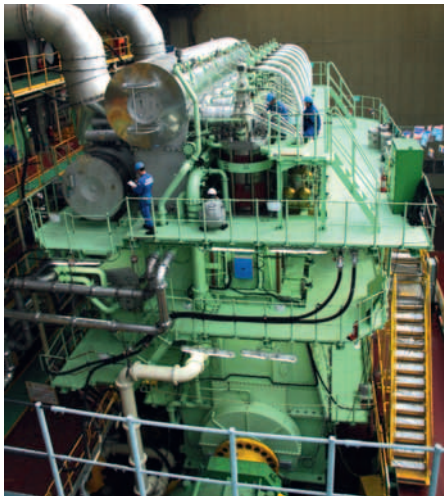
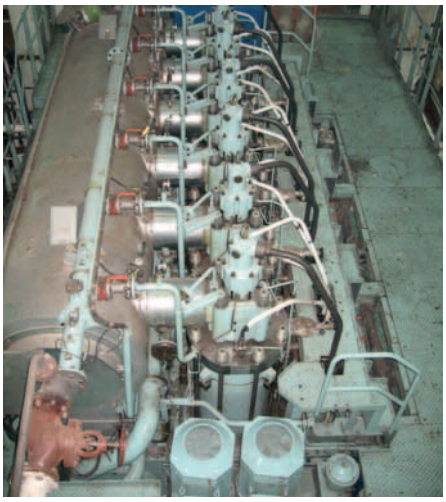
MAN Diesel continues to foster two-stroke development

LOW-SPEED-DIESEL ENGINES | MAN Diesel is still focussing the development of diesel engines as demonstrated recently with two significant two-stroke announcements. In the first development, the company announced the production of its first Type K80ME-C9 low-speed engine and its successful passing of its Type Approval Test in Korea. The engine is one of a new, high-power generation that displays a very high power density.

Around the same time, MAN Diesel could also report the entry of the very first S40ME-B engine into service. The ME-B range is MAN Diesel's most sophisticated, electronic offering.



K80ME-C9



S40ME-B

New K80ME-C9 Engine exceeds expectations

MAN Diesel broadened its product portfolio with the development of its new, Type K80ME-C9 two-stroke, low-speed engine. The ME-C9 engine recently passed the final milestone on its way to commercial applications in the marine sector with a successful Type Approval Test (TAT).

The first production version of the MAN B&W-branded engine successfully completed its TAT programme at Hyundai's (HHI-EMD) works in Ulsan, Korea. HHI-EMD's two-stroke engine assembly and test shop #2 was the venue for the test and hosted representatives from the shipyard, ship owner and leading Classification Societies.

The MAN B&W 7K80ME-C9 engine develops 31,710 kW at 104 rpm and is destined for a vessel operated by the A.P. Møller Mærsk group that also includes Waste Heat Recovery technology. The ME-C9 engine enhances the green credentials of the same vessel that can also boast of a highly efficient waste-heat recovery system. The engine is the first of four large-bore, Mk. 9 engines, all displaying high power density, and due for production during 2009.

The four engines are based on the well-proven technology of MAN Diesel's mechanical MC and MC-C engine ranges. The ME-concept represents an upgrade of the mechanical engines with electronic controls that provide improved, operational economy and flexibility, better manoeuvrability and easier overhauls.

Søren Jensen, Vice President and Head of Research and Development, Marine Low-Speed, MAN Diesel, commented: "The electronic, two-stroke ME-C range is among the most popular available on today's market. A major advantage is its ability to operate at even very low load for indefinite periods of time, whilst offering a substantial reduction in fuel-oil consumption compared to conventional engines at such low loads. During testing, the performance of the 7K80ME-C9 engine, an engine that is fully compatible with IMO Tier-II regulations, exceeded expectations and delivered a lower fuel-consumption than we anticipated." According to MAN Diesel the new engine type has a 20 % higher power density compared to the previous mark. The ME-C9 is not only a more compact engine but also one that is easier to overhaul since MAN Diesel has focused on making all components easily accessible for inspection and service.

The most important ME-C9 features are: 20% higher power density, differentiated distances between cylinders to aid compactness and maintain overall weight, integrated scavenge air receivers, cylinder frame weight-optimised connection rods and low-friction crosshead fuel system with new servo pressure from 200 to 300 bars.

MAN Diesel's first S40ME-B electronic engine has entered service. Yielding 6810 kW at 146 rpm and an mep of 21 bar, the new engine was built by STX in Korea and is one of six ordered by Intership Navigation of Cyprus to power a series of vessels.

The ME-B engine is the prime mover aboard the "Pacific Adventure", a multi-purpose vessel built at HuangHai shipyard in China. The newbuilding recently passed its sea-trials successfully. According to MAN Diesel the market requirement for the lowest possible propeller speed in relation to bore size has led to the new ME-B engine having a stroke/bore ratio of 4.4. In turn, the new engine has an increased maximum cylinder pressure, giving rise to an improved fuel consumption that is 2 g/kWh lower than existing, small-bore engines. Ole Grøne, Senior Vice President, MAN Diesel Promotion and Sales said: "Market reception for the ME-B series has been very positive to date and, with over 100 orders recorded thus far, we are very happy with its success."

The ME-B concept

MAN Diesel introduced the ME-B concept in mid-2006 with the small-bore S35ME-B and S40ME-B MAN B&W engine designs. It subsequently expanded the series in early 2007 with the launch of the S50ME-B MAN B&W engine design, with the result that the entire ME-B programme now boasts a total output range from 2975 kW to 16,020 kW.

The economical ME-B design utilises a camshaft-operated exhaust valve and an electronically controlled fuel-injection system. This fuel injection makes the new ME-B engines particularly well-equipped to meet Tier-II emission requirements, and is an efficient way of managing current environmental, emission requirements.

As with the larger MAN B&W ME-engines, the Alpha Lubricator comes as standard with all ME-B engines, ensuring a very low, cylinder lubricating-oil consumption.

Based on well-proven diesel technology, the ME-B series provides engines geared to market requirements for: electronic fuel-injection control reliability longer time between overhauls better vessel manoeuvrability very low life-cycle costs. The ME-B range now offers 35-, 40-, 46-, 50- and 60-cm models in the smaller bore range, while MAN Diesel's ME-C concept covers the medium- to large-bore segment of the market.