballast tanks include the main ballast tanks, which are the primary tanks used for diving and surfacing, and trim tanks, which are used to adjust the submarine’s “attitude,” or trim, keeping it on an even keel both on the surface and underwater.</td>
</tr>
<tr>
<td>Ballistic missile</td>
<td>A <strong>missile</strong> that follows a ballistic trajectory with the objective of delivering one or more warheads to a predetermined target. Shorter-range ballistic missiles stay within the Earth’s atmosphere, while longer-range models are designed to spend some of their flight time above the atmosphere. Whereas a <strong>guided missile</strong> can be controlled throughout its flight, ballistic missiles can only be controlled in the initial and final stages. During the middle portion they fall according to the laws of gravity.</td>
</tr>
<tr>
<td>BESS (Basic Enlisted Submarine School)</td>
<td>A six-week program that teaches the special skills enlisted personnel will need to live and work aboard a sub. BESS includes training in, among other things, fighting fires, patching leaks, escaping from a sunken sub, and diving and driving the boat. After BESS, Sailors either go directly to a <strong>boat</strong> or move on to more-advanced training.</td>
</tr>
<tr>
<td>Boat</td>
<td>In naval tradition, a boat cannot carry a <strong>ship</strong>, but a ship can carry a boat. Subs are typically referred to as boats, perhaps because they used to be small enough to be transported on ships.</td>
</tr>
<tr>
<td>Bow</td>
<td>The front, or forward, section of a ship or <strong>submarine</strong>.</td>
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<tr>
<td>Bridge</td>
<td>A small exposed platform on the top of a sub’s <strong>sail</strong>. A watch is posted in this area when a sub is on the surface.</td>
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<tr>
<td>Christening</td>
<td>The smashing of a ceremonial bottle, usually containing champagne, across a ship’s <strong>bow</strong> just before it is launched.</td>
</tr>
<tr>
<td>Commissioning</td>
<td>The act of placing a <strong>ship</strong>, usually a naval vessel, in active service.</td>
</tr>
<tr>
<td>Conning tower</td>
<td>A small watertight compartment within a sub’s <strong>sail</strong>. The space is equipped with instruments and controls, including <strong>periscopes</strong>, that are used to direct the boat and launch torpedo attacks. It should not be confused with a submarine’s sail, <strong>control room</strong>, or <strong>bridge</strong>. USS TRITON (SSRN/SSN-586), commissioned in 1959, was the last American sub to have a conning tower.</td>
</tr>
<tr>
<td>Control room</td>
<td>This space is the “brain” of a sub, controlling nearly all the boat’s vital operations. The <strong>periscopes</strong> are typically located here, as is the equipment for driving the boat and for figuring out where it is and where it’s going.</td>
</tr>
<tr>
<td>Decommissioning</td>
<td>The act of terminating a ship’s career in active service.</td>
</tr>
<tr>
<td>Diving planes</td>
<td>Control surfaces used for underwater stability and steering. On some subs they are located on the sides of the boat near the <strong>bow</strong>. On other boats they are located on the sides of the <strong>sail</strong>. They “fly” the boat through the water like an airplane flies through air.</td>
</tr>
<tr>
<td>Engine room</td>
<td>The area where the main engine(s), generators, compressors, pumps, fuel/lubrication oil purifiers, and other major machinery are located.</td>
</tr>
<tr>
<td>Guided missile</td>
<td>A self-propelled <strong>missile</strong> that can be guided while in flight.</td>
</tr>
<tr>
<td><strong>Hull number</strong></td>
<td>A serial identification number given to a boat or ship. For military vessels, a lower number typically implies an older vessel. This number is assigned in addition to a vessel’s name. For example, the hull number of USS NAUTILUS is SSN-571.</td>
</tr>
<tr>
<td><strong>Keel</strong></td>
<td>The main structural element of a vessel, stretching along the centerline of its bottom from bow to stern. It sometimes extends farther downward into the water to provide extra stability.</td>
</tr>
<tr>
<td><strong>Launching</strong></td>
<td>The act or process of floating a ship after construction is completed.</td>
</tr>
<tr>
<td><strong>Medal of Honor</strong></td>
<td>The highest military decoration awarded by the United States government. It is bestowed on members of the armed forces who distinguish themselves “conspicuously by gallantry and intrepidity at the risk of [their lives] above and beyond the call of duty.”</td>
</tr>
<tr>
<td><strong>Missile</strong></td>
<td>A self-propelled guided weapon system. An unguided self-propelled weapon is referred to as a rocket.</td>
</tr>
<tr>
<td><strong>Navy Cross</strong></td>
<td>The second-highest military decoration for valor. It is conferred upon members of the armed forces who are serving—in a time of war only—with the Marine Corps, Navy, or Coast Guard and who distinguish themselves in action by extraordinary heroism not justifying a Medal of Honor, the highest-possible decoration.</td>
</tr>
<tr>
<td><strong>Nuclear reactor</strong></td>
<td>The space in which nuclear fission occurs. This reaction creates energy, mostly in the form of heat, which can then be used to do work. Aboard a nuclear-powered sub, this heat is used to produce steam to drive the turbines that provide the boat’s power.</td>
</tr>
<tr>
<td><strong>Periscope</strong></td>
<td>An instrument for observation from a concealed position. In its simplest form it consists of an outer case with mirrors at each end set parallel to each other at a 45-degree angle.</td>
</tr>
<tr>
<td><strong>Presidential Unit Citation (PUC)</strong></td>
<td>An award given in the name of the President to units of the U.S. armed forces and allied nations for extraordinary heroism in action against an armed enemy. The unit must have accomplished its mission under such extremely difficult and hazardous conditions that they are set apart from and above other units participating in the same campaign. The degree of heroism required is the same as that which would be required for an award of a Navy Cross to an individual.</td>
</tr>
<tr>
<td><strong>Sail</strong></td>
<td>A tower-like structure on the top of a sub. When a boat is on the surface, the sail serves as an observation platform. It also provides an entrance and exit point that is far enough above the surface to prevent water from entering the vessel. Underwater, the sail acts as a vertical stabilizer and also, in some cases, supports diving planes.</td>
</tr>
<tr>
<td><strong>Ship</strong></td>
<td>In naval tradition, a ship is a vessel that can carry a boat; a boat cannot carry a ship. Subs are typically referred to as boats, perhaps because they used to be small enough to be transported on ships.</td>
</tr>
<tr>
<td><strong>Ship’s sponsor</strong></td>
<td>By tradition, a female civilian who bestows good luck and divine protection over a seagoing vessel and her crew. In the U.S. Navy the sponsor is considered a permanent member of the crew and is expected to impart her personality to the ship and advocate for its continued wellbeing.</td>
</tr>
<tr>
<td><strong>SSBN</strong></td>
<td>The portion of a hull number designating a vessel as a nuclear-powered ballistic-missile submarine.</td>
</tr>
<tr>
<td><strong>SSGN</strong></td>
<td>The portion of a hull number designating a vessel as a nuclear-powered guided-missile submarine.</td>
</tr>
<tr>
<td><strong>SSN</strong></td>
<td>The portion of a hull number designating a vessel as a nuclear-powered submarine. All present-day American subs are nuclear powered.</td>
</tr>
<tr>
<td><strong>Stern</strong></td>
<td>The back, or aft, section of a ship or sub.</td>
</tr>
<tr>
<td><strong>Submarine</strong></td>
<td>A vessel capable of operating completely underwater.</td>
</tr>
</tbody>
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