IMCA Safety Flash 08/11

July 2011

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 Hand Injury while using Hydraulic Impact Wrench

A member has reported an incident in which a diver sustained a cut injury to his left hand palm whilst working with a hydraulic impact wrench. A team of two divers were engaged in removing bolts of an old riser clamp at shallow depths. During one such bolt removal, when the first diver held the wrench's trigger handle using one hand, the wrench socket came off from the bolt and the wrench began to fall. He attempted to prevent the wrench from falling to the seabed, and whilst doing so, his left hand came in contact with the rotating/revolving socket, and the socket retaining pin (makeshift welding rod) cut the palm of his left hand.

The diver was safely and promptly recovered to surface and provided with first aid. Then he was sent to the doctor for further evaluation. He resumed duty on the same day.

An investigation revealed that a long welding rod twisted around the socket had been used as a retaining pin to prevent the socket from falling off during use. This practice was considered 'normal'.

Showing use of welding rod as a retaining pin

The following actions were taken to prevent recurrence:

- As advised by the manufacturer, use of the correct size and length of retaining pin, covered by an O-ring, to secure the socket.

Showing correct size and length of retaining pin to secure the socket

2 Recent Near Miss Incidents Involving Potential Dropped Objects

There have been several recent cases of potential dropped objects which have been brought to IMCA's attention by the Marine Safety Forum in MSF Safety Flashes 11-20 and 11-22.

Case 1: Unusual Potential Dropped Object

During positioning of a container on an offshore rig, a large lump of what appeared to be road tar was seen within one of the forklift pockets of the container. The lump measured 30 x 15 x 5cm and weighed 1.2kg. The container, which had forklift pockets on all four sides, had been on a round trip to the rig, gone back ashore and had been taken back to the rig before the hazard was spotted, some two weeks after its original despatch. The investigation could not determine at what point the lump of tar entered the forklift pockets but it could not have been at the supplier nor at the supply base, both of which have fully concreted yard surfaces. Therefore, it is possible that it was present for some time prior to the container's original despatch.

It is presumed that being sticky, the lump of tar was lodged against the top of the inside of one of the forklift pockets, only eventually becoming dislodged due to some form of shock to the container. This made it difficult for the supplier to spot and remove. It is also presumed that it was in one of the transverse forklift pockets and therefore invisible to gantry checks at the supply base.

Members are encouraged to be vigilant in checking for all potential dropped objects. Whilst the probability of items sticking to the top of the inside of forklift pockets is low, the impact of those items falling out and causing harm is high. Provision for checking for and removing such items might include:

- Use of mirrors and lights on extended poles;
- Use of brushes and sweep-through;
- Safe systems for doing checks at eye height to assist ergonomics.

Piece of tar – potential dropped object

Case 2: Potential Dropped Metal Piece

A vessel completed discharging a cargo of 20 inch uncapped casing to an offshore installation after a period of adverse weather. During routine operations on the installation a piece of metal, a D-ring plate cover, was found inside one of the discharged joints of 20 inch casing. The drops calculator classed the potential as a fatality if the object were to have been dropped from more than 2.4 metres.

D-ring plate cover - potential dropped object

Case 3: Potential Dropped Metal Piece

Several days after the object in Case 2 was discovered, on the same installation, a wooden wedge was found inside another 20 inch joint of casing. The drops calculator classed the potential as a fatality if the object were to be dropped from more than 3.7 metres.

Wooden wedge - potential dropped object

Two of the above-mentioned objects (Case 2 and Case 3) were identified as belonging to the vessel and had become lodged inside the casing due to the vessel shipping water on deck during rough weather conditions. Subsequently, all wooden wedges used on this particular vessel were painted white on their top sides to make them easier to see in the dark.

Members are reminded of IMCA's safety promotional material on avoiding dropped objects:

- Pocket safety card: IMCA SPC 12 – *Avoiding dropped objects;*
- Safety poster: IMCA SPP 04 – *Avoiding dropped objects;*
- IMCA SEL 05/11 – *Dropped object prevention – www.dropsonline.org.*

3 Electrician Received Electric Shock

A member has reported an incident in which an electrician received an electric shock whilst working on faulty electrical equipment. The vessel electrician had been called to the gymnasium because the running machine had developed a fault and was no longer working.

The running machine had been purchased for the vessel in the USA and required a110v supply. A 220v/110v transformer had also been sourced in the USA and was mounted on the bulkhead next to the running machine, with a connecting cable into the vessel 220v supply.

During initial investigation of the fault, the electrician decided to remove the 220v supply cable from the transformer to allow testing to be completed. The electrician unplugged the supply cable from the transformer connection first, unaware that it had two male connections (the standard configuration is one male and one female connection to ensure live terminals are recessed). As he started to remove the connection from the transformer, his left hand came into contact with the exposed live pins and he received an electric shock.

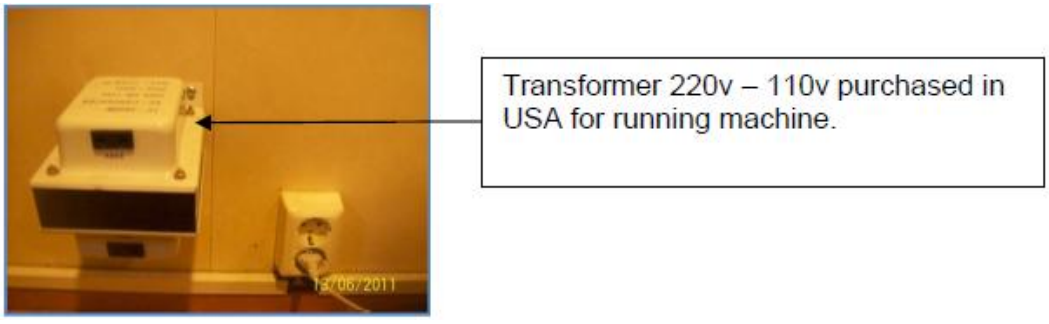
After receiving the shock, the electrician fully unplugged the supply cable from the vessel 220v socket and reported the incident. He attended the vessel medic where he was given a thorough observation, no injuries were identified and no further treatment was required.

An investigation revealed the following:

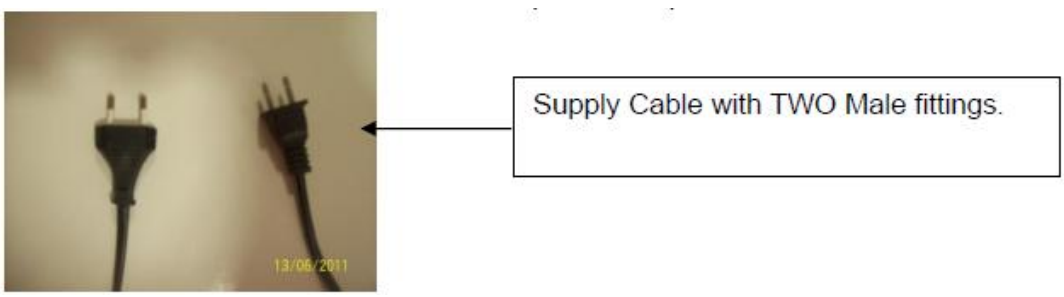
- Poor work practice and inadequate risk assessment for electrical isolations;
- There was a poor level of hazard awareness and task planning prior to starting work;
- Good practice is that electrical supply cables should be isolated from the power supply prior to testing;
- Design deficiencies of the electrical equipment that was being installed and used on the vessel were not identified;
- It should not be assumed that equipment purchased for the vessel is fit for purpose until it has been correctly checked and all potential hazards have been identified, risks assessed and any mitigating actions put in place;
- Electrical equipment purchased for the vessel should not be utilised until a full risk assessment has been conducted and all relevant mitigating safety actions have been completed.

Actions taken included the following:

- Ensure electrical equipment onboard has the correct connections, configuration and rating for safe use;
- Ensure that all electrical equipment purchased for the vessel is fully inspected and tested and a full risk assessment of its intended use takes place prior to installation and use.



Transformer for use with running machine



Supply cable with two male fittings

4 Fatality after Capsize of Workboat with Eight Persons Onboard

A member has reported an incident in which a workboat capsized during personnel transfer, causing seven people to fall into the sea, one of whom drowned. The workboat was transferring personnel from a vessel to a cargo barge during the hours of darkness. Weather conditions were: Wind E 16 knots; Sea state 0.7m – 1.3m with period 3.8s, which conditions were considered by the member to be within acceptable parameters for this kind of operation.

The workboat approached the cargo barge from the stern portside. One person disembarked the workboat onto the cargo barge. Immediately after this, the workboat was hit by two waves from the port side; the first filling it with water and the second causing it to capsize. The person who disembarked raised the alarm by radio. Two members of the crew climbed onto the hull of the capsized workboat and unsuccessfully attempted to right the boat by operating the manual handle to the self-righting gear. The other five persons made their way to the polypropylene rope attached to the emergency tow wire located on the stern port side of the cargo barge. Of these five persons, three did not hold on and drifted away, the deceased being one of them. The other two were recovered safely onto the cargo barge. A tug vessel present in the area, closest to the cargo barge, was requested to search for and recover the lost personnel. This tug recovered the two crew members from the hull of the capsized workboat, and two crew members from the water who had been holding onto the polypropylene rope. The third missing crew member was recovered later by a supply vessel in the area but was already dead.

Cargo barge

Workboat used

An investigation revealed the following:

- The problem had not been anticipated; the capsizing of this type of workboat had never occurred previously;
- The workboat had frequently been utilised in the same sea conditions including operations during the hours of darkness;
- Maintenance and inspection of the workboats was not fully in line with International Convention for the Safety of Life at Sea (SOLAS) requirements;
- Inspection of the self-righting gear revealed that the safety pin utilised to prevent activation during transportation had never been removed. Inspection of the records of the workboat manual revealed that no reference was made to this device or that it should be removed before use at sea;
- Emergency response was not adequate; thus, the full detail of the emergency was not understood by those responsible for initiating the relevant response action;
- Vessel man overboard procedures did not cover overboard scenarios remote from the vessel. Man overboard drills and exercises were limited to loss overboard from main vessel and did not consider personnel working in remote locations.

The following corrective actions were suggested:

- Ensure that a backup vessel is always present during vessel to vessel personnel transfer;
- Ensure that workboat personnel have specific personal protective equipment (PPE) for transfer operations dependent on local climate and conditions, including personal locator beacons, life-jackets, waterproof radios, work suits as appropriate, and appropriate headgear;
- Ensure that during the hours of darkness the bridge watchman has access to night vision binoculars;
- Review procedure for personnel transfer, to include clear line of command and who should authorise the launching of a workboat;
- Develop drills and exercises for man overboard scenario remote from vessel;
- Amend planned maintenance schedule to include checks of self-righting gear and develop user checklist;

- Ensure boarding arrangements on barges are properly considered before use; consider the possibility of development of improved or appropriate boat landing access on barges;
- Ensure adequate lighting is available on cargo barges;
- Identify appropriate tracking system for workboats;
- Investigate the use of alternate means of personnel transfer.

Members are reminded that IMCA has published IMCA SEL 025 – *Guidance on the transfer of personnel to and from offshore vessels*, which can be downloaded from https://members.imca-int.com/documents/core/sel/docs/.