

### METALOCK LINE BORES AND FACES QINETIQ'S TRIMARAN RV TRITON

RV Triton, the research vessel conceived, designed and owned by QinetiQ is currently undergoing extensive sea trials. One of these trials is to assess the suitability of a trimaran to fulfil the Royal Navy's requirements for the Future Surface Combatant (FSC) frigate due to enter service in 2013 to replace the Type 23. QinetiQ was formed from the majority of DERA, formerly the Government's Defence, Evaluation and Research Agency. Part of this trial is also to assess the sea keeping performance and structural design of the trimaran compared to a conventional monohull. Using a trimaran design for a warship is a radical departure from standard naval architecture and the trials programme is being closely watched by other navies.

Vosper Thornycroft undertook the construction for QinetiQ and had a requirement for several line boring and facing operations on the structure. Vosper Thornycroft chose Coventry-based Metallock Engineering to perform the various tasks as it had previous experience of working with them and was confident of a successful outcome. One of Metallock's special purpose boring machines was used to line bore the stern tube to 401mm diameter, 730mm long and the facing to a diameter of 610mm for the inflatable seal housing location. The boring machine is of hollow section and incorporates alignment facilities to permit speedy and accurate settings to predetermined datums, typically in this case the flywheel gearbox or datum mark on a bulkhead.

A second task with the same boring bar was to in-situ machine as a single set-up the upper rudder bore to 500mm by 700mm face and the lower rudder bore in two steps to 592mm diameter and 598mm diameter and the top face to 655mm diameter for a seal.

Using smaller boring bar equipment, Metallock also line bored and faced the port and starboard side hull propulsor structures to 320mm diameter by 50mm deep and cleaned up the hull face to 430mm diameter.

Metallock has been serving industry with mechanical repairs for nearly 60 years and in that time has accumulated a wealth of experience in the art of in-situ machining. The technology saves money in that it is no longer necessary to dismantle and uproot machinery for transportation to a workshop for repair. Instead, Metallock moves in and carries out work on site, and it was this expertise that Vosper Thornycroft called upon for the RV Triton.



*RV Triton, the research vessel, is being trialled to assess its suitability for the Royal Navy. During construction for QinetiQ Metallock Engineering line bored the stern tube, upper and lower rudder bores and propulsor structures. (Picture courtesy QinetiQ).*

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