SCHAEFFLER

Schaeffler Global Technology Solutions

Maritime industry

REINTJES GmbH, Germany

Sea Rescue Relies on REINTJES and FAG SmartCheck

REINTJES GmbH is a globally active independent company focusing on drive technology. The company's product portfolio for the maritime industry includes gear units for main drives in a power range of 250 to 30 000 kilowatts. Along with dredger gear units and step-up gear units, it also includes complex system solutions such as pod and hybrid drives.

Challenge for Schaeffler

REINTJES was recently considering including FAG SmartCheck in its portfolio of after-sales products for ship gear units. In order to be convinced as to the capability of the compact monitoring system, a pilot project was carried out on a sea rescue cruiser of the German Maritime Search and Rescue Service (DGzRS). Since the ships of the DGzRS are used for rescuing people and saving ships in dangerous situations, constant availability is of the utmost importance.
In addition, the test was designed to show if weather conditions during the different seasons have an influence on the vibrations of the gear units.

Schaeffler Solution

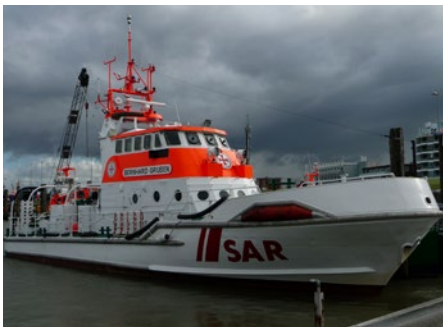
REINTJES fitters installed an FAG SmartCheck on the gear unit of the sea rescue cruiser for early detection of any unusual vibrations. It recorded all vibration data within the test period of twelve months. An LED lamp on the device directly informed the crew on board about irregularities in vibration behavior.
The data collected were regularly read out manually by REINTJES fitters at the FAG SmartCheck and sent via the Internet for subsequent analysis by Schaeffler.

REINTJES POWER TRAIN SOLUTIONS

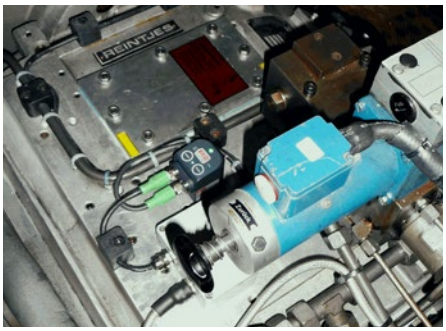
Technical Information on the Gear Unit
Type of gear unit
Ship gear unit:
WVS 440
Output:
990 kW
Motor speed:
1 900 RPM
Propeller speed:
935 RPM

LuK INA FAG

Logo of the German Maritime Search and Rescue Service



Sea rescue cruiser in the harbor



Gear unit monitoring with FAG SmartCheck

Customer Benefit

With FAG SmartCheck, the crew was constantly informed about the condition of the gear unit. The reliability of the ship has top priority in the case of distress at sea and can mean the difference between life and death. Nothing conspicuous was detected on the gear unit during the test period and even the different weather conditions showed no influence on the vibrations occurring in the gear unit. Early detection of incipient damage allows a predictive and inexpensive maintenance of the gear unit. Unplanned interruptions of operation and shut-downs due to a lack of replacement parts are therefore prevented. In addition, the danger of an expensive repair is reduced, which in the case of a damaged bearing could involve costs spiraling into tens of thousands of euros.

What‘s special

The solution presented here can be transferred to other ship gear units and assemblies in maritime applications, whereby– depending on size – several FAG SmartCheck can be applied. Vibration monitoring is only one building block in the extensive Schaeffler range for this industry. Thus, depending on the application, other services such as video endoscopy or oil monitoring can also be used.

Technical Information about the Solution
Monitoring system:
FAG SmartCheck
Vibration sensor:
High-resolution piezoelectric sensor
Operating parameters monitored:
Bearing temperature
Diagnostic procedure:
• Time signal • Envelope • Speed and frequency entrainment • Range and trend analysis

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