

Shipbuilding, Not Boat Building
By Delegate Albert C. Pollard, Jr.
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Growing up on the Northern Neck, I've always been around boats. Indeed, my dad has built several boats, including one 40' Chesapeake Bay deadrise that was a mastery of wood and craftsmanship. It was a three-ply mahogany vessel made with a cold-molded West epoxy system.

Needless to say, this did not prepare me well for last week's tour of the Newport News shipyard.

This shipyard employs over 20,000 people – including many local folks -- and they build U.S. Navy aircraft carriers and submarines. The size, scale and planning involved is almost beyond comprehension. At one point we were taken on a 3-D virtual tour of a steam pipe room in the lower deck of a carrier. The tour guide was able to click on a valve in that 'room' and identify the make and product specs of the valve. Further, the 3-D planning enables repair teams to determine if they can get parts in and out of tight naval spaces.

The whole push in shipbuilding has been towards “modular construction”. For this reason, multi-system pipe assemblies the size of a small house will be built and lowered through holes precut in a deck with tolerances being kept within a few thousandths of an inch – the width of a business card. Everything is so well built it took only a half hour to lower and install the piping system with the floor deck.

Modular construction saves time, increases quality and, ultimately, saves taxpayer dollars. Even the overhead fluorescent lighting is preinstalled on the huge decks before the modules are lowered into place.

Submarines are built in huge cylinders that are highly outfitted before the cylinders are welded together. Each steel plate for each cylinder has a separate identification so if there is a failure the data can be collected. The type of data that is maintained for each individual part includes the installment team, the bending press, the inspector and the steel supplier – just to name a few.

On submarines, tolerances for piecing together the entire boat are kept within three or four decimal points (that's thousandths to ten thousandths of an inch). Northrop Grumman (the owner of the shipyard) has built vessels so large that there is only eighteen inches between the outer hull and the side of the dry dock. Think about that – a thousand foot ship is built inside of a space with less wiggle room than one would have when parking in a family garage.

All this construction is aided by the western hemisphere's largest crane and lots of well trained people.

Just don't expect to see any deadrisers built there.

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