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## IMO 2020:

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With the IMO 2020 regulation looming on the horizon, the lubricants industry is also faced with the technical challenge of how to meet with the new stringent regulations. New products are on the way, writes *Samantha Fisk*

Trying to get ships cleaner for the future has hit not just the maritime industry; but has sent a shock wave over the globe to its other counter parts and suppliers in other industries too, none more so than that of the oil industry, which is now faced by developing products that will also be compliant with the latest regulations coming into affect. The effect that this is having on the maritime industry is that there is confusion for most about what technology will be the best to invest in, both financially and also that will definitely meet with environmental legislation. One of the main factors about which way shipowners should head in has been the topic of fuel with recent months seeing a rapid flurry of speculative new fuels being developed for the market.

Iain White, global field engineering manager, ExxonMobil highlights that there is a lot of confusion in the market at the moment surround fuel choice and what shipowners will need to opt for going into the future. To help its customers and help the industry, Exxonmobil launched its »Journey to 2020« series of symposiums in late 2018.

#### ExxonMobil on »Journey to 2020«

The first symposium was held at the Equinox Complex, in Singapore in October, followed by events in Hong Kong, Taipei, Athens, Tokyo, Imbari, Copenhagen and

Hamburg. Other dates in 2019 are also scheduled. The company says that it anticipates that the vast majority of the industry will initially choose low sulphur fuels, there is no single route to compliance. The »Journey to 2020« symposiums will enable operators to discuss the most practical compliance choices for them with a team of ExxonMobil experts with deep industry experience and fuels and lubricants' knowledge.

These events will also provide an opportunity for operators to explore cylinder oil options that best fit their fuel choices. For the majority of vessels bunkering a 0.50% sulphur fuel, a 40BN cylinder oil will be the best choice. Vessels fitted with scrubbers will continue to burn HFO and will solely use a high BN alternative.

White highlights that over the recent years with NO<sub>x</sub> regulations and EEDI standard this has impacted the design of engines coming to the market today, along with this 50% of ships are lubricated wrongly, he notes. »In 2011 we saw the problem with cold corrosion and the advice was to adjust the feed rate and reduce the cylinder«, he adds.

ExxonMobil has been developing technologies to further investigate and understand how oils are working in the engines. The company has undertaken a large investment programme in its facilities for research in this area, where it now has facilities to X-ray the oil as it is work-

ing which allows the company to calculate the iron and base numbers in 20 minutes. In addition to this ExxonMobil has launched its Mobil Serv Cylinder Condition Monitoring Service. The company says that the scrape down oil analysis service utilises XRF technology that will provide operators with rapid, detailed insights for their engine.

The cylinder condition monitoring service will allow operators to receive recommendations on feed rate and cylinder oil to optimise engine lubricant consumption, which will allow customers to react quickly to any situations that may occur. The monitoring service will also have the ability to measure the sulphur content of the vessel's fuel. Further to this, ExxonMobil are looking to launch a new lubricant to the market in 2019 that will be aimed at the new types of engines affecting the market.

#### Total – launch in 2019

Total Lubmarine are also experiencing similar confusion on the market whilst the deadline for the IMO 2020 comes into effect. Serge Dal Farra, Marketing Director, Total Lubmarine explains the time that we are currently going through can be summed up by the term VUCA, Volatility of the market, Uncertainty of what lies ahead, Complex decisions and Ambiguity.

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The challenge that lies ahead for the maritime community is that in the future it will be moving into a »multifuel era«, which will provide a challenge to all those involved in the process. Currently, there is a range of lubricant oils on the market ranging from BN 25 through to BN 140, with the higher BN numbers coming into play through the discovery of cold corrosion through slow steaming.

With new fuels being introduced to the market, it is expected that a BN number of around 40 will be needed for engines that run this range of fuels. For this Total Lubmarine is also developing its own lubricant that is set to also meet the challenges of the future environmental regulations. »We've seen that you can mess about with the standard oils on the market to make something that will work, but we have decided to develop a new lubricant that will be launched later in 2019«, Dal Farra says.

He continues to explain that although there are BN40 oils on the market, these are not right for modern combustion and a redevelopment of this oil needs to be done. Due to the range of fuels that we could see on the market in the future, another challenge will be to keep the engine clean, as these fuels are still an unknown factor for owners. The latest development from Total Lubmarine has taken things right back to the start again and additives that have detergency have now been added to the product.

Dal Farra highlights that there are three main options for shipowners to be compliant in the future, blended fuels, scrubbers or LNG. He adds that Total believe that LNG will take the lead as studies are showing that this fuel is coming out the most compliant for shipowners to use. Not only that but Total have also recently signed two contracts with CMA CGM to supply its nine ultra large containerships that are under construction with LNG. Preparing for the IMO 2020 Total is also working on developing a new compliant fuel for the market.

As 2020 gets close, the market is slowly taking steps to choose the right solution. Uncertainty still resides in the industry with no clear outcome until 2020, where the clear winner will be the solution that works. Steps are taken by both OEM's and shipowners to meet with the challenges ahead. ■

#### »A lot of R&D needed – Who is capable?«

Shell Marine, as lubrication part of a large oil and gas company, considers itself well positioned for the future, especially in view of the new regulations around the IMO's »Sulphur Cap 2020«. The choice of lubrication obviously depends on the fuel or the technology used, be it a scrubber, LNG or low and ultra low sulphur fuel oil. Shell believes, a significant part of the market will shift to fuels with less than 0.5% sulphur, where other cylinder oil formulations with a lower BN number is expected to deliver optimum performance. This will be a mixture of very low sulphur fuel oil (VLSFO) and distillate fuel. It is expected that 30% of the market could be using scrubbers by 2025-2030, which is likely to see demand recover for higher BN lubricants, although their use may then drop off if new environmental legislation restricts use of scrubbers. However, LNG technology is taken care of, too. »We are as much a gas company as we are an oil company. So we really believe in the future of LNG and therefore we have lubricants to serve LNG driven vessels«, Joris van Brussel, General Manager of Shell Marine, tells HANSA. A major focus is placed on joint development work with engine manufacturers with tests at the Marine & Power Innovation Centre (MPIC) in Hamburg. There, Shell has a number of engines and own testing is done, before products are going into field trials. With regard to the Sulphur Cap, there is quite a lot of need for testing – even although there are not so many market-ready low sulphur fuel oils available, yet. Van Brussel thinks, on the product side, there is still insecurity: »Think about the crew on board, they have to handle these new products. They might know the engine very well, but do they know the products in the engine? Fuel quality is probably going to vary, because people are also blending things.«



Joris van Brussel,  
General Manager Shell Marine

#### »We intend to partner with shipowners«

With the group's own »Miles« programme, Shell intends to do analysis and to do it much quicker. »We intend to partner not so much with the bunker suppliers but with shipowners. We want to ensure that they are able to have something that is going to work reliably for the crew«, the general manager adds.

One aspect is the on-going trend towards more automation on board. Shell is working on some projects in this field. »We are using algorithms and machine learning. Still the crew and the shipowner need to be able to operate the ship, but they need the right information for that. In this respect, we do a lot of sensor testing with engine manufacturers«, van Brussel says.

The post-2020 scenario poses different challenges for slow speed cylinder oils to the ones OEMs have been focusing on over recent years, where BN80-BN100 oils have been needed to defend newer engines against cold corrosion under part-load conditions burning higher sulphur fuels. 0.5% fuel use will drive demand towards lower BN oils. »The two-stroke product portfolio for 2020 is largely in place, but we expect that there will be a requirement for significant volumes of higher BN cylinder oils to be replaced by BN40 or BN70 grades«, Shell stated already. Latest work at the MPIC is focusing on the final tests of a new 40BN cylinder oil for two stroke engines that is already undergoing field trials and is expected to be available in the market in the early part of 2019.

Being asked whether the challenges for the whole industry and the need for intensive and costly research might lead to a consolidation on the lubrication market, too, van Brussel says: »The industry is full of players. In the future, we will see much more different fuels. We have the capability for the whole range of products. But that requires a lot of capacity and investment in R&D. I don't know to what extent everybody is capable of doing that.«

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