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**ExxonMobil Issues Best Practice Tips on Switching Fuels in Emission Control Areas**

*This advice can help marine operators avoid potential maintenance issues*

- **Managing temperature change can help avoid thermal shock**
- **Risk of non-compliance and fines if fuel switchover is completed incorrectly**
- **Switching fuels at correct time is key to meeting 0.10% sulphur requirement**

**LONDON** – ExxonMobil has compiled five ‘top-tips’ to help vessel operators effectively switch fuels when entering and exiting Emission Control Areas (ECAs) without introducing maintenance issues. Typically, inadequate management of the fuel switchover process can increase the risk of thermal shock to engine components, which can result in fuel pump seizures and engine shutdowns.

ExxonMobil advises marine operators to consider the following five key fuel switching tips:

- **Have a clear switchover procedure** – It is important to ensure that the crew is familiar with the process. As an additional safety measure, the procedure should be tested prior to entering crowded and restricted channels where there is a higher risk of grounding or collision.
- **Outline the best time to switchover** – The optimal switchover period is different for each vessel and operators must allow sufficient time for the fuel system to be flushed of all non-compliant fuel before arriving at an ECA limit.
- **Avoid hazards; know the correct temperature and viscosity** – The viscosity of heavy fuel oil (HFO), ECA fuels and marine gas oil (MGO) are very different. The appropriate temperature must be achieved to ensure that the optimum viscosity at the injectors is reached. HFO is injected at ~130°C and MGO needs to be cooled to ~30°C in order to reach the correct viscosity. Major engine manufacturers typically recommend a maximum temperature change of 2°C per minute to help avoid thermal shock.
- **Understand compatibility** – There is a potential risk of fuel incompatibility during the switching process where fuels may mix. This may clog filters, causing engine starvation and possible shut down. In order to understand if

fuels are compatible, an industry-standard spot test can be carried on-board or a more thorough compatibility test can be requested from a reputable testing laboratory.

- **Choose the correct lubricant** – Cylinder oils need to be sufficiently alkaline to neutralise any corrosive acidic sulphur in the fuel. However, when less sulphur is present, less sulphuric acid is produced. Too much alkalinity in the cylinder oil can lead to liner wear, while too little increases the risk of acid corrosion. When burning low-sulphur fuels in slow-speed engines, it is recommended that a lower base number lubricant be used.

In addition to these top-tips, ExxonMobil has developed two ECA category fuels, ExxonMobil Premium AFME 200 and ExxonMobil Premium HDME 50, to help operators comply with ECA requirements safely. To learn more about these products visit [http://www.exxonmobil.com/MarineLubes-En/products\\_premium-eca-fuels.aspx](http://www.exxonmobil.com/MarineLubes-En/products_premium-eca-fuels.aspx)

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Mobil SHC Aware™ Gear Series, a range of high performance Environmentally Acceptable Lubricants (EAL), has been approved by leading marine gear and seal manufacturers. Thruster builders, including Nakashima, HHI Hyundai and KTE Nakashima Korea, have endorsed use of the oils following approvals by seal manufacturers Kemel, BVI and Hwaseung R&A