„Operational Update from Methanol (LGIM) an Ethane Gas Engines (ME-GIE)“

Peter H. Kirkeby

MAN Energy Solutions

Abstract

The LGIM and ME-GIE engine designs demonstrate how MAN has mastered the dual fuel two-stroke engine.

While the two engine designs share technology in many aspects and the diesel cycle for optimum economy and stability, different philosophies when it comes to fuel injection. While the LGIM engine uses an injection valve with a hydraulic pressure booster that facilitates the injection pressure, the ME-GIE uses a common rail concept with a high-pressure fuel supply system.

While both Methanol and Ethane are considered niche fuels in the current merchant fleet, MAN has demonstrated both technologies in service on large sea going vessels with outstanding reliability and availability of the second fuel mode.

The take-aways from the service experience has led to development and new design in several areas, at ISF 41 we will elaborate on the following:

LGIM

The corrosive nature of methanol is not an issue for cylinder condition, but some injection components have suffered. This has prompted further developments in materials and component design.

Operational feedback has led to further simplifications of the system by removing redundant functionalities.

Ethane

Service in the Atlantic ocean has demonstrated extremely stable combustion even when changing between fuels in rough seas.

Further optimization of the gas valve train in the fuel supply system has been possible based on the operational feedback gained when using Ethane cargo as a fuel.