



Two-Stroke Methanol Engine Successfully Completes Demonstration

ME-LGI (Liquid Gas Injection) engine tested at customer event in Copenhagen

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On 17 March, 2015 at MAN Diesel & Turbo's Diesel Research Centre in Copenhagen, the company successfully demonstrated the ME-LGI concept in front of existing ME-LGI customers and partners, including Westfal-Larsen, Marininvest, Waterfront Shipping/Methanex, MES, HHI-EMD, MOL, and Minaminippon. For the purposes of the event, the company rebuilt its 50MX test engine to an ME-LGI unit.

Vice President and Head of R&D, Søren H. Jensen, said: "Attendees showed great interest in the demonstration and the accompanying technical presentations; their feedback has been very positive."

He continued: "A number of years ago we identified the need to develop an engine that could run on more environmentally-friendly, competitively-priced fuels as an alternative to MDO/MGO. We believe the ability of the ME-LGI engine to run on sulphur-free fuels offers great potential. Methanol carriers have already operated at sea for many years. With a viable, convenient and economic fuel already on-board, exploiting a fraction of the cargo to power a vessel makes sense."

To date, MAN Diesel & Turbo has received orders for 7 × ME-LGI engines – a mixture of 7S50ME-LGI and 6G50ME-LGI variants – from Mitsui O.S.K. Lines, Marininvest and Westfal-Larsen.

The very first engine will be produced by Mitsui Engineering & Shipbuilding Co., Ltd. (MES) for a vessel currently under construction by Minaminippon Shipbuilding Co., Ltd. for Mitsui O.S.K. Lines, Ltd.

MAN Diesel & Turbo has previously stated that it is already working towards a Tier-III-compatible ME-LGI version that can meet IMO NO_x limits with the aid of secondary measures.

Methanol as fuel

Methanol as a ship fuel is interesting for ship operators because it does not contain sulphur and is liquid in ambient air conditions, which makes it easy to

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store aboard ships. For ships operating in IMO Emission Control Areas (ECAs), methanol is a solution to the demands of sulphur-emission legislation.

A further advantage of methanol is its ability to be stored in normal, unpressurised tanks, making it straightforward to transport. As delivery by train, truck and/or ship is already in place in many areas globally, establishing and expanding the existing methanol infrastructure is perfectly feasible, even for individual ships operating in remote areas.

In contrast with the ME-GI engine where fuel is injected in its gaseous phase, the MAN B&W ME-LGI engine is the dual-fuel solution for low-flashpoint liquid fuels. The ME-LGI design successfully overcomes the challenge of low-cetane-number fuels – such as methanol – whose self-ignition quality is characteristically poor, using the well-known ME-GI principle of pilot injection of MGO or HFO. The ME-LGI's operation principle and safety concept are similar to those of the already accepted ME-GI concept. Fuel injection is accomplished by a Fuel Booster Injection Valve (FBIV), using 300 bar of hydraulic power to raise the fuel pressure to an injection pressure of some 600 bar.



The ME-LGI engine pictured at the demonstration in Copenhagen



Vice President Søren H. Jensen pictured addressing attendees during one of the technical presentations at the ME-LGI demonstration in Copenhagen

About MAN Diesel & Turbo

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of large-bore diesel engines and turbomachinery. The company employs around 14,500 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The company's product portfolio includes two-stroke and four-stroke engines for marine and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. The range of services and supplies is rounded off by complete solutions like ship propulsion systems, engine-based power plants and turbomachinery trains for the oil & gas as well as the process industries. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.

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