Ship will make its own waves for rig safety (w/ Video)

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(Phys.org) —A so-called "hotel" ship to accommodate offshore oil rig workers is under construction, which will be engineered in a way to maintain its stability even over rough seas. The new Norwegian ship will make its own waves with internal water tanks. The effort is not only purposed for the comfort of the workers servicing the platforms but for safety. The design will support safe movement from the ship to the platform and precision work while over rough seas. How will this ship

make its own waves? The answer is U-shaped water tanks integrated into the ship's hull. The tanks will generate waves in such a way that can stabilize the vessel.

The water is to be set in motion in opposing phase to the wave forces acting on the hull. According to the design, valve openings can be adjusted depending on the ship's roll period; the motion of the water in the tanks is calibrated to match the strength of the waves on the sea.

The ship will be equipped with azimuth thrusters (one definition of azimuth thrusters is an arrangement of propellers placed in pods that can rotate in any horizontal direction). According to a report on the project from SINTEF, the largest independent research organization in Scandinavia, the ship is equipped with six azimuth thrusters – "propeller drives with directional control used to keep the ship in the same position when in hotel mode."

The ship is 500 feet long; 800 workers can be accommodated with housing, gym, sauna, two pools, and office space.

"This concept provides an alternative to the semi-submersible platforms commonly used at present," said Sverre Anders Alterskjær, a research scientist at the Norwegian Marine Technology Research Institute (MARINTEK). "The aim is to create a more mobile hotel unit which can be leased by oil companies which operate in several parts of the world. Our job has been to give the ship characteristics which make it more comfortable to live on at sea," said Alterskjær, a research scientist. MARINTEK is a Norway-based marine simulation facility, which tested models of the new ship.

The project, according to the SINTEF report, has a number of players; the ship was designed by a maritime design company SALT, under contract for Østensjø. Johannes Eldøy, a marine designer at SALT, said,

"The most important thing has been to improve the efficiency and safety of the connection between the offshore installation and the gangway, which is as much as 55 meters long. This is a critical point because the vessel must display the least possible vertical motion in response to the waves while at the same time maintaining its position."

According to SINTEF, the integrated system designed to reduce rolling of the vessel was developed by Hoppe Marine and tested by Alterskjær and his research colleagues at MARINTEK.

The ship is being constructed by Hyundai Heavy Industries in South Korea under contract for Østensjø. The ship is expected to be ready in 2015.

More information: www.sintef.no/home/MARINTEK/Ne … hat-waves-wont-rock/