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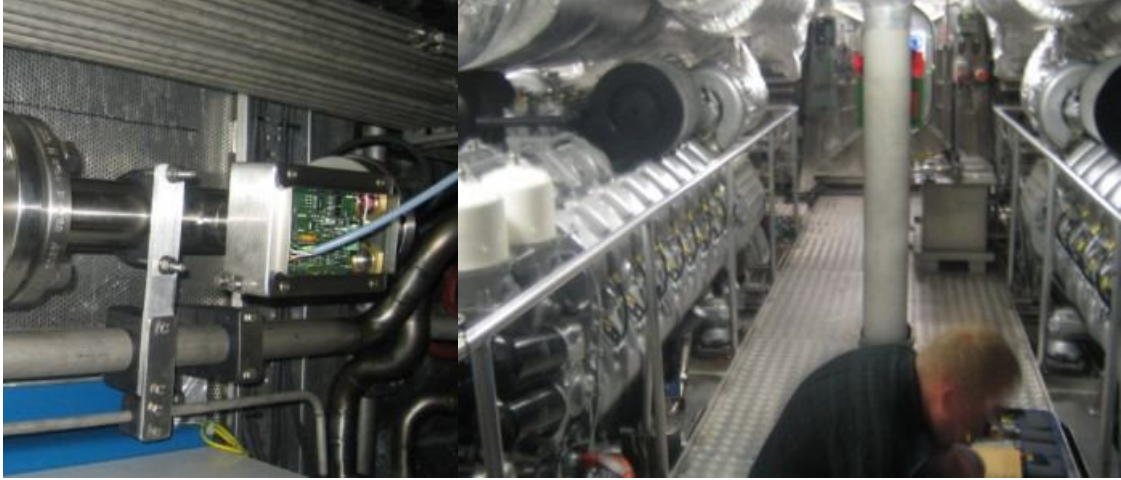
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ARTICLE: August 2007

Water Contamination in Marine Vessels

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The EASZ-1 will report water contamination in marine vessels from measuring water contamination in diesel or fuel inlets to engines , engine lubrication systems, gear lubrication, transmission and propeller systems.



The EASZ-1 online water in oil monitor can easily be retrofitted to existing ship engine brands such as MAN B&W , Wartsila , Sulzer Diesel , MAK , Caterpillar , Pielstick etc . The installation can be performed quickly and with minimal interruption during scheduled maintenance. The unit is "ship ready" being manufactured in all stainless steel 316, CE compliant and protection to IP 66 . Built in temperature compensation and choice of 5 water in oil ranges by jumper selection make it the monitor of choice. Unlike older technologies that used trimming pots, there is no longer a need to re-calibrate the circuit since the device uses state of the art digitally based technology.

The most important system on a ship is the engine system. If the engine system is damaged or does not operate correctly, the ship could pose a serious danger to itself or other ocean-going vessels. For example, the ship could go astray or even run aground on a reef. The type of engine used most often for ships are Diesel engines such as MAN B&W , Wartsila , Sulzer Diesel , MAK , Caterpillar , Pielstick etc. Diesel engines provide higher horsepower, yet are easy to maintain, and save on fuel. Some of the important parts of a diesel engine system are the fuel system, lube system, water-cooled system, gears, transmission system, and propeller system.

In order to ensure that the engine system works properly, the ship's mechanic must keep track of many different parameters such as the temperature of the engine, input/output pressure, tachometer, output horsepower, knots, etc. All of this information must be sent to the control center for the commander or operator to control and monitor the system. It is now possible to monitor water in oil in many of these circuits by installing multiple EASZ-1 online water in oil monitors. These monitors provide an additional safety device . The data enables operators, QA/QC personnel and maintenance companies to monitor contamination levels in any oil system. Water can be considered a contaminant and detecting its presense is important for many reasons.

When it comes to lubrication the quality of engine lubricating oil can dramatically increase equipment reliability and life-time. One major form of contamination in engine lube oils is water . Too much water and systems that are not effectively maintained can effect bearings , rollers and other rotating devices. Water contamination can also cause different problems in different types of lubricating oil, although corrosion is always directly associated with water ingress. Whatever the equipment, water can displace the oil at contacting surfaces, reducing the amount of lubrication and activating surfaces which may themselves act as catalysts for degradation of the oil.

Too much water can be catastrophic in many lube oil systems because of its potential to cause failure via a number of mechanisms. Water contamination can also clog fuel systems and initiate bacterial growth.

In highly loaded lubricated contacts, particularly where oil films are thin (for example on gear teeth), water contamination can result in rapid failure through localised or general breakdown of oil film conditions. Alternatively, the mode of failure could be progressive resulting from local or generalised corrosion of components within the systems and/or through effects which impact on the functionality

of the lubricant itself. There are many potential sources of water contamination in any system and experience operators will always be aware that these problems need to be checked.

EESIFLO International has experienced personnel who can assist ship owners and management companies in keeping check of water contamination of any fuel or oil at any time of the day using its unique online water monitoring systems.