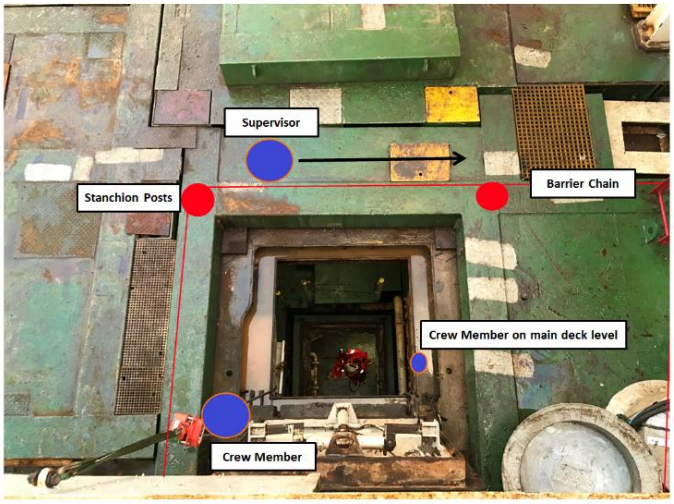
IMCA Safety Flash 17/17

July 2017

Summary

Six of the seven incidents here are of the worst kind: they involve workers getting harmed. Two falls from height resulting in lost time injuries (LTIs), are followed by two incidents of collapse. In the first, a crewman collapsed whilst seasick, injuring himself in falling, and in the second, someone collapsed temporarily owing to dehydration in hot conditions. The fifth incident is about a worker who suffered a hand injury in inappropriately managed rotating machinery. The final two incidents involve workers suffering serious burns in the workplace following the failure of their employer to properly manage risk and provide safe systems of work.

1 Fall from Height – LTI



What happened?

On a vessel that was alongside, crew were engaged in offloading equipment from below-decks through a series of hatches, when their supervisor lost his footing and fell through the hatches, falling 7m. He was taken to hospital with a dislocated and fractured shoulder and a broken ankle. The ankle injury required surgery, and physiotherapy over a number of months before he was fit to return to work.

What went wrong?

A portable barrier (two stanchions and length of chain) was put around the area to warn of a trip hazard. This was because although it was closed, the hatch was not fully sea-fastened.

Recovery to deck of the equipment could be conducted without use of the vessel crane, and the crew held a Toolbox Talk and Pre-Task Assessment before starting, to discuss the method of lifting between the two decks using two chain pulls joined together.

Crew operating the chain pulls were stood inside the barriered off area, wearing fall arrest harness and inertia reel. Their supervisor was on the upper main deck outside of the barriered off area. As the equipment was being lifted using this technique, he moved to get a better look at what was happening. As he did so, he lost his footing and tipped forward toward the portable barrier stanchions and chain, and fell through the barrier and down the hatch.

What were the causes of the incident? Causal factors identified:

- Fall prevention barriers that were around the upper main deck hatch were not suitable or sufficient. There was insufficient robust barrier hardware available on board;
- Several trip hazards existed around the area:
  - where the task was being carried out
  - where the Supervisor was standing
  - where the portable barrier was previously positioned – this was also close to the edge of the open upper main deck hatch;
- The Supervisor was too close to open hatch hazards without sufficient fall protection;
  - visual obstruction prompted the Supervisor to move to get a better look at the activities he was supervising. In so doing he knocked against the portable barrier
  - the supervisor lost his footing/balance close to the edge of the portable barrier and open deck hatches;
- A generic or blanket Permit to Work was used for the recovery/lifting of this equipment using a working at height/chain pull method, rather than a specific Permit to Work.

What lessons were learnt?

- Time spent discussing the lift in detail, may have detracted from proper review of the suitability of the existing barrier, and possibly divided attention over risks from the lift versus that from the fall;
- Better management required of Permit to Work system for specific and non-routine tasks;
- A proper review of the barrier previously put in place, and its adequacy to protect against falls versus highlighting a potential trip hazard, seems to have been forgotten during the planning stages of the task;
- Lapses do happen – Comprehensive checklists to confirm specific actions required can help address potential lapses. These checklists could be included in pre-task dynamic/situational assessment, and standard pre-start checks made within the Permit to Work process.

Members may wish to refer to the following incidents:

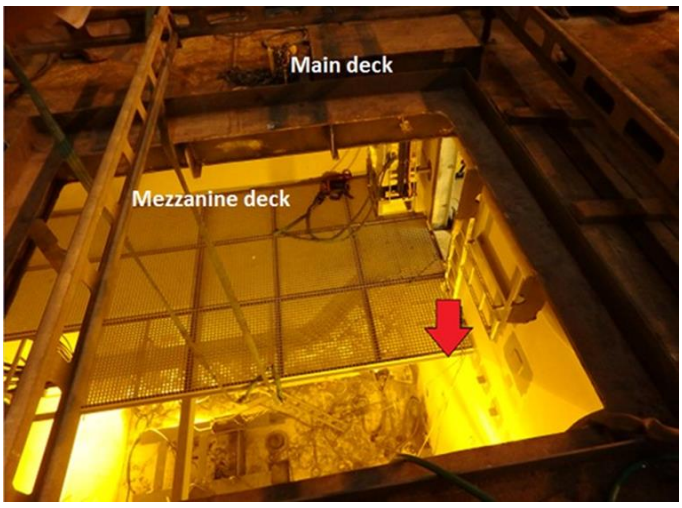
- Fall through open hatch in walkway;
- Dropped object fell from crane – Poor communication/lack of awareness/control of work.

2 Fall from Height During Yard Visit

What happened

A yard worker fell 4m from the main deck to a mezzanine deck. The injured worker suffered a compression fracture in his right ankle.

During a yard visit, pieces of grating were being manually lowered with a rope down through an opening on the main deck. The opening on the main deck was barred off by a scaffold. No fall protection was requested by the people on the main deck.



Two workers should have been on the main deck and two on the mezzanine deck. The workers on the mezzanine deck were wearing fall protection. However, at the time of the incident there were three workers on the main deck, and one worker on the mezzanine deck.

A piece of grating got stuck on an edge on the main deck. This was observed by a co-worker who happened

to be nearby. He intervened in the work operation. The workers on deck shifted the grating about 15 centimetres. As the grating shifted, the new worker continued to hold onto it, lost his balance and fell.

The injured worker was a part of the scaffolding team but was not a part of this planned operation. He decided to help his co-worker. He was wearing a fall arrester but did not clip into an anchor point.

What went wrong?

- **Attitude and behaviour** – the injured person and the work team showed lack of safety awareness;
- **Non-compliance with personal protective equipment (PPE)** – the injured worker was wearing a fall arrester but didn't clip on to an anchor point. Also, whilst the gratings were usually handled manually, there were taglines attached, but these were not used;
- **Competence and experience** – the injured worker had worked as a scaffolder at the yard for years, had experience and training in scaffolding and working at height, and possessed competence certification. All the work team including the injured person were experienced in working at height;
- **Language** – the injured worker spoke neither English nor Norwegian. Translation was conducted by co-workers. This yard routinely employs foreign workers with limited or no skill in English, although laying down rules for sub-contractors on how such workers were to be deployed;
- **Teamwork/communication** – the investigation team has not been able to conclude if the worker was asked to support, or if he intervened on his own initiative. Different versions of the story have been raised in interviews;
- **Management and supervision** – the work team was wrongly organised. There were four workers in the work team, there were supposed to be two workers on the main deck and two workers on the mezzanine deck for this operation. At the time of the incident there were three workers on the main deck, and only one worker on the mezzanine deck;
- **Safety systems** – a Permit to Work and Toolbox Talk had been conducted, and the injured person had been a part of the toolbox talk (see earlier remark about language). The foreman for this work considered it to be known to the work team, so no specific job safety analysis took place, and there was insufficient focus on the shipyards' "**We Care**" safety campaign, as supervisors and co-workers did not pay attention to the injured person not using appropriate working at height equipment.

What were the causes?

- **Immediate cause**: the injured worker rushed into a work situation he was not supposed to be a part of. He did not consider the risk in the operation and did not secure his fall arrest to an anchor point;
- **Underlying causes** of the Incident: the injured worker did not comply with working at height standards and did not pay attention to the risks in the work situation;
- **Root Causes**: the investigation concluded that these were weaknesses in safety awareness and management of work in the actual situation.

What lessons were learnt?

- Ensure closer follow up of yard to ensure compliance to safety awareness;
- Executive (high level) commitment to safety is paramount for building a strong safety culture – particularly when multiple organizations are working together in a shipyard.

Members may wish to review Guidance on safety in shipyards. Members may also wish to review the following incidents:

- Crewman falls down open hatchway during simultaneous operations;
- Dropped object fell from crane – Poor communication/lack of awareness/control of work.

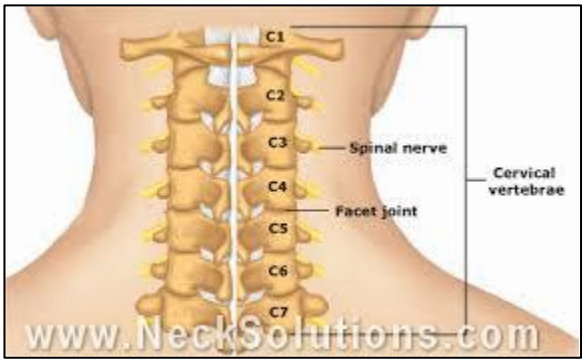
3 Crewman Found Collapsed – Seasickness

What happened?

A trainee member of the crew was found lying unconscious on the deck between two cement tanks. In falling his left arm had twisted under him but there were no signs of physical injury at the time. The injured person suffered partial immobility of the left hand as a result of how he fell.

He was taken to the on-board doctor for medical attention. During subsequent consultation between platform and vessel doctors it was decided to send him ashore for further assessment.

Medical assessment ashore found the injured person suffering from acute oedema (swelling) over spinal discs C3, C4, C5. The injured person is known to be recovering under continued medical treatment and he is able to move his left upper limb and movement at left shoulder joint and left elbow without restriction.



What went wrong? What were thecauses

He had collapsed as a result of the combination of seasickness and medication he was taking to address seasickness.

What lessons were learnt?

- As a result of collapsing, this person suffered a potentially serious fall and injury which could have been a good deal worse;
- No account was taken of the fact that he was an inexperienced trainee. The likelihood of seasickness should be taken into account in risk assessment and informally, when inducting and training new personnel. A "buddy system," or similar, to ensure new personnel are looked out for, may be beneficial.

This event is brought to you because we have received no reports of safety issues arising from seasickness – yet seasickness is a widely acknowledged and common issue, particularly for new seafarers or for project personnel spending only a short time offshore.

4 Worker Fainted and Was Injured During Tanker Operations in A Tropical Climate

What happened?

A worker stood up and subsequently fainted. The incident occurred during hose handling when a tanker was loading at a single point mooring (SPM). A rigger was in a crouched position working on the hoses. On completing the work, he stood up, stepped away, and fainted on the tanker main deck. He fell and in doing so he suffered a slight cut on the left side of the head.

He was assisted to his feet and first aid administered. After recovering, the injured person was requested to leave the tanker and the work site. He was taken ashore and after treated at a local hospital was declared fit.

What went wrong? What were the causes?

- It was extremely hot on board the tanker;
- The rigger was full of PPE including overalls and hard hat with chin strap (he was not suffering from sea sickness);
- The Rigger had spent the previous night on board the tanker with inadequate supplies of drinking water and had to wait until morning to receive a crate of drinking water from the vessel;

- The rigger did not report to the supervisor before starting work;
- In standing up suddenly after a long time spent crouching, the risk of fainting increased.

What lessons were learnt?

- Ensure personnel are medically and physically fit enough to work in the conditions for which they are hired, particularly in tropical climates;
- Ensure personnel are able to remain hydrated and have sufficient drinking water particularly in hot conditions;
- Ensure personnel eat properly and have the opportunity to take rest in the shade.

Members may wish to review the following incidents:

- Diver fainted;
- Decompression illness (DCI) incident during routine decompression of divers from saturation.

5 Worker Suffers Hand Injury

What happened?

The UK Health & Safety Executive (UK HSE) reports that a company was fined after a worker suffered a serious hand injury after a machinery incident. The incident occurred when his hand became entangled with the rotating workpiece of a manually operated metalwork lathe. The resulting injury later requiring surgical amputation to part of his left index finger.

What went wrong? What were the causes

An investigation by the UK HSE found that:

- The machine operators were using an unsafe system of work;
- The company failed to identify if workers were routinely using this dangerous work practice;
- The lathe used by the injured person had a faulty emergency footbrake – and this had been reported to the company earlier, but the lathe had not been taken out of service.

What lessons were learnt?

- The company failed to identify that employees were routinely carrying out an unsafe work practice when hand applying emery cloth to a workpiece rotating at speed;
- The company had failed to take the faulty lathe out of service.

Members may wish to review the following incidents:

- Machine guarding;
- Serious hand injury during use of deck scaler;
- Entanglement in moving or rotating machinery – a timely reminder of the risks of entanglement in moving or rotating machinery from the United States Coast Guard (USCG).

6 Worker Severely Burnt Following Oxygen Explosion

What happened?

The UK HSE reports that an engineering company was fined after a worker suffered life changing injuries after an oxygen pipe exploded in front of him. Work was being carried out to fit a valve to a pipe that carried pure oxygen. The worker was carrying out checks when he heard hissing from the valve. While investigating the noise, the pipe and valve erupted in flames.

The injured person suffered severe third degree burns as a result of this incident. He was initially not expected to survive, having been kept in a coma for several weeks and undergoing several skin grafts.

What went wrong? What were the causes?

An investigation by the UK HSE found the oxygen pipe had been fitted with contaminated second-hand flanges and butterfly valve, containing materials unsuitable for use with oxygen. It was foreseeable that work would at some point be undertaken on the oxygen pipelines that ran across the entire site, yet no action had been taken to take control of this line or to implement training or levels of responsibility for management of such work.

The UK HSE noted that the *"incident could have been avoided if simple checks had been carried out."*

See here for the full press release. Members may wish to review the following incident:

- Oxygen regulator explodes causing injury.

7 Stored Energy – Worker Scalded When Hot Ash Dropped into Water

What happened

The UK HSE reports that a company was fined after a worker received severe burns to his upper body and face. The incident occurred when a worker was attempting to dislodge a blockage in an energy-from-waste furnace at a recycling plant.

The injured person opened two hatches on a chute which took burnt waste away. He used a metal pole to dislodge the blockage. In doing so the waste dropped into a pit filled with water and a plume of hot ash and steam erupted from the hatches causing severe burns to his upper body and face as he turned to escape.

What went wrong? What were the causes?

The UK HSE investigation found that there was inadequate consideration or assessment of the risk to which workers were exposed during this task. This meant the system of work they had wasn't sufficient to stop the incident happening.

It was also found that the company failed to implement appropriate systems to manage and supervise this workplace activity. This meant the limited measures they had put in place were not followed.

The UK HSE inspector observed that it was essential that companies recognise and understand problems and put procedures in place to prevent them from happening, and introduce engineering controls and systems of work that prevent people being injured.

See the full report on the HSE website. Members may wish to review the following incidents:

- Crewman badly scalded during tank cleaning;
- Scalding injury to crew member.