

Guidelines for LSFO Vessel Operations Alternating Between a Higher BN Lubricant and a 40BN Lubricant

This brief references MAN's letter of June 4th, 2020: **"Q&A: SL2020-694 – Cylinder oil & system oil: Introducing performance categories and removal of the 15-25 BN column"**, and in particular, endeavours to provide guidelines for some vessels that are using LSFO (<0.5% S).

In the letter, MAN stated:

"The focus is on monitoring the cylinder condition and ensure that the piston ring pack is clean and moving freely. In case of excessive deposit build-up, use oil with higher cleaning ability."

The alternation time period between high- and low-BN cylinder oils can mean everything from a couple of days to over 300 running hours, as long as the crew make scavenge port inspections, monitor the condition closely, and take action if the condition deteriorates.

As always, it is of great importance to monitor and act on the cylinder condition. Drain oil samples should be taken, analysed and evaluated. Action should be taken if the analysis shows deterioration by, for example, increasing iron content."

The letter also mentioned that for particularly for Mark 9 and higher engines:


"If the cylinder condition is acceptable when using Cat. I 40 BN cylinder oil, there is no need for alternation with category II, 100 BN cylinder oil."

However, if the cleaning ability is not enough in the Cat. I 40 BN cylinder oil, a Cat. II 100 BN cylinder oil could facilitate the situation."

Since the publication of the MAN letter, Gulf Oil Marine has had many questions regarding the above especially for vessel operators who assessed that they needed to alternate between GulfSea Cylcare DCA 5040 lube oil and an oil that has higher cleaning ability (such as, GulfSea Cylcare 50100).

MAN Energy Solutions

Page 1 of 3



To whom it may concern

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Q&A: SL2020-694 – Cylinder oil & system oil: Introducing performance categories and removal of the 15-25 BN column

Introduction

In May 2020, the two-stroke business unit of MAN Energy Solutions (MAN ES) issued service letter SL2020-694 Cylinder oil and system oils. It provides examples of major international cylinder and system oil brands currently available in the market. Furthermore, it introduces two major changes:

1. Cylinder oils are divided into two performance categories: Category I (Cat. I) and Category II (Cat. II – the higher performing).
2. Removal of the 15-25 BN column.

There are no recommendations on how to use the lube oils in SL2020-694. A separate service letter on lubrication guidelines will be issued later this year. Please note that SL2019-671 still applies.

Motivation to the introduced changes

We have introduced the changes in order to bring attention to the development and usage of higher performing cylinder oils, e.g. Cat II 40 BN cylinder oils. The main reasons are:

1. We expect that operation on <0.50% S VLSFO will be the most predominant in the coming years.
2. Highly fuel-efficient engines with higher pressures and higher temperatures require lubricants with matching performance.
3. Service experience shows that keeping focus on the cleanliness of the piston rings and crowns is important to secure an acceptable time between overhaul of the cylinder units.
4. Unfortunately, many low-BN cylinder oils (15-25 BN) are not giving the expected cleaning ability required in the newest MAN B&W engines. MAN ES has therefore

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We would like to offer some practical guidelines for vessel operators who are running LSFO (<0.5%S) and using GulfSea Cylcare DCA 5040.

If upon inspection / monitoring (usually pre- or post-voyage), the cylinder condition is less than ideal wherein there are deposits on the piston rings or iron content on the used oil samples or other cleanliness indicators, vessel operators should, according to the advisory from this MAN letter, consider alternating between the GulfSea Cylcare DCA 5040 and GulfSea Cylcare 50100. Certainly, if the ship is carrying existing stocks of GulfSea Cylcare DCA 5070, the 70BN lube oil can be used too.

In cases where the cylinder conditions are very severe, it is recommended that vessel operators consult with their OEM contacts on the remedial actions.

In most other cases, what operators can practically do is this: alternate the two oils every 7 days, in other words, the cylinder oil should be switched at the next daily top-up of the cylinder oil day tank after 7 days. For those operators with short voyages, they can consider alternating the oils after ½ of the voyage days. Operators should be aware that there is a possibility of up to two days lag for the oils to be effectively switched over.

And at the next available opportunity, the cylinder condition should be monitored to determine if the action of alternating between the two oils has been effective in improving the cylinder conditions.

Vessel feed-rates are to be adjusted in accordance with the findings of the scavenge port inspection and scrape down analysis results, as per OEM's recommendations. Given the criticality of monitoring cylinder conditions, it is further recommended that scrape down analysis be done regularly (every quarterly).

Once again, we urge vessel operators to consult and check with their OEM contacts for any issue regarding their equipment as often the issues may not be solely related to lubrication.

Lastly but not least, we reiterate the importance of frequent and regular monitoring of the cylinder condition and ensuring that the piston ring pack is clean and moving freely. This is very important and necessary to ensure the operability of vessel machinery.

If you have any enquiries, please consult our global technical team at technical.engineer@gulf-marine.com

[Updated in July 2020]