

Building for a cleaner future



MITSUI: The Japanese shipbuilder is promoting its 66,000-dwt neo-supramax bulker design that it says has a fuel-consumption level far below that stipulated by the EEDI.

Photo: Bloomberg News

Energy-efficient ship designs are set to become the norm as yards adopt the minimum required standards.

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Regulatory moves to mandate minimum efficiency standards for newbuildings to reduce shipping's carbon footprint are set to be the starting point for a gradual change in the design and operation of modern merchant ships over the next decade.

Vessels contracted after January 2013 must be rated to make sure they meet the minimum standards laid out in the Energy Efficiency Design Index (EEDI).

However, the regulation is not perhaps as mandatory as it might first seem. Flag states have the right to allow ships not to apply EEDI for a four-year period after it comes into force and many registers in developing countries will likely do this. But in reality, it is unlikely that owners will order non-compliant ships.

One newbuilding broker said: "Many newbuildings on offer from yards probably already meet the initial EEDI ratings, so there will be no benefit for an owner not to apply for the certification. Yards have also already started to develop EEDI-approved designs and they will become the industry

standard in the near future."

This appears to be the case with several EEDI-compliant designs already being touted such as Mitsui Engineering & Shipbuilding's 66BC neo-supramax, Sinopacific Shipbuilding's Crown 63 bulker design and Zhejiang Jinhai Heavy Industries's Marlin 2000 container ship design. All are being marketed and a number of orders have already been placed.

Shipyards may not have to stretch themselves too far technically or raise prices significantly to meet the initial EEDI standards. Put simply, a ship's EEDI equals its carbon-dioxide (CO₂) emissions over transport work or, in other words, the volume of carbon pumped into the air per unit of cargo transported. A quick shortcut to maximise efficiency gains is to reduce speed or engine power and increase cargo capacity within safe parameters to be set by the International Maritime Organisation (IMO) and the limitations of trade routes and ports.

The future trend has already been demonstrated by Maersk Line's order for 18,000-teu container ships — the world's largest — while at the same time reduc-

ing their operating speed.

It appears the ship of the future will be larger and slower, although there are efforts to tweak the EEDI calculations to put more emphasis on the rating system for the use of innovative technology to improve efficiency.

There are other growing pressures to push the boundaries of technology in ship design in the pursuit of efficiency — EEDI minimum standards are scheduled to increase by up to 30% over the next 12 years.

On top of that, rising prices are set to make fuel efficiency a key element in reducing operational costs. As the new EEDI initiative will certify some ships as more efficient than others, it could be-

come a focal point in competition between owners and operators for business.

Environmental group the Carbon War Room is already using EEDI to rank ship efficiency on its website (shippingefficiency.org) and there are similar evaluations of individual ships run by vetting company RightShip.

But carbon emissions are not the only driving force behind the changes. Some analysts argue that owners will face more immediate pressure to be inventive with ship designs to meet regional regulation of sulphur-oxide (SO_x) emissions. From 2015, emission control areas (ECAs) like the North Sea, Baltic Sea and the English Channel — and later the US —

will require 0.1% sulphur content in fuel from 2015, while non-ECAs will have to limit sulphur content to 0.5% by 2020.

LNG-fuelled propulsion is becoming increasingly attractive to owners because it eliminates sulphur and particulate-matter emissions without having to switch fuel or employ as-yet-unproven technology such as seawater scrubbers.

In one of the clearest indications so far that LNG propulsion could be widely adopted in shipping, K Line has designed a 2,000-car-equivalent-unit (ceu) pure car carrier (PCC) that it hopes to employ on the intra-European trades where sulphur restrictions are likely to be the strictest.



MARLIN 2000: Graig Group has ordered a series of up to 26 of the innovative container ships, which are being built by Jinhai Heavy Industries in China

Photo: Graig