

IMCA Safety Flash 19/17

August 2017

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.

Focus: Hand and Finger Injuries

All the incidents here involve workers sustaining actual injuries to the fingers or hands.

1 LTI: Injury to Right Wrist

What happened

Someone using a power tool suffered a serious injury to the right wrist when the drill got out of control. Vessel engineers were installing a support frame for spray protection curtains around the evaporator in the engine room. The task required the engineers, whilst working at height, to drill three 10 mm holes in the frame and add the splash curtain to the support frame.



To access the support frame, a step ladder with a designated working platform was used. The injured person was working on the platform with a power drill. He was directing the drill with his right hand with his left hand on the supporting handle on the left-hand side of the drill. It is estimated that during the drilling of these holes, the drill was at an angle of approximately 45°. During the drilling of a 10 mm hole, the drill bit snagged within the metal tubing of the supporting frame, causing the pistol drill to kick back and spin in a clockwise direction. As the drill spun, the pistol grip was pulled from the engineer's right hand. The pistol drill continued to rotate, then contacted his right wrist/forearm, causing a lost time injury (LTI).

What went wrong/causes

- ◆ There was a lack of active supervision. Supervisors should have a full understanding of safe systems of work, and thus be able to ensure that if the circumstances of an operation change, the team is able to respond correctly and recognise any new requirements in each situation;
- ◆ A causal factor was the fact that the task was being carried out at height, which made it difficult to drill the hole in the correct position. To attain this position the employee had to work in a position which caused the drill to snag;
- ◆ There was poor procedural and risk awareness surrounding the activity:
 - Whilst a toolbox talk was conducted between the engineers carrying out the task, and this highlighted potential hand injuries and slip/trip hazards, no consideration was given to the increased height of the task or the use of power tools whilst working from a ladder/platform

- No permit to work (PTW) or job risk assessment (JRA) was considered necessary, as a similar task had been conducted previously. The engineers did not identify the difference in height between the previous task (180 cm) and the task in hand (293 cm);
- ♦ The work was incorrectly planned and did not have to be done at height. Personnel failed to recognise they were working at height. Had the task been correctly planned and classified as work at height, the decision could have been made to pre-drill the holes at deck level, thus allowing the work party to attain the correct working position and potentially mitigating the snagging of the drill.

Lessons learnt/actions taken

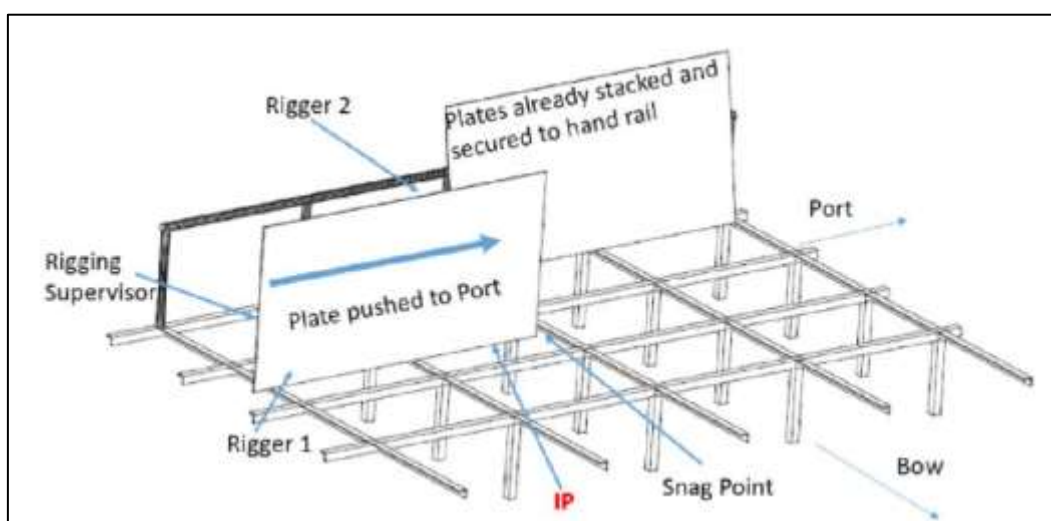
- ♦ Correct tools and equipment used in the wrong conditions can still result in an incident;
- ♦ Routine tasks can become hazardous when changes are not correctly managed;
- ♦ The step ladder with designated working platform should have had the handrails and securing chain in position (they were previously removed due to space required to store the ladders);
- ♦ Tasks requiring ladders, working platforms or alternate access solutions should be reviewed to determine if the appropriate level of work control is applied. Risk assessments and routine duties should be updated accordingly.

2 LTI: Crush Injury to Middle and Index Finger

What happened

Riggers on a vessel were moving heavy deck plates (2.45 m x 1.2 m x 5 mm, weighing 114 kg) when one of them got his hand caught, causing a crush injury. The riggers were tasked with cleaning an area on the vessel. To do this, they had to lift the deck plates, degrease the deck below and power wash from the suspended deck above. During the task, it was noted that the debris and corrosion on the deck below would require shot blasting. A management decision was made to remove all the deck plates and stack them against handrails in preparation for this work.

While moving one of the plates and turning it through 90° onto its long axis, to be slid over the angle beam foundation, the leading corner of the plate caught on a section of angle beam and stopped sliding. A rigger (the IP in the sketch below) attempted to rectify this by lifting the corner, enabling the rest of the team to push the deck plate. Upon setting down the deck plate, his middle and index finger became trapped between the angle beam foundation and the deck plate, causing a serious injury.



What went wrong/causes

- ♦ The incident occurred as a result of 'scope creep'. There was no proper Management of Change;

- ◆ The size and weight of the deck plates did not allow for a safe and ergonomically friendly means of moving them, especially over the angle beam foundation;
- ◆ The injured person placed his hand beneath the deck plate despite being instructed not to do so by his supervisor;
- ◆ The injured person was wearing welding gloves, rather than the impact gloves required in the JRA (job risk analysis);
- ◆ Pinch points had been discussed in a task-specific toolbox talk held just before starting the job.

Lessons learnt/actions taken

- ◆ The change of job scope ('scope creep') should have triggered a stop, leading to the change being properly managed. A new permit should have been raised with a task specific JRA;
- ◆ Members may wish to use this example to highlight the issue of 'scope creep' and appropriate Management of Change – particularly where manual handling is involved.

See [IMCA SEL 001 – Guidelines for Management of Change](#).

Members may wish to review the following similar incident in which a person suffered a serious finger injury, in which one causal factor was failure to manage change:

- ◆ [Line of Fire LTI: Finger Injury During Lifting Operations](#)

3 Hand Injury Whilst Using Pillar Drill

What happened

The Marine Safety Forum (MSF) has published an alert in which someone was injured whilst using a pillar drill. An experienced engineer was changing out a drill bit on a tower drill in the engine room workshop. While doing so he inadvertently operated the wrong handle and started the drill. The engineer was wearing gloves to carry out this task and as the drill turned the glove caught and turned with the drill bit, trapping his hand inside and causing a hand injury.

He was sent ashore for treatment.

What went wrong/causes

The subsequent investigation highlighted several safety critical points, a selection of which are noted below:

- ◆ The drill had multi-function controls (including clutch speed, gears, slow and fast operation, on/off switches) none of which were actually marked to indicate their purpose;
- ◆ By its design, the emergency stop button for the drill did not clearly identify to the operator when it was engaged or deactivated;
- ◆ There was no 'green light' (or similar indicator) to show when the equipment was 'energised'.

Any modification of equipment should only be done after consultation and agreement with the manufacturer to ensure the



modification does not adversely interfere or affect any of the other functions of the drill.

Lessons learnt/actions taken

- ◆ The company reporting the incident introduced 'drill familiarisation' to the engineers' induction;
- ◆ A full and comprehensive risk assessment should be carried out for the use of all engine room equipment;
- ◆ Engineers intending to use the equipment should be fully familiar with those risk assessments and comply with their requirements;
- ◆ IMCA notes that in many countries there are regulatory requirements (the Provision and Use of Work Equipment Regulations (PUWER) in the UK) which should have been applied with regard to equipment control markings.

Note: A more recent model of the same drill incorporates a safety feature where the drill cannot be operated if the drill guard is in the open position. Such safety features should be function-checked to ensure they are fully operational before carrying out any drill changes.

Members may wish to review the following incident:

- ◆ [Near Miss: Drawstring on Storm Jacket Nearly Drawn Into Rotating Equipment](#)

4 Two Cases of Hand Injuries – UK HSE

Incident 1: Worker Injures Hand on Lathe

What happened

THE UK HSE reports that an engineering firm was sentenced after a worker suffered injuries to his hand. A worker was polishing a metal shaft on a lathe using emery cloth, while wearing gloves. The glove appeared to snag and dragged his hand towards the rotating shaft. As a result of the incident he had stitches in his hand and dislocated his scaphoid bone – part of his wrist.

What went wrong/causes

The injured person had only been working for four days at the site.

The HSE investigation found that:

- ◆ No suitable and sufficient assessments had been carried out to determine control measures for this task of polishing;
- ◆ There were no clear guidelines for employees and others, such as agency workers, on safe ways to polish.

The HSE inspector commented: *“Those in control of work have a responsibility to devise safe methods of working and to provide the necessary information, instruction and training to their workers in the safe system of working. This incident could so easily have been avoided by simply carrying out correct control measures and safe working practices.”*

Incident 2: Workers exposed to Hand-Arm Vibration Syndrome (HAVS)

What happened

THE UK Health & Safety Executive (HSE) reports that an engineering firm has been fined for failing to control the risk of hand-arm vibration syndrome (HAVS) to employees using hand-held power tools. A welder who had been working at the company for a number of years had been given a job that involved a significant amount of grinding

and polishing. After some hours on the task, the worker began to experience numbness and tingling. He asked to swap with another worker but was told to carry on.

Whilst his symptoms continued he was told by his supervisor to carry on using vibrating tools. A few weeks later, a 20-year-old apprentice welder also began to suffer from vibration-related symptoms from using similar tools.

What went wrong/causes

The company failed to adequately control the risks to its employees from exposure to vibration. The company also failed to ensure its employees were given sufficient information, instruction and training on the effects of working with vibrating hand tools.

The HSE inspector said: *“This is a case of the company failing to protect workers using vibrating tools. Exposure to hand-arm vibration is a well-known risk which the company failed to adequately control. The company also failed to ensure workers were looked after when symptoms did arise leading to further exposure. This was wholly inadequate, and led to two employees suffering significant health effects.”*

Members are encouraged to bring to the attention of their crews the IMCA safety promotional materials on hand safety and other topics, available free to members. See <https://www.imca-int.com/core/hsse/publications/safety-promotion/>

Hand and finger injuries comprise a significant proportion of all the incidents reported by IMCA members and, in many cases, the root causes of the injuries – as in these cases – are failure to assess risk or properly manage change, or failure to provide a safe system of work.

Members may wish to review the following similar incident:

- ◆ [Uncontrolled Exposure to Hand-Arm Vibration \(HAVS\)](#)

In summary

IMCA members continue to report significant numbers of hand and finger injuries. They can be broadly divided into two categories. Firstly, incidents/injuries in which the use of hand tools was a causal factor, and secondly, finger nips and crush injuries caused when moving large or heavy objects from one place to another (which is a core task for anyone operating vessels and hence for most IMCA members.)

Members may wish to look at some of the following incidents (search words: *hand, finger, crush*):

This list focuses on injuries caused during use of hand tools.

- ◆ [Machine Guarding](#)
- ◆ [Lost Time Injury \(LTI\): Hand Cut During Cutting Operations](#)
- ◆ [Marine Safe Australia – Hand Injuries](#)
- ◆ [Hand Injuries \(MSF\)](#)
- ◆ [Lost Time Injury \(LTI\): Hand Injury](#)
- ◆ [Portable Grinders – Hand Safety](#)
- ◆ [Finger and Hand Injuries](#)
- ◆ [Finger/Hand Injuries \(IADC\)](#)

This list focuses on finger nips and crushes generally, but not always, from loading or lifting operations.

- ◆ [Crushed Finger](#)
- ◆ [Lost Time Injury \(LTI\): Finger Injury Whilst Working in Engine Room](#)
- ◆ [Finger Injury During Maintenance Work – Restricted Work Case](#)
- ◆ [Finger Injury During Loading Operations](#)
- ◆ [Line of Fire LTI: Finger Injury During Lifting Operations](#)
- ◆ [Lack of Safety Awareness: Crush Injury During Lifting Operations](#)
- ◆ [Serious Hand Injury](#)