

## SAFETY BULLETIN No.1 of 2015

### ENTERING VOID SPACES – HARMFUL GASES!

Recently, PLA Marine Surveyors were undertaking an annual inspection of a motor barge at the vessel's moorings and the forepeak hatch of the vessel was opened for a visual inspection to be conducted from the deck. Once the space was opened it was noted that it appeared to be coated with an oil preserve with a pungent smell of linseed oil. The space was considered as an enclosed space, and as such would have required a rescue team on site prior to entry; therefore they did not attempt to enter the space on this occasion. However, as a matter of course, the Surveyors tested the atmosphere within the space to ascertain whether any harmful gases were present.



Upon lowering the first atmosphere detector into the space, it sounded a warning alarm after approximately 10 seconds. A second detector was lowered into the space by way of confirming that it was not a faulty atmosphere detector, which also alarmed providing the following results:



- O<sub>2</sub> – 20.5% - (Normal 20.8%)
- LeL – 4ppm – (Normal 0ppm)
- Hydrogen Sulphide – 0ppm– (Normal 0ppm)
- Carbon Monoxide – **100ppm**–(Normal 0ppm)

It should be noted that the Health and Safety Executive's EH40 Workplace Exposure Limits (WEL) states that with a Long Term exposure level of 30ppm (Short Term 200ppm), individuals are likely to experience dizziness, nausea and other flu like symptoms, and if subjected to continued exposure, conditions could worsen leading to fainting or loss of consciousness.

As there was no machinery located within the space, it was not possible to establish the direct source of the carbon monoxide; however it was highly likely that it had emanated from the adjoining engine space containing a hydraulic power pack with a faulty exhaust system.

#### Key Lessons:

It is important to remember a number of key safety issues prior to entering enclosed spaces, such as those commonly found on-board all vessels. As in this instance, due consideration should be given to the nature and use of adjoining spaces and whether bulkhead penetrations or ventilation ducting routed through the space could impact on the outcome of the enclosed space risk assessment.

In summary:

- Only enter an enclosed space if there are no other options;
- Ensure that the space is properly ventilated;
- Have a rescue plan and appropriate rescue equipment available; and
- **Always** conduct atmosphere testing prior to entry.

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