



Fast Attack Submarines

The U.S. Navy's nuclear-powered attack submarines (SSNs) are highly capable, multi-mission platforms. U.S. SSNs remain the most effective anti-submarine warfare (ASW) platforms available to counter advanced diesel and nuclear-powered submarines operated by potential adversaries. Since the end of the Cold War increased emphasis has been placed on non-ASW missions. Today's SSNs, aided by improved communications capabilities, conduct intelligence, surveillance, and reconnaissance (ISR) missions to provide timely intelligence on the world's trouble spots to senior U.S. policymakers. SSNs have unparalleled capabilities to insert special operations forces and conduct mine warfare. Typically two SSNs are assigned to each carrier battle group to provide force protection. They also carry about 20 percent of each battle group's *Tomahawk* land attack missiles. The attack submarines' stealth and unlimited endurance allows them to operate with near impunity in forward areas. They can transit at high speed, and arrive on station undetected and ready for action.



USS Los Angeles (SSN-688), the first of her class. USS Louisville (SSN-724) and USS Pittsburgh (SSN-720) fired the first submarine-launched Tomahawks in anger during Operation Desert Storm

The current backbone of the U.S. Navy's attack submarine force is the fast, heavily armed *Los Angeles* class submarine. A total of 62 were built. The first 31 carry 25 torpedo tube launched weapons including Mk 48 torpedoes and *Tomahawk* cruise missiles. The next 31 carry 12 *Tomahawk* vertical launch tubes in addition to the armament noted above. The last 23 submarines of the *Los Angeles* class, called "Improved 688's," are quieter, incorporate advanced combat systems, and are configured with bow planes and a reinforced sail for under-ice operations.



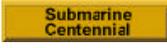
The *USS Seawolf (SSN-21)* is the first of three submarines in the class. The *Seawolf* class will be followed by the *Virginia* class.

affordability. Engineered for maximum design flexibility and able to incorporate new technology, they will dominate the battle space across a broad spectrum of warfare missions in coastal, littoral and open ocean areas.

The Navy began building *Seawolf* class attack submarines in 1989. They are the fastest, quietest, and most heavily armed attack submarine in the world. The first of the class, *USS Seawolf (SSN-21)* completed its initial sea trials in July 1996 and was commissioned in September 1996. The second ship of the class, *USS Connecticut (SSN-22)*, was commissioned in December 1998. In 1992, following the end of the Cold War, the class was truncated to three ships in order to pave the way for a more affordable class of submarine.

The new *Virginia (SSN-774)* class attack submarines will achieve the right balance of combat capability and



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General Characteristics, *Los Angeles* class

Builders: Newport News Shipbuilding Co., VA; General Dynamics Electric Boat Division, CT
Power Plant: One nuclear reactor, one shaft
Length: 362 feet (109.8 meters)
Beam: 33 feet (10.1 meters)
Displacement: Approx. 6,927 tons (7038 metric tons) submerged
Speed: 25+ knots (46 +kilometers per hour)
Crew: 13 Officers, 121 Enlisted
Armament: Four 21-inch (533 millimeter) torpedo tubes; *Tomahawk* missiles, Mk 48 torpedoes, mines
Date deployed: 13 November 1976 (*USS Los Angeles*)

General Characteristics, *Improved Los Angeles* class

Builders: Newport News Shipbuilding Co., VA; General Dynamics Electric Boat Division, CT
Power Plant: One nuclear reactor, one shaft
Length: 362 feet (109.8 meters)
Beam: 33 feet (10.1 meters)
Displacement: Approx. 7,147 tons (7185 metric tons) submerged
Speed: 25+ knots (46 +kph)
Crew: 13 Officers, 125 Enlisted
Armament: 12 VLS tubes, four 21-inch (533 millimeter) torpedo tubes; Mk 48 Advanced Capability (ADCAP) torpedoes; *Tomahawk* missiles, mines
Date deployed: 6 August 1988 (*USS San Juan*)

General Characteristics, *Seawolf* class

Builders: General Dynamics Electric Boat Division, CT
Power Plant: One nuclear reactor, one shaft
Length: 353 feet (107.6 meters)
Beam: 40 feet (12.2 meters)
Displacement: 8,060 tons surfaced, 9,150 tons submerged (8189/9296 metric tons)
Speed: 25+ knots (46+ kph)
Crew: 13 Officers; 121 Enlisted
Armament: Eight 30-inch (762 millimeter) torpedo tubes (50 weapons) including *Tomahawk* missiles, Mk 48 Advanced Capability (ADCAP) torpedoes, mines
Date deployed: 19 July 1997 (*USS Seawolf*)

General Characteristics, *Virginia* class

Builders: General Dynamics Electric Boat Division and Newport News Shipbuilding
Power Plant: One nuclear reactor, one shaft
Length: 377 feet (114.9 meters)
Beam: 34 feet (10.4 meters)
Displacement: Approx. 7,800 tons (7925 metric tons)
Speed: 25+ knots (46+ kph)
Crew: 14 Officers, 120 Enlisted
Armament: 12 VLS tubes, 21-inch (533 millimeter) torpedo tubes; *Tomahawk* missiles, Mk 48 Advanced Capability (ADCAP) torpedoes, advanced mobile mines, and unmanned undersea vehicles.
Date deployed: Scheduled for delivery in 2004

