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HONG KONG MERCHANT SHIPPING INFORMATION NOTE

Fatal Accident Resulting from Improper Release of Carbon Dioxide Gas

To : Shipowners, Ship Managers, Ship Operators, Classification Societies, Marine Institutes, Masters, Officers and Crew

Summary

A recent fatal accident occurred on a Hong Kong registered ship when a large quantity of trapped carbon dioxide gas (CO₂) was released to the atmosphere via an improvised discharge pipe. Four seamen were killed in the incident. This information note draws the attention of the shore management and shipboard staff to the importance of reporting to the flag and port Administrations, and the need to seek shore assistance in case of similar accidents happening on board.

The Incident

1. On 27 September 2004, the CO₂ fixed fire extinguishing system on board a Hong Kong registered ship was somehow activated with 5060 kg of CO₂ gas trapped in its manifold. After receiving advice from the management company, an attempt was made by the ship's crew to release the trapped CO₂ to the atmosphere using a discharge pipe fabricated by the ship's crew. When CO₂ gas was suddenly released, the improvised discharge pipe bent and detached from the manifold resulting direct discharge of a large quantity of CO₂ gas into the CO₂ room. Four seamen including the Master, the Chief Engineer, the Chief Officer and the Third Engineer inside the room were suffocated and died as a consequence. The incident happened when the ship was 430 nautical miles east of Sri Lanka on a voyage from Singapore to Suez Canal.
2. The investigation revealed that earlier on the 23rd of September 2004, while the ship was approaching Singapore, the Chief Engineer might have accidentally triggered 92 CO₂ gas cylinders during an inspection of the fire extinguishing system. As a result CO₂ gas was released and trapped under pressure inside the manifold. The Master reported the incident to the management company in Japan to seek advice but not the flag State administration and the concerned classification society. Neither had the port authority been notified of the problem when the ship arrived Singapore the next day.

3. The investigation identified that the cause of the accident was due to releasing of the trapped CO₂ gas to the atmosphere in an unsafe, ill-planned and uncontrolled manner.

Lessons Learnt

4. The lessons learnt from the incident are as follows:

- (a) Ships' officers should be reminded of the importance of proper handling of the fixed fire extinguishing system. Sufficient and clear instructions and warning should be provided to avoid improper handling of the system and the danger of accidental release of CO₂.
- (b) A large amount of CO₂ gas trapped in the fixed fire extinguishing system manifold is a very serious incident. To release the gas to the atmosphere while the vessel is on passage is also a very risky and unsafe operation. Furthermore the engine room and cargo holds would not be under the protection of a fixed fire extinguishing installation once the CO₂ has been released. Under no circumstances should such release of CO₂ gas be carried out when the ship is at sea.
- (c) Under Section 80 of the Merchant Shipping (Safety) Ordinance, Chapter 369, it is the responsibility of the management company or the Master to report to the Marine Department, Hong Kong SAR without delay when such a serious incident has occurred. Neither the management company nor the Master of the vessel reported the incident to the flag administration or the port authority in this case. Furthermore, no attempt had been made to seek any shore assistance when the ship was in Singapore.

5. The attention of shipowners, ship managers, ship operators, classification societies, marine institutes, masters, officers and crew is drawn to the lessons learnt and take necessary measures to prevent similar accident.

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