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Team players: Six MaK M 43 C marine engines power HAL's "Nieuw Amsterdam"

Hamburg, Germany – Six MaK M 43 C engines with a combined output of 64,000 kW on the cruise ship "Nieuw Amsterdam" will underscore Caterpillar Marine Power Systems' (CMPS) capabilities in high-end propulsion technology. The latest newbuilding for Holland America Line (HAL) will again rely on a diesel-electric configuration of 4x MaK 12 M 43 C and 2x MaK 8 M 43 C engines. When she is delivered in 2010, the 86,000 GT Nieuw Amsterdam will blend sophisticated design with cutting-edge engine technology and further boost the reputation of the HAL brand.

The last of the MaK engines are now undergoing final customer acceptance tests at the Caterpillar Motoren facility in Rostock, Germany. Experts from both Caterpillar and the responsible Marine Classification Society (MCS), Lloyd's Register, are checking the engine performance even under extremes which it will almost certainly never have to experience in real life. On-hand inspection of major engine components as well as the boroscoping of liners will ensure that engine assembly was to highest quality standards and that no unexpected wear will occur. Shipment of all six engines to Fincantieri's Marghera shipyard in Italy is scheduled for the end of March.

Bella Donna

In March 2006, Italian shipyard Fincantieri ordered the first ship set comprising 4x MaK 12 M 43 C and 2x MaK 8 M 43 C marine engines to power the new "Signature Class" cruise ship being built for Holland America Line. The vessel was delivered in 2008 as "Eurodam" and has already logged thousands of miles at sea. Following the initial order, Fincantieri clinched contracts for another four vessels with the same engine configuration.

Apart from Eurodam and Nieuw Amsterdam for HAL, Carnival brand Costa Crociere will also receive two ships each of 92,700 GT and for 2,828 passengers. The first, “Costa Luminosa”, will be delivered in April while the second, “Costa Deliziosa”, is for delivery in January 2010. In late 2007, Fincantieri placed a fifth order for this engine configuration destined for Cunard Line’s new “Queen Elizabeth”, which is also scheduled for delivery in 2010.

Bella Tecnologia

All the Fincantieri newbuildings rely on diesel-electric propulsion. The MaK engines will drive AC generators to deliver the energy needed for onboard facilities, auxiliary systems and the Azipod propulsion technology which actually propels the ships.

Each MaK M 43 C engine will be fitted with Flexible Camshaft Technology (FCT) to guarantee invisible smoke at all loads and NO_x emissions below current IMO (International Maritime Organization) regulations. Utilising FCT, the engines will meet both the extended expectations of passengers on the sun deck and the more stringent legislative rules in some areas of the world, for example the Alaska Marine Vessel Visible Emission Standards. In addition, all M 43 C series engines can be easily converted to IMO II-compliant MaK Low Emission Engine (LEE) standard at any time if the operator desires.

Among the latest innovations in on-board propulsion technology is the MaK DICARE engine monitoring and maintenance system. By tracking both current engine status and long-term trends, the system enables optimum utilisation of scheduled maintenance, service personnel and spare parts, cutting operating costs and extending service life. DICARE spots malfunctions at a glance, assessing data, plausibility and the built-in expertise of decades of MaK diesel engine design.

Bella Maccina

“It’s a clean, neat design with very easy access to all major components” – that’s how Chris Joly, Principal Manager of Marine Engineering at Carnival Corporate Shipbuilding, Southampton, United Kingdom, describes the MaK M 43 C engine series. He also underlines the excellent support given by Caterpillar Marine and the various technical teams involved at Caterpillar

Motoren facilities in Kiel and Rostock. “We have experienced satisfactory operation and good fuel economy in daily service of AIDA and HAL newbuildings,” Joly continues. “However, most of all we are satisfied with the Flexible Camshaft Technology and its guarantee of extremely low smoke levels even at minimum power. This is a perfect match with Carnival’s focus on sustainable development and environmental protection. We are looking forward to seeing the MaK M 43 C series engines also in service in the Costa and Cunard newbuildings!”

Leif Gross, Sales Director of Global Cruise Projects at CMPS in Hamburg, underscores the partnership involving Carnival Corporate Shipbuilding, Fincantieri and Team Caterpillar®. “Diesel-electric propulsion, increased engine performance, resilient mounting, online condition monitoring and reduced engine emissions – these are all innovations that will make the Nieuw Amsterdam another fascinating project both inside and outside the engine room”, he said.

Characters: 4,898

Pictures available on request:

- 1.) Cruise Vessel Eurodam with 4x MaK 12 M 43 C & 2x MaK 8 M 43 C Engines**
- 2.) MaK 12 M 43 C – Boroscoping the Liners**
- 3.) MaK 12 M 43 C – Checking the Rocker Arms**
- 4.) MaK 12 M 43 C – Discussing DICARE Data**
- 5.) MaK 12 M 43 C – Spray-painted**

About Caterpillar Marine Power Systems

Caterpillar Marine Power Systems, with headquarters in Hamburg, Germany, groups all the marketing and service activities for Cat and MaK marine engines within Caterpillar Inc. The organisation provides premier power solutions in the medium- and high-speed segments with outputs from 93 to 16,000 kW in main propulsion and 10 to 7,680 kWe in marine generator sets. The sales and service network includes more than 2,100 dealer locations world-wide dedicated to support customers in ocean-going, commercial marine and pleasure craft wherever they are.

More information is available at: www.Marine.Cat.com.

About Caterpillar

For more than 80 years, Caterpillar Inc. has been making progress possible and driving positive and sustainable change on every continent. With 2007 sales and revenues of \$44.958 billion, Caterpillar is a technology leader and the world's leading manufacturer of construction and mining equipment, clean diesel and natural gas engines and industrial gas turbines.

More information is available at: www.Cat.com.

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