

Electric Boat is a proven leader when it comes to designing, engineering and building nuclear submarines like *Wyoming* (SSBN742), the latest vessel in the *Ohio* Class.

That leadership has been the norm at Electric Boat since the early 1950s, when the company designed and built *Nautilus*, the world's first nuclear-powered ship. In all, it has designed 15 of the 19 classes of nuclear submarines, including all ballistic-missile-firing classes (of which Trident submarines are one example). It also co-designed the *Seawolf* Class, the Navy's newest generation of attack submarine. Electric Boat has built more than half of the U.S. Navy's underseas fleet.

The company is proud of its record. Its engineering and technical support staff comprises the industry's leading pool of talent in nearly every engineering discipline, the physical sciences, computer technology, and industrial operations and management.

Naval architects. Designers. Marine, acoustic, electrical, mechanical and structural engineers — these specialists and more form part of a team that is unrivaled when building such submarines as *Wyoming*.

This Electric Boat team is also actively engaged in the development of the New Attack Submarine, a versatile, multimission successor to Seawolf that is being optimized for regional warfare. To ensure that the New Attack Submarine meets the nation's underseas needs well into the 21st century, it is being designed for maximum flexibility and the affordable insertion of new technology. Innovative modular design concepts are being employed to reduce production costs and enable easier incorporation of mission-specific hull sections during future new construction. Substantial cost reductions are already being achieved through concurrent engineering design/build teams, computer-aided design and electronic visualization tools, and system simplification.

The expertise of the production work force matches that of the engineering staff. Wyoming was built by a work force that does its job in two of the most advanced submarine construction facilities in the Western world. Representing an investment of some \$300 million,

these facilities allow faster and more efficient production. One is the \$150 million, eight-acre Land Level Submarine Construction Facility at the shipyard in Groton, Connecticut. The other is the revolutionary \$120 million Automated Submarine Frame and Cylinder Manufacturing Facility in Quonset Point, Rhode Island.

The Groton Land Level Facility employs a cost-saving hull assembly process where hull sections move about on a grid system of rail tracks and transfer cars as the submarine takes shape. The Quonset Point Facility also reduces costs by providing the most modern equipment and technology to fabricate hull sections.

It is this kind of know-how, teamwork and equipment that has enabled the company to win both the lead-ship construction contract for *Seawolf*, the submarine of the 21st century, in January 1989, as well as the contract for the second submarine, *Connecticut* (SSN22), in May 1991, after a lengthy competition. Submarines of the *Seawolf* Class will operate at faster speeds and deeper depths than previous classes. They will also be quieter, have superior combat capability, and be more survivable.

Combining talent with resources to build submarines like *Wyoming* continues to provide Electric Boat with the capacity and flexibility to remain at the forefront of submarine technology.



Monika B. Owens



Mouita B. Quens

Monika Owens was born Monika Bastian in Mannheim, Germany, the daughter of Wilhelm and Maria Bastian. After her father's death in World War II, she immigrated to the United States with her mother and made her home in Eden, New York.

Mrs. Owens graduated magna cum laude from Harpur College in Binghamton, New York, with a major in French literature. Subsequently she was awarded a teaching assistantship at the University of Hawaii and earned a Master of Arts in French literature two years later. Since then she has completed multidisciplinary course work at various universities in this country and abroad.

Her professional career includes many years of teaching at the University of Hawaii, St. Andrew's Priory in Honolulu, the College of Charleston and American University in Washington, D.C. She especially enjoys working with post-high school students and served several years as an academic advisor at the University of Hawaii.

Mrs. Owens has been a volunteer with the American Red Cross and, as a member of Y Me, My Image After Breast Cancer and the Breast Cancer Coalition, she is an active participant in the fight against breast cancer. She enjoys tennis, reading and traveling the world to experience other cultures.

Married to Admiral William A. Owens, a submariner for more than 32 years, Mrs. Owens' ties to the undersea community run deep. Admiral Owens is currently the Vice Chairman of the Joint Chiefs of Staff, the second highest-ranking military officer in the United States. Their son, Ensign Todd Owens, is a 1994 graduate of the Naval Academy. He is assigned to the Navy's Nuclear Prototype Training Facility in Charleston, South Carolina, where he is training to join the submarine force later this year.

Craig Thomas

U.S. Senator Craig Thomas of Wyoming has established himself as a vigorous advocate for a smaller, more efficient federal government.

Elected to his current position in 1994, Senator Thomas previously served in the U.S. House of Representatives for nearly six years. During his tenure in the House, Senator Thomas emerged as one of the chief spokesmen for the rural West, particularly on the issues that are important to the families in low-population states, such as health care.

Senator Thomas maintains a strong commitment to agriculture, rural health care, a reduction in government regulation, and the multiple use of public land. He currently serves on the Senate's Energy and Natural Resources Committee, the Environment and Public Works Committee, the Foreign Relations Committee and the Committee on Indian Affairs.

Raised on a ranch near Cody, Wyoming, where he attended public school, Senator Thomas graduated from the University of Wyoming with a degree in agriculture.

After that, he served for four years in the United States Marine Corps.

Senator Thomas was Vice President of the Wyoming Farm Bureau from 1959 to 1966 and General Manager of the Wyoming Rural Electric Association from 1975 to 1989. He served in the Wyoming House of Representatives from 1984 to 1989, when he was elected to his first time in the United States House of Representatives.

With a lifetime of involvement in Wyoming and a keen awareness of its fundamental values, Senator Thomas continues to work diligently to promote the interests of the citizens of his state and the West.

Senator Thomas is married to Susan Thomas, a public school educator. They have four children, Peter, Paul, Lexi and Patrick.



Craig Homas

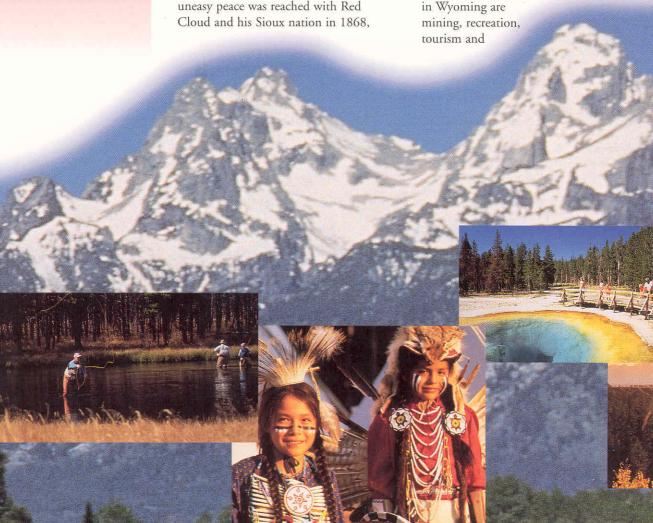
Background photo: Grand Teton National Park

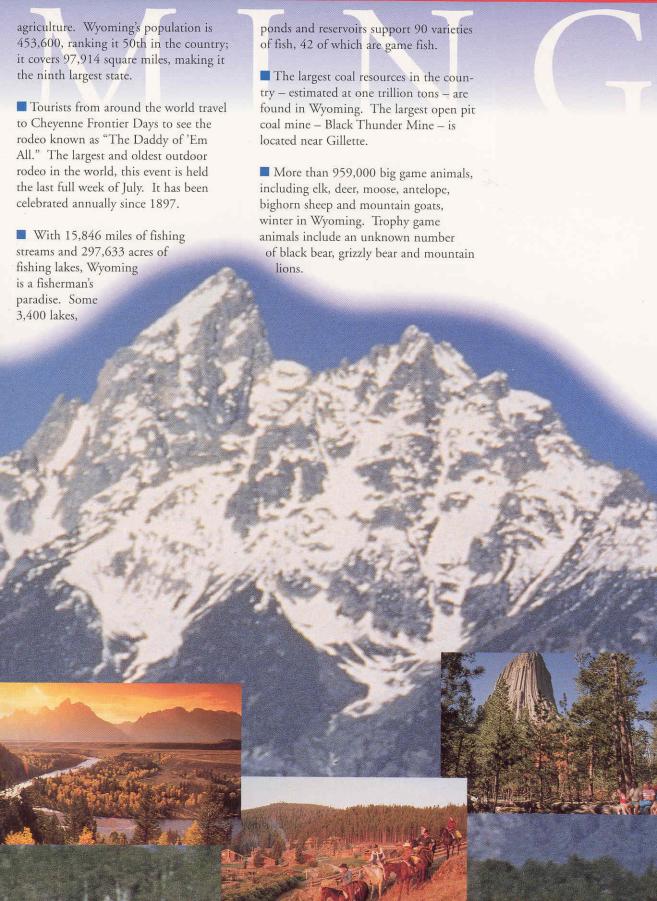
Inset left to right:
Fly fishermen test the waters of Yellowstone National Park; A pair of young Shoshone Dancers; Morning Glory Pool, Yellowstone National Park; The Snake River winds its way towards the Tetons; A genuine trail ride through the Wyoming countryside; Devils Tower National Monument.

- The first European to venture into the Wyoming region may have been Pierre Verendrye, who explored the Bighorn Mountains in 1743. At various times, the flags of France, Great Britain, Mexico, the Republic of Texas, Spain and the United States have flown over Wyoming.
- Explorer John Colter entered the region in 1807; his descriptions of one area earned it the name "Colter's Hell." It is now known as Yellowstone National Park. Colter was followed by a steady stream of trappers, traders and explorers.
- Sustained development of the state began in 1866-67 when the Union Pacific Railroad was extended across southern Wyoming on its way to linking up with the Central Pacific line. An uneasy peace was reached with Red Cloud and his Sioux nation in 1868,

- prompting further growth. A year later, Wyoming was declared a territory. The state was admitted to the Union in 1890.
- Nicknamed the Equality State, Wyoming approved the nation's first women's suffrage legislation in 1869. The state was also first to have a woman justice of the peace and to select women jurors.
- Wyoming is home to Yellowstone National Park, the first national park; Devil's Tower National Monument, the first landmark to be so designated; and Shoshone National Forest, the first timberland to be reserved under the national forest system.

■ The leading industries





Background photo: Wyoming Sloop Steam The submarine *Wyoming* (SSBN742) is the fourth U.S. Naval ship to be named after the 44th state of the Union.

The first *Wyoming*, a wooden-hulled screw sloop-of-war, was commissioned in 1859 and operated along the Pacific coast of the United States, and Central and South America until 1862. In June of that year, *Wyoming* proceeded to the Far East in what would prove to be a fruitless search for the Confederate cruiser *Alabama*.

In response to an outbreak of antiforeign agitation in Japan, *Wyoming* sailed from Philadelphia to Yokohama, arriving in May 1863 to protect American lives and property. The unrest continued, however, and in June, two armed Japanese vessels attacked an American merchantman in the Strait of Shiminoseki.

When word of the attack reached American officials in Japan, they reacted by directing Wyoming to seize and, if necessary, destroy the offending vessels. On July 16, 1863, Wyoming entered the strait and began taking fire from shore batteries. Answering that fire, Wyoming steamed toward a bark, a brig and a steamer, sinking the steamer and damaging the bark and the brig. During the hour-long battle, Wyoming was struck in the hull 11 times and suffered four men killed and seven wounded, one of whom later died. Significantly, Wyoming was the first foreign warship to take action to uphold treaty rights in Japan.

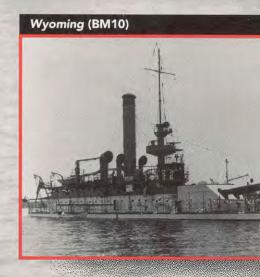
In 1867, Wyoming participated in a punitive expedition against Formosan natives who had killed a crew of ship-wrecked American merchant sailors and spent the 1880s as a training ship for Naval Academy midshipmen. Wyoming was sold in 1892.

The second Wyoming (Monitor No. 10) was launched September 8, 1900, by the Union Iron Works in San Francisco. In 1902, the ship sailed to Panamanian waters when a civil war in Columbia threatened American lives and interests, and remained in the region to monitor the situation until the spring of 1904. In 1908, Wyoming became the first U.S. Navy ship to be converted to oil fuel. A year later, Wyoming was renamed Cheyenne to clear the name for the projected Battleship No. 32. Cheyenne subsequently served as a

submarine tender, and later as a miscellaneous auxiliary, and was decommissioned in 1926.

The third Wyoming (Battleship No. 32) was launched May 25, 1911, at William Cramp and Sons shipyard in Philadelphia. Following its commissioning in September 1912, Wyoming became the flagship of the Commander of the United States Atlantic Fleet. Wyoming participated in drills and exercises in the Atlantic, the Mediterranean and the Caribbean over the next several years. In November 1917, Wyoming sailed for the British Isles, reaching Scapa Flow in the Orkney Islands, where the battleship became part of the 6th Battle Squadron of the British Grand Fleet. During this time, Wyoming performed convey escort duties while guarding against the danger posed by the German High Seas Fleet.

In accordance with the 1930 London treaty limiting Naval armaments, Wyoming was demilitarized in 1931, with the removal of its armor, and guns and turret machinery from three of its six main battery turrets. Wyoming embarked on another phase of its lengthy career in 1941 when it was converted to use as a gunnery training ship. In this capacity, Wyoming fired off more ammunition than any other ship in the fleet, while training some 35,000 sailors on seven different types of guns. Wyoming was decommissioned in August 1947.



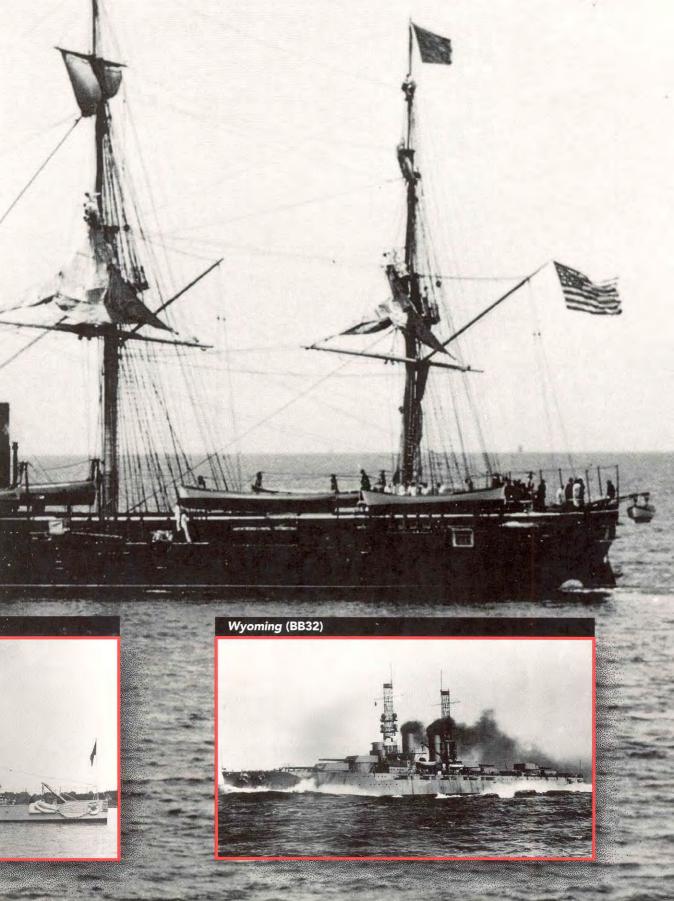
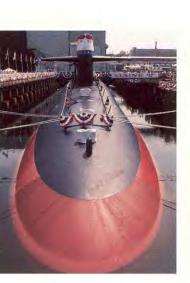


Photo below: Christening of Maine (SSBN741) July 16, 1994



Ohio Class

Ohio-Class (Trident) submarines are the largest and most powerful ever built in the Western world. At 560 feet and 18,750 tons, they are the nation's first line of defense into the next century, serving as undersea intercontinental missile-launching platforms that are virtually undetectable.

The Trident program has many major advantages. Each Trident submarine is able to carry 50 percent more missiles than previous submarines (24 compared with 16).

Ease of maintenance allows longer patrols and shorter turnaround time. Increased missile range enables the submarine to operate in 10 times the ocean area and enables the submarines to be based in this country rather than in foreign nations.

Beginning with *USS Tennessee* (SSBN734), all *Ohio*-Class submarines carry the longer range Trident II missile.

The Trident has improved mobility, quietness and speed, making it the most survivable of the nation's strategic weapon systems.

The submarine's large size allows it to carry significantly more and better sonar gear than the Polaris/Poseidon submarine, and provides much more spacious living quarters for the 154-man crew.

Electric Boat designed the *Ohio* Class and is the sole producer of these submarines. It has already delivered 16 to the U.S. Navy.

Ships of the Ohio Class

USS Ohio (SSBN726) USS Michigan (SSBN727) USS Florida (SSBN728) USS Georgia (SSBN729) USS Henry M. Jackson (SSBN730) USS Alabama (SSBN731) USS Alaska (SSBN732) USS Nevada (SSBN733) USS Tennessee (SSBN734) USS Pennsylvania (SSBN735) USS West Virginia (SSBN736) USS Kentucky (SSBN737) USS Maryland (SSBN738) USS Nebraska (SSBN739) USS Rhode Island (SSBN740) Maine (SSBN741) Wyoming (SSBN742) Louisiana (SSBN743)

Los Angeles Class

Submarines of the *Los Angeles*-Class are the Navy's current operating class of nuclear-powered attack submarine. They are designed to hunt down enemy submarines and surface ships, launch cruise missile attacks on land-based targets and gather intelligence.

The 360-foot, 6,900-ton submarines are well equipped to accomplish these tasks. Faster than their predecessors and possessing highly accurate sensors, weaponscontrol systems and central computer complexes, they are armed with sophisticated Mark 48 anti-submarine torpedoes, Harpoon missiles and Tomahawk cruise missiles. Each vessel carries a crew of 127 — all specialists in their respective fields.

Electric Boat has already delivered 10 of the improved 688-class submarines, featuring the advanced BSY-1 combat system, retractable bow planes, and a hardened sail to break through ice when surfacing during Arctic operations.

These submarines are USS San Juan (SSN751), USS Pasadena (SSN752), USS Topeka (SSN754), USS Miami (SSN755), USS Alexandria (SSN757), USS Annapolis (SSN760), USS Springfield (SSN761), USS Columbus (SSN762), USS Santa Fe (SSN763), and USS Hartford (SSN768).

Electric Boat has produced 32 of the Navy's 58 *Los Angeles*-Class submarines currently in the Navy fleet. Its 33rd, *Columbia* (SSN771) is expected to be delivered in August.



Photo left: Christening of the Seawolf (SSN21) June 24, 1995

Seawolf Class

Seawolf is the first top-to-bottom new attack-submarine design since the Skipjack Class in the early 1960's

Seawolf's flexibility provides the Navy with an undersea weapons platform that can operate in any scenario against any threat, with mission and growth capabilities which far exceed Los Angeles-Class submarines. The robust design of this submarine enables it to perform a variety of crucial assignments from under the Arctic icecap to littoral regions anywhere in the world. Its missions include surveillance, intelligence collection, special warfare, covert cruise missle strike, mine warfare, and anti-submarine and anti-surface warfare.

Seawolf's stealth characteristics make it the world's quietest submarine. In fact, Seawolf will be quieter at high speed than a Los Angeles-Class submarine is at pierside.

Ships of the Seawolf Class

Seawolf (SSN21) Connecticut (SSN22)

Seawolf Class Facts

Length: 353 Feet
Displacement: 9,137 Tons
(Submerged)

Torpedo tubes:

Speed: 25+ Knots Depth: 800+ Feet