

Supplying the right engines for a hybrid patrol boat

ZOETERMEER – May 2017 – In April this year, MAN Rollo supplied two engines for the RPA8 hybrid patrol boat, which Kooiman Shipyard was commissioned to build by the Port of Rotterdam Authority.



When putting out a tender for the patrol boat, the Port of Rotterdam Authority defined a number of principles, including the cost of ownership, emission reduction and minimising wave generation. The tender also specified that the innovative patrol boat would be equipped with a hybrid propulsion system combining diesel electric and diesel direct power; diesel electric fed to one of the engines up to a speed of 25 km/h and diesel direct for both main engines at speeds between 25 km/h and 35 km/h. By correctly loading the engines, the RPA 8's combustion is more efficient, which reduces fuel consumption and emissions. An aftertreatment system further limits the emission of hazardous substances. Moreover, heat recovered from the engines' cooling water system heats the deckhouse.

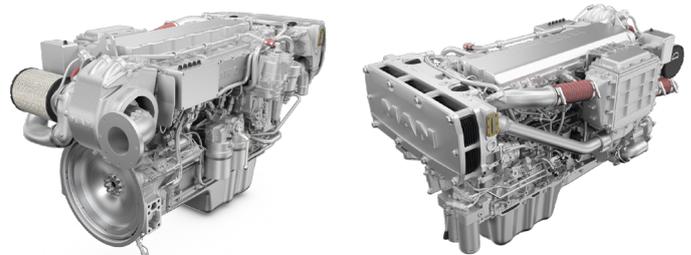
Special hull design

"In this contract, we wanted to show that it is possible to save fuel by effectively aligning the combination of diesel and electric power," says Maarten Kooiman, Head of the Design Bureau at Kooiman Engineering. The Kooiman shipyard also collaborated with the Van Oossanen group, which designed a hull specifically for the RPA 8. The hull is a combination of two patented inventions: the Fast Displacement Hull Form and the Hull Vane. This minimises wave generation and results in a 20% reduction in resistance of the vessel at top speed. To reach the desired top speed (35km/h), 736 kW is sufficient. Maarten Kooiman: "This allows us to install smaller main engines. The information gained from various engine suppliers showed that MAN Rollo could supply engines in the required power range and at a low lifecycle cost."

The right engines

The Port of Rotterdam Authority is striving to become a sustainable port. "Our engines are in keeping with this," says Karel Schuurman, Sales

Manager at MAN Rollo. "The engines are very modern and feature the latest common rail fuel injection technology. As a result, their fuel consumption is low and the exhaust emission levels are lower than that prescribed by the current global emission standards." This is a major advantage, because the patrol boat will operate in a busy urban area with a lot of waterborne traffic. MAN Rollo supplied two MAN D2676LE424 engines to power this innovative patrol boat. Karel Schuurman: "The engines from this heavy-duty range each generate 382 kW@1800 rpm and are the best option for the RPA 8 with respect to dimensions and weight." Maarten Kooiman: "The RPA 8 will start to operate in the Port of Rotterdam in September. We expect this vessel to become the new standard for patrol boats used in inland and coastal waters."



Would you like to know more about what engines are available for hybrid, maritime applications?

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