

Diesel engine surpasses IMO standard

The launch of *L'Astrolabe*, a 72m polar logistics vessel fitted with a complete Wärtsilä propulsion machinery package and Wärtsilä NOR (NO_x reducer) selective catalytic reduction (SCR) exhaust gas cleaning systems for all the main engines, took place in July. This is the first vessel operating with IMO Tier III engine international air pollution prevention (EIAPP) certified Wärtsilä diesel engines.

The vessel was built by Piriou in France for the French Southern and Antarctic Lands Administration. It will be used to transport personnel and supplies to the Dumont d'Urville research station in Antarctica.

The four IMO Tier III certified 8-cylinder Wärtsilä 20 diesel engines are combined with Wärtsilä NOR systems to be fully compliant with the IMO Tier III exhaust emission regulations set out in Annex VI of the MARPOL 73/78 convention. The IMO Tier III EIAPP certification was carried out according to Scheme B based on the requirements of IMO Resolution MEPC.198(62). The Tier III EIAPP certificates were issued by the Bureau Veritas classification society.

The full Wärtsilä scope of supply for this vessel comprises four Wärtsilä 20 main engines, two Wärtsilä controllable pitch propellers and shaft lines including Wärtsilä reduction gears, Wärtsilä NOR systems, and a Wärtsilä tunnel thruster.

SCR technology is currently the primary means for NO_x abatement, and the NOR system is available for use with all Wärtsilä medium speed engines. It enables vessels



to be compliant with global NO_x emission control area regulations. Furthermore, the overall performance of the engine and exhaust gas cleaning system is optimised in terms of emissions reduction, noise abatement and engine efficiency. Wärtsilä provides IMO and EPA Tier III certificates for its engines combined with its NOR system.

Juha Kytölä, vice president, environmental solutions, Wärtsilä Marine Solutions, said: "We have been pleased to deliver this combination of engines and SCR systems in the same scope of supply, and take full responsibility for exhaust gas emissions, performance, documentation, statutory approvals and certification. Such packages are convenient for shipyards and ship operators and, triggered by IMO regulations, are expected to be specified by an increasing

▲ *Piriou-built L'Astrolabe will supply the Dumont d'Urville Antarctic research station*

number of shipyards and ship owners. The engine needs to be SCR compatible, and the SCR should be fit for purpose. It has been a pleasure to work with Chantiers Piriou."

Piriou CEO Vincent Faujour said: "For this type of vessel operating in the most challenging ice and weather conditions, the engine selection had to be carefully made. We know and respect Wärtsilä's capabilities and technical know-how, and we are confident that we have made the best possible choice for this important vessel."

L'Astrolabe will have accommodation for 60 people, a cargo capacity of 1,420 tonnes, and is fitted with a helideck large enough to accommodate two helicopters.

Robust new propulsor utilises eco-friendly PM motor

A new Steerprop CRP ECO LM propulsor featuring permanent magnet (PM) technology from The Switch has been unveiled. Especially suited to harsh environment operation, the lightweight, compact unit offers vessel owners a combination of efficiency, power, easy installation and maintenance, as well as reduced lifetime costs.

The new propulsor utilises a vertical PM motor, allowing it to sit inside a vessel hull, which simplifies installation and maintenance. When the motor is placed on top of the thruster, the unit size can be more compact, increasing efficiency without compromising on hydrodynamics and lowering ongoing operational costs.

While innovative propulsion units have been developed by Finland-based Steerprop since 2001, fellow Finland-headquartered company The Switch, a leader in advanced

drive train solutions, is using its proven technology to enhance performance in marine applications. The PM machine, currently in serial production, has a solid track record of operating in the world's largest wind turbines in rough offshore conditions.

Mika Koli, business development manager of The Switch, said: "The contra-rotating propeller (CRP) units by Steerprop are well known for their excellent hydrodynamic efficiency, in some cases delivering up to 25 per cent less fuel consumption than a single propeller.

"By combining their unit with our PM motor, which gives optimal efficiency throughout the entire speed range, we can take the vessel energy, emissions and cost savings to the next level. We believe the unit sets a new benchmark for efficiency, simplicity, and reliable, predictable marine performance."

The propulsor has received the highest Ice classification. It is robust and, thanks to its lightly loaded CRPs, offers lower noise and vibrations, enhancing levels of comfort for those onboard.

Hannu Jukola, senior sales manager at Steerprop, said: "This is now our third generation of CRP propulsors and an important step forward, both for our business and marine propulsion performance in general. Now vessel designers and builders have a solution that is simple to install, while owners and operators can ensure optimal performance and reduced costs through greater efficiency and simple maintenance. In addition, they can be better global citizens by cutting back on emissions.

"This is a best in class solution that fully capitalises on the potential of two energy-efficient innovations, in one simple, effective and powerful propulsion unit."