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Saving Lives – Cat C32 Marine Engines for new rescue cruisers

Hamburg, Germany – Making progress possible and bringing positive change to people's lives is not only the corporate claim of Caterpillar but also applies to many applications of its technology around the world. A striking example is the new mid-size Search And Rescue (SAR) vessel "SK 30" ordered by the Deutsche Gesellschaft zur Rettung Schiffbrüchiger (DGzRS) and powered by Cat® C32 marine engines. State-of-the-art engine design along with attractive delivery terms and tailored after-sales service won this order for Caterpillar Marine Power Systems (CMPS) and its German dealer Zeppelin Power Systems (ZPS).

Operating a tailored fleet

The German maritime search and rescue service (DGzRS) was founded in 1865 and still works as an independently operating body. Currently, 20 rescue cruisers and 41 lifeboats of 7 to 46 metres length are in service out of 54 stations on the North Sea and Baltic. Together, the rescue cruisers alone log more than 70,000 nautical miles per year on missions or patrols.

To best meet the specific requirements of different rescue districts, the DGzRS has developed a new rescue cruiser, capable of closing the gap between its 10-metre lifeboats and its smallest 23-metre cruisers. While maintaining the extremely seaworthy hull, which has been tried and tested over decades, this future type of boat also features the latest developments in ship and engine building, as well as in electrical engineering and electronics. The first two units of the new class ordered with the German Fassmer shipyard, Berne/Motzen near Bremen, are scheduled for commissioning end of 2008 and early 2009.

Specifying the optimum boat

The specifications for newbuildings involved on missions in shallow areas and close to shore pose particular technical challenges. That's because this type of rescue cruiser must be capable of providing the same high degree of safety as all other DGzRS units under extremely adverse weather conditions on the open sea. Particular attention is paid to the structural strength of the hull, while keeping the design lightweight. Drawing just 1.3 m, this new class of craft can be deployed in areas where larger rescue cruisers have to rely on their tenders. Other characteristics of this boat type are ergonomically designed on-board workstations to provide medical first aid, and hydraulic auxiliary propulsion for rescue and towage operation.

DGzRS rescue units are seen as highly weather resilient. They are among the most modern and efficient SAR units in the world. Like its predecessors, the new rescue cruiser is a welded construction of saltwater-proof light alloy, built according to the tried and tested grid frame system and characterised by excellent seaworthiness and self-righting capabilities. Being relatively lightweight, an equivalent engine power enables high speeds and quick manoeuvring. A single Vee-12, 32 litres, Cat C32 marine engine, rated 1232 kW at 2,300 rpm, provides a service speed of 22 knots. And Caterpillar's proprietary electronic engine control perfectly balances power supply, fuel consumption and exhaust emissions at any given load. The Cat main engine is almost free of ancillary units, thus engine power is almost exclusively available for the propeller. This innovative propulsion concept further improves vessel reliability and manoeuvring capabilities.

Establishing a new class of rescue cruisers

The "SK 30" is 19.90 metres long, with a moulded breadth of 4.75 metres, a moulded depth of 2.70 metres and a design draught of 1.30 metres, leading to a displacement of 38 tons. The keel-laying for the first newbuilding took place at the Fassmer shipyard in July 2007. In February 2008, the Cat C32 marine engine passed comprehensive test bed trials at the workshops of Zeppelin Power Systems in Achim, near Bremen. On May 8, 2008, the engine was married with the almost completed hull. Sea trials began in September and the rescue cruiser and its crew of three is scheduled to enter regular service out of Greifswalder Oje in the Baltic Sea at the end of 2008. Meanwhile, construction of the second newbuilding, "SK 31", is also making good

progress and the vessel is expected to enter service early 2009. Repeat orders for the “SK 30/31” design for other stations are under consideration.

Being in good company

Utilising the power of Cat engines to save lives is also the approach of numerous other governmental and independent SAR authorities world-wide. The renowned Royal National Lifeboat Institution (RNLI) in the UK, for example, operates a fleet of more than 300 lifeboats of up to 17 metres length, with the bigger boats powered almost exclusively by Cat engines. The all-weather, 17 metre, “Severn Class” built between 1996 and 2003 comprises 46 boats, each propelled by twin Cat 3412E marine engines rated 932 kW at 2,300 rpm. The slightly smaller, 16 metre, fast slipway, “Tamar Class” being currently delivered, uses twin Cat C18 engines rated 747 kW at 2,300 rpm. The even smaller, fast carriage, 12 metre, “Mersey Class” introduced in 1988, is powered by twin Cat 3208 engines. It’s no surprise then that the prototype of the RNLI’s most-recent, 14 metre, fast carriage lifeboat “FCB2” relies on 2x Cat C18 engines driving water jets. This design is scheduled to enter series production in 2010.

Utilising the RNLI “Arun Class” design, the Canadian Coast Guard ordered a couple of similar lifeboats powered by twin Cat 3408E engines in the mid-90s. Following the great success of those boats, a series of 31, 14 metre, lifeboats was launched between 1998 and 2004. Based on a design initially developed for the US Coast Guard, the boats were powered by twin Cat 3196 engines rated 336 kW at 2,100 rpm. Likewise, coast guards and governmental SAR authorities in many parts of the world rely on Cat and MaK marine power in their lifeboats, patrol craft and rescue vessels.

Looking forward to commissioning

“The Cat C32 marine engines almost perfectly match the power requirements of the new rescue cruisers SK 30 and SK 31.”, said Holger Freese, Project Manager SK 30/31 at DGzRS headquarters in Bremen, Germany. “Engines aboard our ships have to operate even under extreme conditions to save people from distress. Rugged, reliable, easy to maintain and available 24/7 – that’s an obligation we won’t compromise on!”.

“We are pleased that the DGzRS decided to go with Cat C32 marine engines for their most recent newbuildings.”, commented Klaus Dammann, Sales Director Marine Division, Zeppelin Power Systems, Hamburg, Germany. “This order underlines our capabilities to expand our business into market segments which used to be served almost exclusively by competing brands. But with Caterpillar Marine Power Systems’ advanced electronically-controlled C-series marine engines, we have excellent sales arguments when it comes to power density, fuel efficiency and total cost of ownership!”.

Characters: 6,949

Pictures available on request:

- 1.) DGzRS SK30 powered by Cat C32 Marine Engine**
- 2.) Cat C32 ACERT Marine Engine right side view**
- 3.) Cat C32 Marine Engine for DGzRS SK30 on the ZPS Testbed**
- 4.) Cat C32 Marine Engine being installed aboard DGzRS SK30**

About Caterpillar Marine Power Systems

Caterpillar Marine Power Systems, with headquarters in Hamburg, Germany, brings together all the sales and service activities for Cat and MaK branded marine products within Caterpillar Inc. This organization provides premier marine power solutions (high and medium speed with outputs from 11 kW to 16,000 kW) and customer service from a single source for the global ocean-going, commercial and pleasure craft markets. The Caterpillar Marine Power Systems sales and service network includes more than 2,100 dealer locations world-wide and is well positioned to support customers wherever they are.

More information is available at www.cat-marine.com or www.mak-global.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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