EC-CHAP
Eastern Connecticut Center for History, Art, and Performance, Inc.
History

October 22

David Bushnell's Turtle

When writing my previous article on Connecticut's industrial contribution during the Revolutionary War, I wanted to include something about David Bushnell's and Isaac Doolittle's invention. I decided that this topic deserved its own article. Their invention was the Turtle: the first submarine to be used in combat.

I took a trip down to the Connecticut River Museum in Essex, CT. Established in 1974 in an old steamboat warehouse, the nonprofit institution focuses on the history of the Connecticut River and its people in addition to having an exhibit dedicated to the Turtle submarine. The Turtle's main inventor, David Bushnell, was born in 1740 in a district of Saybrook, which is now Westbrook, CT. Farming for most of his life with his brother Ezra, he eventually attended Yale college in 1771 at the age of 31 and took an interest in explosive mines and experimenting with detonating gunpowder underwater. He successfully designed and tested small underwater bombs during his college career. Word of Lexington and Concord reached Yale's campus in April 1775, just a few weeks before Bushnell's graduation. Upon graduation, he immediately moved back to his home on the Connecticut River to find a way that his explosive could help the Continental Army. An underwater explosive could certainly damage a British ship. However, the Continental Navy was no match for the British armada and so the bomb would have to be attached unnoticed by any lookouts aboard. Bushnell sought to build a submersible that could attach an explosive to a ship in the darkness of night.

David Bushnell intended to keep his project a secret from everyone but needed help if he wanted his idea to be a success. His brother, Ezra, was already enlisted with the Continental Army stationed near Boston. David Bushnell reached out to Ezra's commanding officer, who happened to be David's former classmate, Nathan Hale. Hale granted the request for Ezra to return home to help his brother and they began to construct the Turtle. The body was constructed out of two large pieces of solid oak, leaving only one seam to be waterproofed, which would then be reinforced with iron hoops similar to a barrel. The resulting shape looked like a clam or turtle's shell, hence the name, and had enough room to fit one man. The pilot would use foot treadles or a hand crank to rotate the front propeller to move forward. A hand pump would allow water into or out of the Turtle in order to lower or raise the vessel. Air was supplied to the pilot via snorkel. Once underwater, the pilot would have about 30 minutes to complete his mission before he ran out of air. He would also be in almost pitch darkness when underwater with water pooled around his feet and using only the glowing light of some Foxfire wood fungus placed inside the Turtle to see his compass and barometer. Bushnell worked with local artisan Isaac Doolitle to make the 150-pound time bomb. Doolittle was a clockmaker and devised a way that the turtle could tow the bomb attached to a large screw facing upwards

from the turtle. The pilot would use a crank to screw into the bottom of a ship, detach, and have a few minutes to get away before the bomb exploded.

After a successful test, permission was granted from Connecticut Governor Trumbull and George Washington to use the Turtle against British Admiral Howe's flagship *HMS Eagle* stationed in New York Harbor. A volunteer named Ezra Lee would be the pilot. A whale boat took the Turtle as close as possible to the British fleet before casting Ezra off. He moved by pedal and crank for 2 ½ hours before he descended underneath the *HMS Eagle*. Exhausted, he still attempted to screw the bomb to the hull but was unsuccessful. For some reason, the screw could not pierce the hull. The current belief by historians today is that Ezra was unfortunate enough to hit an iron plate near the rudder which the screw could not bore through. With dawn approaching and air running low, Ezra attempted to make an escape but was spotted by lookouts aboard the ship. The British pursued the unidentified, slow moving vessel in rowboats. To deter them, Ezra armed and released the bomb which harmlessly exploded but caused the rowboats to give up the chase.

The Turtle would see two more attempts to fulfill its mission but was spotted and fired upon in both. After this, the transport vessel for the Turtle was sunk by the British, ultimately leading to the conclusion that the project was a failure and would not be tried again by the patriots. Some say that the Turtle was recovered by Bushnell, though it has never been found. After his experiment, Bushnell joined what would eventually be called the Army Corps of Engineers and continued his work in underwater explosives. Submarines would not see combat again until almost a century later by the Confederates in the Civil War.

The fascinating story of Bushnell and the Turtle deserves a much deeper dive than I have provided here and I highly recommend visiting the Connecticut River Museum or researching this topic more in your own way. The pictures you see with this article are of the two replicas of the Turtle at the Connecticut River Museum with one of them being a working replica.

Ryan Elgin serves as EC-CHAP Assistant Director, Curator of the Gardiner Hall Jr History Museum, and Volunteer Coordinator. He may be contacted directly at ryan@ec-chap.org.

The Gardiner Hall Jr Museum is open to the public Saturdays from 10:00am to 12:00pm. For more information, please call 518-791-9474.