

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 Permit to Work and Isolation procedure not followed

What happened?

An electrician installed fuses on a 930V DC electrical system while the system was live. Under deck carousels were mechanically and electrically isolated as a precaution for maintenance work. Several other important vessel systems were powered from the same drive cabinet. The electrical isolation was conducted by removing the fuses for the carousel drive unit.

Applicable
Life Saving
Rule(s)



Bypassing
Safety
Controls



Energy
Isolation



Signage on
cabinet door



Open cabinet
with fuses on top



Fuses behind
protective mesh

When the fuses were originally removed, the vessel was in port and none of the other vessel systems driven from this same drive cabinet were powered up. The electrician isolated the power to the entire drive cabinet by isolating the breakers and removing the fuses. The electrician then left the fuses at the bottom of the cabinet. Tags were not applied, and the cabinet was left unlocked. On completion of the maintenance work another electrician re-installed the fuses, believing the power to the cabinet was isolated. He opened the cabinet, removed the protective mesh, and installed the fuses using a fuse insertion tool rated to 1000V. When inserting the second fuse, an arc flash occurred, and the fuse blew. The electrician was not injured.

What went wrong?

- There was no Permit To Work (PTW) in place to control, communicate and co-ordinate the activities;
- Persons holding several different roles within the work team failed to understand and apply the company-required level of controls for electrical works and isolations – the isolations were incorrectly applied;
- The vessel Standard Operating Procedures (SOP) for work on the equipment powered by this drive cabinet did not consider the isolations as long-term with a requirement to protect several people working in the area;
- Procedures were not followed: the security of the electrical cabinet was not in accordance with company procedures; the electrician did not lock and tag the cabinet while the fuses were removed;

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- Additional work team requirements with regard to the isolations had been discussed in the Toolbox Talk (TBT) but were not carried out;
- The electrician re-installing the fuses did not check if the power to the drive cabinet was isolated before starting work - failing to follow the instructions written on the cabinet and the work instructions given him.

Actions

- Review of procedures, work instructions, task risk assessments etc. with regard to Permit to Work and electrical isolations;
- Review of Toolbox Talks to ensure they cover all aspects of the work including PTW and isolations;
- Check that the system you are going to work on **is isolated** – **BEFORE** you start work;
- Follow the instructions and warnings signs posted in the workplace. If in doubt, ask!

Members may wish to refer to:

- [Electrician suffered flash burn to hand](#)
- [Fault in high voltage equipment](#)
- [Agitator started moving during mud tank cleaning – leading to injury](#)

2 MSF: LTI – Fall from Height (control of work during SIMOPS)



The Marine Safety Forum published [Safety Alert 21-18](#) relating to an incident where someone fell from the bridge deck to the deck below.

What happened

Four crew in two teams were working on maintenance of the vessel superstructure. One of the teams was on the monkey island; the other, on the bridge level gantry, removing gratings and working on the steel frame of the gantry. When the team finished on the monkey island, they went down to the bridge level, and one of them removed his safety harness. He spotted an old paint drip that needed dealing with, and considered that a check around the bridge to finish off the job before break was a good use of time.

During this task he found it necessary, owing to restricted space, to work moving backwards, not looking behind to see if there were any obstacles. He was aware of the other team working on the same level and that they had been working on gratings, but he **did not check** to confirm where exactly they were at this moment. Whilst working he took a step backwards and fell 3m through the opening left by the lifted section of grating down to the boat deck. The MSF’s member does not report what happened then but the incident was considered an LTI.

Applicable Life Saving Rule(s)

-  Bypassing Safety Controls
-  Line of Fire
-  Working at Height



What went wrong/what was the cause?

- Control of Work and Permit to Work Systems weren’t correctly and effectively implemented on board;
- There was a lack of situational awareness and risk perception, a lack of awareness of SIMOPS, and inadequate communications between deck personnel in charge and deck crew;
- There were no barriers or signage in the area of the incident. A fall hazard was introduced by removing the bridge gantry gratings.

Actions

- More effective and thorough toolbox talks and pre-task risk assessment, particularly for non-routine tasks;
- More thorough approach to SIMOPS:
 - During scope of work planning, identify any combined operations and any additional hazards introduced by the SIMOPS. **Can SIMOPS be avoided, and tasks executed at different times?**
 - Assess the relevant level of risk associated with the SIMOPS.
 - Are the planned control measures enough to keep things safe? If not, identify additional risk reduction measures and update the relevant risk assessments.
 - Whatever happens, make sure a record is kept so the same mistake doesn't happen again - provide input to the Permit to Work / Control of Work process and "embed" any changes identified.

Members may wish to refer to:

- IMCA M 203 *Guidance on simultaneous operations (SIMOPS)*
- [Equipment on quay damaged when vessel started listing \[uncontrolled SIMOPS\]](#)
- [SIMOPS – Smoke from hot work task enters confined space](#)
- [Unsafe lifting operations \[Uncontrolled SIMOPS\]](#)

Members may also wish to refer to the following incidents involving the word "grating" where someone has fallen through grating or otherwise grating has played a role in an incident: www.imca-int.com/safety-events/?searchitem=grating

3 UK HSE: Poor control of work - worker suffered serious injuries

An individual supervisor – not the company - has been sentenced for safety breaches after a worker became entangled in a conveyor belt sustaining serious injuries to his hand and arm.

What happened

A worker was working on a conveyor belt when it became damaged and needed repair. The worker started work to repair the conveyor line, when it started moving and his arm became entangled, which caused muscle and tissue damage.

What was the cause?

Investigation found that the site supervisor, who had control of the site in the absence of the site manager, was responsible for completing a Permit to Work for the repair work and isolating the line. However, on his way to complete the Permit to Work *he became distracted* by another matter and the Permit to Work and isolation were not completed. This meant that the conveyor belt restarted during the repair work injuring the employee.

The inspector said: *"The site supervisor failed to implement company policy and procedure in respect of Permits to Work and isolation. This incident could so easily have been avoided by simply carrying out correct control measures and safe working practices."*

Members may wish to refer to:

- IMCA *"Are you prepared to work safely?"* short video – [Permit to Work](#)
- [Near miss: engine room hatch left open without barriers](#) [A crew member who was on the deck left the area for an urgent task **forgetting to implement** the control measures identified.]
- [Electrician fatally electrocuted](#) [Inadequate risk assessment, the electrician was **in a hurry and distracted**, there were no competent personnel reviewing and approving electrical Permits to Work.]

Applicable
Life Saving
Rule(s)



Bypassing
Safety
Controls



Line of Fire



Work
Authorisation

- Electrician suffered flash burn to hand *[the need for improved control of work was a clear lesson]*

4 Fractured finger while handling metal plates

What happened

While working on deck, a crew member suffered a pinch injury to his right hand baby finger, resulting in a distal fracture to the tip of the finger and a significant laceration requiring sutures to the finger above the nail bed.

Applicable
Life Saving
Rule(s)



Line of Fire

What went wrong?

Heavy weather had caused damage to welded plates on deck. While manually handling the plate back into position with another crew member, the injured person suffered a pinch injury to his finger which was trapped between the plate and frame. Following a medical review, the vessel headed into port to permit further diagnosis at hospital. An X-ray showed a distal fracture to the tip of the finger and the wound required stitches.



What was the cause?

- The design of the plate did not allow for safe manual handling;
- The installation of the plate had a permanent risk of finger entrapment;
- The risk assessments and toolbox talk used were generic in content and not task specific;
- The JSA used was for hot work only and did not include manual handling at all.

Lessons learned

- Safety by design: the plate was subsequently modified to have a pair of temporary handles to keep fingers away from the pinch points;
- Magnetic lifting handles sourced as a long term solution;
- Take care with generic risk assessments – ensure they are either modified to suit the task, or use a dynamic risk assessment or toolbox talk specifically for a full and thorough review of the task.
- If the task is slow, uncomfortable or inconvenient, can we use the toolbox talk or JSA to better define and understand these areas of risk? Can we remove the risk or reduce its likelihood or severity?

Members may wish to refer to:

- [Update to SF 08/21: fatality – person crushed when secured material fell on him](#)
- [Secured material fell against crewman causing injury](#)
- [Crush injury to hand while attempting to secure crane hook](#)

5 UK HSE: Liquid petroleum gas (LPG) leak

The UK Health and Safety Executive (HSE) reports that the operator of the UK's largest oil refinery has been fined for health and safety breaches after a leak of liquid petroleum gas (LPG) was discovered by a worker cycling home at the end of their shift. See [press release here](#).

Applicable
Life Saving
Rule(s)



What happened?

There was an uncontrolled release of around 15 tonnes of LPG through a valve near to the main roadway used by LPG road tankers visiting a refinery in Fawley, Hants, UK. The leak went undetected for around four hours before being discovered by an employee on his way home. It took a further hour to establish the source of the leak with on-site emergency personnel having to enter the area to reset the valve.

What went wrong?

An investigation by the Health and Safety Executive (HSE) found that the leak occurred because:

- LPG was put through the pipe work at too high a pressure for the valve;
- There was no process in place to detect the discrepancy in the flow in the pipe;
- The company had failed to take all measures necessary to prevent a major incident.

The inspector said *“The measures required to prevent incidents should be proportionate to the risks. Where companies handle large quantities of substances that can cause major incidents, such as LPG, they are required to have layers of protection in place to prevent incidents.*

*In this incident a number of those layers **either failed or were not in place** resulting in a significant leak. Even though there was no fire or injury on this occasion, there was potential for a major incident. The prosecution has been brought to highlight the importance of maintaining the layers of protection and preventing this kind of major leak.”*

(IMCA emphasis)