

MT30 chosen to power US Littoral Combat Ship option



Speed and flexibility are key features of the Littoral Combat Ship in the US Navy's next generation of warships

As its name suggests, the Littoral Combat Ship (LCS) is purpose-designed to undertake military operations within coastal waters. If construction gets the go-ahead, when the first of the series is launched in April 2006 it will be a fast and agile monohull powered by Rolls-Royce MT30 marine gas turbines in a combined diesel and gas turbine (CODAG) arrangement driving four Kamewa waterjets.

The twin MT30 system will take the vessel from 0 to 46 knots in under two minutes

This propulsion system was chosen by Lockheed Martin Maritime Systems & Sensors, one of two bidders selected to design 'flight 0' (initial production, first-generation) LCS vessels, with options to construct up to two of each. The other team is led by General Dynamics' Bath Iron Works, which proposed an LCS based on a trimaran hull.

The Lockheed Martin LCS exploits a combination of lightweight design and modular construction techniques that will enable it to be configured for specific missions and to offer sprint speeds approaching 60 knots. Displacing 2,800 tonnes, the 115.2m-long semi-planing monohull is based on the transatlantic record-holding yacht *Destriero*. The twin Rolls-Royce MT30 system will take the vessel from 0 to 46 knots in under two minutes and the ship's outstanding manoeuvrability will

enable it to accomplish a 360-degree turn at full speed in less than eight ship lengths.

"The selection of MT30 represents another important milestone for our business in North America," said Dr Saul Lanyado, president of the Rolls-Royce marine business. "We are already providing this engine for the US Navy's DD (X) destroyer programme demonstrator, and we are also looking forward to displaying our capabilities as a propulsion system integrator".

The MT30 is a perfect example of the Rolls-Royce strategy of investing once in a single technology and then applying it widely. As a direct derivation of the Trent 800 aero engine, it shares 80 per cent component commonality. For marine applications, the MT30 is suitable as a propulsion or genset drive – and can be packaged for commercial as well as naval applications.

For the Lockheed Martin LCS, Rolls-Royce is also supplying four Kamewa 153SII waterjets – two booster and two steering/reversible units – and shaftline propulsion components. Auxiliary propulsion will be provided by a 360-degree Ulstein Aquamaster retractable azimuthing thruster. Rolls-Royce stabilisation systems are still being considered.

Rolls-Royce is well positioned for the full LCS production programme, currently expected to be for a total of 57 ships, which could be a mix of the Lockheed Martin and General Dynamics' Bath Iron Works designs.

MT30 completes ABS testing programme

In mid July the MT30 completed its arduous ABS testing programme required by the US Navy on the specially built testbed in Bristol. The programme of 1,500 hours and 198 cycles included full power running with ambient air inlet temperatures of over 38°C (100°F). The engine has now been stripped down and all internal components are being evaluated to determine the wear and life characteristics of the engine. Full ABS certification is expected early in 2005.



The Lockheed Martin team's LCS design is a 115.2m-long semi-planing monohull