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**Media Release**

**Port Equipment Manufacturers Association highlights the danger of fatigue cracks on container cranes**

February 10, 2016 – The [Port Equipment Manufacturers Association](http://www.pema.org/) (PEMA), the global industry body for port equipment and technology, has published a new information paper on the structural examination of container handling cranes in ports and terminals.

The paper is designed to increase understanding of the risks posed by fatigue failure, highlight the importance of structural examination and give practical guidance to help terminal personnel to detect cracks through visual examination of ship-to-shore (STS), rail mounted gantry (RMG) and rubber tyred gantry (RTG) container handling cranes. The paper states that, while visual examination by non-specialists is better than doing nothing, this should not replace following a proper inspection programme by the crane maker or a trained professional.

Fatigue damage is the initiation and growth of cracks in material caused by repeatedly applied loads. It is the progressive and localised structural damage that occurs when a material is subjected to cyclic loading. All operating loads contribute to this damage. It can take 15 years or more for dangerous cracks to be detectable.

According to data from the insurance firm TT Club, the third biggest source of equipment claims in ports worldwide is fatigue damage. Fatigue failures in port equipment, especially STS cranes, pose a significant human safety, economic and operational risk. The authors of the paper estimate that, of the worldwide fleet of 5,000 STS cranes, each year around 150 will develop a fatigue crack that can result in the failure of a critical member.

The paper corrects the common misunderstanding that after a crane has been reviewed and load tested by a certifier and received its annual inspection certificate, there is no chance of fatigue failure in the following year. In fact, certification only demonstrates that that crane can carry the design load, but says nothing about the presence and growth of fatigue cracks.

The main part of the paper looks at what causes fatigue failure and provides a detailed and extensively illustrated guide to practical structural examination that covers what to look for and where to look for it. The paper highlights fracture critical members (FCMs) and points out typical crack locations. It highlights the importance of regular visual inspections, but advises that operators should engage a professional to conduct in-depth examination of critical points on the cranes on a periodic basis.

The paper was prepared by Simo Hoite and Michael Jordan of Liftech Consultants, Hannu Oja of Konecranes, David Moosbrugger of Kunz, Theo Scheijven and Walter Oostwouder of APM Terminals, and Michael Tanner and James Scanlon of Liebherr Container Cranes.

The new report is the 9th information paper to be published by PEMA and builds on technology briefings covering RFID, OCR, container yard automation and laser technology. PEMA has also published best practice papers on standard safety specifications for yard equipment and minimum safety specifications for quay container cranes. All publications are available for free download at <http://www.pema.org/publications/>.

**About PEMA**

Founded in 2004, PEMA provides a forum and public voice for the global port equipment and technology sectors. The Association has seen strong growth in recent years, and now has over 95 member companies representing all facets of the industry, including crane, equipment and component manufacturers; automation, software and technology providers; consultants and other experts. [www.pema.org](http://www.pema.org/)

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