

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: “pinkie is no longer perkie”

What happened?

The Marine Accident Investigation Branch [Safety Digest 2/2022](#) includes an incident in which a crew member on a large cargo vessel lost part of their finger while passing through a hydraulically operated sliding door to an adjoining machinery space. The door was fitted with a operating lever handle on either side. The crew member used their right hand to operate the lever handle and the door began to open to the right. The crew member walked through the doorway and placed their left hand on the lever handle on the other side, pushing it down once more to continue the operation.

What went wrong

The door opened fully, *while the crew member kept their hand on the handle*. As the door retracted fully, the crew member’s left hand became trapped between the handle and the doorframe, resulting in the little finger suffering amputation of the fingertip and nail above the first knuckle. It could not be reattached.



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Rule(s)



Line of Fire



Door operating handle – red circle indicates line of fire

The door was not faulty: Subsequent inspection for technical, hydraulic and electrical defects found it to be in good working order.

Lessons learned (MAIB)

- Training: automatic or powered doors are potentially very dangerous. Hydraulic and electric power-operated systems are unforgiving in their closing force and should be treated with respect. Crew should be provided with suitable training on both the safe use of these doors and the dangers of their unsafe operation;
- Procedures: If we go through a powered door often, it is easy to forget the dangers and take shortcuts such as walking through the door before it has fully opened. Previous accidents have sadly resulted in more serious injuries than those suffered in this case, and sometimes death;
- Awareness: Entrapment is a hazard often associated with moving machinery and wariness is the watchword. There should have been no need for the crew member’s hand to remain on the door’s operating lever and this action indicates insufficient knowledge of the system;
- Short cuts: if the operator was attempting to take a shortcut, then a greater understanding of the system would have been required to understand the dangers of doing so. Lack of understanding of how a system will work when shortcuts are taken, and the potential consequences, are a good enough reason not to take short cuts.

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Members may wish to refer to:

- [Lost time injury \(LTI\): Finger injury – watertight sliding door \(2016\)](#)
- [Fatal accident involving a horizontal watertight sliding door \(2001\)](#)
- [Line of fire: pinched finger between door and frame](#)

IMCA will bring further reports from this MAIB Safety Digest in the next few Safety Flashes.

2 LTI: person suffered serious crush injuries

What happened

During offshore drilling operations, a drilling assistant sustained serious crush injuries, resulting in several weeks away from work. He was injured when he leaned out of the rooster box, between the guard railings, and was caught between the compensator carriage and the rooster box.

What went wrong

- No-one **STOPPED THE JOB**: people on the back deck did not challenge unsafe behaviour: people remained in the rooster box in between tool-handling operations.
- There was inadequate management supervision – no-one verified and monitored compliance with the applicable rules, regulations and good practice;
- Procedures were not adequately controlled, maintained, and shared;
- Hazards associated with the tasks were not adequately identified and assessed in the preparation onshore, nor execution offshore;
- There was a lack of means of communication and observation (such as audio comms and CCTV) to support the management of deck activities;
- Previous lessons learned during other geotechnical drilling operations were not adequately captured in the drilling manual, shared and/or implemented on this project.

Actions and recommendations

- Our member took the following actions and recommendations
 - Ensured that the procedures and work instructions supporting the operations were controlled, up to date, relevant to the operations and shared, ensuring that the team executing the operations were adequately familiarised;
 - Hazard identification tools such as HAZOPS, HAZID, Risk assessment, Task risk assessment or SLAM (“Stop, Look, Analyze, Manage”) are critical in ensuring all stakeholders are aware of all the risks and mitigations, reducing the risk to “as low as reasonably practicable”;
 - Adequate communication is essential between employees and supervisors, and where required should be supplemented via electronic means;
 - Safety barriers and devices (e.g. railings) should not be bypassed or defeated;
 - Regularly reinforce messaging to ensure that in the event of any process change or where a hazard is identified, all of us are empowered to speak up and **STOP THE JOB** without fear of consequence or retaliation.

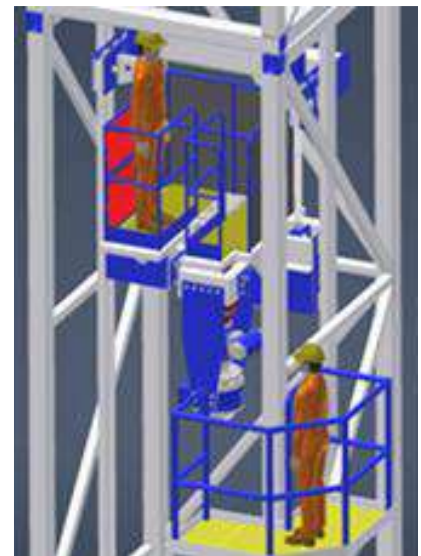
Members may wish to refer to:

- [High potential LTI: rigger ear injury](#)
- [Near-miss: Personnel almost caught between crane house and scaffold pipe](#)

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Line of Fire



- LTI: head injury

3 LTI: burns to forearms

What happened?

During pipe coating application work at a third-party sub-contractor worksite, a worker received serious burns to both forearms, that resulted in an LTI. The injury occurred at the start of the operation when the pipe was being coated with the first layer. During this operation the transition between pipes required the manual application of a spatula to mark the pipe cutting area, as shown below. While marking the pipe, the injured person's arm touched the pipe due to an unexpected movement of the pipe assembly, causing serious burns to both forearms. This injury was seen by another employee who activated the line emergency stop and helped the injured person away from the line of fire situation to a safe place. First aid was given before the casualty was taken to hospital for further treatment.

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Line of Fire



Re-enactment of task (spatula)



CCTV footage of the task being undertaken by the injured person.

What went wrong

The final investigation is still to be released, but preliminary findings from this incident and other recent third-party incidents have identified the following issues:

- The task was deemed to require manual intervention using a spatula as a marking tool, thus exposing people to possible injuries;
- The task was seen as routine, to be undertaken on a regular basis. There was no challenge to re-engineer the task by those performing it or supervising it;
- There was no consideration of hierarchy of risk controls, or specifically automated or engineered methods to eliminate human exposure;
- Company management had paid a visit and had previously identified the risks associated with the task and provided improvement suggestions to the sub-contractor.

Recommendations

- Ensure that the obligation and expectation to exercise the **stop work authority** is clearly communicated and understood by all, particularly third-party and sub-contract personnel;
- Can we do the job in a safer way? Ensure we have clear expectations in respect of controlling risk and identifying tasks that can be reengineered to remove the risk of human intervention or manual handling;
- Dare to challenge the “norm” with a fresh set of eyes as to how tasks are actually being conducted.

Our member notes an increasing need to improve human factors, risk perception and competency considerations for personnel involved in third-party operations. Our members' analysis of their own “top 20” incident causes to

date in 2022 confirms that **inadequate engineering/design** and **use of tools and equipment** are within the top 5 causes of incidents.

Members may wish to refer to

- [Cook's arm scalded while removing food from oven](#)
- [Flash fire in field joint coating station](#)

4 LTI: Foot trapped between pipes

What happened

During pipe handling operations a rigger positioned himself at the pipe's bottom layer gap. A pipe from the upper layer rolled down into the space on the bottom layer, trapping the riggers left foot resulting in a Lost Time Injury (LTI).

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Bypassing
Safety
Controls



Line of Fire

What went wrong?

The worker walked towards the pipe stack. The pipe on the top layer was still connected to the gantry crane. He stepped forward into the gap on the bottom layer. At the same time, the pipe stack shifted, trapping his ankle, causing an LTI. The sequence of events is illustrated here:



Crew member walked towards the pipe stack. The pipe on the top layer was still connected to the gantry crane



Crew member stepped forward into the gap on the bottom layer. At the same time, the pipe stack shifted, trapping his ankle.



Crew member's left foot trapped between the two pipes

What was the cause?

- This was a repetitive task which had been ongoing for two months (loading and unloading 2000 pipejoints during this period);
- There were sufficient team members on site, but the other riggers were involved in another task elsewhere. The crew person involved decided to continue the task on his own to get the job done;
- Temporary wedges were available during the pipe handling operations. The pipe stacking area, however, was not set up with permanent wedges or spacers to ensure the pipes could not roll;
- A stacking plan and a risk assessment were available, but neither were being followed at the time;
- Inspections and audits had failed to verify controls and preventive measures;
- Human factors - risk perception and competency of personnel involved in operations.

Members may wish to refer to

- [Serious injury during pipestalk rolling operation \(2006\)](#)

- [Lost time injury \(LTI\) during lifting operations – backloading tubular cargo \(2015\)](#)
- [Injury caused by shifting load of pipes \(2016\)](#)
- [LTI: Leg Fractured While Loading Tubulars \(2020\)](#)

5 MAIB: A scalding injury

What happened

The Marine Accident Investigation Branch [Safety Digest 2/2022](#) includes an incident in which an engineer suffered severe scalding to his face. The incident occurred during rounds, when a cruise ship’s third engineer discovered a leak on the drain valve for one of the vessel’s four economisers. There was an open-ended pipe running from the valve to a tundish drain in the deck. The Chief Engineer was briefed and a decision was taken to conduct a repair. The economiser’s circulating pump was stopped and the inlet and outlet valves were shut; the plan was to leave the system to cool down overnight before the repair.

What went wrong

After the isolations were in place, but before the system had cooled down, the Second Engineer decided to check the system by opening the drain valve. Leaning over the valve, the Second Engineer cracked it open and pressurised hot water and steam burst out of the drain pipe. The force of the discharge caused the hot water to deflect upwards off the tundish, severely scalding his face. After initial medical treatment on board, he was evacuated to a nearby hospital for specialist burns care.

The lessons (MAIB)

- Hazard: The opening of drain lines on pressurised systems should be undertaken with extreme caution;
- Risk: The Second Engineer leant forward over the pipework that ran to the tundish to open the drain valve. As a result, his upper body was directly in line with the deflected water and steam. When venting or releasing stored pressure, keep your body OUT OF THE PATH of any predictable discharge;
- Equipment: Take great care when opening valves that are infrequently used. A valve that has become seized in the shut position may require extra force to manoeuvre it and lead to the valve suddenly and unexpectedly opening, causing an uncontrolled fluid flow. The use of a correctly sized wheel key can provide appropriate torque and increase the application of controlled force to the valve wheel.

Members may wish to refer to

- [Scalding injury to crew member](#)
- [Crewman badly scalded during tank cleaning](#)
- [Personal injury – burns from hot engine oil to body and face](#)

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Line of Fire

