



Artifact Spotlight: Whitehead Torpedo

The cold-running Whitehead was the world's first self-propelled torpedo, and the model from which all future design concepts originated. Its inventor, Englishman Robert Whitehead, developed the first experimental model in 1866. Propelled by a two-cylinder, compressed-air engine, this early iteration could travel 200 yards at a speed of 6½ knots. By 1868, Whitehead had refined his design and offered two versions of his Mark 1 torpedo for sale: an 11-foot, 8-inch model with a 40-pound guncotton explosive and a larger, 14-foot model with a 60-pound guncotton explosive. Both performed similarly, running at 8–10 knots with a range of 200 yards.



Robert Whitehead

Austria was the first country to show interest in Whitehead's automobile torpedo and experimented with it from 1867 to 1869. Sufficiently impressed with its potential, they purchased manufacturing rights in 1869 but granted Whitehead permission to continue selling torpedoes to other countries. The British Royal Navy purchased some Whiteheads in 1870 and began manufacturing a British version in 1871. Many other countries with significant naval power, including France, German, Italy, Russia, and China, also bought Whitehead torpedoes for their fleets. Robert Whitehead continued to improve his torpedoes, and in 1877, he had introduced the Mark 2, again in two versions that traveled faster and farther than the Mark 1 models. The two Mark 2 torpedoes had similar speeds of 27–28 knots, but the larger 16.5-foot long Mark 2 boasted twice the speed of the 11-foot, 8-inch model.

The United States initially declined to use the Whitehead, attempting instead to develop its own torpedo. They established the Naval Torpedo Station (NTS) at Newport, Rhode Island, in 1869 to create such a weapon, but the resulting product was flawed and never left the test stage. Naval Lieutenant Commander John Howell began conceptualizing on his automobile torpedo around this time and the U.S. Navy was able to avoid the Whitehead a little longer by placing Howell torpedoes into action in the early 1890s.

The Whitehead torpedo finally joined the U.S. Navy in 1892 after the E.W. Bliss Company secured manufacturing rights. The Navy, afraid of falling behind as the rest of the world embraced the Whitehead, purchased 100 Mark 1 torpedoes in the smaller size. Between 1896 and 1898, the Howell torpedo was phased out and replaced by five types of Whitehead units: Mark 1, Mark 2, and Mark 3 units in 11-foot, 8-inch lengths and 14-foot Mark 1 and Mark 2 versions. By the time they entered American service, the Mark 1 models performed comparably to the Mark 2 and Mark 3 Whiteheads — they were faster, traveled further, and carried a larger warhead than Whitehead's initial vehicles. All five models featured three-cylinder engines, and a gyroscope was added for azimuth control to the larger Mark 1 and the Mark 3.



Torpedo boat USS *Morris*
firing a Whitehead torpedo

The E.W. Bliss Company produced 300 Whitehead units of varying type for the Navy between 1896 and 1904. Together with the Bliss-Leavitt torpedoes that later supplanted them, Whiteheads made up the torpedo arsenal for the Navy from 1896 to 1910. They were launched from battleships and torpedo boats and used to conduct anti-surface ship warfare.