



The Navy's atom-powered Nautilus gets royal New York welcome after underwater crossing of North Pole.



What Do You Know About Submarines?

by Evan Charles

TOMORROW America will salute all the men—and women—of the Navy, whether they serve on the biggest battleship or the tiniest tug. However, this Navy Day finds most of our battleships in mothballs, and the submarine fast becoming the Navy's capital ship. Rep. John F. Baldwin Jr. of California has asked that submarines be named after states, as battleships used to be. And Rep. James E. Van Zandt of Pennsylvania has urged construction of 100 nuclear-powered subs in an effort to catch up with a Soviet submersible fleet said to approximate 500—at least three times as many as America has and almost ten times as many as Nazi Germany had at the start of World War II!

To your battle stations now, and let's see how savvy you are about subs.

- | | True | False |
|--|--------------------------|--------------------------|
| 1. The submarine is sometimes called a "pigboat." | ☐ | ☐ |
| 2. Underwater, a submarine cannot travel as fast as it can on the surface. | ☐ | ☐ |
| 3. The submarine was used in the Civil War. | ☐ | ☐ |
| 4. The Soviet Union has no atom-powered submarines. | ☐ | ☐ |
| 5. George Washington used a submarine against England during the American Revolution. | ☐ | ☐ |
| 6. The Navy's first sub was designed by an immigrant from Ireland. | ☐ | ☐ |
| 7. Crews on nuclear submarines have to be changed periodically because they are subjected to large amounts of radiation. | ☐ | ☐ |
| 8. Before Robert Fulton invented his famous steamboat, he designed a successful "diving boat." | ☐ | ☐ |
| 9. The casualty rate among U. S. submariners in World War II was comparatively low. | ☐ | ☐ |
| 10. When the Nautilus recently made its historic underwater crossing of the North Pole, it found the Arctic pack to be an average of one mile thick. | ☐ | ☐ |

Answers

1. True. It has also been described as "an oversized sewer pipe packed tight with hardware and manned by a crew of lunatics."
2. False. Once submerged, it can move faster than on the surface.
3. True. The Union tinkered with a small, hand-cranked submersible called *The Intelligent Whale*. The Confederate *Hunley*, salvaged from an old boiler, went down with her only victim, the Union frigate *Housatonic*.
4. True. Military experts say Moscow has not yet launched an atomic submarine. The United States has launched eight, and authorized 16 others.
5. True. It was a one-man barrel designed by David Bushnell of Connecticut and called the *Turtle*. It was used in August, 1776, in an effort to blow up the British flagship *Eagle* in New York harbor—but it failed. Nevertheless, Washington declared, "I think it was an effort of genius."
6. True. He was John Philip Holland, who sold Amer-

- ica its first submersible in 1900 and later built similar vessels for Britain, Russia, and Japan.
7. False. Despite the proximity of the crew member to radioactive materials, the atomic submarines are so well shielded that a crew member is exposed to less radiation than the average civilian receives from everyday exposure to X-rays, cosmic rays, and natural radioactivity.
8. True. Fulton submitted plans in 1797 for the *Nautilus*, a wooden sub with a hand-operated propeller. France showed some interest in the weapon, but the British Admiralty considered it impractical.
9. False. Losses suffered by the underwater fleet were proportionately much higher than those of the Army, the Air Force, or other divisions of the Navy. Eighteen percent of our combat subs went down with about 15 percent of all personnel.
10. False. The polar ice was found generally to be only 12 feet in thickness.



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