

# Speed trials on cruise liner OLYMPIC VOYAGER

**Royal Olympic Cruises accelerated into the fast lane recently when its latest high speed liner Olympic Voyager received a top award for the most significant new cruise ship. MARIN conducted the Voyager's sea trials.**

The never-ending quest for speed continues in the cruise and ferry business. Passengers want the excitement of fast transit, an extra day ashore and the widest range of destinations possible, which means that there is always a need for ever-speedier vessels.



## Answering passenger needs

Royal Olympic Cruises contracted Blohm + Voss for the design, construction and delivery of two luxury cruise liners. The challenge to combine high speed with sufficient volume and within the constraints of economy and comfort was addressed by the German yard. With a capacity of 920 passengers and a service speed of 27 knots, measuring 180 m in length, with a beam of 25.5 m and a design draft of 7.1 m, the vessel is powered by four 9450 kW Wartsila 91 46 C diesels driving two Kamewa controllable pitch propellers. The vessel is equipped with a single rudder.

## Sea trials


MARIN's Trials & Monitoring group was asked to assess vessel performance and to certify the vessel's contract requirements. The sea trial program comprised speed and power trials and manoeuvring performance tests. Shafts were instrumented with strain gauges to record the developed torque, and the speed and track of the vessel were accurately measured by D-GPS.

Standard manoeuvring trials such as zig-zag, crash-stop, acceleration, rescue and turning circle tests

were conducted and analysed according to IMO requirements. The rudder angle, heading and rate of turn were measured.

In addition, the wave conditions during the trials were monitored continuously by a dedicated doppler level radar mounted on the bow of the vessel. Accounting for the vertical vessel motions the absolute wave height and period can be derived from the measured distance between the bow and the wave surface.

As is often the case, these sea trials had to be conducted under non-ideal conditions and the measured wave height and period were used as input for the resistance analysis. Besides added resistance due to wind and waves, the measured trial data were also corrected for actual displacement of the vessel, current, sea water temperature and density to determine the speed for the contractually agreed conditions.

Results of the speed trials formed the basis of the acceptance of the vessel by Royal Olympic Cruises, which was 15 days earlier than scheduled. 

Olympic Voyager.

Courtesy Royal Olympic Cruises.

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