Market Update Note
20 February 2014

Expanded Layout Area for
MAN B&W Two-Stroke Engines
G40/45/50ME-C9.5

In response to market demands for even lower propeller speeds and extended derating possibilities, we have decided to expand the layout area for the G40, G45 and G50 engines. At the same time, we have decided that the G40ME and G45ME engines should be designed only as ME-C9.5 engines.

The G50ME-C9.5 engine is introduced in parallel with the existing G50ME-B9.3 engine. The L3-L4 line is moved to the left to achieve an even lower engine layout speed, and the L2-L4 line is lowered to 75% of the MCR MEP. An example of the new layout diagram and data for the G45 engine is given below:
The engine data for the engine will be changed as follows:

**G45ME-B9.3 from previous engine programme**

<table>
<thead>
<tr>
<th>CyU.</th>
<th>Ls, kW</th>
<th>Strokes, 2,283 mm</th>
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<tbody>
<tr>
<td>5</td>
<td>6,900</td>
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<td>6</td>
<td>8,340</td>
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<td>8</td>
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- **SFOC for engines with layout on L1 - L2 line [g/kW](H)**
  - High load (85%-100%): 168.5, 165.5, 169.0
  - Part load (60%-85%):
    - Cast: 168.5, 164.5, 169.0
    - EGB: 166.5, 164.5, 170.5
    - ECT: 166.0, 165.5, 170.5
  - Low load (25%-70%):
    - Cast: 163.5, 165.5, 169.5
    - EGB: 163.5, 165.5, 170.5

**New G45ME-C9.5**

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The SFOC at 100% layout MEP has been increased by 1 g/kWh as the new ME-C version is fitted with mechanically driven HPS (hydraulic power supply). Consequently, a similar reduction in the electric power consumption is achieved.

Owing to easier performance control in the extended area with lower rpm and MEP, we have changed the design of the above engine types to be fully electronically controlled like our other ME-C engines.

For derated MEP, the SFOC gain has improved for the new ME-C version while keeping the reduced electric power consumption, which means that the total fuel consumption for derated MEP is lower for the new ME-C version.

As the detailed drawing work for the G45 and G40 engines has not yet started, we will only have one version of these engine types, namely the dot 5 version.

Data for the three engines is included in our latest Marine Engine Programme.
The new design incorporates an HPS (hydraulic power supply) based on the gear box used for the S50ME-C8.2 placed on the aft end of the bedplate. The fuel injection and exhaust valve control will be based on our ME-C HCU (hydraulic cylinder unit) with FIVA (fuel injection valve actuation) control. As the camshaft and the chain drive have been omitted, the main structure is slimmed accordingly.

The dot 5 design for the three engines is based on a $p_{\text{max}}$ of 185 bar.

The lower weight of the new engines, thanks to a dedicated design for 185 bar, omission of the camshaft and chain drive, and the reduced engine structure, will counteract the increased cost for the extra ME-C-parts.

The G45ME-C9.5 engine will be introduced first, followed by the G40ME-C9.5 engine and finally the G50ME-C9.5.

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Best regards,
MAN Diesel & Turbo

Niels B Clausen  Leif Hauerslev