



The First Submarine Attack

by Wilbur Cross

The first wartime submarine attack in history occurred almost two centuries ago, during the American Revolution. The peculiar vessel that figured in that naval engagement was the *Turtle*, designed and built by

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a Connecticut Yankee named David Bushnell. His remarkable little contraption with its wooden hull looked rather like a big barrel. It was barely seven feet high, three feet wide, and four feet long, and its maximum speed was perhaps two miles an hour.

Motive power was provided by a crank that turned an ungainly propeller at the bow, and a tiny rudder at the stern determined direction. The "conning tower" had crude glass ports through which the lone operator could squint as he cranked his way along. Air was supplied through two ingenious tubes that closed automatically each time they submerged.

For armament the *Turtle* carried a crude torpedo filled with some 130 pounds of gunpowder; this detachable mine had a fuse to set off the gunpowder and a timer to set off the fuse, with the entire mechanism chained to an auger bit at the top of the submarine. The operator was supposed to maneuver out to an enemy vessel, dive beneath it, and rise up smack against the wooden hull. With a crank, he would then turn the auger until it embedded itself firmly into the enemy planking. Then he would release the catch—an action that also started the timer—move free of the ship's hull, and hurriedly withdraw.

The man who volunteered to operate the *Turtle* in the first actual attack was a young sergeant, Ezra Lee. Working with Bushnell for several weeks, Lee practiced submerging, rising, and cranking his way around in the Connecticut River. He had to become thoroughly familiar with the array of levers, cranks, valves, and instruments, for while submerged he would have to maneuver almost

in the dark, with only the faint glow of some foxfire (a luminous fungus) to light the depth gauge and the compass.

Late in August 1776 came the order to ready the *Turtle* for combat. It would do battle in New York harbor, where the entire British fleet lay anchored near Staten Island.

On the evening of September 6, 1776, all was in readiness, and the *Turtle* floated quietly alongside a pier at the lower tip of Manhattan. In the darkness the shadowy mass of the British fleet, some two miles to the southwest, could barely be seen.

Two whaleboats were to tow the submarine as far down-channel as possible without risking detection. The tide was supposed to be at the ebb, so that Lee would have still water as he approached the fleet; the turning of the tide would help him return to the point where the whaleboats could again take the *Turtle* in tow.

The strange flotilla moved silently down the harbor until, somewhat west of Governor's Island, the sergeant loosed the tow rope and said, "I can take it from here."

With a "God be with you, Mr. Lee," the escort crew lowered the hatch cover and bolted it. Then the two whaleboats backed away and Lee was alone, with his sub pointed directly toward the spot where the *Eagle*, flagship of the fleet, was said to lie.

Powerfully and deliberately, Lee began cranking the propeller handle until suddenly, in an unexpectedly short time, he sighted through the ports a mass of dark silhouettes—the British ships!

Something was wrong. Perhaps the fleet had begun to move in the night, heading for

New York. Then Lee realized that someone had made an error in timing, for the tide was not at the slack at all, but racing so rapidly out to sea that he would shortly be carried right past the fleet and well out beyond Staten Island.

Furiously he increased the pace of his cranking, trying to buck the tide, and continued his exhausting efforts for almost two hours until the waters became still. As he paused to rest his aching muscles he sighted an enormous man-of-war that could only be the *Eagle*.

He began cranking again. When he was perhaps fifty feet away, he took one last sighting through the port, gulped in a last breath of fresh air through the tubes, and pushed the ballast intake valve. Seawater gurgled into the ballast tank below, and the *Turtle* began descending.

At two fathoms he closed the valve and began to crank the forward propeller until he thought the *Turtle* was just under the broadest part of the ship's beam. Cautiously he worked the pump to eject enough water so that the *Turtle* would start to rise.

Tense seconds passed until, with a slight thump, the *Turtle* came up against the *Eagle*'s hull. Slowly Lee began to crank the auger bit overhead to attach the gunpowder charge to the ship's underside. But something was wrong. The bit was not penetrating, although he could feel it turning and could hear scraping sounds. Suddenly he realized that the bit was rasping against *metal*—the ship's lower hull was sheathed with copper!

No matter how much Lee shifted the

Turtle's position, and no matter how frantically he worked the auger bit, nothing happened. Finally he saw that he would have to retreat, for he was growing faint from lack of air.

It took about ten minutes more for the sergeant to work free from the *Eagle* and get some distance away. Almost collapsing from exhaustion, he surfaced and gulped air through the tubes. Then, peering through the portholes, he saw that dawn was breaking, and realized that if he were to avoid detection, he would have to reach safe waters soon.

Once again he began cranking vigorously, but almost instantly he was sighted by British soldiers garrisoned on Governor's Island, and within minutes a barge manned by troops with rifles put out from the island. Lee was trapped, unable to submerge because the air in the vessel was too foul. There was just one desperate hope—the gunpowder charge lashed to the *Turtle*'s back. He pulled the catch—thus releasing the torpedo and starting the timer—and raced forward.

When the tremendous explosion shattered the air and water, the British barge stopped abruptly, then pulled back to the safety of Governor's Island. In a short while one of the whaleboats reached the little *Turtle*, and America's first submarine hero was released from his prison.

It would be almost ninety years before a submarine would actually sink a ship in battle, during the Civil War. The *Turtle* had made its big effort in vain—and yet not quite in vain, for it had demonstrated prophetically the feasibility of submarine warfare.

CHECK YOUR READING

- The first attack in which a ship was sunk by a submarine took place during**
 - the American Revolution
 - the Civil War
 - World War I
- The device that enabled the *Turtle* to move forward was**
 - an auger bit at the top
 - a propeller at the bow
 - a rudder at the stern
- To make the *Turtle* descend, the operator had to**
 - let the ballast tank fill with seawater
 - pump seawater out of the ballast tank
 - close the tubes that let in air
- To torpedo an enemy ship, the *Turtle*'s operator was supposed to**
 - let a mine float in the ship's path
 - propel a cannonball toward the ship
 - fix a kind of time bomb to the ship
- To get a glimpse of his surroundings, the operator looked through**
 - tiny portholes
 - a periscope
 - Either A or B
- According to the attack plan, the moving tide was supposed to help the *Turtle***
 - race out to Staten Island
 - return to Manhattan
 - Both A and B
- Sergeant Lee sighted the British fleet in an unexpectedly short time because**
 - the ships were moving toward him
 - he cranked faster than planned
 - the tide was still going out
- After submerging to two fathoms, Lee made the *Turtle* rise again by**
 - cranking the forward propeller
 - letting air into the submarine
 - pumping water from the ballast tank
- Lee was unable to torpedo the *Eagle* as planned because the ship**
 - had a metal-sheathed hull
 - was not in the line of fire
 - started to chase the submarine
- The tremendous explosion set off by Lee succeeded in**
 - blowing up a British barge
 - propelling the *Turtle* ahead
 - Neither A nor B

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