



Fuel-Saving Trawler Herøyhav

FEATURING A “very flexible propulsion package” the Herøyhav benefits from a number of fuel-saving power modes. The 69.95 m trawler was built by Denmark’s Karstensens Shipyard for the Ervik family’s Herøyhav AS.

Its propulsion package is comprised of a MAN 9L27/38 engine and a two-speed reduction gear that drives a MAN Alpha 4,200 mm diameter ducted propeller. MAN Diesel & Turbo also supplied the vessel with its Alphasonic 2000 propulsion control system, including the ECO Speed Pilot for optimal voyage planning and speed setting.

The Herøyhav’s hybrid propulsion system enables the trawler to operate over a wide power range, including diesel-mechanical,

diesel-electrical and hybrid combinations. Main engine power produced is 3,285 kW—coupled with auxiliary power, the propulsion package has a total output of 4,785 kW for trawling or full-speed steaming.

During speed trials the trawler was able to reach above 11 knots in four different power modes—11.6 knots (diesel-electric, variable propeller speed); 14 knots (diesel-electric, fixed propeller speed); 15.5 knots (diesel-mechanical) and 16.6 knots (diesel-mechanical + electric boost).

Moreover, its fuel-saving propulsion set up limits exhaust gas-to-air emissions.

Additionally, its coated propeller shaft, installed in combination with a water-lubricated stern-tube system, eliminates any risk of sealing damage and any leakages of stern-tube oil to the sea.

Hybrid Propulsion Fast Supply Intervention Vessel Karina



DEVELOPED FOR THE combined transport of deck cargo and passengers to offshore oil fields, the world’s first hybrid propelled Fast Supply Intervention Vessel (FSIV), the Karina, exceeded expectations during sea trials this past summer.

When designing the vessel Shipyard De Hoop’s focus was on “speed keeping,” not necessarily on “top speed.” With the focus shifted to maintaining speed De Hoop is able to ensure that the vessel won’t slow down as it takes on cargo weight—leading to greater efficiency in operations.

The Karina features a hybrid diesel-electric/diesel-direct propulsion plant that will enable the vessel to consume very little fuel—and to switch between the two modes of operation.

During low-speed and maneuvering operations, the vessel goes into diesel-electric mode. During this time the portside diesel engine is used to drive a generator. The generator, in turn, delivers power via a DC-bus switchboard to two electric motors that drive the propeller shafts through the gearboxes. In this mode, maximum speed reached is 13 knots. To maintain this speed, only 410 kW of power is required.

For higher speed operations, the hybrid vessel will use both its diesel engines. The FSIV comes equipped with two Caterpillar 3516 diesel engines that engage with gearboxes to provide up to 2,350 kW at 1,800 rev/min each. In diesel-direct mode, the two fixed pitch ducted propellers are capable of producing up to 3.7 mW with 200 metric tons payload in total, achieving a maximum speed of 21.3 knots.

When going from lower-speed to full-throttle, the vessel’s smart power management system automatically switches from diesel-electric to diesel-direct mode which results in rapid acceleration.

The 55m vessel also features a bulbous bow and the Hull Vane. The Hull Vane is made of fixed foil positioned below the hull and behind the rudders. This further reduces power consumption by 11 to 15%. The added feature also has a stabilizing effect on the vessel, reducing heave and pitch.

Adding to its uniqueness, the Karina’s structure is made entirely of steel. Steel was chosen for a number of reasons—its cost effective; easier to repair and work with; leaves room for design versatility and customization; and can be made bulletproof.

The vessel was built to Germanischer Lloyd’s rules for worldwide operation and can carry 100 passengers and eight crew.