IMCA Safety Flash 14/20

April 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.

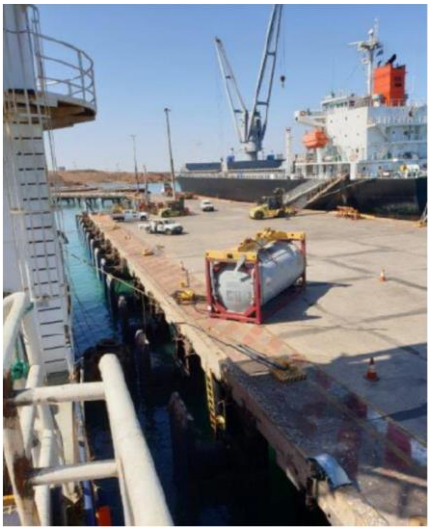
The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information 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 Lifting Operations – Wire Hoist Rope Failure

What happened?



When conducting a standard lifting operation of a 24.5te storage vessel and lifting frame (approximately 36% of the crane 70te maximum rated capacity) the wire hoist rope (WHR) failed causing the load, main block and length of wire to drop approximately 3m to the wharf. No personnel were injured.

The maintenance, inspection, and testing regime applied to the WHR was consistent with general industry practice, guidelines, and company requirements and included third-party examination and certification. However, localised internal corrosion of the wire hoist rope (WHR) went undetected.

The metallurgical examination conducted on the wire hoist rope after the incident concluded that the wire hoist rope failed by a ductile overload mechanism following corrosion damage during service, particularly of the core wires. The lack of protective zinc galvanised coating on the wire hoist rope was a significant contributor to the eventual failure.

What lessons were learned?

- Reliance on 'industry practice and guidelines' alone when maintaining, testing and inspecting wire hoist ropes may not be sufficient. Frequency of use, intended loads, environmental conditions, time in service, and criticality of the wire hoist rope should be specifically considered;
- Implement crane wire maintenance regimes for specific individual wire rope types using original equipment manufacturer input coupled together with a competent person's assessment of the risks, giving due regard for the operating environment and intended use of the crane/wire rope;
- Establish criteria to determine when and how magnetic wire rope (MRT) testing should be applied (frequency, triggers, length of wire).

Members may wish to refer to:

- High Potential dropped object – satellite dome fell from mast
- Near Miss: Corrosion-related failure of bolts used to secure lifeboat winches
- Near Miss: corrosion caused crane boom failure during heavy lifting
- Wire rope integrity management for vessels in the offshore industry (IMCA LR 001, IMCA HSSE 022, IMA M 194)

2 Fire in Engine Room and Subsequent Collision with Structure on Transport Barge

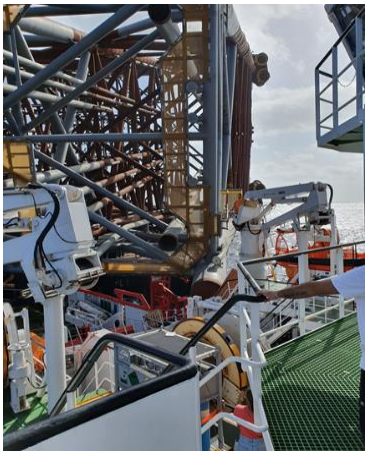
What happened?

During the tow of a structure to location, a fire occurred in the engine room of the tow tug. This led to a blackout resulting in a collision with the structure on the transport barge.

The crew's interpretation of a project specific requirement led to a pressure test being conducted on the fuel oil system. During this test fuel oil started spraying out of a gasket in the engine room. The fuel oil spray was eventually ignited by the heat of the engines. The fire in the engine room caused a short circuit which was followed by a blackout. With the failing of the power supply, the tow tug started drifting. The transport barge drifted past the tow tug; however, the structure, which protruded outside the stern of the transport barge, struck the tow tug.

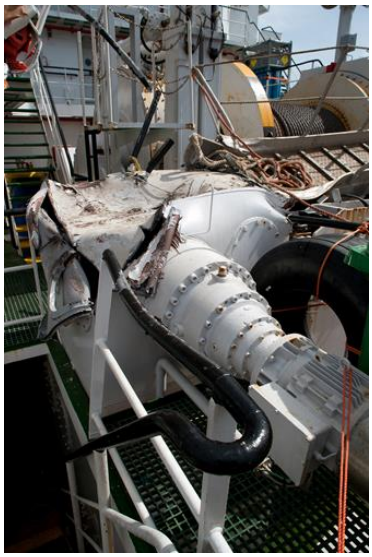
What were the causes? What went wrong?

Contributing factors include:



- The emergency generator failed to start, resulting in a black out;
- The fire extinguisher system did not activate (the fire was extinguished with a combination of the sprinkler system and the residue fuel oil burning out);
- Crew were not familiar with characteristics of fire-fighting systems on-board;
- Unreliable gasket material used in the FO system;
- The engine emergency stop button in the engine control room could not be accessed by the crew as too much smoke had escaped from the engine room;
- The permit to work (PTW) failed to address or communicate the specific situation related risks;
- There was reliance on third-parties' expertise during design, build, commissioning and operations.

What actions were taken?



- Any non-standard activity should be subject to control of work procedures;
- Offshore and onshore organization need to communicate proactively when non-standard activities are considered/required;
- There should be thorough familiarization of emergency and fire-fighting systems on-board – this is a must. Not only how they are operated, but also specific characteristics of the system and the effectiveness of the medium used;
- Ensure that the PTW is also used as an effective communication tool.

Members may wish to refer to:

- IMO Circular MSC.1/Circ.1321 *Guidelines For Measures To Prevent Fires In Engine-Rooms And Cargo Pump-Rooms*

3 LTI: Worker Lost His Thumb

Photo 1-Mock Up of IP's hand position at the time of the incident.

What happened?

During drilling operations, a worker got his thumb caught under a part of a drill being lowered into position, resulting in the amputation of the thumb just above the knuckle. The incident occurred during operations to retrieve core samples from the borehole. Our member notes that an Inner Barrel is deployed by freefall to latch into the Bottom Hole Assembly (BHA) of the drill string. The Inner Barrel was lifted into position by winch, attached to the Overshot, and lowered into the casing, ready to be deployed. On this occasion, whilst deploying (de-latching) the Inner Barrel from the Overshot the assistant driller positioned his hands as shown in the photograph to depress the latch release keys. As the Inner Barrel dropped under its own weight his left thumb was caught between the latching ring and the top of the casing resulting in the amputation of the thumb just above the knuckle.

The IP was taken to the nearest hospital. The medical team were unable to save the tip of his thumb.

Applicable Life Saving Rule:


Photo 2 - Lay Key supporting the Inner Barrel.

What went wrong?

- Bypassing safety controls: the injured person failed to understand or use safety-critical equipment or follow procedures applicable to this task;
- 'Line of Fire': the injured person got in the way of falling/moving objects.

What actions were taken?

- Full review of all aspects of this task including revision of task work instruction and method statement;
- Drill crews have been reminded to use the appropriate Lay Key intended for this task.

Members may wish to refer to

- Don't put your finger in the wrong place: failure to isolate equipment causes serious finger injury
- Lost time injury (LTI): Finger injury whilst working in engine room
- IMCA "Are you prepared" video *Watch your hands*
- IMCA safety poster *Hand Safety*

4 Near Miss: Dropped Clump Weight

What happened?

Applicable Life Saving Rule:

A clump weight fell approximately 30m to deck and landed around a metre to where a rigger was working. The incident occurred just after the boom of the main crane was lowered towards the cradle for sea fastening prior to transit. It was dark, windy and raining. The crane operator stopped lowering the boom to verify using the camera that the boom was in the correct position. As the camera view was blurred by rain and glare from the lights, the operator leaned forward to look at the boom. At that moment, his elbow unintentionally touched the tugger winch lever. The tugger winch started pulling on the tugger wire and pulled the rigging onto the sheave in the boom. Since a wedge socket was part of the rigging, the wedge was pushed down when the wedge socket hit the sheave, releasing the tension on the wire. As a result, the wire was pulled out of the wedge socket. The wedge socket, shackle and clump weight dropped 30m to the deck and landed one meter from where a rigger was working.

What were the causes?

- No safeguards in place to prevent unintentional activation of the tugger winch by operator;
- No mechanisms in place to stop rigging being pulled onto the sheave;
- A wedge socket was recently introduced into the rigging configuration (changed from original spelter socket);
- The lever of the tugger winch was installed as per design, positioned close to the elbow.

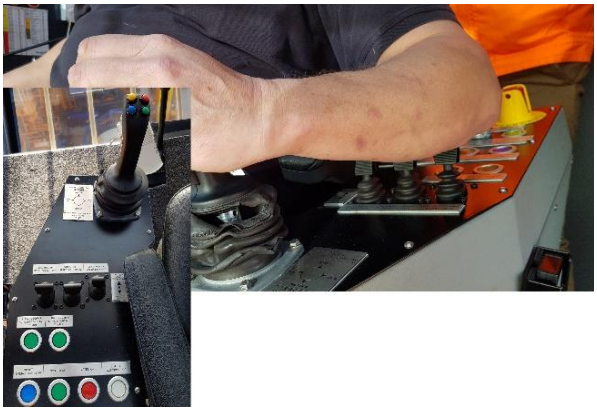
What lessons were learned?

- Relying on certification of the crane does not guarantee that the crane is intrinsically safe by design. A certified crane also has residual risks that should be evaluated with a risk assessment;
- Unintentional activation of control levers should be evaluated in a risk assessment;
- Changes to the design should be controlled with the management of change (MoC) process. This process should also focus on new risks introduced with the changes;
- Suspended objects have a risk of falling, although the risk might be small, the potential impact is severe.

What actions were taken?

- Verify if controls can be activated unintentionally and consider what would be the possible (worst) consequence;
- Evaluate if there are mechanisms in place to stop equipment from making contact e.g. limit switches;
- Consider what the weakest component is in the equipment configuration and what the consequence might be when it fails.

Clump weight on crane



Situation in crane cab

Members may wish to refer to:

- Trencher angle inadvertently altered
- Accidental activation of emergency stop during saturation diving operations
- Accidental shutdown of main engines
- Near-miss: Dropped clump weight

5 Vessel Gangway Rolled Off Platform Tower and Fell to the Quayside in High Wind

What happened?

Applicable Life Saving Rule:	

During stormy weather, there were sudden and violent gusts of wind of greater than 50 knots, resulting in a vessel alongside being pushed off the quay. This resulted in the gangway rolling off the platform tower and falling approximately 5.2m to the quay. The vessel's side of the gangway remained attached to the vessel. There was no-one nearby at the time; no-one was harmed; however, the incident had the potential to cause fatal injury.

The incident occurred when a vessel was in port for maintenance. A shipyard's gangway was attached to the vessel's deck and placed on top of a stairway tower platform on the quayside. The gangway was only fixed at the vessel side and could move via rollers on the platform side. The platform was used to assist with tidal height variation.

Investigation noted the following:

- The potential risk of a falling gangway was not considered or recognised. There was no previous history of issues or incidents with this setup, the task was considered as a **low risk routine duty** by the shipyard (IMCA bold);
- During sudden, violent gusts of wind, the mooring ropes stretched allowing the vessel to move away from Yokohama fenders and quay. Mooring ropes worked as designed;
- In response to the available weather forecast, precautions where put in place, including additional mooring lines, additional manpower to monitor mooring lines and gangway watchman closely observing gangway movements;
- The was no consideration for safety in design. The positioning of the stairs in front of the platform forced personnel to pass underneath the gangway which can be classified as supported load;
- The incident had the potential to cause a fatal injury.

Vessel moves away from the quay, pushed by sudden and violent gust of wind

Gangway moves with the vessel and falls off the platform tower

What actions were taken?

- Damaged gangway was removed, and alternative gangway fitted to a lower deck direct to the quayside;
- Ensure weather reports are reviewed with regard to operations that involve equipment which does not belong to vessel;
- Could this happen on your vessel? Ensure that risk assessments suitably address concerns related to safe access and egress to your vessel.

Members may wish to refer to

- Small Boat Cradle Collapsed During Poor Weather Conditions
- Recent UK MAIB Investigations (Shifting Of Cargo And Loss Of Cargo)
- Near Miss: Cargo Shifted On Deck In Heavy Weather