Improved SFOC with MAN B&W S50ME-C9.7

In October 2017, the performance of the S50ME-C9 engine was upgraded from dot 5 to dot 6 as outlined in the market update note dated 2017-10-16. We have since received a strong request from the market for further improvements related to SFOC and flexibility in the layout area. We have therefore decided to upgrade the S50ME-C9 engine further and to introduce a dot 7 version.

Fig. 1 shows a comparison of the main parameters for dot 5, 6 and 7 versions of the S50ME-C, and an enlarged layout area is shown in Fig 2.

<table>
<thead>
<tr>
<th></th>
<th>V_{pist}</th>
<th>S</th>
<th>B</th>
<th>S/B</th>
<th>MEP_{L1}</th>
<th>P_{scav}</th>
<th>Pcyl_{L1}</th>
<th>Speed_{L1}</th>
<th>Speed_{L3}</th>
<th>SFOC_{L1}</th>
</tr>
</thead>
<tbody>
<tr>
<td>S50ME-C9.7</td>
<td>8.63</td>
<td>2214</td>
<td>500</td>
<td>4.43</td>
<td>21</td>
<td>4.30</td>
<td>1780</td>
<td>117</td>
<td>85</td>
<td>165</td>
</tr>
<tr>
<td>S50ME-C9.6</td>
<td>8.63</td>
<td>2214</td>
<td>500</td>
<td>4.43</td>
<td>21</td>
<td>4.20</td>
<td>1780</td>
<td>117</td>
<td>89</td>
<td>167</td>
</tr>
<tr>
<td>S50ME-C9.5</td>
<td>8.63</td>
<td>2214</td>
<td>500</td>
<td>4.43</td>
<td>21</td>
<td>4.20</td>
<td>1780</td>
<td>117</td>
<td>89</td>
<td>169</td>
</tr>
</tbody>
</table>

Fig. 1: Comparison of the main parameters for S50ME-C9.5 as well as the dot 6 and 7 versions

Fig. 2: Enlarged layout area for S50ME-C9.6 and S50ME-C9.7
The SFOC for the new S50ME-C9.7 engine is lowered by 2 g/kWh over the entire speed range compared to S50ME-C9.6, see Fig. 3. This applies to the different tuning and Tier options for all selected SMCR.

The design changes introduced in the upgrade from dot 5 to 6 were:
1. Cermet-coated three-piston ring pack
2. New piston crown with improved cooling
3. Change of T/C configuration
4. New fuel injection nozzle

The preliminary list of design changes for dot 7 compared to dot 6 is as follows:
1. New combustion chamber comprising new cylinder liner and design changes to cylinder cover and piston.
2. The designs of the engine structure and moving parts have been modified to cope with the upgraded combustion pressures. However, the main dimensions are not enlarged and the footprint is the same as for dot 5 and 6.

For more details:
MAN Diesel & Turbo
Teglholmsgade 41
2450 Copenhagen SV, Denmark
Phone  +45 33 85 11 00
Fax  +45 33 85 10 30
lss@mandieselturbo.com
www.marine.man.eu/

Fig. 3: SFOC for S50ME-C9.6 and S50ME-C9.7