

From Holland to Virginia and Columbia: A History of Innovation

For more than a century Electric Boat has partnered with the U.S. Navy to deliver submarines with the most advanced undersea capabilities in the world. Over the last century, Electric Boat has achieved a number of significant firsts – delivering what would be the Navy’s first commissioned submarine, its first welded-hull submarine, its first nuclear submarine, and its first strategic-deterrent submarine. Today, the company is engaged in serial production of the Virginia-class submarine; design of the Columbia Class, the next-generation ballistic-missile submarine; and development of the Virginia Payload Module.

The company was formed in New Jersey in 1899 to complete the world’s first practical submarine, the Holland, and has maintained a presence in Southeastern Connecticut since 1911 when it established an operation in Groton to build diesel engines. Electric Boat’s other primary facilities are New London, Conn., and Quonset Point, R.I.

Since launching the world’s first nuclear warship, USS Nautilus, in 1954, Electric Boat has built most of the Navy’s nuclear submarines, and has designed 15 of 19 U.S. Navy nuclear-submarine classes.

The company is engaged in three major programs:

The Virginia-Class Submarine Program

Hailed as a model for defense-acquisition programs, the Virginia Class gives the submarine force the capabilities it requires to dominate both the open ocean and the littorals. A potent platform for Special Operations, strike and surveillance, the Virginia Class has been designed for modularity, making it sufficiently mission-flexible to prevail against future threats. Electric Boat continues its efforts to improve ship capability while maintaining the program’s standing as the Navy’s most effective shipbuilding program.

The Columbia-Class Program

The first Ohio-class submarine will reach the end of its service life in Fiscal Year 2027. To ensure there is no gap in the nation's most survivable strategic deterrent, construction of the first Columbia-class submarine must start in Fiscal Year 2021. Electric Boat, which designed and built the entire Ohio Class, is now engaged in the development of the Columbia Class, focusing on reducing design, construction and life-cycle costs. Development of the Common Missile Compartment, a joint effort between the U.S. and the U.K. for replacement SSBNs, is on track to support the construction schedules of both countries.

Virginia Payload Module

When Ohio-class SSGN submarines joined the fleet in 2005, they provided the U.S. Navy with a significant increase in stealthy, survivable strike capacity. To retain this capability when the SSGNs begin coming off the line in the 2020s, Electric Boat proposed an effective and affordable solution with inherent mission flexibility – the Virginia Payload Module (VPM). The VPM comprises four additional large-diameter payload tubes in a new hull section inserted amidships in Virginia-class submarines, extending the hull by 84 feet, and boosting the fixed strike capacity of the ship by more than 230 percent, while increasing the cost less than 15 percent.

###