

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 Explosion - hot work in a flammable atmosphere (Transport Malta)

The Marine Safety Investigation Unit (MSIU) of Transport Malta has published [Safety Investigation Report 05/2022](#) relating to an explosion on a tanker following use of an angle grinder on deck near the vent heads of a fuel oil tank.

Applicable
Life Saving
Rule(s)



Bypassing
Safety
Controls



Hot Work

What happened

A large tanker was in transit to her scheduled dry-docking. Additional technicians were on board to assist with preparations for the dry dock. As part of this process, walkway ramps on the main deck were being dismantled to check on their condition and that of the piping passing underneath. Two of the bolts on the last ramp were particularly hard to undo and the assigned technician opted to use an angle grinder to facilitate the work. Sparks emitted from the grinding disk flew towards the vent head of a fuel oil tank (see photograph). Subsequently, an explosion rocked the vessel, causing damage to her steel structure, and port side lifeboat and life-rafts. There were no injuries.

What went wrong?

The full investigation report is detailed and instructive; however, IMCA will draw out only a few conclusions:

- **Acceptance of risk/perceived pressure to finish the job:**
 - The technician had failed to loosen the bolts, having tried with an impact wrench, smaller sized spanners, and a chisel, he was unable to remove the last two bolts. Eventually, their hexagonal shape was rounded, making it even more difficult to undo them. Then he reached for the angle grinder;
 - The vessel would dry dock the following morning and things would become very busy. The technician continued his work into the evening. Daylight was ebbing and this might have also prompted the technician to find a quick solution to the issue at hand prior to sunset.
 - The technician was motivated to quickly complete the task expected of him and the solution seemed to be a simple one. The cutting of corroded nuts and bolts using an angle grinder would have speeded up the process;
 - The safety investigation believes that, although the technician was aware that sparks would be generated by cutting the bolts with the angle grinder, he was unaware of the flammable gases accumulating around the vent head of the bunker tank in the vicinity.



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Some of the actions taken

- Refresher webinars were organised to emphasise the ‘stop work authority’;
- Better safety management and planning of work when additional crew are on board.

Members may wish to refer to:

- [American P&I Club: Fire Started from cutting torch work](#)
- [UK HSE: worker fatally injured in oil drum explosion](#)

2 Process Safety Fundamentals – IOGP / Step Change

Step Change in Safety <https://www.stepchangeinsafety.net/> has created a “Safety Moment” based on IOGP’s **Process Safety Fundamentals** with the inclusion of relevant incident examples. Whilst not all of the incidents occurred within our industry, the learnings remain applicable. The Step Change Safety Moment pack can be downloaded [here](#) and can be used during safety meetings or as individual sheets for toolbox talks.

The principles outlined, and some basic pointers from within the material, are here as a reminder, with an emphasis on the final three:



- **We respect hazards** - incident investigations identify lack of hazard awareness as an underlying cause of many process safety events;
- **We apply procedures** - we use operating and maintenance procedures, even if we are familiar with the task;
- **We sustain barriers** - we speak up when barriers don’t feel adequate;
- **We stay within operating limits** - we discuss and use the approved limits for our location;
- **We maintain safe isolation** -we raise isolation concerns before the task starts and challenge when isolation plans cannot be carried out;
- **We walk the line** - we physically confirm the system is ready for the intended activity;
- **We control ignition sources** - we minimize and challenge ignition sources even in “non-hazardous” areas;
- **We recognise change**
 - We look for and speak up about change;
 - We discuss change and involve others to identify the need for management of change;
 - We discuss and seek advice on change that occurs gradually over time.
- **We stop if the unexpected occurs**
 - We discuss the work plan and what signals would tell us it is proceeding as expected;
 - We pause and ask questions when signals and conditions are not as expected;
 - We stop and alert our supervisors if the activity is not proceeding as expected.
- **We watch for weak signals**
 - We proactively look for indicators or signals that suggest future problems;
 - We speak up about potential issues even if we are not sure they are important;
 - We persistently explore the causes of changing indicators or unusual situations.

3 IOGP: Dropped object with potential for injury - riser release

What happened

IOGP have released [Safety Alert 334](#) relating to a dropped object incident during drilling operations on a Jack-up Mobile Offshore Drilling Unit. Following running of the completion in a subsea well drilled from the jack-up, it was necessary to recover the 16" riser.

While recovering the 16" riser to surface, a drill-pipe deployed anchor tool, which was set inside the riser, prematurely released dropping the Riser approx. 14m and causing damage to the Subsea Wellhead Housing (WHH) sealing face. There were no injuries.

The anchor tool had been pull tested to 40K lbs to confirm engagement prior to releasing the riser.

What went wrong

The load rating of the drill-pipe deployed anchor tool in operation was not as per advised value and it subsequently failed when a relatively modest load was inadvertently applied. (The tool prematurely released at around 35K lbs overpull, rather than the 114K lbs rated overpull).

Actions and recommendations

The damage to the wellhead sealing face was subsequently addressed and confirmed satisfactory.

IOGP recommends that during recovery of casing or riser, that the slip mechanism of the anchor tool is energised constantly by applying pressure and that the shear pins and ratchet mechanism are not solely relied upon as a means to ensure tool engagement.

Members may wish to refer to:

- [Dropped Object from Derrick](#)
- [High potential near miss: guide cone funnel dropped](#)



A drill-pipe deployed anchor



Riser

4 Safe Use of Ladders and Stepladders

The Ladder Association, in co-operation with the UK Health and Safety Executive (HSE) has published Guidance Document LA455 on the safe use of ladders and stepladders, found here: <https://ladderassociation.org.uk/la455/>

In the UK, falls when working at height remain a common kind of workplace fatality, accounting for around a quarter of all worker deaths and 8% of all non-fatal injuries every year, with many involving a fall off a ladder. It's essential that people use the right type of ladder for a task and know how to use it safely. The guidance is for employers on the simple, sensible precautions they should take to keep people safe when using portable leaning ladders and stepladders in the workplace. It will also be useful for employees and their representatives.

It covers such areas as:

- **When is a ladder the most suitable equipment?** *“As a guide, if your task would require staying up a leaning ladder or stepladder for more than 30 minutes at a time, it is recommended you use alternative equipment. You should only use ladders in situations where they can be used safely, e.g. where the ladder will be level and stable, and can be secured (where it is reasonably practicable to do so).”*
- **Who should use a ladder at work?**
- **Checking your ladder before you use it** – make use of pre-use checklists
- **Using your ladder safely** – simple precautions can minimise the risk of a fall;
- **What about the place of work where the ladder will be used** – guidance on where a ladder should and should not be used;
- **What are the options for securing ladders?**
- **What about ladders used for access?**
- **What about the condition of the equipment** – ensuring *“that any ladder or stepladder is both suitable for the work task and in a safe condition before use. As a guide, only use ladders or stepladders that:*
 - *have no visible defects. They should have a pre-use check each working day;*
 - *have an up-to-date record of the detailed visual inspections carried out regularly by a competent person. These should be done in accordance with the manufacturer’s instructions.*
 - *are suitable for the intended use, i.e. are strong and robust enough for the job;*
 - *have been maintained and stored in accordance with the manufacturer’s instructions.”*

Members may wish to refer to:

- [Poor condition of on-board equipment](#) [A damaged ladder was observed as in use on the vessel deck during vessel walk around. Further inspection revealed another ladder in similar condition in regular use.]
- [Descending Stairs Safely](#)
- [Falls from step ladders](#)
- [‘Routine’ task, non-routine result: A fall from a crane ladder leads to an LTI](#)



5 *This is not a drill...an LTI during a drill (MSF)*

What happened

The Marine Safety Forum (MSF) reports in [Safety Alert 22-08](#) an incident in which someone was injured during a drill. Crew on a vessel were undertaking a programme of drills and exercises. A stretcher and casualty handling drill was being conducted on-board the vessels daughter craft when the incident occurred.

As part of the scenario and setting the scene, one person was to close the door of the daughter craft. He placed his right hand on the inner door frame not realising that his thumb was overlapping on the inside of the frame. He used his left hand to close the door with force, entrapping his right thumb and inflicting a severe open fracture. His wound was cleaned and dressed, and he was subsequently medevac'd to shore.

What went wrong

Subsequent investigation determined that the root cause was lack of situational awareness and poor judgement. Though a very experienced seafarer, he “got carried away” – he had lost focus on his own actions and was concerned with ensuring that the exercise was being completed correctly.

Actions

- Check whether door design can be amended to assess potential preventative measures;
- Use a ‘Time Out for Safety’ to highlight the trapping point and raising awareness of the potential hazard on the cabin door frame.

Members may wish to refer to:

- [All of a sudden – “this is not a drill” – person injured during a drill](#)
- [Line of fire: pinched finger between door and frame](#)
- [Finger injury: diver caught finger in bell door](#)

Applicable
Life Saving
Rule(s)



Line of Fire

