REPORT NUMBER 201162

Open ballast tank causes internal flooding

A cargo vessel berthed in the evening and began discharging steel cargo alongside a wharf. According to the discharging plan, it was intended to discharge cargo from hold nos 2, 4 and 6 initially. During this sequence, seawater ballast was to be pumped into nos 1, 4 and 6 (port and starboard) wing tanks. At times, because of the uneven distribution of cargo in the holds, the vessel took a list to one side and the ballast tank valves were controlled to keep the ship close to upright.

Soon after midnight, the valves of nos 1 and 4 wing tanks were shut and ballasting of no 6 wing tanks began. Tank soundings were not monitored during the ballasting operations, and the quantity of seawater in the tanks was not estimated either. At about 01.30, a '440V insulation fail' alarm activated at no 1 deck crane power distribution panel on the main switchboard. The power cables to the deck cranes passed through the port-side passageway. Suspecting moisture in the junction boxes, the electrician opened the access to the passageway and was shocked to find that it was flooded with ballast water. Portable pumps were used to discharge this water.

When the space was sufficiently dry by early afternoon, it was observed that no 1 port wing tank manhole cover had not been closed and water was continuing to pour out into the passageway. The tank was deballasted to bring the water level below the manhole opening and the lid was secured tightly.

After the electrical junction boxes in the passageway had been cleaned and dried, the insulation readings returned to normal and power supply was restored to the deck machinery. During a precautionary check, it was noticed that two more wing tank manholes were open and these were properly secured.

Investigations revealed that after the chief officer had made an internal inspection the previous day, the fitter assigned to the task of securing the manhole lids had forgotten to carry out the work. The chief officer had also failed to verify that the job had been properly completed.

Root cause/ contributory factors

1. Failure to follow basic seamanship in securing tank lids after completion of inspection.
2. Insufficient monitoring of progress of ballasting operations and tank soundings.
3. Inadequate work planning and execution.
4. Defective high-level bilge alarm in the passageway (fault known to crew).
5. Failure to carry out risk assessment and control measures.
6. Poor leadership/supervision.
7. Inadequate maintenance.

Corrective and preventative actions

1. The attending superintendent immediately held a safety meeting at which the serious lapses and failures on the part of the crew were discussed.
2. Members of the ship's staff were instructed to ensure careful planning and continuous monitoring and recording of all ballasting operations, including regular appraisal of quantities in each tank based on tank and pump capacities.

MARS editor's note

This incident is of concern on many counts and points to possible serious deficiencies in the safety management system, operational and maintenance procedures and crew's observance of basic seamanship. Where such bilge wells are fitted, the onboard procedures and planned maintenance systems should incorporate the regular testing and recording of the functioning of the bilge alarm and the draining/pumping arrangements and also ensure a reasonable stock of spare parts.

REPORT NUMBER 201163

Sudden release of load causes injury

A crew member engaged in fabrication work went to the pipe storage rack to select and remove a length of pipe. He grabbed the pipe by its partially projecting end and pulled with all his strength. As it was held in place between other pipes in the rack by compressive and frictional forces, his initial effort failed to dislodge it. In a fresh attempt to move the pipe, the crew member pulled on it with a violent jerk, causing the pipe to slide out suddenly. The worker lost his balance and fell backwards, hitting his back on the bulkhead behind him, causing a contusion.

Root cause/contributory factors

1. Poor risk assessment and work planning.
2. Failure to seek assistance from co-worker when in difficulty.

Corrective/preventative actions

Incident report circulated to all vessels in the fleet with instructions to:

1. Discuss the incident at their next safety meeting and refer to Section 3, Chapter 19.4 of *The Code of Safe Working Practice – Manual Handling – Advice to seafarers*.
2. Assess carefully any load that is to be lifted or moved and plan for the best way to apply the effort.
3. Request assistance from other crew in case of difficulty.
4. Consider the task and assess injury risks before starting the operation or task.
5. Remember that statistics have consistently shown that improper muscular effort and poor posture are leading causes of strain injuries, which can be prevented by use of proper techniques.

Contact More reports are always needed. If you have experienced or seen any incident from which others may learn, please report it, including your name and contact details, to the MARS editor at: mars@nautinst.org, via www.nautinst.org/mars or to MARS, c/o The Nautical Institute, 202 Lambeth Road, London SE1 7LQ, UK.

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