IMCA Safety Flash 12/13

July 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 - Falling Transponder on Main Deck

A member has reported an incident in which a transponder came into contact with the crane's sheave, causing the transponder to fall on deck. The incident occurred during lifting operations, which required overboarding a jumper and its spreader bar – both positioned on deck. The whole assembly was directly slung to the hook on the main line of the vessel's crane (see Figure 1). The main line and the whip line were both equipped with a transponder that was positioned right above the headache ball and directly secured to the wire rope with two jubilee clips.

Once the assembly was lifted off its stands, the length of the whip line was reduced from approximately 7m to 3m, so that it would not get tangled with the main line. The incident happened as the knuckle boom was folded to adjust the rigging. The surface area of the knuckle boom increases when folded and both lines are drawn in as a result. The transponder on the whip line was caught up in the sheave, causing the transponder, which weighed approximately 4 kg, to fall from 30m to the deck. There were no injuries. The transponder sustained noticeable damage (see Figure 2).

Figure 1: Spreader bar assembly

Figure 2: Damaged transponder

Our members' investigation revealed the following:

- The mechanical hook level alarm installed on the whip line was disconnected because it was deemed too sensitive to grease build-up;
- The mechanical hook level alarm installed on the main line was not working because of corroded switches that had not been replaced;
- The above-mentioned switches were not waterproof;
- No-one, prior to or during the operations, spotted the two transponders that were on both lines and/or identified them as hazards associated with a risk of falling object;
- The whip line had been put back into service after three months of unavailability due to a problem with calibration;
- There was no specific procedure regarding the use of transponders on the crane's lines;
- Existing company safety management system procedures for management of change were not followed.

Our member took the following preventive actions:

- Ensured personnel fully comply with existing company safety management system procedures, particularly with reference to management of change;
- Ensured crane operators are fully aware of the workings of their cranes – i.e. that the crane's lines are automatically drawn in when the knuckle boom is folded;
- Removed unnecessary transponders from crane wires.

Our member put procedures in place to:

- Ensure that the mechanical hook level alarm installed is tested each time the crane is started, and that this test is included in the vessel's planned maintenance system (PMS);
- Cover the use of transponders during lifting operations.

2 LTI: Crewman Injured During Opening of Tanks

A member has reported an incident in which someone suffered a head injury, when water escaped from a tank when it was opened. The incident occurred during opening of vessel ballast water tanks for ventilation prior to cleaning and inspection. The wrong tank was opened; a tank containing ballast water (the majority of the volume of which was above the man-hole) was opened by mistake, and approximately 180 cubic metres of water flushed out of the tank. The person opening the tank was pushed aside by the flow of water and knocked against other structures, suffering head injuries as a result.

Following first aid, the crewman was taken to hospital for treatment, but later returned to the vessel. The incident was considered an LTI. Our member also considered the incident "high potential" as it could have easily resulted in a fatality.

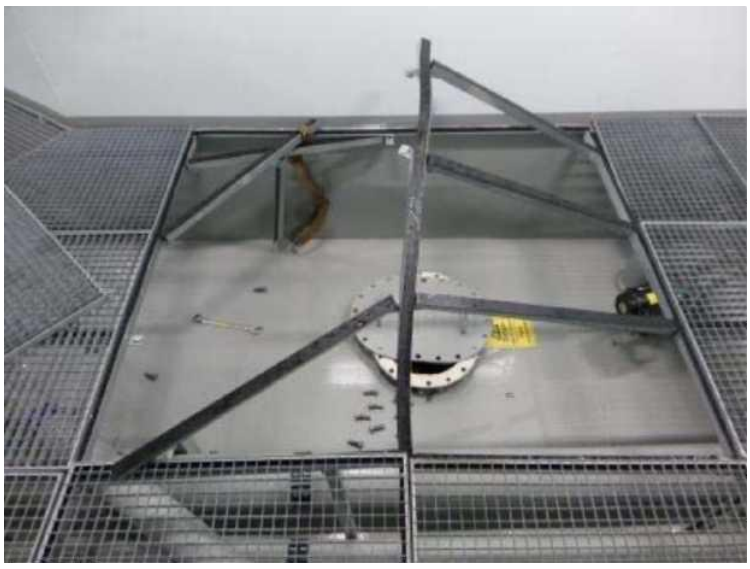

Figure: Showing damaged grating and manhole from starboard side.

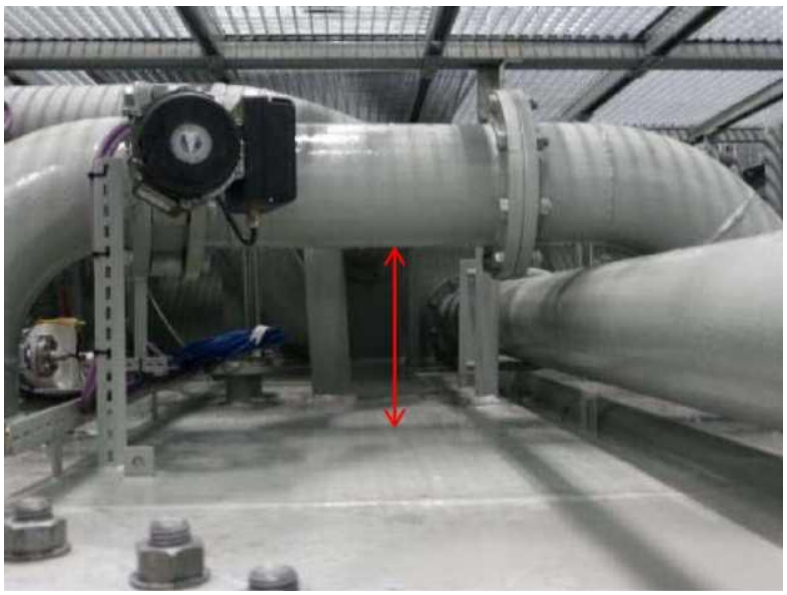

Figure: Showing area against which crewman was pushed by flow of water. NB height from deck to the pipe is approximately 0.35m (red arrow)

Our members' investigation revealed the following:

- There had been no risk assessment before starting the task;
- No permit to work was obtained for the task;
- There was insufficient familiarisation of persons involved in the task;
- There was no proper communication with regard to which tanks were to be opened and when to open them;
- All nuts were removed from manhole cover prior to breaking the seal.

Our member drew the following lessons from the incident:

- Leave a minimum of bolts on the treads prior to breaking the seal of the manhole;
- Ensure personnel involved in a task have a full and common understanding of what is required before starting;
- Ensure personnel are aware that the job can be stopped if this is not the case;
- Identify requirements for permit to work, isolations and tool box talks before start of task.

3 Incidents of Failure of Jet Drives on Wind Farm Service Vessels

A member has reported a number of incidents involving jet drives on wind farm service vessels.

Incident 1: Loss of Jet Drive Control on Wind Farm Service Vessel

A wind farm service vessel lost control of its jet drives. The incident occurred when a wind farm service vessel was underway returning to port from the wind farm. Control of the port jet was lost and the vessel veered heavily to port. The port jet was shut down and the vessel returned to base on one engine escorted by another wind farm service vessel.

Our members' investigation revealed the following:

- An M6 size bolt, securing the steering feedback transducer plate to the end of the steering ram, had vibrated loose and fallen off into the bilge;
- This resulted in a loss of steering control of the unit.

Our member took the following action and learnt the following lessons:

- The steering feedback transducer plate was reconnected and LocTite or similar used on the nut and bolt;
- The repair operation could have been conducted offshore without returning to port;
- When the rams are disconnected from the transducer plate for maintenance purposes, the nut and bolt should be secured with an agent like LocTite or similar to prevent the bolt from vibrating loose;
- Wind farm vessel crews should have a thorough technical understanding of the vessels they are using.

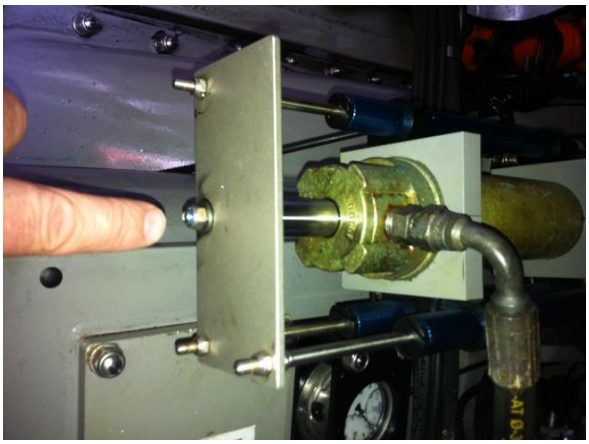

Figure: Transducer plate secured correctly to ram

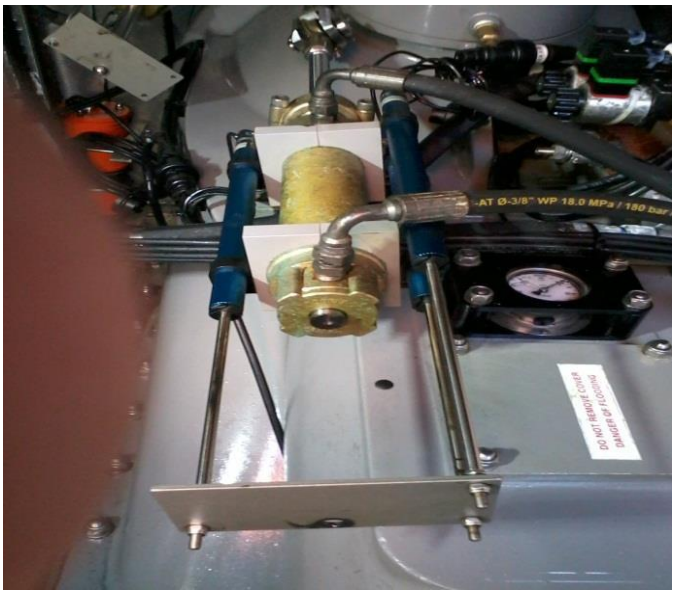

Figure: Transducer plate secured correctly to ram transducer plate unsecured and steering ram retracted

Incident 2: Failure of Jet Drive on Start-up

Before starting the jets, before starting the day's operations, it was found that the starboard jet failed to respond. Initial fault finding consisted of shutting down and restarting the starboard jet and changing over the relays. This did not work. An attempt was then made to manoeuvre using the local solenoid control – this did work. Following local control, the jet operated normally on all control systems and operations were resumed. As a result, the vessel was 45 minutes late for operations.

Our members' investigation revealed the following:

- The gearbox had been maintained earlier in the week;
- The jet had performed for 45 minutes since the gearbox was serviced;
- Use of the local solenoid control restored the system to operation;
- The cause of the incident was suspected air within the system.

Our member recommended that:

- Knowledge of the local control is included as part of the emergency procedures in the company competence programme;
- Wind farm service vessel skippers should be aware of the possibility of using local control systems;
- The use of local control systems should be part of routine fault finding.

4 Wind Farm Service Vessel in Collision with Wind Turbine Foundation

A member has reported an incident in which a wind farm service vessel collided with a turbine foundation, after failure of the vessel jet drive. The incident occurred after the vessel had disembarked passengers at the sub-station and had reversed away to drift, whilst standing by for the next assignment. The jets were disengaged and engines left running, as was common practice. Under the influence of currents, the vessel drifted towards another turbine foundation and when approximately 30m away, the vessel coxswain/skipper attempted to engage the jets. At this moment it was found that neither jet would engage. Several minutes were spent fault finding to no avail, after which the vessel coxswain/skipper assisted the deckhand with fenders. The vessel collided with the foundation, causing a buckled frame and bent plate in the port quarter bulwark, but no damage to the foundation.

Later the same day, the problem re-occurred and the vessel returned to port. Since that time, the problem had not re-appeared. Client and office were only informed after the second failure, when the vessel was returning to port.

Figure: Showing buckled frame and bent plate, as a result of collision between wind farm service vessel and turbine foundation

During investigation, the following points were noted:

- It was common practice for wind farm vessels to be allowed to drift in field, whilst waiting for work;
- There was no guidance from the wind farm operator (the client) on a minimum distance of approach to offshore structures while drifting;
- At the speed the wind farm vessel was drifting, 30m was not sufficient distance to allow enough time to re-start the jets or to anchor;
- The jet drives re-engaged, once they had been completely shut down and re-started.

Our member drew the following lessons from the incident:

- Following any incident, the company office and client should be informed immediately, if necessary using satellite telephone;
- Jet drives should be engaged when within 100m of an offshore structure, unless the wind farm service vessel is at anchor or tied off;
- Following this incident, the wind farm client now allows wind farm service vessels to tie off on to foundations when waiting on work.

5 Risks Associated with Pneumatic Hose Couplings - Update

The National Offshore Petroleum Safety and Environmental Management Authority of Australia (NOPSEMA) has published an updated version of its Safety Alert 55, covering the risks of incorrectly assembled, or faulty, pressurised pneumatic (air) hose couplings.

The revised alert can be downloaded from www.nopsema.gov.au/assets/publications/Safety-Alert-55-Rev-2.pdf