At Yale, David Bushnell amazed his professors by demonstrating that gunpowder could be detonated underwater. As the quarrel with England escalated into war, he began building the world's first submarine. Bushnell described it as resembling "two large tortoise shells of equal size, joined together!"

The Turtle's hull was made of oak timbers six inches thick, bound with iron bands and coated with tar to make her watertight. She had a hatch that could be screwed down until it too was watertight. The hatch had glass portholes about the size of a half-dollar that enabled the one-man crew to see where he was going underwater.

Like a modern submarine, she submerged by taking water into her ballast tanks and rose by pumping it out. For propulsion, the Turtle had a screw propeller attached to an inside crank turned by the crewman. She could make about three knots underwater and stay down for a half-hour.

On the night of September 6, 1776, Bushnell and his assistants lowered the Turtle into the water near Manhattan's South Ferry landing and screwed into position a cask of gunpowder, containing a clock and gunlock firing mechanism.

Sergeant Ezra Lee entered the craft and began the first submarine attack. The target was HMS Eagle, Lord Howe's flagship. A screw on top of the submarine was supposed to secure the cask to the hull of the Eagle. The clock would start ticking. The Turtle would have a half-hour to put some distance between herself and the explosion.

Unfortunately, the screw struck the iron bar connecting Eagle's rudder hinge to the stern and Lee got nowhere. Rattled, he mismanaged the Turtle's ballast, and she shot to the surface as dawn broke. The British spotted her and began hot pursuit. But they changed their minds when Lee cut loose his cask and it exploded. The blast knocked people out of their beds in New York and threw the British fleet into a panic.

A few weeks later, as the Americans' grip on New York grew shaky, the British sank a sloop carrying the submarine up the Hudson, along with numerous other small river craft. Undersea warfare would have to wait another century.
NATHAN HALE—A WASTED SPY

When the American army was routed on Long Island and retreated in disarray to Manhattan, George Washington sent out an urgent call for men to volunteer as spies. He desperately needed to know where the British would strike next.

Captain Nathan Hale of Connecticut volunteered, in spite of repeated attempts by his friends to talk him out of it. One pointed out that the former schoolmaster’s nature “was too frank and open for deceit and disguise.” Besides, the friend said, “Who respects the character of a spy?” Hale replied that every kind of service for the public good “becomes honorable by being necessary.”

Hale’s commanding officer, Colonel Thomas Knowlton, was a good combat soldier but unfortunately knew nothing about intelligence work. His orders to Hale were vague. He gave him neither invisible ink, although it had been invented three years earlier by an American, nor any code that might have enabled him to write letters in cipher.

For a disguise Hale chose the role of Dutch schoolmaster. Armed with nothing but his Yale diploma, he wandered through the British army camps in Brooklyn.

Before Hale found anything important to report, the British attacked across the East River, routing the Americans at Kips Bay and seizing New York City. Hale decided to follow them into the city. No one knows exactly when he arrived, but he spent enough time there to make notes on British troop dispositions and field fortifications.

On September 20 he was trapped inside the city when the Americans sent in teams of soldiers to set New York ablaze and deny the British winter quarters. Hale may have participated in this scorched-earth warfare. At any rate, it was his undoing. The infuriated British began checking the identity of almost every young American they saw. Hale, with his Connecticut accent and soldierly bearing, undoubtedly attracted their attention.

Before he was hanged, Hale chatted with a British engineer, Captain John Montresor, who was moved by his “gentle dignity, the consciousness of rectitude and high intentions.” The American gave Montresor some farewell letters to his family and friends.

Asked if he had anything to say as the noose was placed around his neck, Hale may well have uttered the words attributed to him: “I only regret that I have but one life to lose for my country.” It is a paraphrase of a line from Joseph Addison’s Cato, eighteenth-century America’s favorite play.

Captain Montresor gave Hale’s letters to the British provost marshal, a hardhearted character named William Cunningham, who refused to deliver them. “The rebels should never know they had a man who could die with so much firmness,” Cunningham said.

Montresor later told the story of Hale’s death to the Americans during a parley over an exchange of prisoners. Hale’s friends were ashamed of the way he died and said nothing until fifty years later, when one of them confided the story to his daughter.

Only then did Yale orators and others convert him into a national hero. In 1776 Nathan Hale was closer to being an unknown soldier.