

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 Dutch Safety Board: fatality when mooring line snapped

What happened

The Dutch Safety Board has issued the following report on a mooring line fatality onboard chemical tanker *RN Privodino* on 28 June 2018, while entering the Noordersluis lock at IJmuiden, en route to Amsterdam. Shortly after the port forward spring had been paid out, it unexpectedly came under severe tension. The mooring team on the foredeck was no longer able to respond adequately in good time, as a result of which the mooring line parted. The section of mooring line that was connected to the on-board winch recoiled, and struck a crew member, killing him instantly.

The full and detailed report can be found here: www.onderzoeksraad.nl/en/page/17800/fatal-outcome-following-parting-of-mooring-line---lessons-learned

What were the causes?

The Dutch Safety Board concluded that:

- The forward spring broke because, with the spring already wrapped around the bollard on shore, the vessel was still moving forward when the forward spring on the mooring line winch was transferred from the storage drum to the tension drum, at which time the forward spring could no longer be paid out quickly enough. This transfer was carried out without the relevant instructions being issued;
- The mooring team leader on the foredeck was unable to monitor the actions of the operation of the mooring line winch and was also not informed of those actions;
- The mooring team leader had no view whatsoever of the crewman. At that moment, the crewman was in a dangerous position on the foredeck, in the snap-back zone of the forward spring.

As part of the analysis of the accident, the Dutch Safety Board identified four missing or failing barriers:

- 1: Slowing down the vessel on time
- 2: Only place the spring under tension when the vessel reaches its final position in the lock
- 3: Intervention by mooring team leader (supervision)
- 4: Working outside the Snap-back zones

Applicable
Life Saving
Rule(s)



Line of Fire



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Lessons learned

- Bridge team management: a deep understanding of each person's role and responsibility with respect to sharing information and issuing advice, their assigned and agreed task agreed on within the bridge team and the fulfilment of that task by other members of the bridge team;
- The accident was able to happen due to a *lack of clarity* and as a consequence different expectations about the final position of the vessel, in combination on the one hand with *actions that were not in line with the agreement and which were not corrected*, and on the other hand, *insufficient mutual information exchange and advice*. Acting on the basis of expectations and assumptions also played a role; [IMCA italics]
- When mooring, the vessel should be stationary in the final position when the instruction is given to tension the mooring lines. This could prevent similar accidents. That moment can only be determined by the bridge team, because the vessel is being sailed from the bridge;
- Supervisors ought not be hindered by burdening them with other tasks;
- The areas that were actually dangerous changed depending on which mooring line was used and how it was guided over the deck, so, in the sudden occurrence of a dangerous situation, it was no longer possible to rapidly determine where a safe position could be sought.

Members may wish to refer to:

- *Mooring practice safety guidance for offshore vessels when alongside in ports and harbours* (IMCA M 214, IMCA HSSE 029)
- *In the line of fire* (IMCA SEL 036, video)
- *Mooring incidents* (IMCA SEL 038, video)

2 Near miss: uncontrolled movement of mooring chain

What happened

There was a sudden and uncontrolled movement of very heavy mooring chain during chain laying operations. A vessel was laying a 170mm diameter bottom chain from a suction anchor towards an FPSO. When the chain end was approaching, the shark jaw was engaged onto the chain to remove tension, in order to enable handling of the chain end from its chain locker. The last few chain links of the bottom chain then moved uncontrolled over the chain handling unit and rolled/dropped on deck, under its own weight, in between the chain lifter and the winch hangar. The bosun was located close to where the chain dropped and moved away when he noticed the uncontrolled chain movement starting.

What went wrong?

The circulation pump on the chain handling unit tripped, causing the chain lifter to lose its holding force, and hence the chain catenary forward of the unit pulled the tail end over.

Causal factors

- This was a new vessel with as yet, a lack of full implementation of required safety systems;
- There was insufficient job safety preparation and risk management in place;
- There was inadequate understanding of the failure modes for the system;
- The vessel's generic procedures & job safety analyses were not re-visited with respect to project-specific loads and factors;
- The chain handling unit was not included in the vessel anchor handling and tow manual.



Image: www.offshore-energy.biz

Additionally, it was noted that there were no physical barriers in place for working around equipment.

What lessons were learnt?

- Implement additional physical barriers on deck;
- Update vessel documentation including SJA's and manuals.
- Assess need for additional technical barriers on chain handling unit and circulation pump (including upscaling of pump and set-up on alarm);
- Formalise training and familiarisation.

Members may wish to refer to:

- [High potential DROPS near miss: failed crane component](#)
- [High potential near miss: anchor brake failure](#)

3 Lifeboat Wire Rope Failure

During a five-yearly 110% load test of a lifeboat, taking place under third party supervision, the forward fall wire failed, resulting in the lifeboat falling and flipping upside down landing in the water below. There were no personnel onboard during testing and no injuries were reported. The lifeboat was recovered to shore.

What went wrong?

Our member's investigation noted that during maintenance of the lifeboat davit sheaves, the fall wire was removed by disassembling the three existing bulldog ("Crosby") clamps on each wire termination on the davit. Once all maintenance works were completed, the fall wire was reinstalled using the original bulldog clamps, which were clamped in the same position as the original termination.



What were the causes?

Close inspection of the wire

indicated that the fall wire had slipped through the bulldog clips and released from the thimble on the turnbuckle because:

- The grips were torqued in the exact same position they were before, therefore compromising the structure of the wire which was already flattened/deteriorated;
- The bolt grips were tightened without making reference to any minimum / maximum torque value specification.

Additionally:

- There had been inadequate preparation of the wire for termination;
- Bulldog clips had remained in use since the installation of the lifeboat, as there was no regulatory or mandatory (Flag state) or company procedural requirement to perform replacement;
- There was no evidence that the bulldog clips were inspected prior to refitting.

What lessons were learned?

- Fall wire inspection, maintenance and termination should be by competent and qualified personnel;

- Consider replacing wire terminations which have Bulldog grips or cable grips (left image) with asymmetrical wedge socket type (right image).



What actions were taken?

- Checked fleetwide to see whether any similar terminations existed - any lifeboat falls which were found to be secured with bulldog grips were renewed and replaced with the asymmetrical wedge socket type by a competent third party and subsequently certified;
- Flag State was notified at the time of the event, and updated with the outcome of the investigation.

Members may wish to refer to:

- [Tombarra fall wire fatality: Updated reports](#)
- [Failed shackle on vessel life raft](#)
- [High potential near miss – rescue boat davit failure \(MSF\)](#)

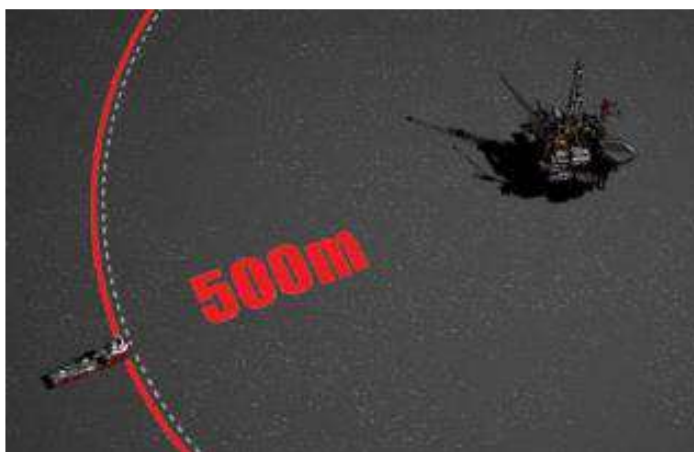
4 Vessel Near Miss with Wellhead

A vessel had a near miss with a wellhead within the 500m zone. The vessel Master was preoccupied and did not notice that the vessel was drifting close to the wellhead. The vessel missed the wellhead by less than 10 meters.

What was the cause?

Subject to further investigation:

- There was only one watchkeeper – the Master - on the bridge at the time. Company procedures for having two watchkeepers on the bridge at all times, were not followed;
- The client’s voyage procedures were not followed;
- The Master was preoccupied with change-over procedure which took attention away from the vessel’s movement;
- The Master assumed that the vessel was going more slowly than it actually was, and had no expectation that the vessel would drift so close to the wellhead.



Applicable Life Saving Rule(s)		
	Bypassing Safety Controls	Line of Fire

Actions

Vessel Masters have overall authority for the health and safety of all personnel onboard the vessel, the safety of the vessel itself and it's immediate environment.

- Ensure that watchkeeping procedures for bridge operations are strictly followed;
- Ensure that client voyage procedures are strictly followed;
- Ensure that there are sufficient trained, competent and rested people available at all times for watchkeeping;
- Follow COLREGs at all times;
- If a watch officer needs to leave post, ensure a suitable replacement is found before doing so.

Members may wish to refer to:

- [Bow thruster room flooded during fresh water transfer operation](#) [*causes: negligent watch-keeping practice; Poor supervision of task; Poor handover or shift change procedures*]
- [MAIB: Two recent vessel collisions](#) [*MAIB conclusions: the two vessels collided because a proper lookout was not being kept on either vessel; complacency and poor watch-keeping practices*]
- [Vessel made contact with installation](#)

5 Positive: vessel improvements made following a man overboard incident

Following a non-fatal man overboard incident involving a member of a mooring gang falling off a tug, as part of the incident investigation, a thorough review was conducted to identify how crew transfer over vessel bow areas could be improved.

Applicable
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Rule(s)



Line of Fire



Bow fendering enhancements



Photo showing obstruction free bow



Modified bow

Immediately post-incident, removable hand rails were installed in the bow area, provided with enhanced grip points for transferring personnel. It was identified that still further improvement could be made in this area. As well as the physical enhancements, customised HSE refresher training was provided to the personnel on:

- the importance of 'three-point contact' whilst transferring;
- the use of personal floatation devices and,
- the buddy system of giving your fellow team members member behind you the required support and help during transfer.

The tug involved went to dry dock shortly after, and it was decided to remodel the bow area to provide an obstruction free bow embarkation/disembarkation platform at bulwark top height, with vastly increased landing

area to the original vessel design with additional stringers and stanchions added. Bow fendering enhancements were also made during this modification with heavy duty 500mm 'D' fender installed around the radius of the new platform for enhanced asset protection.

Since the photos above were taken the landing area and the step-up platform have also been coated with yellow/black hazard marking stripes.

Positive Findings:

- The modifications completed have provided far greater safety and security for crew during personnel transfer operations over the bow;
- There was excellent cooperation between the technical, HSE and marine departments in working to reduce the risk;
- The team did not settle for average and explored every possibility to increase the safety for the mooring gangs.

Our member will be suitably modifying all their similar tugs in the same fashion as they dock over the coming 12-18 months.

Members may wish to reflect on the importance and value of these excellent improvements by looking at the following:

- [Double man overboard resulting in one fatality](#)
- [MOB fatality: person fell between vessel and jetty](#)
- [MAIB: fatal man overboard incident whilst boarding tug](#)