

IMCA Safety Flash 03/12

April 2012

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

I Near Miss: 220v Cable Not Isolated During Work

A member has reported an incident in which a 220 volt mains cable was left live and exposed *in situ* during repair works. During the routine maintenance task of outfitting a control room it was necessary to remove a light fitting to allow the removal of some fire retardant panels. The light was presumed to be isolated by a member of the work party, who tested this by use of a digital multi-meter and also by placing the tube back into the fitting to verify that it did not operate. The work party member then disconnected the fitting and left the exposed wires *in situ*.

When an instrument technician passed through the area on another task, he queried the status of the exposed wires. A further check was made on the wires and these were found to be live with 220v. The electrician was contacted and requested to isolate the circuit.

An investigating was conducting and the following conclusions were drawn:

- ◆ On identifying that the light fitting required to be removed as part of the outfitting, the work party member took it upon himself to do this task, without checking;
 - the isolation status of the circuit with the supervisor
 - if an isolation confirmation certificate was in place
 - if a valid permit to work was in place for the task;
- ◆ No consultation was made with the vessel electrician, who would be deemed responsible for the lighting circuits;
- ◆ The work party member attempted to check the voltage of the circuit with a digital multi-meter, but did not operate this correctly and hence obtained a false reading, which led him to disconnect the fitting on a live circuit;
- ◆ An immediate cause of this incident was that a digital multi-meter was used incorrectly to verify that the wires were not live ('proving dead'). As there is the potential to have the digital multi-meter on the incorrect setting, it should never be used for proving dead. On this occasion, it is considered that the hold button had been inadvertently pressed on the unit which prevented a voltage from showing when proving dead.

Our member has also noted that there have been a number of other potentially fatal electrical incidents within its fleet since this incident:

- ◆ A hard-wired, temporary 220v three phase cable was found hanging on a nitrogen quad, which had been disconnected at one end with the breaker only tripped, not isolated;
- ◆ A near electrocution occurred due to the failure to apply a robust isolation.

In light of these recent near miss electrical incidents, the following preventative actions were taken:

- ◆ Ensure all vessel departments were aware that any isolations carried out are done so in consultation with the appropriate electrical authority, and carried out by an approved isolator;
- ◆ Ensure all vessel departments comply fully with company procedures for applying and controlling isolations - personal isolations or trips are not to be considered an acceptable means of isolating;
- ◆ All 'proving dead' should be done with an approved unit which is designed for this purpose only. A recommended example of this would be the Martindale VII 37002 voltage indicator and the PD440 proving unit;
- ◆ Isolators should be familiar with the correct process of proving circuits are dead, including testing the device immediately before and after proving dead to ensure that the device is working correctly.

2 Lifting Post Failure on Survey Equipment

A member has reported an incident in which a lifting post fractured completely, leaving equipment hanging overboard by only a hold-back safety tether and electrical umbilical. The incident occurred during a planned dive when survey equipment was being deployed subsea to the seabed. The vessel was set up to give a 30 metre (m) over-boarding safe zone from subsea assets. At the time the survey equipment was being over-boarded from the port side using the Cherry Picker crane, the divers were under their bell on the stand-off stage as per standard procedure.

The design lift point for the equipment was a central lifting post which was bolted onto the equipment. This had a plate on it rating it to a safe working load (SWL) of 500 kilograms (kg) and was issued with a test certificate in October 2010, when it was tested to twice the SWL. The central lifting post consisted of two pieces of aluminium box section with one section being welded inside the other (see images). A short rope hold back safety tether was also attached, connecting the equipment to the Cherry Picker hook, which was to restrain the load on failure of the lifting post. The total weight of the unit in air was 270kg.

As the lift commenced there was a moderate sea state with a 1.25 to 2.5m swell. As the equipment was lowered through the splash zone, at about 5m depth, the lifting post fractured completely. This left the equipment hanging on the hold-back safety tether and the electrical umbilical.

The operation was halted immediately and the bridge and Divers informed of the situation. The equipment was lowered to the seabed where the divers re-rigged it with a four point lifting bridle (4 x 2 ton x 3m slings). The equipment was then successfully recovered to the deck. There were no injuries and, apart from the failed lifting post, no damage to equipment.



Equipment



Attachment point



Showing failed lifting post

Following an inspection and investigation, the following points were noted:

- ◆ The central lifting post had failed where the lower box section entered the upper box section. This area was not a welded joint. The weld connection was above this on all four sides through cut outs in the upper box section.
- ◆ The lifting arrangement for the equipment was inadequate for deployment subsea, as the additional forces of the splash zone had not been sufficiently factored into the design.

The following actions were taken:

- ◆ Stopped use of this lifting arrangement until a new and safer design could be developed;
- ◆ Quarantine of spare lifting post and equipment owner informed that the Lifting certificate should be withdrawn;
- ◆ Check with other projects and with IMCA members to see if they are using similar equipment, and quarantine as necessary;
- ◆ Until suitable lifting points are designed and tested, all lifting of the tool shall be via basket with certified lifting points.

3 Near Miss: Supply Vessel Pulls Platform Crane Overboard

The Marine Safety Forum (MSF) has published the following Safety Flash regarding an incident in which a platform crane was destroyed. During routine hoisting activities on board discharging of a 20 feet basket from a supply vessel, the basket turned round when the crane started lifting it, and hooked inside an escape opening in the rail. The supply boat moved down on the swell at the same time as the crane lifted, and the crane was pulled overboard. There were no injuries.

Further information can be found from <http://www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-12.08.pdf>

4 Bypassing of Storage Tank Safety Features

The National Offshore Petroleum Safety and Environmental Management Authority of Australia (NOPSEMA) has published the following Safety Flash regarding instances where safety features associated with machinery space oil and fuel tanks have been intentionally bypassed, including deliberately bypassing the spring return valves of tanks containing hydrocarbon inventories by securing them open via a number of means, including zip ties.

Further information can be found from www.nopsema.gov.au/assets/Uploads/alert/Alert50.pdf

5 Watertight Doors and Hatches Routinely Left Open at Sea

The National Offshore Petroleum Safety and Environmental Management Authority of Australia (NOPSEMA) has published the following Safety Flash regarding several instances where designated watertight doors – which are to be closed at sea - have been routinely left open.

Further information can be found from www.nopsema.gov.au/assets/Uploads/alert/Alert51.pdf