

Ref : DMA/AIFI/96/C 871

Date: 05/02/2018

Dear Captain  
Good Day,

### **Incident description**

On board a bulk carrier and during a third party survey, the surveyor made a request to test the emergency fire pump, which was arranged with the assistance of the chief engineer. The emergency fire pump was located in a recessed well in the steering gear compartment, approximately 3 meters deep and accessed by an inclined stairway. At the commencement of the test, the surveyor asked to observe the pump being started locally and operating before proceeding on deck to check the hoses rigged fore and aft. Shortly after descending into the fire pump well, the chief engineer urgently ordered the surveyor to get out and by the time both men reached the steering compartment deck, they were experiencing symptoms of dizziness, with the chief engineer in a state of near collapse. They were taken on deck into fresh air by other crew members and recovered soon afterwards.

### **Analysis**

Investigation into the cause of the incident revealed that maintenance had recently been carried out on the provision store refrigeration machinery located in the steering flat. During this work, Freon refrigerant gas from the plant must have been released into the space and, being heavier than air, had migrated into the pump well displacing breathable air. Both men were very fortunate to escape from the space unharmed. If the ladder had not been inclined but vertical, as is more usually the case, they may not have exited the well before passing out. The chief engineer was possibly more affected due to being of shorter stature than the surveyor and thus inhaling a higher concentration of the gas.

### **Lessons Learnt**

- Improper maintenance procedures can cost lives. Refrigerant gas should be contained and in the event of accidental release, the immediate area and adjacent spaces must be checked and thoroughly ventilated
- This is not an isolated incident involving Freon charged refrigeration plant.
- Where refrigeration machinery is present in a steering flat or other confined space, a risk assessment should be carried out to determine whether the space is to be treated as an "enclosed space" requiring pre-entry precautions and atmosphere tests
- Consideration may be given to providing fire pump wells of this type with mechanical ventilation extraction from the bottom of the space and if fitted, to ensure it is always operated before entry

You are requested to confirm receipt, discuss the contents in the next consolidated meeting on board & keep a copy in the file DA-11 .

Best Regards,

Ali Mohtasham

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