Market Update Note

Restricted Use of Mid-Range Cylinder Lube Oils

MAN Diesel & Turbo advises against the use of existing mid-range cylinder lube oils (50-60 BN) in combination with high-sulphur fuels.

Operation on high-sulphur heavy fuel oil (>1.5%S)
Based on numerous engine inspections and feedback, we have concluded that mid-range cylinder lube oils, in many cases, are not being used at a sufficiently high feed rate when operating on high-sulphur fuel oils.

The result has been a weaker protection against cold corrosion and, eventually, significantly increased wear rates.

This is not a sustainable situation, and it has led us to withdraw our No Objection Letters for the mid-range cylinder lube oils for all MAN B&W two-stroke engines operating on high-sulphur fuel from 1 January 2016.

Operation on low-sulphur heavy fuel oil (0.5-1.5%S)
We have no objection to the use of mid-range oils on engines operating on low-sulphur heavy fuel oil (with a sulphur content of 0.5-1.5%).

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**Diagram: General overview of cylinder lube oils and how to choose a suitable cylinder lube oil**

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Two-stroke engines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine design</td>
<td>≤ Mark 7</td>
</tr>
<tr>
<td>Optimised for improved fuel consumption: Part load optimised and derated engines</td>
<td>No</td>
</tr>
<tr>
<td>Cylinder lube oil</td>
<td>Low S fuel</td>
</tr>
<tr>
<td></td>
<td>High S fuel</td>
</tr>
</tbody>
</table>

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Fig. 1 General overview of cylinder lube oils and how to choose a suitable cylinder lube oil
Cylinder condition

Careful monitoring of the cylinder condition, evaluation of the cylinder oil feed rate, and follow-up by proper action is always highly recommended. Scavenge drain oil analysis is a strong tool for evaluating the engine wear condition, and regular scavenge port inspections as well as liner measurements should always be the decisive measures to judge the cylinder condition.

Our latest Service Letter (SL2015-604) provides important recommendations on how to choose the proper lubrication strategy, and which cylinder oil types should be apply for specific engines types, see also Fig. 1.

Our Service Letters are available on our Nexus extranet under the headings:

Service Support - Service Letters - Diesel Service Letters

Or you can click here if you are already logged in:
http://dieselport/ServiceSupport/ServiceLetters/2-4Stroke/DieselServiceLetters/Pages/default.aspx

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