

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 Diving instructor killed – incorrect valve threads

The Dutch Labour Inspectorate (*Nederlandse Arbeidesinspectie*) reports an incident in which a recreational diving instructor was killed. The incident is reported [here](#) (in Dutch).

What happened

During a dive, the valve came loose from the diving cylinder and fatally hit the diving instructor; a cylinder with internal thread G3/4 was used, which was fitted with a valve with external thread M25x2.

What was the cause

Threads on the diving cylinder and the mounted valve were incompatible. In this case, the screw thread of the valve was slightly smaller than that of the screw thread in the diving cylinder. The result was that there was an increased risk that the valve will come loose from the cylinder when at pressure.

The Dutch Labour Inspectorate (*Nederlandse Arbeidesinspectie*) notes that despite various (international) publications about the prevention of such incidents, these situations unfortunately continue to occur.

Members are advised to follow the guidance contained within [IMCA D 064 Guidance on diving cylinder and valve thread compatibility](#).

Members may wish to refer to:

- [Pillar valve failure](#) (2009, investigation revealed that the cylinder (Luxfur S50 brand) had an imperial thread and the pillar valve (MDE 232 bar) which failed had a metric thread)
- [Diver injury during air cylinder recharging](#) (2010, root cause was that the pillar valve had an external metric thread of M25x2 whilst the cylinder had a Whitworth imperial thread of 1 inch (25.4 mm))
- [High potential Near-miss: Incompatible pillar valve assembly](#) (2013)
- [Injuries due to failure of diver's emergency gas cylinder](#) (2014, the inner thread on the HP cylinder was not compatible with the outer thread of the pillar valve)
- [Injuries due to failure of divers emergency gas cylinder – use of incompatible threads](#) (2016)
- [Bailout cylinder and pillar valve compatibility failure](#) (2017)



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2 Near miss: pilot ladder – side rope failed

What happened

Whilst undertaking pilot boarding operations during the hours of darkness, a side rope on the pilot ladder parted when it was being weight tested by the pilot. The pilot was not injured; however if the ladder had not been weight tested by the pilot, it could have failed whilst it was being climbed, resulting in a fall from height into the sea.

The pilot boarding operation was aborted and the vessel directed by the authorities to anchor, resulting in significant operational and commercial delays.

What went wrong – key findings

- The pilot ladder had not gone through a 30-month strength test because the requirement to do so had not been uploaded into the vessel's planned maintenance system;
- It was known that the pilot ladder was in poor condition, but it was decided to continue to use the ladder beyond its operational life knowing that the vessel would soon be de-commissioned;
- The vessel did not carry a spare / second ladder.



Action taken

- A Pilot ladder is essential safety equipment and should always be serviceable / available for use;
- Safety critical equipment should be inspected before use and any deficiencies found should be reported and rectified;
- The defective pilot ladder was replaced with a new ladder;
- Carry a minimum of two pilot ladders and replace them every two years;
- Ensure vessel planned maintenance systems are up to date and include everything that should be included.

Members may wish to refer to

- [OCIMF: Pilot ladder side rope failure: Unsafe pilot transfer](#)
- [Safe embarkation and disembarkation of Marine Pilots](#)
- [Pilot ladder safety](#)
- [Hazard hunt: pilot ladders and gangways](#)

The following documents will be useful:

- SOLAS Regulation 23 on *Pilot Transfer Arrangements*
- International Chamber of Shipping (ICS) *Shipping Industry Guidance on Pilot Transfer Arrangements – Ensuring Compliance with SOLAS*
- IMO Resolution [A.1045\(27\) Pilot Transfer Arrangements](#)

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3 LTI: finger injury during davit test

What happened

A worker suffered a serious finger injury when his hand got caught between a painter rope under tension and the handrail. The incident occurred during testing of the rescue boat davit. He was holding the painter line, which was hitched to the handrail, coiled around his right hand. During the test, the winch brake system failed. This caused the FRC to fall. The crew members' hand was stuck between the painter rope and the handrail. He suffered serious lacerations and compound fractures to his baby finger. The FRC was damaged.

What went wrong

- The brake failed causing the FRC to fall. This was not anticipated;
- The injured person coiled the painter line around his hand, and was not wearing appropriate safety gloves;
- The crew members involved in the task were unaware of the risks involved and did not even fully understand the aim of the operation;
- The person in charge did not appropriately supervise the operation. The toolbox talk did not communicate sufficient information.

Lessons learned

- Be aware of the risks around you – stay out of the “bight” of ropes that might come under tension;
- Don't wind ropes around your hand if they could come under tension;
- Understand what is happening around you. What are the hazards of the task you are doing?
- Wear appropriate PPE.

Our member went on to ensure that there were specific launch and test procedures for the FRC, and investigated the failure of the brake.

Members may wish to refer to:

- [Lost time injury \(LTI\): Serious hand injury – caught in the bight](#)
- [Lost time injury \(LTI\): Serious hand injury during subsea lifting operations](#)
- [Lost time injury \(LTI\): Hand severed during mooring operations](#)

4 Small fire following hot work

What happened

On a member's vessel alongside, a small fire started following hot work conducted by the client's welding sub-contractors. The incident occurred during the welding of jumper stands on the main deck. After completing their work, the welders left the vessel without notifying the bridge, and the Permit to Work was closed. Shortly thereafter, an AB discovered smoke coming from a rag left over the welded area. The small fire was

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Line of Fire



Damage to FRC



Injured finger



Reconstruction of what was done WRONG

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extinguished with a bucket of water. There was no damage to equipment, no consequences, and no-one was harmed.

What went wrong

- There was inadequate communication between the third-party welders and the vessel crew;
- There was no joint inspection (by vessel crew and third-party welders) of the work before the welders left the vessel and the Permit to Work was closed;
- There was no fire watch.

What went right

- There was a Permit to Work for the operation;
- The small fire was discovered by an observant AB and was easily extinguished.



Smouldering rag was found at place marked by red ring

Lessons learned

- Closer liaison with third-party contractors to ensure understanding of requirements for
 - Monitoring of work;
 - Opening and closing of Permits to Work.
- Ensure joint inspection and agreed acceptance of work done by third-party contractors before allowing them to leave or closing Permits to Work;
- Ensure fire watches are set.

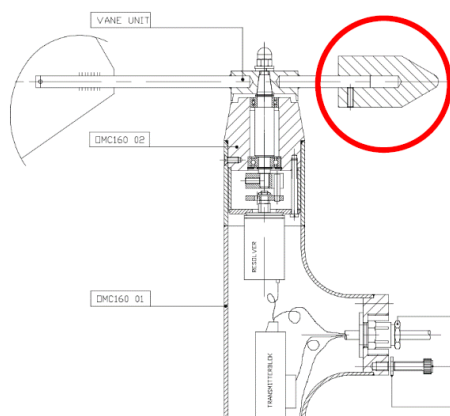
Members may wish to refer to:

- [Near Miss: Fire blanket caught fire during third-party hot work](#)
- [Hole burnt in vessel deck during removal of sea-fastenings](#)
- [SIMOPS – Smoke from hot work task enters confined space](#)

5 Single point failure resulting in a dropped object

What happened

A small part weighing 0.3kg fell 20 meters from an OMC-160 wind speed and direction sensor installed on a vessel's main mast. Two wind speed and direction sensors were installed on the vessel's main mast; they consisted of a wind speed sensor and a wind direction sensor. The wind direction sensor was of the wind vane type unit and had a counterweight (length 6 cm/diameter 3 cm; 300 grams) fixed to it. This counterweight was only secured to the wind vane by a single grub screw. The grub screw came loose causing the counterweight to fall off. There were no injuries, nor any damage to the vessel or equipment.



Before: single point failure – one grub screw



After: new securing method – two grub screws

What went wrong

- The counterweight was secured with only one screw, and this single point failure was not identified during the previous DROPS surveys;
- The OMC-series wind sensors are designed for minimal maintenance and as such were not part of the vessel's planned maintenance system;
- The original grub screw worked loose because of vessel vibration.

Preventative action

- The crew secured the counterweight by drilling one more hole on the opposite side of the existing one, and thus used two new screws to secure it. In addition, Loctite was applied to secure these screws;
- After checking for similar situations on the main mast, the same modification was done to the counterweight on the second direction sensor;
- Check if there is anything similar in your work area that could fall from height following a single point failure, or, is not included in the vessel planned maintenance system – check all instruments on masts;
- Check fixings at height very thoroughly. Particularly worthwhile and important when access is difficult.

Members may wish to refer to

- [Dropped object: Tank dog](#) [*grub screw holding the anchor pin in place had worked loose*]
- [High potential dropped object near-miss: antenna fell to deck](#) [*grub screws came loose*]
- [Dropped object near-miss: Antenna parts worked loose and fell to deck](#)