

# Accommodating a tighter budget

**Andrew Rice**, Marketing Communications Manager, Rolls-Royce – marine, profiles how the MOD's focus is shifting from support to availability...

**T**he UK MOD's Defence Logistics Organisation is always looking at new ways of working to reduce support costs. A recently awarded Total Care Package will deliver benefits for four navies.

As defence budgets become tighter, politicians and military commanders continue to try and squeeze them even further to deliver the best in value. Finding more cost-effective ways to keep the desired number of operational ships at sea is an ever challenging discipline.

As ship replacement costs have increased, so has the number of older ships, and effectively maintaining them in this reduced cost environment, especially where numbers are small, is a particular challenge to the operator and the equipment provider.

Responsible for the total support of about 130 surface ships and submarines in the UK fleet, cost is a key issue for the Defence Logistics Organisation (DLO) who are constantly seeking ways to deliver the same output but at lower costs. Innovative thinking has brought customer and contractor together, led by the commercial reality of the airlines industry, where Rolls-Royce has gradually moved from traditional 'time and materials' contracts to relationships where energy can be focused on increasing the reliability and availability of customer equipment. Known as a Total Care Package, it has advantages to both sides, encouraging meticulous costing and project management.

As a result, a £137m long-term contract for the in-service support of Olympus and Tyne gas turbines used on the Royal Navy's older ships, Aircraft Carriers, and Type 22 and Type 42 destroyers has been placed with the company. An innovative Total Care Package, it also provides the same support for Olympus engines installed on the French Navy's George Leygues class, the Belgian Navy's Weilingen class and the Royal Netherlands Navy's L class frigates, under an inter-government memorandum of understanding. All MOU partners have been actively involved in setting up the contract, which covers a total of 27 ships.

The Olympus (based on the same engine as used on Concorde) and Tyne engines entered service in the early 1970s. Until the new Type 45 destroyer replaces them, Type 42 destroyers form the backbone of the Royal Navy's anti-air warfare capability. They are powered by two Tyne engines,



*Rolls-Royce Olympus (above) and Tyne gas turbines will be supported for the next 12 years*

which give a cruising speed of 18 knots, and two Olympus engines for high-speed running at 31 knots. The carriers HMS Ark Royal, HMS Illustrious and HMS Invincible use four Olympus gas turbines for a top speed of 30 knots.

Commenting on the contract, Lord Bach, the UK's former Minister for Defence Procurement, said: "I am very pleased this new contract has been agreed; it will save taxpayers some £14m over conventional support arrangements. These arrangements will provide long-term benefits to both industry and MOD. Industry will be better able to plan for the long term rather than piecemeal, and the MOD benefits by making the best use of industry's expertise in the support of complex equipment with far less bureaucracy, saving money that can be better used to provide improved support elsewhere."



*The engines in service will now be supported for a fixed monthly fee based on an agreed number of annual operating hours*

All the Olympus and Tyne gas turbines in service will be supported until the ships they power are decommissioned, in approximately 12 years' time. The contract was awarded by the UK Ministry of Defence on behalf of all four navies and contains performance incentives predicted to deliver an overall cost saving compared with previous contractual arrangements.

The new Total Care arrangements reflect the DLO strategic objective of changing its role from service provider to 'decider'. Total Care also changes the overall contractual environment, moving the focus from contracting for support, under enabling terms, to contracting for availability, for a fixed monthly fee, with 24/7 technical support, naval base spares and engine availability (including repair and overhaul). The cost, based on an agreed number of annual engine operating hours, ensures accurate budgeting for the customer and is incentivised to encourage savings year on year.

The MOD has reviewed the programme and identified three areas of improvement to be targeted: reducing repairs by extending engine and component life; reducing repair costs by improving repair performance; and reducing stock through improved supply chain management. Both parties have also agreed a series of key performance indicators requiring close customer co-operation for maximum benefit – therefore, three MOD personnel are now permanently seconded to the Bristol-based Total Care team.

A key feature of the contract is the transfer from the MOD of those risks best managed by the designers, like component obsolescence and reliability. As the original equipment manufacturer, the company has unique product knowledge and benefits from a fleet-wide view, and is better placed to manage the navies' engines as engine numbers reduce, due to existing agreements with other Olympus and Tyne users that include the Pakistani, Chilean and Hellenic Navies.

The transfer of more responsibility will mean the company can get intimately involved in daily operations and take a 12 year view of engine operation. This means plans can be made to introduce engine health monitoring, to give an accurate view of engine life and the data used to enable predictive maintenance. Engine life can be extended, where appropriate, and engine changes planned to coincide with fleet time maintenance periods. It also means the accurate prediction of the number of engine overhauls required each year providing an enhanced level of service.

The data will also be used to optimise the supply chain, producing incremental benefits through quicker overhaul turn times and reduced inventories. Generating these benefits will also improve spares availability

while at the same time reducing costs. As the contract matures, it is anticipated that working in a partnership, with greater insight of the customer's operations, will lead to more innovation and further improvements in working methods.

The Total Care Package will see Rolls-Royce take responsibility for ensuring power is available to keep ships at sea with target cost-based prices for engine availability, related to the number of running hours. It is a concept successfully developed to support a number of commercial airlines and the aero Spey Nimrod power plants, and replaces multiple individual service and overhaul contracts for each gas turbine.

The target cost incentive fee arrangement features an annual maximum price limit based on current costs and planned deployments. Should the Total Care cost exceed the target cost, but fall within the annual price ceiling, profit reduces correspondingly. Cost 'under runs', or savings, achieved below the target cost will generate a profit sharing formula – a win-win situation where both the MOD and the company share the savings.

Modifying the successful commercial Total Care formula to specifically meet the needs of the MOD and DLO for its surface ship fleet has required close collaboration. The partnership is now up and running with a co-located project team. The process of continuous improvement and knowledge sharing to increase efficiency and cost-effectiveness has begun.

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