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Case studies for onboard safety meetings

Every month the marine insurance company Gard will provide a case study from our accident files. It is our hope that the case studies and the enclosed risk assessment form will be used during the discussion in the safety meetings.

Onboard safety meetings are held at least monthly and as soon as possible after any serious incident or accident within the company.
The TMSA issued by OCIMF

The Company should establish procedures to identify, describe and respond to potential emergency situations.
The ISM code

Onboard safety meetings
Case study no. 1: Enclosed space entry

Please read the following story of an incident which took place during an inspection of a vessel's tanks. We will be discussing the incident and the factors which led to it occurring. Please keep our procedures in mind while reading to compare with the actions of the crew below.

- The vessel was on a laden voyage to the Far East. During the last month the crew had been inspecting the vessel's topside ballast tanks, noting condition of steel and paintwork. The crew was now about to inspect the last ballast tank, the no. 1 port.
- The air pipes of the tank had been closed off for some time. To air the tank the crew had opened both manholes on deck, one forward and one in the aft end of the tank. An electric fan normally used to air the tanks was faulty and could not be used.
- Three crew members were preparing to carry out the inspection. One OS was positioned on deck as a guard, while the 2nd Officer and one AB were to inspect the tank. As the 2nd Officer entered the tank, he complained about the hot, damp air and that he could hardly see anything in the poor light of his torch. He asked the AB to get a stronger light before entering the tank, and to bring new batteries as well.
- The 2nd Officer remained in the tank, while the OS remained on deck awaiting the AB's return. After a while the OS tried to look into the tank, but saw at first nothing. He called to his colleague, but received no answer. Entering the manhole to get a better view, he discovered the 2nd Officer lying motionless at the bottom of the tank. He climbed down the rest of the ladder to try to shake him awake. When he reached the bottom of the tank he lost consciousness.
- It took the AB 10 minutes to return, and he found no one on deck upon his return. Looking into the tank, he saw two lifeless bodies. His first thought was to enter, but remembered previous advice about such accidents and rushed instead to raise the alarm. The Chief Officer took charge and ordered a set of breathing apparatus belonging to the fireman outfit to be brought forward, along with a rope and a stretcher. He also sent for an oxygen content meter.
- It was discovered that the air bottles were empty, as they had not been refilled after a previous fire exercise. Spare air bottles were sent for and once they had been replaced a rescuer was sent into the tank.
- It was very difficult to get the two persons out of the narrow manhole. The OS regained consciousness when he was brought up to the deck but it was discovered that the 2nd Officer was not breathing. Several attempts were made to revive the 2nd Officer without success.
- The OS said that he had felt no bad smell, no pain, had no warning of lack of oxygen before his legs gave way and he felt a need to sit down.
- Investigations concluded that the heavy corrosion of the tank had depleted it of oxygen. The limited airing of the tank by only opening the manhole covers for a couple of hours had not been enough to provide sufficient oxygen in the tank. It was also discovered that the oxygen content meter had not been calibrated since May 1999.

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Risk assessment form

Based on the case, we will now perform an onboard risk assessment of the incident and the factors which led to it. Bearing in mind our own procedures, please consider the following:

Hazard Identification

Based on the case description, what are the hazards involved, i.e. the potential dangers that can arise from this activity?

Risk Assessment

Could these hazards be present onboard our ships?
Frequency: How often (daily, monthly or annually) can the hazards possibly occur?
Severity: How bad are the worst possible outcomes of these hazards?

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Risk Acceptance

Are the risks identified above acceptable in our company or should any of the identified risks be reduced?

Risk Treatment

How can the identified risks be reduced? (Both frequency and severity of a hazard should be assessed to determine the risk. Consider factors such as equipment, procedures and training.)
Which procedures do we have onboard that must be followed during an activity like this?

Case studies for onboard safety meetings

The case studies for safety meetings have been developed by Gard to provide crews with a tool to improve experience transfer and safety awareness.

The cases consist of a short story describing a common operation onboard most vessels. The crew should read the story and try to detect the errors made.

Gard recommends that the risk assessment form is used as a template to discuss the story and carry out a risk assessment of the operation described.
Any suggestions for improvements or discovered discrepancies in own procedures should be reported in accordance with the company manual.

The cases will be distributed monthly to Gard's members and clients who are subscribing to our loss prevention e-mails.

To be included in the distribution list or to receive more information about Gard's loss prevention programme please contact:

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