

IMCA Safety Flash 27/20

September 2020

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links Additional links should be submitted to info@imca-int.com

Any actions, lessons learnt, recommendations and suggestions in IMCA safety flashes are generated by the submitting organisation. IMCA safety flashes provide, in good faith, safety information for the benefit of members and do not necessarily constitute IMCA guidance, nor represent the official view of the Association or its members.

1 Near miss: sudden Loss of air from diver bail-out bottle

What happened?

A diver was returning to the dive basket to be recovered when he heard a “popping” sound and realised his first-stage regulator appeared to have failed and the contents of his bail-out bottle were escaping.

His bail-out bottle contents went to zero. The diver was recovered to the surface without further incident.

The regulator maintenance history was as follows:

- ◆ A six-monthly full strip-down and full service of the regulator had been undertaken two months prior following the service manual. Our member noted that a full suite of all spares was carried for the regulator including all greases, and special service tools;
- ◆ A monthly service had recently occurred, where the regulator was opened, cleaned with fresh water, and had a diaphragm check and full function test.

What were the causes? What went wrong?

Investigation revealed that there had been a failure of a roll diaphragm from an Xstream first stage regulator attached to the diver's bail-out bottle (Photo 1). The regulator was stripped down to reveal worn structural fibres inside the diaphragm had weakened allowing a hole to form. Photo 2 shows a comparison between the failed and new diaphragm. The damage can be seen on the right unit showing the exposed fibres.

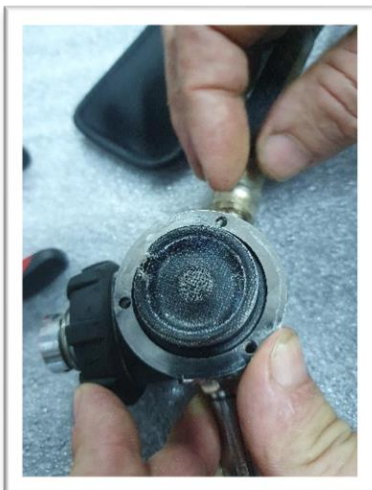


Photo 1



Photo 2

Lessons learned

The roll diaphragm was inspected during the six-monthly maintenance and was deemed good enough quality to remain in service. Human judgement is subjective in deeming this part serviceable.

Our member noted that there was no clearly defined replacement criteria for the diaphragm; consideration was being given to replacing the part every six months.

Actions

- ◆ Follow manufacturer's guidance;
- ◆ Enhanced company planned maintenance system to include that the roll diaphragm is to be changed out in addition to the service kit items.

Members may wish to refer to

- ◆ [Damaged High Pressure Content Gauge Hoses On Bail-Outs](#)
- ◆ [Failure Of Gas Supply To Diving Bell](#)
- ◆ [Failure Of Bail-Out Regulator \(2002\)](#)

2 Serious leg injury from falling winch sheave

What happened?

An umbilical winch sheave was being hand-rolled along the deck when it fell over and struck the leg of one of the people handling it. Crew were rolling an umbilical sheave from an umbilical winch along the lower bell hanger to the main deck for onshore refurbishment.

The sheave was big and heavy: 1.7m across and 1.8m wide, and weighing around 580kg. It had to be moved to a position from which the vessel crane could lift it onto a lorry on the quay for transfer to the workshop.

The work team was made up of a supervisor and two technicians. They had already removed one sheave from its housing and moved it to the back deck for lifting to the quayside. As the team were rolling the second sheave it slipped on the deck, dropped to deck level, and struck one of the team. He suffered leg injuries; he remained conscious and after initial first aid was transferred to hospital for further treatment.

**Applicable
Life Saving
Rule:**



Bypassing
Safety
Controls



Line of Fire



Work
Authorisation



Original sheave location at aft winch station



Transit between office space and storage area



Sheave positioned across walkway post

What were the causes? What went wrong? (IMCA emphasis)

A Safe System of Work (SSOW) was not effectively integrated and implemented at the worksite.

- ◆ There was a **failure to adequately plan and supervise the works** conducted by their team. The team focussed on the winch disassembly without consideration of how to safely move the sheaves across the deck;
- ◆ The work started **before a detailed risk assessment was carried out** to ensure that suitable and sufficient controls were identified and implemented;
- ◆ There had been a preparatory Task Risk Assessment (TRA) but the controls identified were **not effectively communicated** to the work team during the pre-work Toolbox Talk;
- ◆ The Permit to Work was issued without confirmation that the work team fully understood the risk assessment or that they were able to comply with its requirements;
- ◆ The competency of the team had been reduced as a result of changes to crew allocation and rotation;
- ◆ Standard practices for supervising and supporting work teams including subcontractors at the worksite had been impacted by additional controls developed in response to COVID-19.

Actions

- ◆ Ensure subcontractor activities are correctly interfaced with company safety management systems;
- ◆ Ensure that the requirements for Risk Assessment, Permit to Work and effective Toolbox Talk delivery are clearly understood by all, particularly where subcontractors are involved;
- ◆ Permits to Work should only be issued after confirmation that **all** requirements and precautions for the task have been applied;
- ◆ Ensure all aspects of upcoming work is adequately discussed, reviewed, managed and controlled;
- ◆ Ensure measures in place to protect from COVID-19 are factored into the planning, supervision and completion of work activities.

Members may wish to refer to

- ◆ [Fatal Incident During Change-Out Of Chain Wheel \(Gypsy\) On Anchor Handling Tug Supply \(AHTS\) Vessel](#)
- ◆ [Crewman injured when steel plates fell against him](#)
- ◆ [Member of the public killed following unplanned movement of an unsecured load](#)

3 Hand injury from portable handheld Angle Grinder

What happened?

A worker was injured whilst cleaning equipment using a portable handheld angle grinder fitted with a wire brush. The rotating brush caught an edge and kicked into the worker's gloved left hand. The glove was pulled into the rotating wire brush resulting in a deep abrasion to the hand.

Applicable
Life Saving
Rule:



Line of Fire



Glove and wire brush



Hand position - RECONSTRUCTION

What were the causes? What went wrong?

Our member's investigation determined:

- ◆ The task risk assessment was incomplete.
- ◆ The grinder was being used without the side grip handle fitted;
- ◆ No consideration was given to where to place the hand relative to the rotating brush;
- ◆ Given the operator's position, the grinder could not be used safely. The operator should have moved to the other side of the component to complete the task, and deployed the grinder in a horizontal position;
- ◆ There was no formal power tool / abrasive wheel training in place;
- ◆ There was inadequate supervision of the task.

Lessons learned

- ◆ Equipment should be safe and without risks to the operator (that is, complete, with safeguards fitted and free from defects). [*This is a regulatory requirement in many places*];
- ◆ Appropriate supervision is essential;
- ◆ Reliance was placed on experience and 'on the job' training rather than on formal training and competence evaluation.

Actions

- ◆ Task risk assessment amended to include all hazards and control measures;
- ◆ Angle grinder side grip handle obtained and fitted and its use made mandatory as company policy;
- ◆ Review of power tool/abrasive wheels training and competency evaluation requirements;
- ◆ Supervisors' responsibilities discussed and reaffirmed.

Portable tools of this sort wield a lot of energy and their use should be preceded by appropriate training and assessment of competence. It's easy to think "it's just an angle grinder" and pick it up for a quick job – but it could have fatal consequences:

- ◆ **Fatality: Grinder Incident** [*the wheel disintegrated, fragments penetrated the victim's chest and abdomen. He was taken to hospital by rescue helicopter, but died the same day.*]

See also:

- ◆ [Portable Grinders – Hand Safety](#)
- ◆ [Are YOU prepared to work safely videos:](#)
 - [IMCA short video – watch your hands](#)
 - [IMCA short video – grinding wheel safety](#)

Incidents reported to IMCA involving **grinders**, can be investigated here: <https://www.imca-int.com/alerts/search-safety-flash/?swpquery=grinder>.

4 LTI: Leg Fractured While Loading Tubulars

What happened?

A load shifted during cargo operations, pinning a crewman's leg between the deck and the load, causing a broken leg. The incident occurred on a vessel which was in port to load cargo. The cargo consisted of various items including containers and multiple bundles of tubulars. The crane driver lifted the tubulars into position with the deck ratings providing voice communication to ensure that the load was in the correct position. Once confirmed correct, the crane driver payed out the crane wire allowing the deck ratings to disconnect the sling from the lifting hook. Shortly after disconnection, the load shifted striking an AB in the left leg, pinning his leg between the deck and the tubulars.

What went wrong?

- ◆ The task of loading tubulars was considered routine and therefore was not risk assessed adequately;
- ◆ The likelihood of the tubulars not being secure and moving once landed had not been identified as a risk, and the injured AB was positioned in the line of fire with nothing to prevent the tubular load striking the leg.



Applicable
Life Saving
Rule:



Line of Fire

What were the causes?

- ◆ Risk Management processes did not identify hazards associated with task;
- ◆ Personnel were positioned in line of fire with no physical means of holding moving load;
- ◆ Vessel relied on a third party onshore provider to bundle load correctly with no checks.

Lessons learned

- ◆ Supervision and checking of loads is required prior to each lift, especially from third party providers;
- ◆ Multiple bundles of tubulars were lifted in a single lift. The bundles should either be lifted separately or moused together;
- ◆ Physical means of holding loads (pins/chocks) should be deployed in case of potential moving load;
- ◆ Positive: the injured person was properly treated because the medical emergency procedures were well drilled and practiced.

Actions

- ◆ Ensure agreed lifting plans and configuration of unusual loads with third party or client prior to lift;
- ◆ Vessel crew should inspect and supervise the loading process;
- ◆ Deploy pins or chocks to prevent load moving to impact personnel;
- ◆ Personnel reminded not to stand in line of fire during/ or post lift.

Members may wish to refer to

- ◆ [Lost Time Injury \(LTI\) during lifting operations – backloading tubular cargo](#)
- ◆ [Near Miss: Cargo \[tubulars\] shifted on deck in heavy weather](#)
- ◆ [Serious Injury During Pipestalk Rolling Operation \[2006\]](#)

5 UK HSE: Two workers suffer multiple burn injuries

What happened?

An oil refinery company was sentenced for safety breaches after a 2013 incident in which two workers suffered life-changing injuries from an uncontrolled release of high pressure and high temperature steam. The two workers, one of whom was an apprentice were re-assembling high pressure steam pipework following maintenance of a steam turbine driven pump.

See [press release here](#).

What were the causes? What went wrong?

During the process, they were exposed to an uncontrolled release of high pressure, high temperature steam of around 250°C. The uncontrolled release resulted in the 53-year-old employee receiving burns to his lower back and legs, and the 20-year-old apprentice receiving extremely serious burns to his torso, chest, arms and legs. At the time of the incident, these injuries were life threatening.

Investigation found a series of failures with the company's "safe system of work". A number of personnel involved in the implementation of the company's safe isolation procedure of the steam system had failed to complete all the required checks and verifications to reduce the associated risks.

Members may wish to refer to

- ◆ [Crewman Badly Scalded During Tank Cleaning](#)
- ◆ [Fatality: Pressure Build-Up Leading To Sudden Release Of Mechanical Plug](#)