Odfjell Tankers Save 20% Fuel Oil with Kappel propeller upgrading package

A total of nineteen 37,000/40,000 dwt chemical tankers have been upgraded with an efficient combination of Kappel propellers, rudder bulbs, main engine power limitation adjustments, and re-gearing of Power Take-Offs for shaft generators.

A complete but relatively simple power train solution for increased efficiency
The nineteen Odfjell vessels upgraded over the last two years are eleven ‘Kvaerner Class’ 37,500 dwt and eight ‘Poland Class’ 40,000 dwt vessels. Each vessel has a two-stroke engine powering a four-bladed, controllable-pitch propeller and a PTO-driven shaft generator. The vessels’ new service speed at reduced EPL main-engine output – combined with the implementation of the highly efficient Kappel propeller blades, a customized fairing cone and a pre-fabricated rudder bulb kit – have all contributed to radical power savings, reduced exhaust gas emissions and a market attractive A+ top energy rating.

Upgrading target and fuel savings approved at tank testing and at sea trials
The calculated power savings were originally verified by tank test analyses at MARINTEK (Norwegian Marine Technology Research Institute). Performance tests at the following sea trials were done in loaded condition. The hull and propeller were cleaned before the reference performance test. The following power savings were recorded: Saving at design speed: +20% in constant speed mode with PTO engaged. Saving at EPL top speed: +10% in combinator mode without PTO engaged.
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Harald Fotland, senior vice president of Odfjell Tankers, described the retrofit, saying: “It’s one of the best retrofitting projects Odfjell has ever been involved in. It’s a fantastic result, this has been a dream project.” (Tanker Shipping & Trade 31/5-2017)

Payback time
Although originally intended to have a payback time of 12 months, the drop in the oil price since the inception of the project has pushed this back to 24 months, although Mr. Fotland remains happy, saying: “We consider this to have been a very good investment.”

Pioneers – still steaming ahead
As dedicated technological front-runners, Odfjell launched their top modern newbuilding programme in 1991. Now with all nineteen vessels upgraded, they will be amongst the most energy efficient chemical tankers in the world.