IMCA Safety Flash 06/15

May 2015

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.

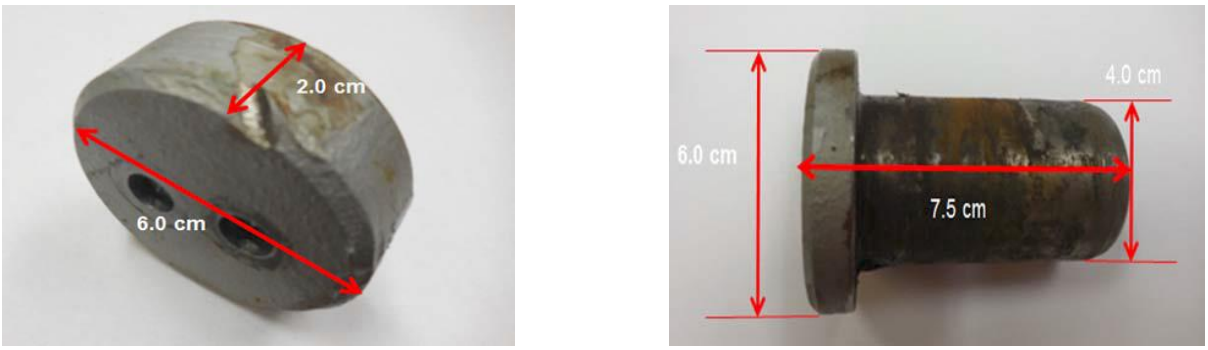
The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information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

A member has reported an incident in which two objects fell from a pipelay tower. The incident occurred some four weeks after repairs to a 360Te winch wire garage at the top of the pipelay tower. These repairs had involved the erection of scaffolding 50-60m above the deck in the pipelay tower, removal of the garage assembly, repair and reinstallation.

During operations four weeks later a shaft weighing 1kg and shaft end cap weighing 500g fell approximately 57m to the mobile work platform below. There were no injuries.



The objects which fell from the tower

Our member's investigation noted the following:

- During the earlier reinstallation of the garage assembly, the securing bolts for the shaft end cap were installed without any means of thread locker (Loctite). This resulted in the bolts for one of the shaft end caps vibrating loose, resulting in the shaft being unrestrained and free to vibrate out along with the end cap;
- There was no written work instruction or method statement for the earlier corrective maintenance;
- There was no means of securing the end cap retaining bolts other than the torque of the bolt itself in the shaft;
- The drawings for the garage assembly and parts list did not reference the use of thread locker;
- The garage assembly was not listed on the vessel asset equipment register and therefore no maintenance was assigned to it.

The following actions were taken:

- Use of secondary means of securing fasteners for all equipment, particularly at height;
- Checked security and integrity of remaining fasteners;
- Fasteners cleaned, torqued to the correct value, thread locked (Loctite) and wire moussed;
- Equipment entered into the appropriate asset equipment register and planned maintenance scheduled;

Members are reminded of IMCA promotional material as follows:

- Pocket card IMCA SPC 12 – *Avoiding dropped objects;*
- Poster IMCA SPP 04 – *Avoiding dropped objects*.

Members may wish to refer to the following similar incidents (key words: *dropped, object, pipelay, tower*):

- IMCA SF 11/12 Incident 2 *Near Miss: Dropped Object*
- IMCA SF 01/15 Incident 5 *High Potential Dropped Object*

2 Failure of Underwater Pan and Tilt Rotator Unit

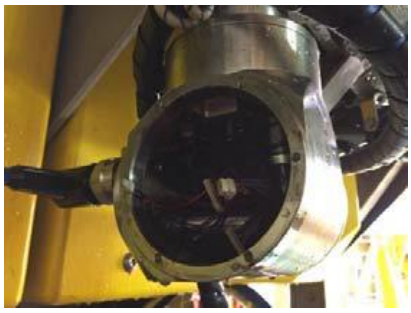
A member has reported an incident in which there was a small explosion and fire on a remotely operated vehicle (ROV). Personnel had reported having experienced minor issues with the upper pan and tilt unit fitted on the ROV camera whilst it was subsea. Once the unit was recovered, they intended to connect it to a computer and run the on-deck camera analyser software.

An explosion blew the single axis driver assembly (SADA) with the camera unit attached (approximately 5kg weight) away from the main rotator unit. The explosion resulted in the SADA with camera becoming separated (the 6 x 5mm grommet screws connecting the SADA to the camera pan and tilt main housing were sheared) and propelled at a high speed away from the pan and tilt main housing. Flames were noticed coming out of pan and tilt rotator unit and extinguished.

There were no injuries.

Close up of pan and tilt unit

Broken pan and tilt unit shown in situ



Close up of broken pan and tilt unit

Our member noted that the origin of the over-pressure that led to the explosion is still unknown and under investigation with the unit manufacturer.

The lessons were as follows:

- Never be in the line of fire;
- Maintenance/repair work on the pan and tilt units should be reduced to ALARP – as low as reasonably practical;
- Ensure there is a robust management of change process – ensure that there is proper risk assessment when the situation has changed, as in this case.

Members may wish to refer to the following similar incident (key word: *overpressure*)

- IMCA SF 08/03 Incident 2 *Fatality – Pressure Build-Up leading to Sudden Release of Mechanical Plug*

3 Marine Risk Management within the Safety Zone

The Marine Safety Forum has drawn attention to the increasing frequency of serious marine incidents within installation 500m zones. This highlights the need for:

- Greater understanding and ownership of marine risk from an installation perspective;
- Strict operating discipline in compliance with established procedures and recognised operating limits;
- Better quality communications between installation and vessels.

Further information can be downloaded from here.

4 Near Miss Incidents: Crew Transfer Vehicles Approaching Wind Turbines

A member has reported a number of recent near miss incidents involving the approach of small boats – offshore renewable industry crew transfer vehicles – to wind turbine towers. In both incidents the vessels have become unattached from the boat landing and have then become dangerously close to hitting the monopile when taking avoiding action.

Incident 1

During personnel transfer onto the crew transfer vessel a wave caused the bow of the vessel to shift to the port side on the boat landing; the Master tried to correct the movement by altering the steering to the starboard side. A misjudgement caused the vessel to suddenly over-compensate and become even further off centre upon the boat landing. The Master then slewed the vessel around to starboard in order to realign upon the boat landing without the tide and wave influence (on the beam when in the transfer position). At this point the vessel became unattached from the boat landing. To avoid hitting the monopile, unable to reverse due to a following sea, the Master throttled forwards away from danger. The vessel passed approximately 2m from the boat landing.

The vessel is pushed onto the boat landing centrally and transfer operations are underway

After craning operations finish and just after one of the technicians descends the ladder onto the vessel, the vessel slides a short way to starboard

The crewman holds onto the handrail whilst the Master slowly repositions the vessel back into the boat landing; he shouts up to the technicians to STOP transfer until he tells them otherwise. Note: the vessel is now not centrally on the boat landing

The vessel moves suddenly to starboard, the crewman evacuates the transfer platform

The vessel becomes unattached from the boat landing. The Master in interview said he was unable to reverse away from the monopile due to sea state/current; the photo shows the waves bow on

The vessel accelerates forwards in order to avoid contact with the monopile and manoeuvres into position to re-begin push-on. There were four technicians left on the monopile during this time

Our member noted that if the Master knew he was about to make a significant steering alteration he should have informed the crewman first to allow him to safely evacuate the transfer platform before the movement began.

Our member's recommendation was that if a crew transfer vessel moves significantly off centre of a boat landing, the Master should first instruct the crewman to remove himself from the transfer platform and tell him to order the technicians to STOP transfer and standby. Then the Master should pull the vessel away from the wind turbine and begin correct push-on again before recommencing transfer.

Incident 2

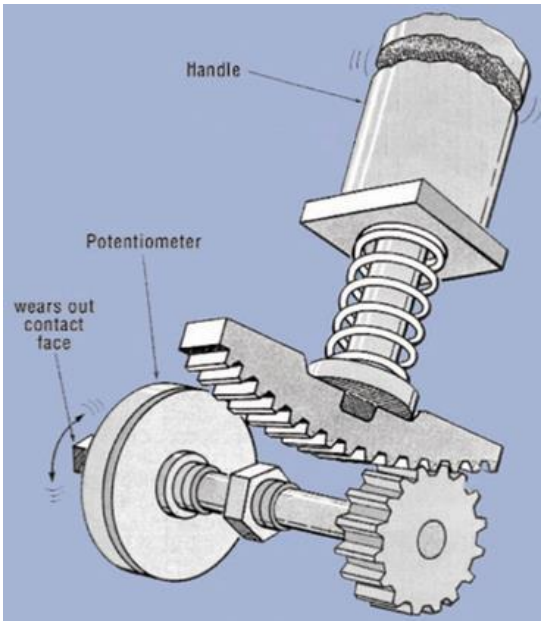
A crew transfer vessel was at work in marginal sea/weather conditions that were near to the limit of the vessel capabilities to transfer crew in a safe manner. The Master made the decision to attempt pushing onto a wind turbine boat landing in order to better assess the vessel's movement. After a short while he quickly deemed the weather conditions too severe and decided to abort the procedure. When the Master put the jet controls into reverse to move astern, only one jet responded. Due to the high engine power being applied to hold the vessel in position against the boat landing, the vessel turned sharply to starboard in front of the boat landing. The Master instantly attempted to use the jog steer back up controls to avoid collision but this was unsuccessful; the port jet would not respond. Next the Master tripped the jet control isolators and re-booted the system. This time all was now working correctly and the vessel was driven away from danger and returned to shore without further problems. Again the crew transfer vessel came within two metres of colliding with the monopile.

Our member conducted a full overhaul of the system but there were no obvious signs of damage or deterioration found. As a precaution to prevent further reoccurrences, the supplier of the jet drives was asked to attend the vessel the next day to perform a second system overhaul and fault finding exercise. After two further days of work on the system, the drive supplier concluded that a worn **jet control potentiometer** had caused the units not to respond as requested.

Incident 3 – Joystick potentiometer wear

This incident is similar to incident 2 above. Within the previous week on another crew transfer vessel the Master noticed the vessel was not steering correctly when on passage to site. Suddenly the steering on both units would not centralise and was stuck hard to starboard, the jet display alarmed with fault code: **JS steer fault (joystick)**.

The Master, under advice over the phone from the superintendent, removed the joystick from the fly bridge steering console and replaced it with the faulty unit in the wheelhouse. All steering was regained. The faulty unit was sent back to the supplier, and under investigation it was found that the steering potentiometers had worn. Our member considered introducing planned maintenance/replacement of such units to prevent recurrence.



Members may wish to refer to the following similar incidents (key words: *renewables*):

- IMCA 17/13 Incident 2 *Small Workboats Used on Offshore Wind Farms.*

5 Badly Sprained Ankle Resulting in LTI

A member has reported an incident in which a person suffered a badly sprained ankle leading to an LTI. The incident occurred when the person was making his way from the wheelhouse to the galley via the external staircase. When he put his weight on the second step his foot slipped and he fell the remaining distance (approximately 2 metres) to the deck resulting in an ankle injury.

Initial first aid was provided on the vessel until the injured person could be taken to hospital. Subsequent medical assessment diagnosed a badly sprained ankle resulting in being unable to do any work for at least seven days. This was likely to be followed by a period of restricted work.

Showing step staircase outside onboard vessel

Our member's investigation noted the following:

- Conditions were wet at the time;
- Other than being wet, the steps were clean;
- The injured person fell without hitting any other steps on way down and took the full impact on his foot when he hit the deck;
- The injured person was descending facing away from steps;
- The design of the stair (approx. 40 degrees from vertical) meant that when descending in this manner, only the person's heel COULD be placed on the tread;
- Steep stairs were not identified as a hazard on this vessel;
- The injured person was wearing correctly fitted, laced/zipped work boots with good tread, and was not carrying anything at the time of the fall.

Lessons learnt:

- Although risk assessments for the project covered all operational tasks they did not extend to cover descending stairways;
- No warnings signs were in place identifying the steep stairway or the need to use the hand rail.

The support provided by the correctly worn work safety boots may have limited the extent of the ankle injury.

Recommendation and corrective action:

- Individuals should always consider the safest method of descending stairs before doing so;
- Stairways to be kept clean, and where possible, non-slip treads/nosings fitted;
- 'Caution steep stairway use handrails' signage fitted;
- The fact that you have not been told how to descend the stairs does not remove the need for you to assess your own safety before descending, and decide how to descend the stairway;
- Ensure hazards not directly linked to operational tasks, are considered and addressed in the workplace, and included in vessel induction for all crew, client personnel and passengers;
- Ensure that work boots and all other PPE is fitted and worn correctly.

Members may wish to refer to the following similar incident (key words: *slipped, stairs*):

IMCA SF 17/14 Incident 5 *Slips, Trips and falls – Raising Awareness.*