

Circular From LONDON**Date: 29 February 2016**

Deck crane inspections and maintenance

Deck cranes can be subject to demanding operating conditions, but the reliability of the cranes and the avoidance of costly and time-consuming breakdowns rely on the cranes being properly maintained, as explained in the following:

Routine inspection and maintenance of the cranes (and grabs, if fitted) should be carried out according to the manufacturer's maintenance schedule and this should be incorporated into the ship's planned maintenance system. In addition to routine maintenance, cranes are subject to test and examination. The International Labour Organisation (ILO) Convention 152 requires that a register of lifting appliance and loose gear be kept (what is often referred to as the cargo gear record book). The requirement is for a thorough examination annually and a retesting and thorough examination every five years, the latter of which includes a load test.

The wires for the cranes - those fitted and any spares - should each have a certificate and these should be kept with the cargo gear record book. Wires should be regularly inspected for any damage. Wires may be damaged during cargo operations, in particular, due to chafing against the hatch coaming. Deck crew on watch during cargo operations should notify any damage as soon as it is identified and prepare a stevedore damage report. Damaged crane wires should be assessed for replacement in accordance with the crane manufacturer's guidance or in accordance with ISO4309 - Cranes - Wire ropes - Code of practice for examination and discard. Wires should be lubricated with the correct wire rope lubricant.

The majority of cranes onboard ship are of the electrohydraulic type. It is important that the hydraulic oil is maintained in good condition. In addition to regularly checking oil levels, filters should be regularly inspected. One of the biggest causes of failures of hydraulic systems is dirty oil. Although hydraulic oil may look clean, particles in the oil that cannot be seen by eye can cause control valves to jam and will also cause wear of components. Water in the oil can cause corrosion and if the oil emulsifies this can lead to sluggish operation. Routine oil analysis should be carried out to ensure that the oil is in a satisfactory condition and ideally, this should include a particle count.

It is important that the oil cooler is regularly inspected and cleaned, particularly if the cranes are being operated in high ambient air temperatures. This may need cleaning more frequently if the ship is regularly loading and discharging dusty cargoes. A dirty oil cooler may result in the crane cutting out if the high temperature limit is reached, which could lead to a performance claim if the cranes are repeatedly stopping. Hydraulic oil leaks should be attended to as soon as they have been identified. In addition to being a safety hazard, the stevedores may refuse to use the cranes.

The brakes on the cranes should be regularly inspected and their condition recorded. Band brakes often have indicators to show the correct brake tension but linings should be checked to ensure they are of

adequate thickness and are not contaminated with oil. Disk brakes are usually checked by measuring the clearance, and this should be recorded in the maintenance records.

One of the most important parts of the cranes is the safety devices. Limit switches should be regularly checked to ensure that they are operating correctly. Ensure that covers on limit switches are properly fitted and waterproof. If limit switches and controls are not functioning correctly, this can result in damage to the crane and/or risk of injury to personnel.

Source of Information: London P&I Club

Andrew Liu & Co. Ltd