Safety Flash

28/22 – December 2022

IMCA Safety Flashes summarise key safety matters and incidents, allowing lessons to be more easily learnt for the benefit of all. The effectiveness of the IMCA Safety Flash system depends on members sharing information and so avoiding repeat incidents. Please consider adding **safetyreports@imca-int.com** to your internal distribution list for safety alerts or manually submitting information on incidents you consider may be relevant. All information is anonymised or sanitised, as appropriate.

1 MAIB: Worker falls between vessel and quay

The Marine Accident Investigation Branch Safety Digest 2/2022 includes an incident in which a shore worker fell 8m between vessel and quay, suffering significant injuries.

What happened

A shore worker boarded a berthed bulk carrier via the gangway to obtain a signature on some paperwork. Because of the falling tide, the gangway was then stowed, its safety net was removed and the crew started to rig an alternative means of safe access and egress. The shore worker returned to the deck with the signed paperwork and was advised by the crew to wait a few minutes for this to be safely prepared for his disembarkation. He was also informed that the gangway was no longer in use for access.

Showing the actual rescue of the shore worker

What went wrong

The shore worker ignored the crew's direction and walked along the stowed gangway, intending to jump ashore from its lower platform. At the lower platform, the shore worker slipped, lost his balance and fell over 8m into the sea between ship and shore, suffering significant injuries.

What went right

The alarm was raised and emergency services were quick to arrive on scene. Meanwhile, the Chief Officer climbed down the jetty ladder and pulled the shore worker out of the water and safely into a recess just above sea level. From there, the shore worker was evacuated to hospital on a stretcher for treatment of his injuries.

The lessons

- Procedures: The shore worker was largely responsible for his own injuries. Crew instructions to visitors are not optional advice, and here were ignored!! This accident demonstrates the importance of safe means of access and the importance of managing and, where necessary, directing visitors on board to be safe.
- Risk: Don't rush!! Rushing to depart led to a nasty fall into the sea and injuries that required hospital treatment. Although waiting might have seemed tiresome, the short delay to the shore worker's departure would be nothing compared to the pain and inconvenience he suffered from the fall.
- Equipment: Safe means of access is crucial. When rigged, and with a safety net in place, the gangway represented a safe means of access; however, the tidal state meant it was no longer safe to be used. The crew acted to remedy this and rig alternative means of access, but the shore worker was impatient to leave and,

tempted by what he perceived to be an easy jump to the jetty, he contravened the crew's instructions and took an unsafe route off the vessel.

Members may wish to refer to

- MOB: person fell into water during gangway installation
- Near miss/positive: crew exercised stop work on new gangway
- MOB fatality: person fell between vessel and jetty

2 Accidental swallowing of paint thinners

What happened?

A crew member thought they were drinking water from a used mineral water bottle and actually drank paint thinners by mistake. The content of the bottle was not marked, and the bottle was incorrect for the temporary storage of the chemical.

What went wrong

A crew member, making stencils in the workshop, cleaned the stencils using paint thinners, which had been poured from the original clearly marked and labelled container into a used mineral water bottle. Upon completion, the unlabelled mineral water bottle containing the thinners was left in the workshop in a place where drinking water bottles were often left. The following day another crew member picked up the bottle and drank from it. As a precautionary measure this crew member was sent ashore for medical examination which revealed no consequences.

What was the cause

- The risks of using a mineral water bottle for a chemical were not appreciated;
- There were no dedicated small bottles/containers on board – an old water bottle had to be used to hold a limited amount of the thinners;
- The bottle containing the chemical product was not marked with its temporary content;
- Clear liquid, in appearance very similar to water, was stored in a water bottle and could therefore be easily confused with the original content;
- Poor housekeeping: at the end of the task, the chemical product remaining in the water bottle was not disposed of nor returned to the original container, but was left at the workstation.

An inspection confirmed that there were no other unmarked containers in use on board.

Lessons to be learned

IMCA notes that this should not be happening, but unfortunately is a repeated scenario that other IMCA members have had to deal with in recent times.

- If it is necessary to decant chemicals from their original containers: always decant the chemicals in the chemical storage area, use a container in good condition and of type appropriate for the chemical – never use bottles normally used for, or associated with, drinking water;
- Ensure there are some appropriate containers or bottles for this kind of task;
- Ensure that chemicals and hazardous substances are stored appropriately and not left out – tidy up afterwards!

Members should review

- Person accidentally drank hazardous substance (2016)
- Unlabelled containers: Chemicals stored in drinking water bottles (2017)
- Near miss: Water bottles reused for fuel storage (2017)

- Person accidentally drank hazardous substance: Unmarked bottle (2017)
- Accidental drinking of thinners stored in mineral water bottle (2018)

3 Near miss: pipe dropped from pipe supports

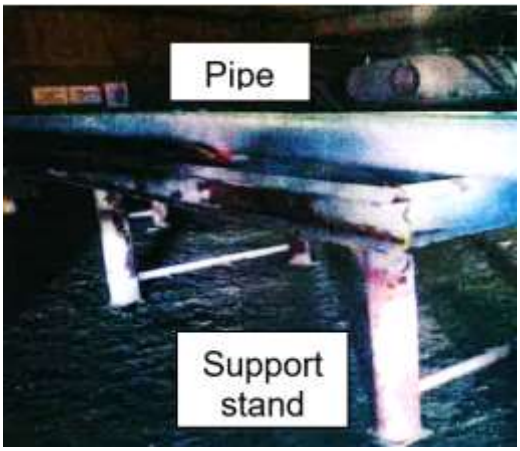
Applicable Life Saving Rule(s)

Bypassing Safety Controls

What happened

During the cleaning of a section of pipe at a third-party facility, the pipe rolled off the pipe support easels and dropped to the floor. There was no injury to personnel nor damage. The incident happened when a worker was using an angle grinder with an abrasive sanding wheel to clean the pipe. The pipe was supported by two easels at either end with only minimal wedges or restraint to prevent the pipe rolling off the supports. The worker turned the pipe to get to the underside and during this action the pipe rolled off the supports dropping to the ground.

Dropped pipe from pipe supports



Previous Incident - 8m pipe length stored on support stand with no stoppers or wedges

Previous Incident - Dropped welding coupon from support single stand

Our member reports that this is the third incident in the last 12 months with a similar cause – inadequate supports used while working on pipes.

What went wrong the following findings were noted:

- There were inadequate supports used for working on and storing pipes;
- There was a failure in procedures and risk assessments, to address the manual handling aspects of pipes on temporary supports;
- There was a failure to learn from previous industry incidents;
- Previous inspections and audits had failed to verify controls and preventive measures;
- Human factors, risk perception and competency of personnel involved in operations.

Recommendations

- Ensure effective risk assessment of temporary pipe stand / support arrangements;
- Use rollers or other mechanical devices to turn a pipe;
- Managing third party suppliers and contractors:
  - Set clear expectations on what should and should not be done;
  - Have formal agreements in place on the level of oversight, mode of control and accountability;
  - Schedule audits, inspections, and verifications of third party operations;

  - Support third party contractors and consider regular fresh eye reviews of work tasks and equipment in use.
- Remember that you can and should **STOP THE JOB** if you think it is unsafe. Don't hesitate to do so.

Members may wish to refer to

- Focus on third-party dropped objects
- Don't ASSUME – verify and check

4 Oil tank sight glass push buttons wired open

Applicable Life Saving Rule(s)

Bypassing Safety Controls

What happened

On a visit to an engine room, a serious *bypassing of safety controls* was observed. Both top and bottom level check push buttons on an Oil Tank Sight Glass were inhibited by wire. The sight glass is used to check the oil level in storage tanks. It is designed such that a button has to be pushed to check and verify the level of the oil tank. The button allows a connection between the sight glass and the oil tank. Whilst the button was wired open, if the glass tube were to be accidentally broken or damaged, then the contents of the tank could easily spill into the engine room with consequent further serious hazard of slips/trips, fire, and lack of oil where it was intended.

Top and bottom side of sight closing devices blocked by wire

What was the cause?

- Unsafe behaviour – this was an intentional override of a design feature related to safety-critical equipment
  - The oil level gauge closing device had been inhibited with wire and remained in open position for a long time.

Members may wish to refer to

- Unsafe actions and conditions – inhibited alarm buttons
- Deliberate failure to follow instructions: unsafe/quarantined tools brought back into use
- Plastic cover on smoke detector

5 BSEE: Unsafe chemical use and disposal

The United States Bureau of Safety and Environmental Enforcement (BSEE) has published Safety Alert #450 relating to several incidents involving the improper use or disposal of chemicals.

Incident 1: During the disposal of expired paint products, a worker mixed epoxy resin and solidifier in a container. In a second container, Carboline epoxy paint A & B components were mixed. Finally, the two containers were mixed

into a five gallon bucket and placed in a paint locker. Five minutes later, the worker noticed smoke coming from the locker. The worker placed the bucket into a larger container filled with water and left. Twenty minutes later, the worker's supervisor noticed white smoke coming from the container, and called the control room. A fire alarm muster was called. The worker added more water to the container enroute to his muster station but the smoking did not stop until later when the mixture was covered with fire retardant powder.

Incident 2: An operator noticed a cotton cloth rag smouldering inside a wheelbarrow. The wheelbarrow also contained filtration media and used paint that was curing before disposal. Water was used to put out the fire. The investigation determined that the cloth likely contained flammable Carboline thinner, which ignited as the cloth dried in direct sunlight.

Incident 3: An employee attempted to clear a clogged drain in the living quarters with a proprietary drain cleaner ("Liquid Fire", active ingredient: sulphuric acid). The employee then added additional drain cleaner on the mornings of the next two days without success. On the third day, the employee added chlorine bleach to attempt to unclog the drain. The bleach and drain cleaner reacted causing a small greenish yellow gas cloud to form. The employee inhaled a small amount of the gas and experienced a sudden shortness of breath. The employee was medevaced to a hospital for chest x-rays, supplemental oxygen, and breathing treatment and was later released.

The BSEE recommendations included:

- Remember that when epoxy base is mixed with solidifier, the reaction may be exothermic (i.e., produce heat);
- Do not leave cloths, rags, mops, or clothing that have been saturated with flammable liquids in hot areas or direct sunlight. Laundering these items without first removing the flammable liquids can cause fires;
- Do not mix cleaning products. Follow the instructions provided by the manufacturer and do not use them for purposes other than their designated use;
- **Read and understand the Safety Data Sheets (SDS)** and have procedures for handling chemicals that account for their specific hazards. Keep SDS on file for all chemicals kept in inventory or used routinely at your facility. SDS include information about hazardous chemical properties, personal protective equipment (PPE) requirements, and procedures for first aid, handling, cleanup, firefighting, storage, and disposal;
- Verify that firefighting and spill response equipment is nearby and ready for use before starting a job. Some firefighting formulations may not be effective against certain chemicals, and water may worsen some types of fires or chemical reactions;
- Wear appropriate PPE when handling chemicals. Face shields, special chemical handling gloves, and aprons are common PPE for chemical handling. Latex gloves may be sufficient for some chemicals; others may require PVC or nitrile gloves. Refer to the SDS for PPE information.

Members may wish to refer to

- Mixing of cleaning chemicals
- Chemical reaction: person injured during grouting operations