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HONG KONG MERCHANT SHIPPING INFORMATION NOTE

Collapse of Gantry Crane Trolley

To : Shipowners, Ship Managers, Ship Operators, Masters and Officers, Classification Societies and Crane Manufacturers

Summary

An industrial accident occurred on board a Hong Kong registered ship at Freeport, Texas, U.S.A. on 20 October 2004. While the ship was loading a cargo of rice in sacks with the ship's gantry crane, the gantry crane trolley detached from the cross-beam and fell down into the cargo hold. The accident caused the death of a crane operator and the injury to other two stevedores. The accident is believed to have been caused by the failure of mounting bolts at the support frames of the gantry crane trolley. The investigation revealed that bolts of strength lower than design value were used. The strength of the mounting bolts was also found seriously weakened by corrosion.

The Incident

1. On 20 October 2004, the Hong Kong registered ship berthed at a dock of Brazos Harbour, Freeport, U.S.A. for loading. A cargo of rice in sacks was loaded into the No. 5 cargo hold using the ship's gantry crane. A crane driver was inside the driver cab of the gantry crane trolley to operate the crane for loading of cargo while the other two stevedores were working inside the cargo hold.
2. While sacks of rice were being loaded into the cargo hold, the supporting frames of the gantry crane trolley suddenly detached from the cross-beam of the gantry crane. The trolley and the crane driver fell down into the bottom of the No. 5 cargo hold (see figure 1). The accident caused the death of the crane driver and injury to the two stevedores.
3. The accident was probably caused by the failure of the mounting bolts at the supporting frames of the gantry crane trolley.

Lessons Learnt

4.
 - a) The gantry crane, including the trolley assembly should be inspected periodically by a competent person to ensure free of defects;
 - b) For critical components such as bolts subjected to repeated, fluctuating or alternating stresses, they should be examined regularly and maintained in top condition. Only genuine parts should be used for replacement if necessary;
 - c) Any trolley which might fall off from its mounting should be fitted with an anti-tipping device of sufficient strength to hold the trolley in position in case of critical part fails; and
 - d) Applying sideloading force (see figure 1) on the cargo by the crane trolley is a malpractice which could cause uneven loading on the support frames and their mounting bolts. Crane operator should not operate the gantry crane in a manner that exerts sideloading force.

5. The attention of shipowners, ship managers, ship operators, masters and officers, classification societies and crane manufacturers is drawn to the lessons learnt. Due regard should also be paid to the guidance note in Merchant Shipping Information Note No. 18/2006 on "Examination, Testing and Maintenance of Shipboard Lifting Appliances and Loose Gear".

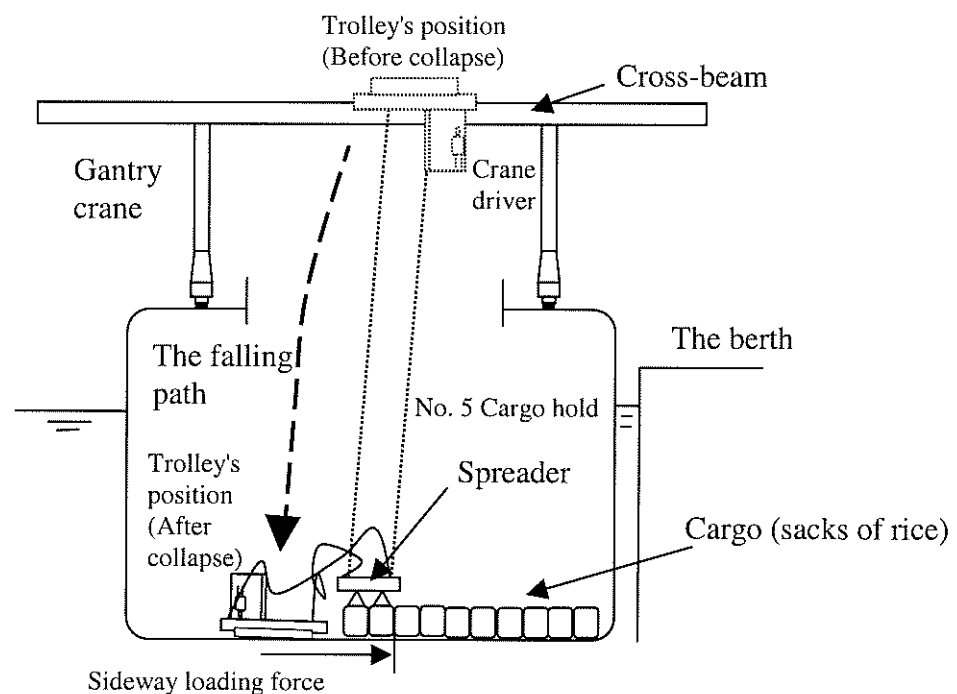


Figure 1 : The scene of the incident