interview

Meeting innovators in the global cruise industry

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International Cruise Ship Industry

INTERNATIONAL CRUISE SHIP INDUSTRY

Focusing on innovation in the global cruise industry

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Total Lubmarine's Marketing Director, Serge Dal Farra

In this latest interview, ICSI spoke with Total Lubmarine's Marketing Director, Serge Dal Farra, regarding the threats to cruise ships' machinery during and after layup.

Q: With most cruise ships in warm layup, what are Total Lubmarine's recommendations for keeping the machinery in operational order?

A: The COVID-19 pandemic has affected the cruise industry in unthinkable ways, which has forced some owners and operators in this sector to consider placing vessels in layup. So the idea of a layup is to preserve the ship's structure and integrity of its components and equipment by protecting against corrosion and machinery wear and tear.

However, there is a 'no one size fits all' solution.

In warm layup, most systems are kept functioning so that ships can quickly be put back into operation.

Any layup should follow the requirements of the OEMs and the guidance provided by class societies. We recommend that during a period of static mooring, engines and auxiliary equipment are kept fully inspected and lubricated even in stand-by mode. You want that part of the process to be as smooth and risk-free as possible. Our experts recommend:

- You circulate and purify any lubricants that can be passed through machines (main engine system oil and generator sump oils for example).
- Following a layup, you draw off a full set of lubricant samples and send for analysis before re-commissioning.
- Lubricants are checked for the presence of free water and drained if any is found.
- Draining the stern tube of any excess water, and check if the lubricant is excessively degraded by the presence of water (often an elevated acid number is an indication).
- Engines are cleaned and degreased to remove any acidic deposits.
- Cylinder and liner bores care coated with a preservation lubricant.
- Keeping oil at the normal running levels.
- You monitor coolant inhibitor using analysis kit or laboratory to ensure equipment remains effective, and top up as necessary.

The range of services available include standard analyses for engine oil, non-engine oil, drain oil, thermal oil, stern tube oil, and EAL (environmentally acceptable lubricant).

Q: Cruise ships come in all size ranges with different propulsion configurations. Does Total treat each cruise ship as a separate project when recommending the correct lube oil?

A: The challenge for ship operators in today's climate, is to safely and efficiently match the marine lubricant to the equipment, adhering to OEM warranty and service guidelines. Different engine types do have differing lubricating requirements, but every ship is also unique with its own lubricant schedule, which is why we've introduced Lubchart.

It is created by our marine lubricant engineers in consultation with the shipowner or manager, and where necessary the shipyard. Customers are given access to a dedicated website from which they can view the Lubchart in detail and download various supporting information relevant to their vessel.

Any engine operating on residual fuels contains sulphur. Cylinder lubricants have three main purposes; to provide a barrier to metal to metal contact between piston rings and the cylinder liner; neutralising any sulphuric acid to control corrosion; and to clean the cylinder liner and piston rings preventing damage from combustion and neutralisation residues.

Our response has always been to develop products that meet our customers' needs, whatever fuel or engine type they choose, such as Disola SGS, which is designed for stationary or infrequently used engines. Total Lubmarine can also provide more detailed analysis including kinematic viscosity, insolubles, flashpoint, water content, base number (BN), PQ index, metal content, acid number (AN).

Q: Most cruise ships are fitted with auxiliaries and main engines from different providers. Does Total liaise with the OEMs before recommending a lube oil together with the vessel's engineering management team?

A: Yes. As one of the world's leading lubricant suppliers, we take our role and our client needs seriously. As the cruise and ferry industry introduces new energy efficiency, emissions and greenhouse gas initiatives, we continue to work with all major designers and OEMs, auxiliary equipment manufacturers – and our supply chain – to develop new engine oils to use with the fuels of the future.

We deliver a comprehensive range of trunk piston oils suitable for high-medium speed 4-stroke diesel engines. AURELIA and DISOLA guarantee high safety margins, high levels of engine cleanliness and compatibility with all main fuel types, including

Total recommends keeping a cruise ship's machinery well maintained during layup

high and low sulphur fuel oil (HSFO, LSFO), LNG, distillates, marine diesel oil and gas oil.

We also offer a complete range of synthetic EALs to comply with regional environmental regulations.

Our teams place emphasis on helping customers reduce their lube consumption by working with OEMs on engine developments and performing sea-trials to test lubricant performance.

There are dedicated OEM relationship managers tasked with maintaining close contact with each organisation.

Q: There is an increase in interest to fuel cruise ships with LNG. Does this make any difference to the lube oil needed for say a dual fuel engine?

A: Whilst there is future potential in other alternative fuels, such as liquefied bio methane (LBM) and liquefied synthetic methane (LSM), along with, Ammonia (NH3) and (Hydrogen LH2), these developing technologies are still too 'early-stage' to provide effective cruise-fuel solutions.

The reality is that LNG is the only option that provides considerable GHG emissions reductions now, while charting a clear pathway towards a sustainable future for the cruise industry.

According to the ThinkStep Study, investing in LNG-fuelled vessels can give cruise-operators immediate GHG benefits – up to 21% on a well-to-wake basis and 28%, tank-to-wake, including the impact of methane emissions. Our recent announcements on 'Gas Agility' are an example of how we are supporting this transition.

Q: For the smaller expedition type cruise vessels, hybrid propulsion systems are often chosen, including battery power for certain functions. Again will hybrid propulsion mean a change of lube oil, compared with more traditional medium or low speed engines, ie a higher or lower BN?

A: Each market has a different set of challenges to face, all resulting from the continuous improvement of engine designs and the introduction of new and emerging technologies serving our common ambition for carbon neutrality. Irrespective of the nature and the magnitude of the anticipated changes in the industry, we can safely assume that lubricants will continue to play a pivotal role in supporting the complete energy production chain.

As an integrated energy company, SAFT – a Total company – produces batteries for many applications including marine, notably supplying the battery system for the UK research vessel, 'Sir

David Attenborough'. The new Polar vessel, the UK's largest research ship, will rely on SAFT's Seanergy® high power marine battery system to meet its peak demand for propulsion during dynamic positioning operations and when pushing through ice up to one meter thick.

This is a key example where we are experiencing a growing trend towards hybrid-electric propulsion systems for new ships and ensuring the right lubricants are used for these systems will inevitably take on greater importance over the coming years.

Q: Operational efficiency is obviously vital to the smooth running of a cruise ship's machinery. Does Total Lubmarine offer a consultancy type service to cruise ship operators when dealing with new propulsion systems?

A: All propulsion systems regardless of type do need lubrication between moving parts to prevent heat build-up and wear. On most equipment such as pumps, compressors, and winches, lubricant levels need only regular checks and the occasional change.

However, engine lubricants on ships are a much more challenging area and need constant attention, regular adjustment, and special attention as to the choice of lubricant dependent on the fuel being used and its trade pattern.

Lubricating oils can also be used as a means of ascertaining the health of an engine or a propulsion system, and proper analysis can give early warning of possible failures long before an incident occurs, allowing preventative measures to be taken.

Q: In normal circumstances, with cruise ships calling at a myriad of ports worldwide, some of which can be fairly inaccessible, is Total able to access most of these ships through a worldwide sales and service network?

A: Yes. With a presence in over 100 countries and 1,000 ports around the world, customers can rely on a strong global network. Our teams are committed to providing the same dedication and attention to detail to each and every customer, single cruise ship or large fleets.

Simply getting things done is key to our popularity with customers. We are working to alleviate the current pressure across the cruise sector and use the down time to further reinforce and back up the supply chain, so when travel restrictions are fully lifted, cruise lines can get back to business and focus on their core activity without worrying about lubricant supply and stocks.

We are working smarter by anticipating our customers' needs, incorporating data management into our processes and anticipating where and when our customers' cruise ships will call, and what lubes they will need 24/7. This is an all-important step at this challenging time.

It is one of the reasons why our company has been rated in the IHS Markit Annual Industry report as having the second largest port network in the international marine lubricants segment.

Q: Does Total Lubmarine's policy involve handling lube oil supply and services in-house at various distribution and service centres worldwide, or does the company sub-contract with select suppliers as necessary, or a mixture of both?

A: The Total Lubmarine network is made up of a range of partners who are able to manufacture in strategic locations and help to enable lubricants to be delivered to the same process – a signature of the Total Lubmarine quality.

We are supported by more than 50 blending plants through a network of affiliates and partners, where the right lubricant is never far away. In a competitive market, ensuring our products are distributed locally provides customers with value, harnessing local knowledge to fulfil customer's requirements.

A ship can have up to 100 types of different marine equipment on board, each of which needs careful attention. The challenge for ship operators is to safely and efficiently match the marine lubricant to the equipment.

With decades of marine lubrication experience, our experts advise on, and supply customers, with an entire range of lubes, greases and coolants, offering nearly 80 different products, from cylinder to stern tube lubricants.

Q: Lube oil supply is very competitive. Does Total Lubmarine continually analyse engine data from the different cruise ships using the products in order to continuously develop new lube ranges?

A: The development of new products and technical services is a constant evolution of how we do business 365 days a year. And, being the second largest lubricant provider in the world, Total Lubmarine has a vast portfolio of engines and auxiliaries to draw data from. This includes our close associations with equipment makers, customers, stakeholders, yards, port authorities

and class societies.

Our technical insight covers everything from fuel quality and lubricating strategy, through to future fuels and availability. This requires our technical experts to provide a high level of in-depth technical awareness, support and solutions to cruise and ferry operators to ensure they implement the right lubricants, monitoring tools and fuels strategy to achieve optimal engine performance and cleanliness.

While all products are developed and tested at one of our research centres before going through rigorous field testing, sea trials and validation, we are also beginning to blend conventional services with digital monitoring that will enable the delivery of real-time product performance analysis.

For example, we use additional vessel operating information such as engine condition, running hours, temperature and humidity, to gain real insight in to how engines and their lubrication perform – operating conditions that can be enhanced to further reduce CO2 emissions.

Combining monthly spot data with trend monitoring and OEM guidance, and working alongside our customers, we create insights on the engine's condition, and we help customers achieve the optimum lubrication that will successfully guarantee safe operating margins. Harnessing data in the way that we do, better supports our customers and delivers peace of mind to Superintendents and Chief Engineers.

Q: For the larger more standard cruise ships, is there one Total Lubmarine product that has been found to be compatible with the main machinery and auxiliaries?

A: Modern passenger ships must have reliable engines that run quietly and meet strict environmental emission limits. Operators also seek to minimise operating costs, and this is why we have developed a comprehensive range of trunk piston oils suitable for high to medium-speed 4-stroke diesel engines.

For example, our AURELIA and DISOLA products guarantee high safety margins, and are compatible with all main fuel types, including low sulphur fuel oil, LNG, and marine gas oil. We also offer synthetic ester EALs to comply with regional environmental regulations, lubricants and greases that fulfil Vessel General Permit (VGP) requirements for oil-to-sea interfaces.

Q: With most of the cruise ships idle, has Total Lubmarine found that the volume of sales to this particular sector has diminished or as the ships tend to run their engines and auxiliaries at regular intervals, is the demand for lube oil still apparent?

A: Yes – the demand is still there for our products across the cruise sector but as with any industry faced with restricted movement in a pandemic lasting several months, we have observed various industry challenges.

When cruise ships go in to layup, there is a natural knock-on effect to volume sales, and we've all experienced the challenges this has presented. But we are optimistic about the future and we continue to work closely with all our customers and partners across the world to make sure they are able to continue operating efficiently and effectively in these difficult and unprecedented times.

Q: Is there any advice that the company can give to cruise ship operators before re-entering service on machinery operation or restart?

A: Following any period of layup – hot, warm, cold, and long-term – a reactivation of a ship and its operations requires careful and planned management to help assess the risks to ensure a safe and successful vessel reactivation.

It is critical that crews ensure that equipment is fit for continued service and it is part of the process that can actually take longer than preparing the vessel for layup, and the resources necessary not only from the shore management and crew, but also from external service engineers and shipyards with drydocks, can be demanding.

Cruise ships contain vast amounts of machinery and auxiliaries that throughout any layup need regular inspection, maintenance and preventative work. Not only should the machinery itself be restarted carefully, at Total Lubmarine we would always recommend that special attention must be paid to the fuel and lube oil quality, including analysis and monitoring, if these have been stored on board during the layup.

We would always advocate the use of a lubricant expert to help you ensure your vessel's engine is inspected and its oil assessed to provide the necessary reassurance.

The engine is the 'heart' of the vessel and the lubricant helps it function, and this is one of the many critical items of machinery on board that keeps the vessel running with power; which enables crew and passengers to travel from one location to another at ease.

No matter where you need us to be, we'll be there.

We supply our range of high performance products with our agile network of people located in offices at all major maritime hubs and covering more than 1000 ports in 100 countries, we make partnerships possible.

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