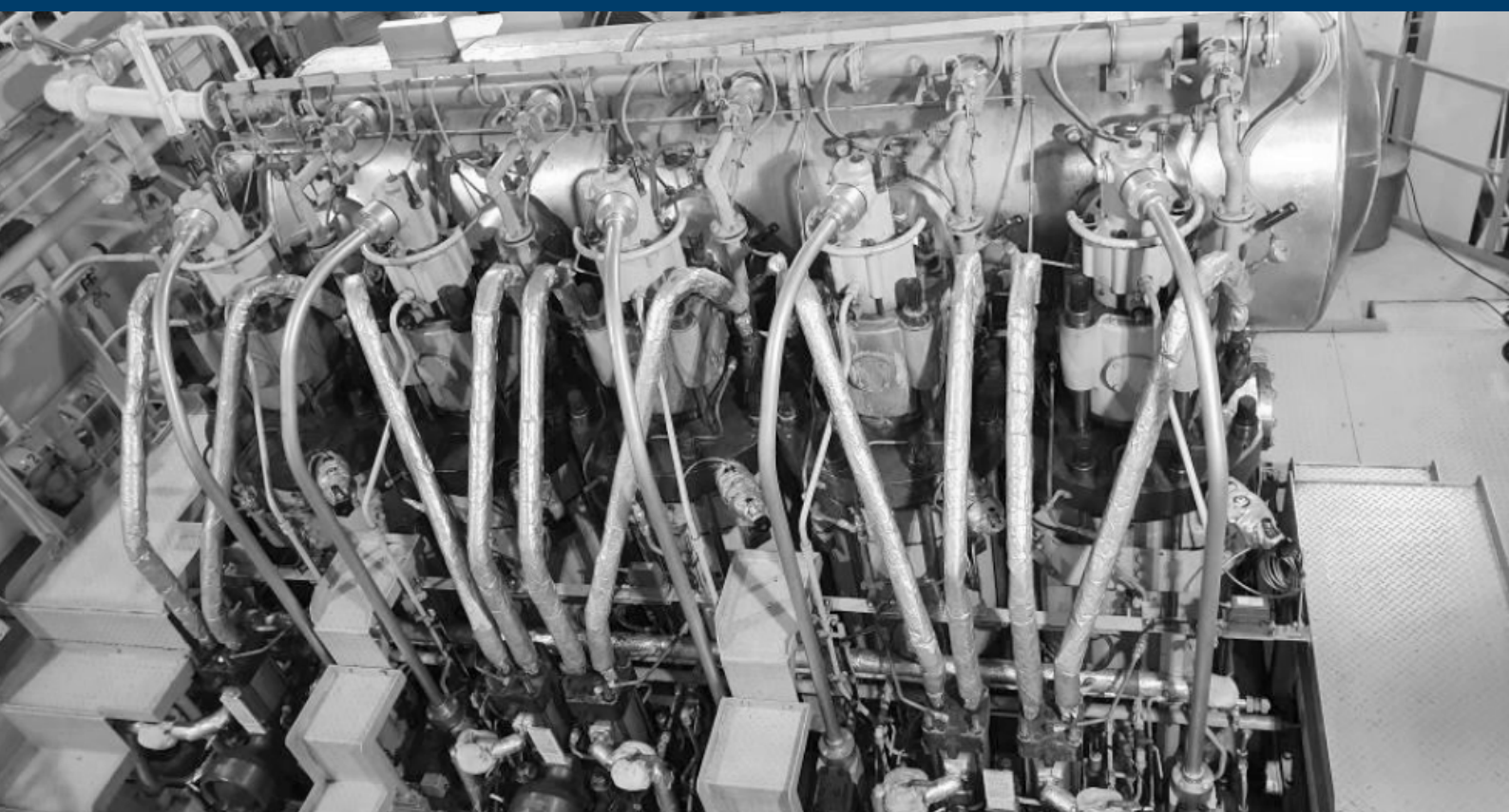




NORWEGIAN HULL CLUB

Casualty Information

No. 113 - September 2021



Cylinder lubrication of 2-stroke engines

Norwegian Hull Club wishes to emphasise the importance of safety on board by focusing on welfare, environment, assets and the sharing of useful experience.

In this Casualty Information newsletter, we will highlight the importance of regularly maintaining the cylinder lubrication system.

As is usual in such newsletters, The Club makes a number of recommendations in order to promote best practice and avoid unwanted incidents.

Dear Seafarers, Shipowners and Managers,

The IMO 2020 0.5% global sulphur fuel cap regulation has increased focus on optimal cylinder lubrication.

Norwegian Hull Club believes that most stakeholders have increased their knowledge of cylinder lubrication during the transition from Heavy Fuel Oil (HFO) to Very Low Sulphur Fuel Oil (VLSFO). However, we still experience damage to cylinder units caused by inaccurate cylinder oil feed-rates and/or cylinder oil Total Base Number (TBN) that is not optimized according to actual engine condition.

Inaccurate feed-rates could be due to failure and wear to cylinder lubrication system components. Cylinder lubrication of 2-stroke engines has become more challenging, while the lubrication systems on modern engines have become increasingly complex. Consequently, closer attention to the condition and performance of such systems is required.

In this Casualty Information newsletter, we would like to highlight the importance of regular maintenance and service of the cylinder lubrication system. Service in this respect means condition assessment of the cylinder lubrication system's main components and wear parts, including the electronic control system and software. It should be done by competent, specially trained personnel, possibly from the manufacturer.

We recommend that owners, managers and crew pay attention to service letters and bulletins, and follow guidelines issued by the respective engine manufacturer regarding service intervals of cylinder lubrication system.

Monitoring engine condition while operating on VLSFO and VLSMGO is important, and alternation between high and low TBN cylinder oils - depending on cylinder condition - in order to avoid accumulation of deposits is recommended by engine makers / oil suppliers. Based on actual cylinder condition, a cylinder oil with a higher TBN may have to be used to achieve increased cleaning ability.

It is important that cylinder unit inspection routines (underside piston inspection) are performed at regular intervals in order to physically determine if the engine is operating with optimal cylinder lubrication,



An example of an onboard lubrication system



and to initiate corrective actions before damage occurs e.g. piston ring breakage and / or cylinder liner scuffing.

To monitor a cylinder's condition in operation, it is recommended that a cylinder wear-down kit be kept onboard. This can be used to measure changes / increase in iron content (Fe) in the drain oil. In addition, oil samples drawn from the scavenge air space drains can be sent to a laboratory for further analysis.

Based on cases we have handled over the past year, The Club strongly recommends that crews undergo proper training in operating and maintaining the specific cylinder lubrication system. Training should include general information and guidelines for cylinder inspection and type of lubricating oil to be used based on actual engine condition.

Kindly note that the process to ensure optimal cylinder lubrication starts when the bunker is lifted. Fuel sampling should therefore be conducted during the entire bunker period, preferably through a continuous drip into a clean cubitainer or through an automatic sampler, stirred and poured into sample bottles. Mixing of fuels should be avoided as far as practically possible. Mixing fuels is even more risky post IMO 2020 as low sulphur fuels tend to be more unstable and less compatible. When the fuel oil analysis report is received from the laboratory, it is crucial that the person responsible (both ashore and on board) reads and understands the parameters and guidelines / recommendations related to general fuel treatment and cylinder lubrication provided.

Norwegian Hull Club wishes you all fair winds and following seas.



It is recommended to follow guidelines issued by the respective manufacturer regarding cylinder lubrication intervals.



NORWEGIAN HULL CLUB

Access our Casualty Newsletter Library at
www.norclub.com