



New propulsion for catamarans operated by Thames Clippers

SIGHTSEEING IN LONDON THANKS TO SERIES 2000 REMAN ENGINES FROM ROLLS-ROYCE

Who MBNA Thames Clippers
Was 10-cylinder diesel engine in the 2000 series
for marine propulsion
Where London, UK

The Thames Clippers line operates twelve catamarans on the Thames in London for tourists and commuters. Since the previous Series 2000 engines reached their maximum operating hours, six vessels have been operating with reman engines. For Thames Clippers, exchanging with such overhauled engines represented an ideal solution because the catamarans were not out of service.



A Rolls-Royce
solution



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Sean Collins
Chief Executive Officer of Thames Clippers

London, UK – The *Monsoon* is casting off from the pier and starting its tour of the sights along the River Thames in London. It is one of six catamarans operated by the Thames Clippers line that has been operating with two MTU 10V 2000 M72 reman engines from Rolls-Royce since 2008. Reman engines are not new engines, but are completely overhauled engines that Rolls-Royce has reinvigorated for a second lifetime. The *Monsoon* and the other five vessels were built at the same time in Brisbane, Australia, as a result of which all of them reached their maximum operating hours almost at the same time. Consequently, Thames Clippers had to decide whether to buy new engines, have the old ones overhauled or opt for Reman engines. “The reman principle of Rolls-Royce is the perfect solution for us,” says Sean Collins, the Chief Executive Officer of Thames Clippers as the “Monsoon” heads towards its first stopping point. “Rolls-Royce supplies us with an overhauled engine, we remove the old one and install the as-new engine,” he continues. The old one is returned to Rolls-Royce and prepared for use by other customers who would like a Reman engine.

What is remanufacturing?

Remanufacturing involves a complete renovation in which engines and components with 12,000 operating hours are remanufactured according to a standardized industrial process. This involves restoring them to the properties of as-new parts or engines, as well as giving them a full warranty. The central hub for overhauled MTU engines from Rolls-Royce is MTU Reman Technologies GmbH in Magdeburg. As well as complete renovations, the workforce there also develops new processes and procedures that Rolls-Royce applies to standard remanufacturing procedures at all locations assigned to this task. In the Reman process, employees first dismantle the entire engine and clean the components. Then, they assess the components and decide whether they can be remanufactured, or if a new part needs to be used. About 80% of the engine components can thus be prepared for a second engine lifetime. Once employees have remanufactured the old components and reassembled them, a final quality check is carried out as well as a test run on the engine test bench. The time required for an engine to pass through the Reman process is about 20 days on average. However, up to half a year may be required for engines with special configurations.

- 1 MTU Reman engines of type 10V 2000 M72 provide the power required for propelling each of the catamarans. With a power of 900 kilowatts each, the engines propel the catamarans from Thames Clippers at up to 29 knots (54 km/h). (Pictures: Rolls-Royce)
- 2 The catamarans from Thames Clippers call at the sights along the River Thames in London. (Pictures: Rolls-Royce)

Time for engine
to pass through
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20
DAYS





Extreme reduction in out-of-service periods for vessels

“Our fitters exchange the old engines for new Reman engines within one day,” explains Sean Collins enthusiastically. If Thames Clippers had had the first MTU engines overhauled in the traditional way, it would have taken a few weeks during which the vessels would have had to be out of service. This means the line has reduced the out-of-service period for the catamarans to a minimum. Furthermore, overhauled engines are less expensive than new ones. Up to now, Thames Clippers has purchased more than 20 of them, because many of the vessels are already operating with their second Reman engine.

Stopover in North Greenwich

While Sean Collins is talking about the Reman engines, The O2 arena hoves into view on the riverbank. Not far away, the catamaran puts in at the North Greenwich pier. This is the terminus for the RB1 route and the crew uses the longer stopover time to take on fresh water for the vessel and do a bit of cleaning before new passengers come on board. After about 20 minutes, the *Monsoon* casts off again in the direction of the London Eye, at the other end of its route. The vessel accelerates at high-speed. After all, the engines develop an output of 900 kW each, powering the catamaran to a speed of up to 29 knots (54 km/h). The greatest stress on the engines comes from the continuous acceleration and deceleration between the stopping points. “As a result, it is very important for us to check over the engines every morning and evening,” says Sean Collins. Minor maintenance work such as oil or filter changes are carried out by the Thames Clippers fitters themselves. For more significant maintenance work, the line has concluded a contract with MTU UK, the UK subsidiary of MTU. The maintenance contract covers changing the

injectors, turbocharger or fuel pumps when an engine has reached half of its run time. In addition, the MTU fitters check the engines regularly during the first 12 months.

Busy time for Thames Clippers

A few passengers leave the vessel at Bankside pier and new ones embark, after which the catamaran casts off again. The vessel is 38 m long and 10 m across the beam, and can carry up to 220 passengers. Bankside pier is the second-to-last stop on the 45 minute trip on route RB1. This main route was used by 2.7 million passengers in 2013, whilst Thames Clippers forecast to carry 3.6 million passengers across all its routes this year. “Our busiest time is in the summer, or whenever there is tube or rail disruption,” says Sean Collins. The number of tourists amongst the passengers has increased significantly over recent years, he continues. The catamarans of Thames Clippers carried more passengers than ever before in 2012 during the London Olympic Games. That was also the acid test for MTU Service. “As a precaution, MTU UK sent us some important spare parts and a Reman engine as backup in case of a malfunction,” explains Sean Collins. When problems did in fact crop up with an engine during this busy time, the staff at Thames Clippers were able to remove the engine and install the Reman replacement engine in only one day. Later, the fitters discovered that the engine failure was only due to a wear part.

When the *Monsoon* ties up at the London Eye stop, it is almost the end of the journey. The final highlight of the route for the tourists here is a view of the Palace of Westminster and the world-famous Big Ben. The crew only has a few moments to take a break. Then the river taxi starts its next trip along London’s famous riverbank sites.