IMSV "SERKEBORG" instrumented for ice trials

In October 2012 Dutch shipyard Koninklijke (Royal) Niestern Sander in Delfzijl delivered IMSV"SERKEBORG" to Wagenborg Offshore. MARIN will conduct extensive measurements in ice.

This Ice Breaking Multipurpose Support Vessel (IMSV), which is equipped with two Polar Class azimuthing thrusters, has been jointly developed by Wagenborg Offshore and Royal Niestern Sander for offshore services in shallow water and under arctic conditions using Wagenborg Offshore's 14 years' experience operating in the North Caspian sea. Model tests in ice were conducted at AARC in Helsinki.

To verify the design criteria and the contractual requirements, IMSV "SERKEBORG" will be subjected to extensive ice trials in spring 2013. During these trials not only will the sustained speed in ice be recorded but additionally, the manoeuvrability and the vessel's general performance in ice. Furthermore, Wagenborg requested that the ice loads on the hull should be measured.

For this purpose MARIN's Trials & Monitoring group equipped the vessel with an extensive monitoring system. To measure the hull strains, 36 strain gauges were installed divided over five cross-sections of the vessel. The sensors located in double bottom tanks and side tanks were fully capsulated based on MARIN's extensive experience of instrumentation in FPSO cargo and ballast tanks. The system has been designed to operate in temperatures of between + 40 and -30 degrees Celsius..To reduce cabling and avoid signal loss, Ethernet connections were made from local junction boxes to the central measurement computer..

Motions of the vessel in all six degrees of freedom will be measured by a combination of a motion sensor unit and a twin DGPS system. Thruster power, rpm and angles, will be recorded by the Wärtsilä monitoring system, which is directly interfaced with MARIN's computer system.

Ice movements will be recorded utilising CCTV cameras located on the bow and at the towing winch location. The ice trials will be conducted in close cooperation with Wagenborg and AARC and during the actual trials the ice properties will be measured by AARC specialists.

"SANABORG" sister to "SERKEBORG"

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