HISTORY OF TECHNOLOGY

A Revolutionary Craft

Artisans re-create earliest American submarine

On a summer night in 1776, an American soldier named Ezra Lee steered a tiny wooden submarine through New York Harbor, sidled up to the flagship of the British fleet, and attempted to attach a bomb to the warship’s underbelly. The scheme failed, but Lee survived, and the sub, the Turtle, and its builder, David Bushnell, became icons of Yankee ingenuity.

Last winter Rick and Laura Brown, professors at the Massachusetts College of Art, embarked on a mission of their own: to build a working replica of the historic Turtle. After scouring archives for clues to how the sub was constructed, the Browns invited timber framers, blacksmiths, and other specialists to Handshouse Studio, a workshop in Norwell that perpetuates traditional crafts. The team began building the replica by hollowing out two halves (below). “Bushnell wanted thick walls of solid wood to withstand water pressure,” says Rick, “so we think he built the Turtle from one large log.” After weeks of work, the completed replica (bottom) was tested in nearby Snug Harbor (left). To dive, the pilot floods the hull interior knee-deep with seawater; to resurface after about 15 minutes, he pumps the water out by hand. “It works!” says Rick, a little amazed. Plans are under way to display the Turtle at museums nationwide.

—Glenn Oeland

Three Centuries of Subs

1620 Cornelis Drebbel, inventor to King James I, demonstrates first working submarine.

1800 Robert Fulton’s Nautilus, constructed of metal plates over a wooden hull, operates underwater for up to six hours.

1855 The Sea Devil, built by German inventor Wilhelm Bauer, is powered by a four-man treadmill.

1864 The Confederate H. L. Hunley becomes the first submarine to sink an enemy warship.

1898 John Holland builds the gasoline-powered Holland VI.

1900 The U.S. Navy purchases Holland VI, its first submarine, for $150,000.

1954 The first nuclear-powered sub, U.S.S. Nautilus, is launched.