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 Near miss: dropped object during lifeboat testing

What happened?

During launch testing of a lifeboat, a turnbuckle and shackle weighing 7kg fell 23m from the davit onto the boat, landing within a metre of a worker hooking up the falls at the lifeboat hatch. The worker was physically unharmed; there was some cosmetic damage to the lifeboat.

What went wrong?

There was a mechanical failure – the turnbuckle was of a "closed" design that did not allow visual inspection of the thread engagement through the buckle. The threaded end of this turnbuckle was just 13cm and had one thread securing it into the buckle (see location of nut in illustration) on the threaded end. The bottom end was lost at sea.

Actions

- The lifeboat was secured to the falls and the area cleared before it was lifted;
- The remaining maintenance pennant turnbuckles were removed from the other lifeboats, and the threaded end measured was 17-18cm with plenty of thread though the buckle;
- Similar turnbuckles on other vessels in this fleet were examined carefully;
- Arrangements were made to replace "closed" turnbuckles with "open" turnbuckles that can be properly inspected;
- Company arranged with the lifeboat OEM to source appropriately specified open type turnbuckles from their supplier;
- Procedures revised to include thorough DROPS inspection of turnbuckles and other rigging overhanging the lifeboats before launch.

Members may wish to refer to

- High potential dropped objects from wind turbine Nacelle crane
- Hyperbaric lifeboat emergency lifting chain link failure
- Failure of lifeboat release hook mechanism
- High potential near-miss: Failure of lifeboat release hook mechanism

Viking Norsafe, the supplier of the davit system, has circulated a Product Awareness Notice relating to their E-110 Davit systems fitted with optional hanging off units using closed turnbuckles. It has been circulated to vessel owners with E-110 systems. It can be downloaded here and is also at the end of this Safety Flash.

2 Serious LTI - Person struck in rigging accident

Applicable Life Saving Rule(s)

Line of Fire

What happened?

During the loading of subsea hatch covers onto a vessel, a member of the rigging crew was struck and badly injured by a 55 Te shackle connected to a steel wire sling and fibre lifting sling, which formed part of the lifting arrangement used to lift the covers.

The hatch cover was safely landed on deck. However, during the lowering of the lift rigging to enable the crane to be disconnected, a slack leg of the lifting bridle, which would only come into use during deployment subsea, came to rest on the top flat section of the hatch cover. Instructions were given by the banksman to 'stand by' whilst the crane manoeuvred to free and lower the slings to deck. The volume on the injured person's radio had previously been turned down due to feedback from other users' radios, and subsequently he missed the safety command from the banksman. The rigger approached the load and within 5 seconds of doing so the rigging suddenly fell from the top of the cover and struck him. The rigger sustained multiple injuries including a fractured and dislocated right clavicle, fractured spine in several places, broken ribs and bruising to the lung.

Lift rigging fell from flat top section of hatch cover

55Te ROV shackle and wire sling

What was the cause?

Our member drew the following conclusions:

- The design of the cover allowed objects to come to rest on top;
- The rigging design was overly conservative and too big and heavy for the job in hand;
- Misleading rigging drawing did not show slack sling;
- There was a breakdown in verbal communication (radio interference, terminology, understanding);
- The rigger acted without thinking deeply – "fast thinking" and entered the line of fire;
- There were missed opportunities to use existing safety mechanisms (such as the toolbox talk, task risk assessment, the stop work authority, the management of change process).

Key Learnings identified:

- **See things from a different perspective**: keep in mind during the engineering design phase how the crew will be affected by design choices and try to eliminate or mitigate undesirable effects before equipment reaches the worksite;

- **"Fast thinking"** in response to a developing situation or to personal biases such as self-pressure, pride, desire to please others or pre-empting an outcome, can lead us unwittingly into the line of fire. This is natural behaviour and not an intentional violation, but by being more aware of our own and others biases and responses we can better manage them;
- **Communication breakdown** plays a part in almost every incident.
  - Technology such as bone conduction headsets can help us minimise disruption due to feedback and surrounding noise whilst allowing the wearer to maintain situational awareness;
  - Standardised communications protocols such as challenge and response, and repeat back, can help provide positive assurance that a message has been received and understood as intended;
  - Drawings are a form of communication and should provide information to end users without misleading them.
- **Work as imagined versus work as done**: How people writing procedures imagine the job is done can be quite different from reality at the worksite. Where practicable, we need to include the end user in the development of procedures. Failure to follow a procedure step by step on every single occasion, is not a wilful violation or a root cause when something goes wrong.

Members may wish to refer to:

- LTI – worker fractured arm during mooring line handling

3 Fire extinguisher fails during pressure testing

What happened?

A member reports a recent incident involving the failure of a 5kg CO_2 fire extinguisher during hydrostatic pressure testing. The extinguisher, rated to 200bar, was being tested to a pressure of 300bar. The incident occurred when the test pressure reached 196 bar. The extinguisher was 13 years old. No-one was harmed.

What went right?

- The failure occurred under test conditions and no personnel were nearby to get injured;
- The hydrostatic test was a scheduled 5-year test carried out as per the company's planned maintenance programme.

What went wrong?

- The main body of the extinguisher failed. Our member noted the following points:
  - **General Wear and Tear:** Over time, fire extinguishers are subjected to various environmental factors and conditions that can lead to wear and tear. This wear and tear may include corrosion, stress, or weakening of materials due to exposure to temperature fluctuations and external elements. It is essential to regularly inspect and maintain fire extinguishers to ensure their integrity;
  - **Age of the Extinguisher:** The extinguisher in question was manufactured in July 2010, making it over a decade old at the time of the incident. As fire extinguishers age, their components, including pressure vessels and seals, can deteriorate. Over time, the ability of the extinguisher to withstand high-pressure testing may diminish, increasing the risk of failure.

Lessons and actions

- The failure serves as a reminder of the importance of regular inspection, maintenance, and age considerations when dealing with critical safety equipment;

- When in doubt about the condition of a fire extinguisher, consult with experts or manufacturers for guidance on inspection, testing, and replacement intervals;
- Our member took the following actions:
  - Reviewed the current inspection and maintenance program to ensure it is implemented correctly and is rigorous enough for inspection and maintenance of fire extinguishers;
  - Considered the age of fire extinguishers when planning hydrostatic tests. Older extinguishers may require more frequent testing or replacement to ensure their safety and reliability;
  - Ensured detailed records of inspections, maintenance, and hydrostatic testing are kept for all fire extinguishers. These records can provide valuable insights into the condition of your equipment over time;
  - Ensured that personnel involved in handling and testing fire extinguishers are adequately trained and aware of the potential risks associated with aged or damaged equipment.

Members may wish to refer to:

- Fatality – explosive failure of corroded fire extinguisher
- Failure of fire extinguishers owing to corrosion
- MSF: Air cylinder failure in lifeboat

4 Fire-fighting equipment in poor condition

Applicable Life Saving Rule(s)

Bypassing Safety Controls

What happened?

Several 50kg wheeled dry powder fire extinguishers on board a vessel were found to have low pressure and heavy signs of corrosion. This was discovered during an audit walk-around by shore-based personnel.

Fire extinguishers being absolutely crucial safety equipment on a vessel, they should be maintained to the very highest standards in full readiness for use in an emergency. Regular thorough inspection of fire-fighting equipment to verify that this is so, is a regulatory requirement in some countries including the UK.

What went wrong?

- There had been a regular monthly inspection of the firefighting equipment onboard, but the person inspecting the equipment had not highlighted its poor condition;
- The crew were unaware of the detail and quality required in planned inspection of firefighting equipment.

Actions

- Thorough and comprehensive inspection of all fire extinguishers and fire fighting equipment on board/site to ensure all are in sound workable condition;
- Removal and quarantine of defective fire extinguishers and other safety critical equipment not in safe and usable condition, and relevant repairs or replacements ordered;
- Additional control measures to be put in place until replacements /repairs implemented;
- Regular maintenance: Monthly visual inspection of fire fighting equipment by crew and annual service by authorized third party provider;
- Crew Training: Conduct regular awareness sessions to ensure sufficient knowledge of relevant crew members on how to conduct quality visual inspections of firefighting equipment as well as to emphasize the importance of timely reporting of any safety concerns.

IMCA notes that this is recurring issue; we have published similar incidents in the past. Please refer to:

- Electrolytic corrosion: failure of fire hose couplings
- Corrosion damage: Failed fire hydrant
- Condition of fire-fighting installation and equipment
- Failure of fire extinguishers owing to corrosion
- Near-miss: Hyperbaric fire extinguisher incident

5 Fire in ROV workshop

Applicable Life Saving Rule(s)

Energy Isolation

What happened?

A crew member noticed smoke coming from the ROV workshop and reported a fire.

What went right?

- There was no panic, and the fire response team was ready at short notice;
- The communications system was used clearly and effectively;
- The training, experience and action of the fire response team, and the crew, prevented further damage that could have significantly exceeded the actual damage, and even jeopardised the ship itself.

What went wrong?

- A rechargeable headset flashlight was left on charge unsupervised, also on a UPS supply.

Lessons learned

- The importance of checking the condition of all personal electrical equipment;
  - All electrical appliances should be sourced from a reputable supplier and should be in good working condition;
  - Plug sockets and extension leads should be used correctly and not overloaded;
  - Charger cords for all electronic devices should be in good working condition (with no exposed wiring) prior to being brought offshore, and likewise, sourced from a reputable supplier;
- Charging devices should not be left on surfaces that are potentially flammable or that can promote heat build-up;
  - Avoid leaving charging cables or portable electronic devices on bedding;
  - Remove electronic devices from chargers and outlets once fully charged;
- Include information about the hazards of charging portable devices during orientations and post relevant signage in living quarters.

Members may wish to refer to:

- Diver helmet hat light
- Fire in the accommodation: electronic items in cabins
- Fires caused by electronic device chargers
- USB power bank (Lithium battery) fire
- Portable electrical equipment – serious fire in the accommodation

Information from Viking Norsafe, the supplier of the davit system referred to in incident 1:

VIKING NORSAFE	**PAN** PRODUCT AWARNESS NOTICE		
This PAN applies to type of Life Saving Appliance :	**E-110 Davit systems fitted with Optional Hanging Off units using closed turnbuckles**	Document reference	
PAN Subject:	**Turnbuckle thread**	PAN-ident	PAN-0041-0
Distribute to customer:	**Shipowners with E-110 systems**		
Written by:	Georgios Nikoltsis	Issue Date:	18.10.2023
Authorized by Technical Director:	Thomas Thompson		

Description of the background for this PAN:

For years VIKING/Norsafe have delivered products of the type E-110 for a variety of vessel, Rig designs and user needs. Recently, we received notice of a possible issue in relation to the Optional Hang off Unit as referred to in the product user manual.

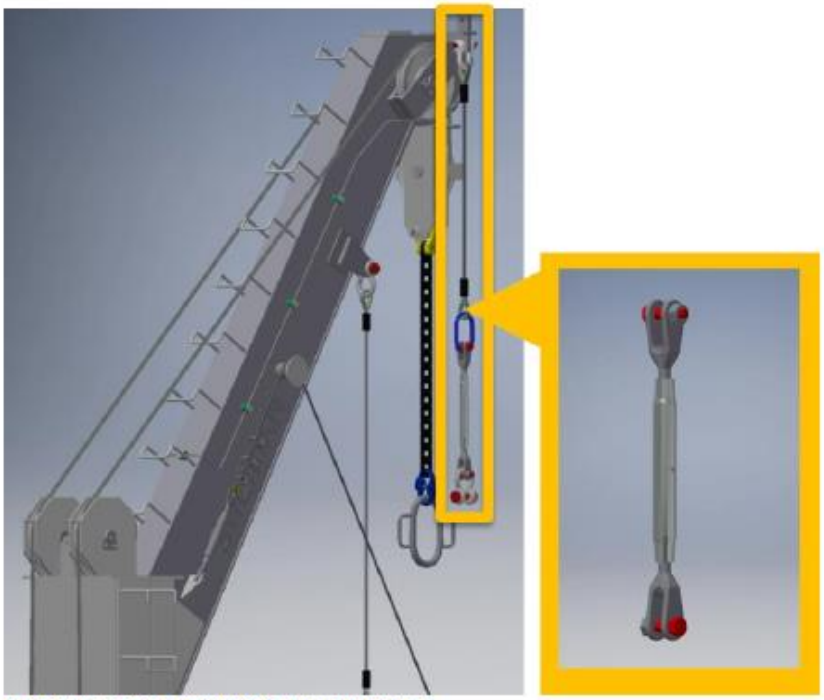

Fig.1: Optional hang off unit with closed turnbuckle

For further information, please contact Viking Norsafe by telephone or e-mail
www.viking-life.com telephone: +4737058500 e-mail: VIKING@VIKING-LIFE.com

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Issue:

Issue relates to the use of the turnbuckle meant for hanging off during maintenance. As informed, this turnbuckle being of a closed type, it makes it hard for the user to see the amount of thread used or remaining thread available, and resulting in its potential release.

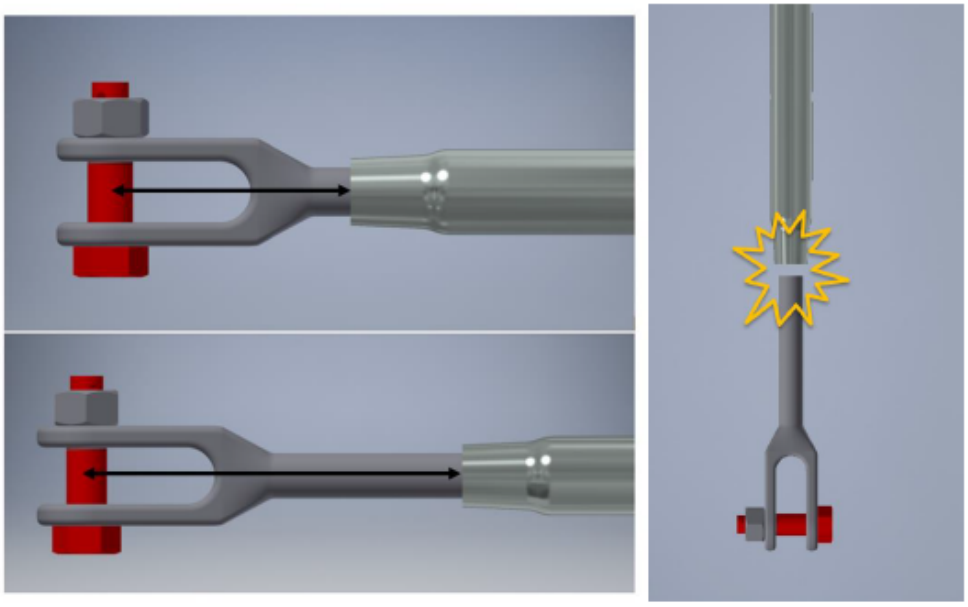

Fig.2: Closed turnbuckle and thread movement

Recommended activity:

VIKING Norsafe recommendation to owners of referred E-110 systems to consider the following recommendation;

- We recommend to use the optional hang-off unit only for maintenance purpose and not to be used as a component during lifeboat drills.
- We recommend to mark the thread to show its limits and or remaining thread available to the user
- In the case the closed type is no longer preferred, please contact your nearest VIKING office for its replacement for an open type turnbuckle.
- To replace the system with a fixed length wire sling, with the length of the sling to be determined based on actual on-site measurements.
- Hanging-off to be used only in conjunction with maintenance activities.

For further information, please contact Viking Norsafe by telephone or e-mail
www.viking-life.com telephone: +4737058500 e-mail: VIKING@VIKING-LIFE.com