



## 香港商船資訊

## HONG KONG MERCHANT SHIPPING INFORMATION NOTE

**Fatal accident caused by cargo hold fumigation**

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

**Summary**

On the voyage, high-density phosphine gas was detected in the accommodation of a Hong Kong registered bulk carrier (*the vessel*) whilst her laden cargo holds being fumigated. An unconscious engine cadet was rescued from his cabin, but all resuscitation efforts ended in vain. This Note draws the attention of shipowners, ship managers, ship operators, masters, officers and crew to the lessons learnt from this accident.

**The Incident**

1. *The vessel* completed loading of wheat at port and commenced cargo fumigation subsequently before departure. On the fifth day of the voyage, a phosphine gas reading of 2.0 parts per million (ppm) was detected at the upper deck alleyway of the accommodation. The master instructed all crew members to evacuate from their cabins immediately, but the engine cadet was later found lying on his bed. Despite the crew attempted to resuscitate him, the engine cadet was eventually confirmed dead.
2. The investigation revealed the following factors leading to the accident:
  - (a) when *the vessel* was built, an electric cable conduit connecting No. 5 cargo hold and the accommodation was added at the request of the shipowner. This additional work had not been checked against the relevant rules and regulations of the classification society of *the vessel*. As both ends of the cable conduit were not sealed, phosphine gas leaked from No. 5 cargo hold to the accommodation; and
  - (b) the senior officers of *the vessel* were in lack of safety awareness. They did not informed the management company of the fumigation process in accordance with the company's procedures. No immediate actions were taken to identify the cause of increasing phosphine gas concentration within the accommodation.

## **Lessons Learnt**

3. In order to avoid recurrence of similar accidents in future, masters, officers and crew of vessels should:

- (a) strictly comply with the company's procedures and guidelines on fumigation; and
- (b) enhance the safety awareness of the toxic gas and emergency response relating to the fumigation, and duly carry out the risk assessment for fumigation operation.

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

Marine Department  
Multi-lateral Policy Division

8 May 2020