

Title: Third Generation Thruster Retrieval System Taking Thruster Maintenance Planning off the Critical Path

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Abstract

Drilling rig operators have been pushing classification societies, yards and equipment suppliers to increase a drillship's dry-docking interval to 10-years. By means of active monitoring systems, thruster manufacturers have been able to expand this interval. In order to minimize the costly non-productive time due to unavailability of thrusters even further, it would be beneficial to make thruster maintenance and overhaul independent from the vessel's operations. This is made possible by the 3rd generation Thruster Retrieval System which provides safe and controlled access to the thruster on deck. This way optimal offshore thruster maintenance capabilities are realized, so that thruster failure probability is minimized and longer dry-docking intervals can be justified.

This 3rd generation TRS has been incorporated in the Magellan drillship design, equipped with 8 identical thrusters, each mounted onto a TRS canister. By means of the TRS' rack and pinion system the thrusters can be fully retrieved above main deck. The system enables thruster preventive maintenance on board and on deck, during vessel operation. It also provides the option for full thruster change-out on-deck minimizing diver operations and associated downtime, as this operation can be executed offshore without the need of crane vessel assistance. The Magellan DP system design allows one thruster to be taken off-line, so the maintenance and change-out planning can be done completely independent of the drilling operational planning, further increasing uptime.

The authors will present the system functionality, the main system components and the integration in the drillship design. Practical design cases will be used to demonstrate the vessel performance.