

The science of submarines

We asked ex-Chatham Dockyard Shipwright John De Rose, about how submarines were built at Chatham.

“First we would build a box keel (a keel is the specially shaped piece of steel along the entire length of the bottom of the boat) on the slipway, about 1m x 2m using 12-15mm steel plate. Then we’d erect frames for the pressure hull, these were are about 8m diameter and covered in 25mm plating. These were built in 15 to 20m sections with frames every metre. When complete they were joined to each other to make a 65m long cigar shape – you could compare it to a tube of Rolos.

While this was going on, the front and back of the submarine were being built, and when they were complete they were placed on the slipway and welded to the rest of the pressure hull. The pressure hull is where the crew live and work. It needs to be able to withstand undersea pressure which increases as the submarine goes down.

In order for the submarine to sink, it needs to take on water and this is done by flooding external water ballast tanks. These were welded to the side of the pressure hull throughout its length and could be flooded or pumped depending on whether you wanted dive or rise.

The final part was the walkway for the crew to stand on when afloat, and the conning tower, or fin. These parts were usually made from fibre glass. This is where the radar, radio and air masts are situated together with the periscopes.”

Sounds easy right? Now it’s your turn...