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香 港 商 船 資 訊

HONG KONG MERCHANT SHIPPING INFORMATION NOTE

Cargo hold explosion caused by hot work on the hatch coaming

To : Shipowners, Ship Managers, Ship Operators, Masters, Officers and Crew

Summary

When the crew carried out hot work to dismantle the connection of a hydraulic ram attached to the forward hatch coaming of a cargo hold fully loaded with coal, an explosion took place resulting in one death and two injuries as well as buckling and dislocating of hatch covers of the cargo hold. This Note draws the attention of shipowners, ship managers, ship operators, masters, officers and crew to the lesson learnt from this accident.

The Incident

1. A Hong Kong registered bulk carrier fully loaded with coal departed for her discharging port with all hatch covers of the cargo holds and ventilation flaps closed. On the voyage, the crew carried out hot work, trying to dismantle the connection of a leaky hydraulic ram which was attached to the cargo hold forward hatch coaming. During the repair, an explosion in the cargo hold took place, injuring three crew members, who were later taken to the hospital by a helicopter sent from the nearest coastal state. Amongst the three injured crew members, one of them was the fitter who passed away in the hospital two days later.

2. The explosion was caused by a hot spot on the hatch coaming igniting the flammable methane gas released from the coal inside the cargo hold. The violent power of the explosion caused the hatch covers in the area to buckle and dislocate while the associated securing cleats were also torn apart and broken. The accident might well have been avoided and the hot work could have been stopped if the master had passed the safety cargo information and warning received from the shipper and the company to the chief engineer in advance. The crew also failed to take note of the hazard from the cargo hold behind the hatch coaming. Furthermore, inappropriate risk assessment was another contributory factor.

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3. The investigation also revealed that the daily gas sampling measurement as well as ventilation measures for cargo holds had not been implemented cautiously. The portable gas detectors on board were also found defective without being reported to the company in accordance with the company's procedures for repair/replacement arrangement.

Lessons Learnt

4. In order to avoid recurrence of a similar accident in future, masters, officers and crew of vessels should:

(a) strictly follow the company procedures of permit to work system especially if the operation involves hot work, gas sampling measurements and gas detector maintenance; and

(b) be familiar with cargo safety information and follow all the required safety precautions.

5. The attention of shipowners, ship managers, ship operators, masters, officers and crew is drawn to the lessons learnt above.

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