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management s.a.

Fire in Engine Room (circular 2.)

Protank Management S.A , as a Company collects and takes into account all "loss prevention" circulars, case studies or "casualty investigation reports" within industry and share findings with its crew.

Officers and crews onboard are encouraged to participate with their comments after discussing those topics in safety meetings.

Our aim is to avoid recurrence of similar incidents.

Please find attached a case study for a "Fire in Engine Room" incident circulated by P&I club Gard Norway.

Attachment: case study by Gard

Case study for onboard safety meeting

Case study no. 2: Fire in the engine room

Please read the following story of an incident which took place in an engine room on a ship. 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.

A 1998 built bulk carrier was on a voyage from Australia to China. The vessel was in good condition, however, the engine room was oily and dirty. In addition, the exhaust pipes had sections of insulation missing and hot spots were evident both on the main engine and the auxiliary diesel engines. The Chief Engineer (CE) had asked for assistance from shore to renew the insulation, but had been told to wait for the Special Survey when the ship would be at a repair yard.

All fuel and lub-oil tanks were fitted with level glasses with self closing cocks. These cocks had all been secured in the open position by steel wire, to make daily soundings easier for the crew. One of the glasses had been replaced with a clear plastic pipe.

One of the diesel generators was running high temperatures and the CE decided to overhaul it. For three days the crew had then been working on overhauling all the cylinder units, which also made it necessary to dismantle sections of insulation around the exhaust channel. By the end of the third day, the engine was test-run and found to function well, however, the pads of insulation were difficult to fit back onto the exhaust pipe, more or less falling apart in the process. This task was completed just in time for the crew to clean up and go for supper. The repaired diesel generator was left running.

An hour later, while people were still seated in the mess room, an engine room alarm was heard and the Engineer on duty calmly put on his boiler suit and went to investigate. The vessel's machinery was fully automated for watchless operation, and alarms went off relatively frequently without causing much panic. Shortly thereafter, however, the fire alarm sounded, and the bridge announced over the intercom that the fire alarm panel showed a fire in the engine room and black smoke was coming out of the open skylight.

The CE, a motorman and a greaser rushed to the engine room to discover that the Engineer on duty was trying to fight a fire engulfing the newly overhauled diesel engine. He was emptying the second powder extinguisher on the flames, but to little effect. Oil was spewing from a coupling of the high pressure pipe on one of the cylinders, spraying onto the hot exhaust pipe, now fully alight. Flames were also seen to spread along pipes above the auxiliary diesel engines, where oil and dust had accumulated. Burning oil was dripping down onto the floor plates, and smoke and flames had started to emerge. A collection of wooden planks used in the past as staging in the engine room, was also on fire, as was a large container of oily rags and rubbish.

The CE ordered the motorman to stop the fuel supply. The emergency closing of the fuel supply valve was by wire pull. Unfortunately, this broke without closing the fuel valves.

All of a sudden the fire spread dramatically. The heat of the fire had caused the sight glass and the clear plastic pipe to break and the oil drained out through the bottom self closing cock, which was secured in open position by wire. Due to the escalation of the fire, the crew had to escape from the smoke and heat by withdrawing to the control room. The CE decided to close off the engine room and prepare for release of the CO^2 plant. He cried out: "Are there anybody left in the engine room? CO^2 will be released".

Case study for onboard safety meeting
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 potential hazards involved, i.e. the hazards present prior to the incident occurring?

Risk Assessment

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

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 in a case like this?