

IMCA Safety Flash 07/13

May 2013

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.

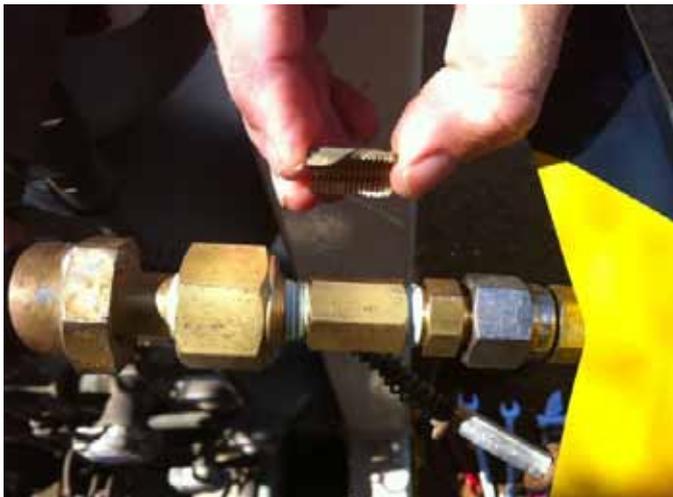
The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information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

1 Near Miss: Failure of Gas Quad Fitting

A member has reported an incident in which there was a potentially catastrophic failure of a high pressure fitting on a gas quad. The incident occurred in a yard ashore when crew were carrying out pre-mobilisation equalisation transfer between banks on mixed gas DIV64 quad pack using high pressure (HP) hose. The wrong fitting (incorrect thread and low pressure (LP) rather than HP) was used to connect the HP whip to the king valve on the quad. The fitting failed due to a hairline crack as the gas transfer was being conducted between the HP banks.

The LP fitting failed such that it split into two pieces. One piece was found in the immediate vicinity; the other was found 20m away from the point of failure. It was later discovered that this piece had travelled with such force that it had hit and chipped an internal brick wall within a nearby workshop. The trajectory of this second piece would have crossed the main general workshop area in the facility at a height of approximately 3 metres where an estimated 10 other persons had been working. There were no injuries.



Part of failed fitting



Hose damage resulting from inadequate whip check

The company concerned noted that the following safety precautions were in place:

- “ A risk assessment on the immediate work area had been carried out prior to starting work;
- “ A permit to work had been completed, signed and displayed by the operator and immediate supervisor;
- “ Adequate bunting and warning signage had been erected to alert surrounding work areas of HP activities;
- “ The worker conducting the task had reviewed and signed a job hazard analysis for high pressure filling.

During investigation, the following points were noted:

- “ In order to complete this task in equalising gas between the mixed gas DIV64 internal banks, use was made of NPTT (tapered) adapter fittings from both the HP king valve stem connection ports and adapting to the HP transfer hose, and in this incident both the thread type and the choice of material were incorrect. Low pressure fittings were used rather than high pressure fittings;

- “ Whip checks had been installed at each end of the transfer hose and secured to the DIV64 frame prior to equalisation operations being conducted. However, the hose end at the point of failure did not adequately choke or restrict the hose to a point where by it should have prevented the uncontrolled movement. This resulted in the hose also being damaged and ripped at the section where the stainless steel hose crimp is machine fitted (see photo);
- “ An identical ¼” NPTP brass socket fitting arrangement had been used on the other end of the hose; upon inspection, a hair-line crack was found in the material;
- “ Additionally the first section of the brass fitting had clear visual evidence of heavy condensation, and icing on the exterior of the other associated adapter fittings at the point of the pressure drop which would have further contributed to reducing the structural integrity of material under high pressure.

The following root causes were identified:

- “ Pressure of circuit was above the coupler’s capacity;
- “ Crimped swivel fittings not suited to pressure of this level;
- “ Crew were not aware of different thread types;
- “ Whip checks insufficient;
- “ Valves open more then they needed to be;
- “ Regulator not used;
- “ Pressure not monitored;
- “ Over-tightening on coupler resulted in hairline stress cracks.

It was also noted that there was no specific process or procedure in place for the task, and that the time allowed for the task was not sufficient.

The following lessons were learnt:

- “ Equipment should be of sufficient pressure rating;
- “ Improved training and information were required on this task;
- “ Risk assessment for this task needed to be more detailed;
- “ Hose securing – whip checks – should be improved;
- “ Consider increasing size of restricted access area during high pressure work;
- “ Real-time measurement of high pressure should be in place;
- “ Time allowed for this work should be realistic;
- “ Complacency is to be guarded against.

2 LTI: Fall from Height

A member has reported an incident in which a crewman suffered an injury during a fall from height. The incident occurred when a senior ROV pilot technician was climbing down from the ROV hydraulic power unit (HPU) after cleaning the unit with another crewman acting as spotter and assistant. When making his final step down from the HPU, the injured person’s full body harness safety lanyard caught on one of the rigging points. As the lanyard hung up, it prevented him from touching the deck with his final step from the HPU, causing him to swing into and make forceful contact with the LARS stowed transport post. The post protruded approximately 5 inches and is approximately 4 feet off the deck. He hit the post in the lower right back just below his right shoulder blade.

During the injured person’s descent, the other crewman had left the area to stow tools. He heard a loud bang and a scream. When he arrived back at the scene, he noted his colleague was suspended approximately one inch off of the deck, with toes just touching the deck. He helped him to the deck, and called the medic.

The injured person was taken to local medical facilities where he was diagnosed with rib contusion and given prescription drugs for pain. At a follow-up examination some days later the injured person’s duty status was changed to restricted duty with no bending, no climbing and no lifting of more than 5 kg. A further medical appointment was scheduled. Four days of lost time were incurred.

The company's investigation revealed the following:

- “ Failure to follow the job safety analysis that had been established and reviewed prior to work starting;
 - the JSA identified that a ladder should be used, however this ladder was not used for either ascent or descent
 - the spotter was to remain in the work area during the performance of all tasks, but left to store tools during his colleague's descent from height;
- “ Rushing to complete the job without consideration of hazards which included: the injured person failing to check all conditions before descent from the HPU, and the spotter leaving area to store tools before his colleague was safely on deck.

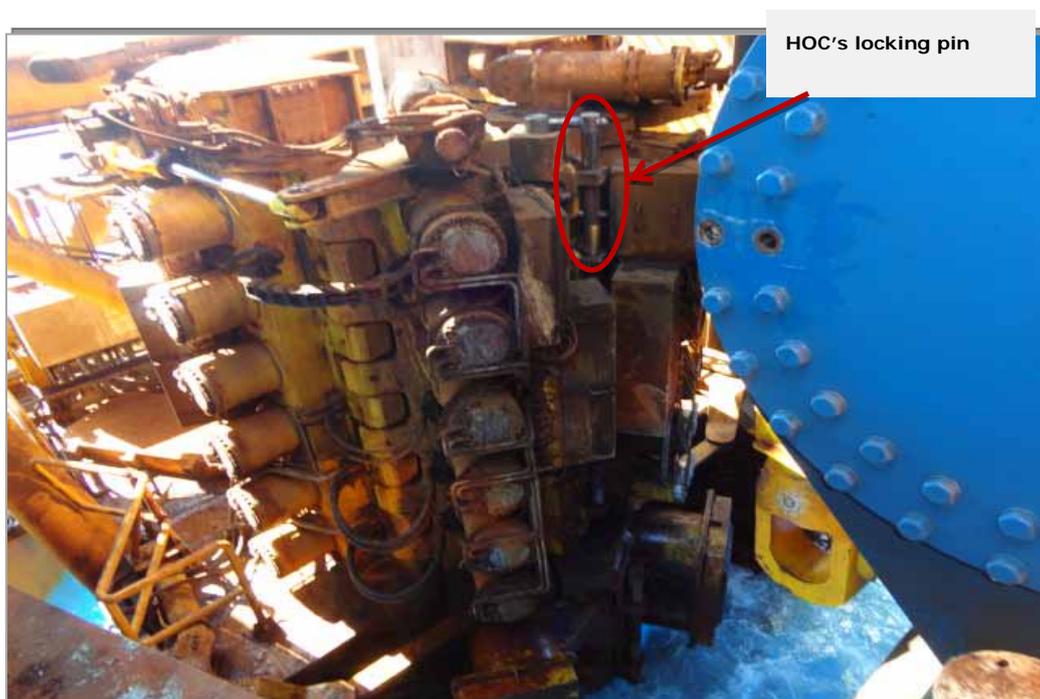
The company noted that risk assessments and job safety analyses are generated and reviewed for employees' safety, and should be read, understood and followed, otherwise employees and their colleagues can be placed at risk. The following lessons were learnt:

- “ Failure to understand and fulfil assigned safety responsibilities places everyone in danger. Spotters and observers must recognise the importance of their roles and remain vigilant when monitoring work activities;
- “ Rushing to complete tasks could have serious long-term consequences, as short cuts may be taken which could result in accidents. No job is more important than the people who perform it. Work carefully and deliberately and give yourself time to think about potential hazards and doing the job right. Always put safety first.

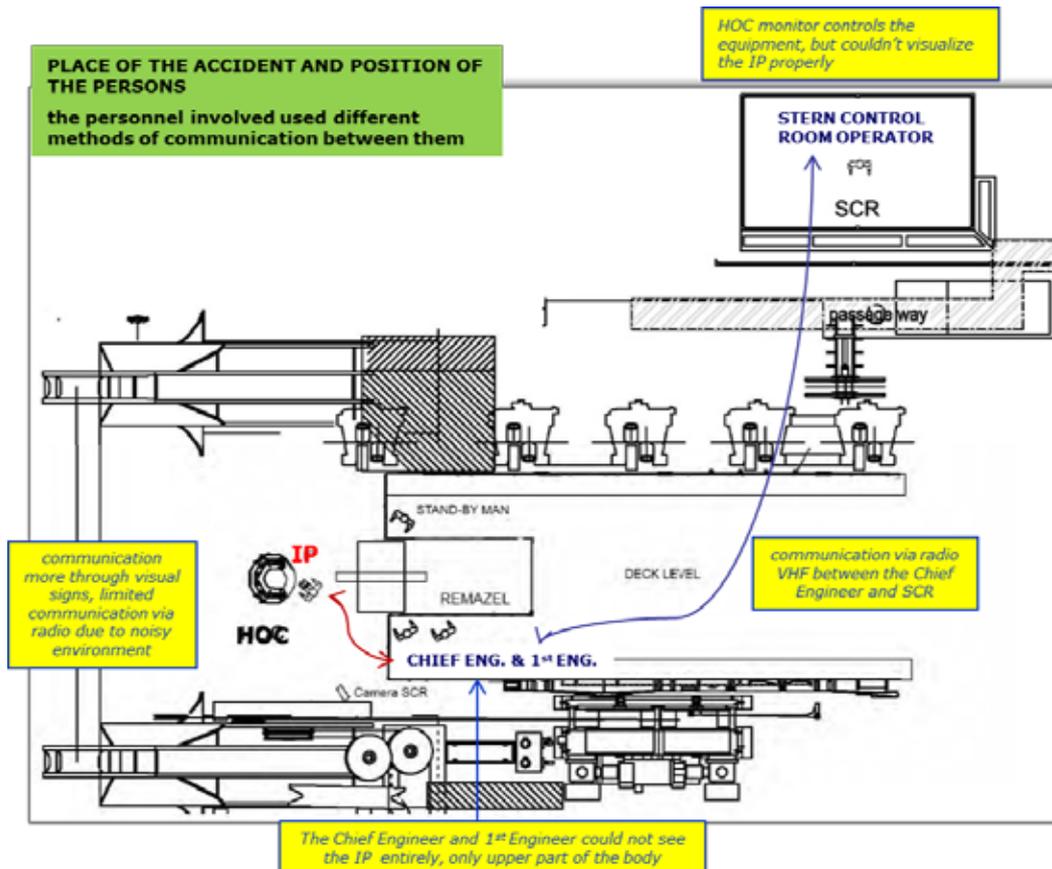
3 LTI: Serious Foot Injury

A member has reported an incident in which a rope access technician suffered a serious injury to one of his toes, leading to partial amputation. During J-lay pipeline operations, a malfunction was discovered in the locking pin designed to lock off the hang-off clamp (HOC). The pin would move down, but not up. Maintenance of the equipment was arranged. A crewman was assigned to clean the hang-off clamp using a water jet, and during this process he was supervised, from the deck level, by the Chief Engineer and 1st Engineer. When the cleaning was complete, he confirmed using hand signals to his supervisors that the job was complete.

The supervising team alerted the crewman that there would shortly be a test movement of the locking pin in order to test the functionality of the equipment. The supervising team alerted the crewman of the imminent movement of the pin, giving signals that he should move to a safer location. He confirmed visually that he had received this signal, but did not move, remaining with his foot on the pin. The 1st Engineer gave instructions via radio that the pin should be moved. Whilst moving, the pin squeezed the toe cap of the crewman's boot, causing injuries leading to partial amputation of his right big toe.



Showing hang-off clamp locking pin



Line drawing showing place of incident and position of persons involved

An investigation identified the following causes:

- Improper communication between all persons involved:
 - injured person and supervisory team communicated using hand and visual signals and there was no confirmation that the signals were understood as intended
 - 1st Engineer and control room operator communicated by radio
 - There was no communication between injured person and control room operator;
- The control room operator could see the hang-off clamp, but could not see personnel working nearby;
- There was no evidence of any toolbox talk before the operation to agree on proper communication channels or planning of the operation;
- Whilst a job safety analysis and permit to work had been issued, these did not fully identify the task hazards.

The following corrective actions were taken:

- Improved job safety analysis to ensure adequate identification of all hazards and mitigation measures;
- Improved communication protocols and instituted use of common communications channel between crew and control room.

4 Gangway Safety: A Review of Recent Incidents and Near Misses Involving Vessel Gangways

The Marine Safety Forum has published the following safety flash reviewing a number of incidents and near misses reported by base staff involving vessel gangways. These incidents and near misses range from improperly rigged gangways and safety nets through to poor housekeeping standards with tripping hazards left on the gangway

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-13.09.pdf

5 Dropped Object Injury

The Marine Safety Forum has published the following safety flash covering an incident in which a crew member was injured when a trolley and chain hoist came off the lifting beam. The immediate cause of the incident was that in certain circumstances there was no end stopper to prevent the trolley and chain hoist from coming off the end of the beam.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-13.10.pdf

6 Risks Associated with Pneumatic Hose Couplings

The National Offshore Petroleum Safety and Environmental Management Authority of Australia (NOPSEMA) has published the following safety alert covering the risks of incorrectly assembled or faulty pressurised pneumatic (air) hose couplings.

The alert can be downloaded from www.nopsema.gov.au/assets/publications/Safety-Alert-55.pdf