

# In Our Waters

## A Tale of Two Turtles

by Adam M. Grohman

On August 3, 2007, artist and designer Duke Riley and two of his friends decided to test a handcrafted plywood submarine in New York Harbor. Riley's plan was to utilize his one-man, self-powered submarine to get close to the British *Queen Mary II* in order to take photographs of the grand liner. His escapade in the shadows of the *Queen Mary II* quickly ended, however, when both federal and local law enforcement officials sank Riley's plans. The submarine and its builder never got a chance to complete its intended photographic purpose, but it did land the artist in hot water.

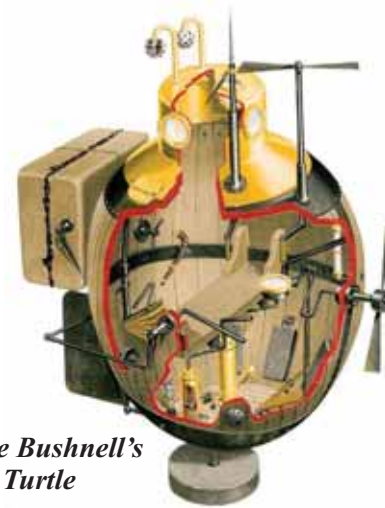
More than two hundred and thirty years ago, the original Turtle submarine also attempted to get close to a British vessel, the *HMS Eagle*. On a different note, however, the original planners and designers of the queerly shaped submersible vessel did not wish to take photographs. Rather, the one-man, self-propelled submarine was attempting to attach an early naval

mine to the *Eagle's* hull. Both attempts, past and present, of the Turtles ended without the completion of the intended mission, but both will surely be remembered and recorded in the annals of submarine history and lore.

Designed by David Bushnell in 1775, the original Turtle was seven feet long and six feet in diameter. It was constructed of oak and built utilizing iron bands in a similar fashion to barrel construction. The craft was propelled through the water with hand-powered vertical and horizontal propellers. Though limited by the era's lack of machine-driven propulsion equipment, Bushnell's use of ballast tanks that could be pumped was truly a revolutionary idea. This unique use of ballast tanks allowed the operator to take on water ballast to submerge the craft and release a sufficient amount of water to allow the submarine to broach the surface.



Full Size Model of the Turtle at the U.S. Submarine Museum, Groton CT.



Inside Bushnell's Turtle

After counsel with Benjamin Franklin and support from General George Washington, Bushnell was granted the opportunity to test his submarine craft in combat. The target, the sixty-four gun frigate and flagship of Lord Howe, was in charge of the blockade of New York Harbor. The thirty-four year-old inventor and builder was not capable of personally commanding his vessel due to the physical rigors it entailed. His brother Ezra Bushnell was to take the Turtle into combat but fell seriously ill on the eve of the mission. Instead, a replacement, a sergeant in the Continental Army, volunteered for the daring and risky mission.

On July 6, 1776, under cover of darkness, Ezra Lee navigated the strange craft through enemy-held waters and reached the *HMS Eagle* undetected. At this critical juncture, Lee attempted twice to drill into the hull of the British

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frigate so that he could attach a one hundred and fifty-pound gunpowder charge. The plan failed, however, because he was unable to successfully drill into the hull of the *Eagle* and attach the mine. As he was attempting his withdrawal, a group of British sentries spotted the craft and rowed over in a longboat to investigate. Because Lee realized that the extra weight of the mine was hindering his escape, he jettisoned it into the water. The mine released from the Turtle, and with its timer already primed, soon exploded. The submarine without the heavy burden of the mine provided Lee the ability to escape from the clutches of capture. The resulting blast left the British Royal Navy wondering what had happened in their closely guarded harbor. Though not successful, the first operation of a submarine in combat had been completed and recorded.

Time has provided a murky history of Lee's combat mission below the waves in New York

Harbor, and it is important to take Lee's debriefing of the mission with a certain amount of suspicion. Various scholars argue the effectiveness of the craft and Lee's report due to the fact that

sonnel. Though Sergeant Lee probably received a hearty pat on the back for his daring dive below the surface, Duke Riley was slapped instead with a series of tickets for "marine mischief."

Duke Riley's 2007 version of the Turtle and its brief underwater trip as it approached its intended target proved that the technology of the Bushnell design worked, even if it was still unable to complete its objective. David Bushnell will be remembered for his contribution to the submarine design and its use in combat operations. Riley's re-creation and his plan, which most would argue was ill-conceived in light of the current threat of terrorism and vigilant efforts to thwart such attacks, illustrates the continual effectiveness of submarines (even early designs!). Ultimately, though, even in the case of one-man submarines, it is safe to say that some things never change, even in our waters.



*A "Turtle" in hot water. Photograph courtesy of U.S.C.G. PO3 Christopher Taylor*

upon exiting the craft he would have been extremely exhausted from the physical demands of operating the submarine and possibly was suffering from carbon dioxide poisoning. This is akin to Riley's surprise when he found himself surrounded not by British redcoats, but New York Police Department officers and Coast Guard per-

### About the Author

Adam M. Grohman is a researcher, author, and chief diver of the Underwater Historical Research Society based on Long Island, New York. He is the author of *Non Liquef*, *The Bayville Submarine Mystery*; *Runner Aground*, *A History of the Schooner William T. Bell*; *Dive GTMO* and two novels. For more information about this vessel or other projects of the UHRS, visit [www.uhrs.org](http://www.uhrs.org)



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