



CHAPTER ONE



New York at War

AT FIRST GLANCE, New York harbor seemed like a peaceful place on the night of September 6, 1776. It was a cloudy night with a fresh breeze and rain at times. However, a closer look at the harbor revealed the outlines of hundreds of ships, whose presence was confirmed by lanterns hanging from their decks and rigging. Beyond them, flickering lights were visible on nearby Staten Island and western Long Island (modern Brooklyn). They were coming from the campfires of the large British army that surrounded the city. In the opposite direction, lights were also visible from New York City, located on the southern tip of Manhattan Island. They were from the forts and barricades occupied by the Continental

(American) army, defending the city and civilians who had not fled the war zone. Everyone in the metropolis appeared to be sleeping, but a careful observer could see Continental artillerymen manning the cannons that defended the city and squads of soldiers patrolling its blockaded streets and waterfront.

There was also activity on the dock at the bottom of Whitehall Street, where a group of American officers had gathered in the darkness. The men on the dock were watching an unusual sight: a strange-looking craft, bobbing just barely above the surface of the water, that was attached by ropes to two big rowboats called whaleboats. Even in the darkness, one could see that the top of the strange machine was made of brass, with glass portholes on all sides and two brass tubes pointing straight up into the sky. The officers on the dock spoke in excited whispers as they watched the whaleboat crews begin to tow the machine out into the harbor, their oars wrapped in rags to muffle the sound. The Americans gathered on the dock were among the few men who knew that the strange craft under tow was an “underwater machine”: a submarine called the *American Turtle*, which was setting out to sink one of the big Royal Navy warships anchored in the harbor.



Introducing David Bushnell

THE MAN RESPONSIBLE for the *American Turtle* was also on the dock that night. His name was David Bushnell, and he is an example of a fascinating breed of Americans called “Yankee tinkerers.” They were dreamers and inventors who created amazing machines, often working alone in sheds and barns with simple tools and little formal education. Bushnell was different from some of the other homespun inventors: Despite being born on a small farm in Connecticut, he had attended Yale College (today’s Yale University) in New Haven, Connecticut, where he studied science and mathematics. He was born in 1740 and entered Yale in 1771, making him thirty-one years old when he started college. It was

beyond the usual age for a man to go to college (women did not go to college at the time), and Bushnell was called “the old man” by his classmates. He had desperately wanted to get a college education earlier in his life, but his father was a poor farmer, and it took David years to scrape together the money to pay for school. He raised some of the money by working in a Connecticut shipyard that was located near his boyhood home in Old Saybrook, Connecticut. This work experience gave him some pence (coins) and an introduction to the principles of ship construction. Even after he had the money for school, David studied with the Reverend John Devotion, a local clergyman and scholar, who tutored him in subjects including natural philosophy (science) and Latin, while a fellow townsman, named Elias Tully, let David live in his house as a guest.

David Bushnell attended Yale for four years and graduated in the class of 1775. During the same period, America was moving toward war with Britain over the growing fear that the British government was trying to control the lives of the colonists (the decision to declare independence from Britain came later in the war). The Boston Tea Party (December 1773), for example, happened while David was at Yale. With war approaching,

many of his fellow students formed a militia company and prepared to defend their liberties. David, who shared their patriotism, turned his scientific mind to figuring out how to sink the Royal Navy. He selected an important way to aid the patriot cause because Britain had the largest and best navy in the world. The Royal Navy could easily plunder American merchant ships at sea, ravage the coast, and burn towns, while the colonists had few warships and little means to quickly build and arm them. Bushnell was determined to find a way to destroy enemy ships, and he turned to books for ideas. Thus, while his fellow students were drilling with muskets on New Haven's village green, Bushnell was in the Yale library reading about ancient schemes of sinking ships with "Greek fire" (flaming oil) or exploding "infernals" (mines).