

# Navy Redesigning Its Submarines to Accommodate Women



In this Dec. 5, 2012, file photo, Lt j.g. Marquette Leveque, left, and Lt. j.g. Kyle McFadden, receive their pins to indicate that they're qualified to serve on submarines in a ceremony at Naval Submarine Base Kings Bay. (James Kimber/U.S. Navy via AP) Associated Press | 19 Apr 2017 | by Jennifer McDermott

PROVIDENCE, R.I. — Every submarine in the U.S. fleet was designed with the height, reach and strength of men in mind, from the way valves are placed to how display screens are angled.

That's going to change.

With women now serving aboard [submarines](#), defense contractor Electric Boat is designing what will be the first [Navy](#) subs built specifically to accommodate female crew members.

The designers are doing the obvious things, such as adding more doors and washrooms to create separate sleeping and bathing areas for men and women and to give them more privacy. But they are also making more subtle modifications that may not have been in everyone's periscope when the Navy admitted women into the Silent Service.

For example, they are lowering some overhead valves and making them easier to turn, and installing steps in front of the triple-high bunk beds and stacked laundry machines.

The first vessel built with some of the new features is expected to be delivered to the Navy in 2021, the future USS New Jersey.

The Navy lifted its ban on women on submarines in 2010, starting with officers. About 80 female officers and roughly 50 enlisted women are now serving on subs, and their numbers are expected to climb into the hundreds over the next few years.

For now, the Navy is retrofitting existing subs with extra doors and designated washrooms to accommodate women. But Electric Boat in Groton, Connecticut, is at work on a redesign of the Navy's Virginia-class fast-attack subs and is also developing a brand-new class of ballistic-missile submarines, relying on body measurements for both men and women.

"We have a clean sheet of paper, so from the ground up, we'll optimize for both men and women," said Brian Wilson, Electric Boat director of the new ballistic-missile sub program.

Electric Boat officials had no immediate estimate of how much the modifications will cost.

As anyone who watches war movies knows, submariners are always turning valves, whether to operate machinery, redistribute water between tanks or isolate part of a system that has been damaged.

On the Columbia-class boats, valves will generally be placed lower, Wilson said. Sometimes there will be an extension handle, and some will be easier to turn. Sailors will be able to connect their masks into the emergency air system at the side of passageways, instead of overhead.

Emergency air masks are being moved on fast-attack submarines, too, but the bulk of the changes on those subs are to ensure privacy.

Seats in the control room on the ballistic-missile submarines will adjust forward a little more so everyone can touch each display and reach every joystick. Steps will be added so shorter people can climb into the top bunk or see into the washers and dryers, since clothes that get stuck in the machines are a fire hazard.

The first Columbia-class ballistic-missile sub is scheduled to join the fleet in 2031.

At 5-foot-6, Lt. Marquette Leveque, one of the first women to serve on a submarine, said that she didn't have any trouble reaching valves and other equipment but that the ergonomic changes will be helpful for shorter crewmates.

Leveque was assigned to a compartment with two other female officers on the USS Wyoming. They shared a washroom with male officers. A sign on the door could be flipped to show whether a man or woman was using it.

With so few women on board, the timesharing worked, she said. But with more on the way, the need for separate spaces is greater, she added.

"Privacy is important anywhere you are," she said. "We live on this boat, as well as work there."