

## *TECH TIDBITS, vol. 23*

### Thrusters

When a rig started the tow from the shipyard to the rig's load-out destination, the captain explained that he was reluctant to run the thrusters to assist the tow vessel, because the vessel had slowed down when the thrusters were turned on during the Atlantic transit about six years previously.

#### Description of Issue

As a test, the thrusters were tried again during the tow and, sure enough, the speed dropped by 1.5 to 2 knots. This was puzzling as speed should have *increased* by the same amount. The thruster orientation was checked on the topside, and both thrusters were indexed to the same red line on the azimuth gear.



#### Solution

After reaching the load-out location, divers were sent down to check the thrusters. They found that the thrusters were mounted in an inverse orientation with one forward and one aft, and so they were facing each other when indexed to the same line on the azimuth. This situation had existed since the rig's construction.

Things were corrected by indexing the aft thruster to the blue index mark instead of the red, and tested on the final leg to the drilling location. Speed under tow was increased by 2 knots, shaving a full day off the next 500-mile transit and presumably reducing the time to first well spud.

### Hold Heading vs. Transit Mode

A new drillship was headed from initial load-out to the first drilling location. After getting under way, it was noticed that the bridge crew was operating the vessel in the "hold heading" setting instead of "transit mode." The crew answered that there was no difference, and that they had sailed all the way from the yard in the Eastern Asia using the hold heading setting without any problems.

## **Description of Issue**

It was explained to the crew that the hold heading setting is a precision function intended to keep the ship on an exact heading, even in an extreme environment. To do this, the ship maintains a percentage of bias on the thrusters, i.e., the thrusters face one another to some extent, which enables them to react much more quickly to changes in wind, wave or current. This also consumes extra power. In transit mode, however, the heading requirements are relaxed. The vessel can drift off heading slightly, but will regain the set heading in a few minutes. Transit mode removes any bias and the ability to react to environmental changes quickly, but this is not needed when sailing open water.

## **Solution**

When the crew switched to transit mode, the vessel power dropped and the speed picked up.

Using just a rough calculation of a daily consumption of 80 tons of fuel per day for a 47-day transit at three dollars USD per gallon Rotterdam spot price for fuel, the fuel savings would have been \$8,560,740 USD for the transit from the yard. The speed increase would reduce transit time for even more savings.