

Wire failures and damages are often present in crane incidents



## Crane regulation review misses the mark

SOLAS amendments do not go far enough

BY CHRIS DYSON

The subject of a ship's on-board lifting appliances has been variously discussed at recent IMO subcommittee meetings and it appears likely that relevant SOLAS amendments will be adopted and enter into force on 1 January 2026, which will be applicable to ship cranes. Is this a game changer for improving the safety of ship's cranes or is it simply window dressing?

I have been investigating crane failures and incidents over the past 25 years which, unfortunately for the industry, still continue to occur on a regular basis, often with the same underlying themes. While the new SOLAS

regulations, and proposed guidelines, provide a readily accessible source for relevant information and requirements which may assist the industry as a whole, they appear to fall short in significantly enhancing safety requirements.

The SOLAS amendments will require ship cranes to be designed, constructed and installed in accordance with classification society requirements. This perhaps closes a loophole in present requirements, although cranes produced by reputable manufacturers are already likely to be approved by classification societies at newbuild and this is also commonly stipulated in shipbuilding contracts.

### Ship's cranes – the forgotten heroes

A ship's maintenance requirements can often be focused on getting the vessel from A to B in a safe and efficient manner, for which the ship's cranes are not required; the cranes themselves are located, housed and operated in an exposed marine environment. At sea, they remain exposed to environmental factors and subject to deterioration, even though they are not in use. In port, they are commonly operated by stevedores, who will leave the vessel at the end of their shift and wave goodbye to the cranes when the ship leaves the port. These ingredients can often result in incidents and failures.

The proposed new SOLAS guidelines refer to the operation and maintenance of the ship's cranes and their presence in the marine environment, but do not go beyond advocating measures, which should already be adopted by prudent owners/operators.

Crane designs include numerous safety devices, but these cannot guard against all types of misuse and mishandling, which can give rise to incidents. The requirements for such safety devices are already given in classification rules, applied at newbuild.

Neglecting obvious safety factors, crane incidents can initially appear of relatively low monetary cost, in terms of immediate and obvious damage sustained, but these costs can escalate significantly and quickly, including by means of the use of shore cranes, delays, repair time and logistical requirements. Basic information concerning damage/failure incidents is often missed at the time of occurrence, which can increase the complexity

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Ship cranes will need to be constructed in accordance with classification society requirements under new SOLAS amendments

of investigations and arguments between relevant parties, with associated escalation of costs. There may be a reluctance to send a crane expert to an incident and instead to use local personnel, which may be limited in their knowledge and expertise.

Following an incident, the ship may effectively simply allege that this was caused by 'mishandling', while alternatively, the stevedores may simply refer to the same event as due to 'the maintenance of the crane', with neither party providing specific detail.

### Wire issues

Wire failures and damages continue to feature prominently in crane incidents. While the new proposed IMO guidelines refer to the ISO standards for wire inspections, these are already widely used as a reference, and there remains no general requirement to replace the wires periodically, for example, at five-yearly intervals, corresponding to class renewal and as associated with routine dry docking. The wires are complex mechanisms that are subject to wear in normal service and will ultimately fail after some period, even in normal use. Advanced

methods of inspection are not commonly adopted and more basic methodology may be inadequate to fully determine the onset of deterioration, within a wire.

The proposed SOLAS guidelines refer to maintenance manuals to be provided for ship cranes and to wear components. However, the guidelines are open to varying interpretation and do not specifically mention parts that are non-serviceable by ships' crews and may be termed as 'maintenance free' by the manufacturers, albeit periodic specialist overhaul will likely be required over the expected life of the crane. Such 'maintenance free' parts are often neglected and not referred to within crane manuals, which can give rise to significant incidents/failures.

Shore-based hydraulic oil analysis is a common industry tool for assessing the internal condition of relevant machinery, but is

often beyond the simplistic requirements provided within manufacturers' manuals.

### Annual surveying

While the five-yearly load test has been adopted in the proposed SOLAS amendments, along with the annual thorough examination, and the requirement for the design, construction and installation of cranes to be in accordance with the requirements of a suitably recognised classification society, they do not go so far as to bring the cranes under classification after entering service. In addition, as is presently the case, they refer to ongoing 'survey' to the satisfaction of the administration and a 'competent' person.

I am aware of numerous incidents that have occurred within a short period following annual survey, i.e. thorough examination and, to a lesser extent, five-yearly load testing. While the delegation of these responsibilities to a classification society would not guarantee improved standards, it would have been a step in the right direction, but appears to now be an opportunity that has been missed by IMO.

In summary, I consider that while the proposed amendments to SOLAS for on-board lifting appliances are a step forward, they do not advance the regulations and requirements sufficiently such as to be likely to significantly enhance the safety of ship cranes. ■



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