

IMCA Safety Flash 09/13

June 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

I High Potential Near Miss: Dropped ROV/TMS Leading to Equipment Damage

A member has reported an incident in which an ROV/TMS and an A-frame docking head fell to the deck from approximately 1m. The incident occurred during the launch of the system; the ROV crew witnessed a guide bar from the A-frame docking head fall more than 4m to the deck, landing at the base of the ROV some 2m from an ROV crew member. The guide bar was heavy-walled box section, approximately 2m in length and weighed approximately 20kg. The launch was stopped immediately; after a further 20-30 seconds, the docking head separated from the A-frame, and the ROV/TMS and docking head fell to the deck.

There was significant damage to the equipment, and our member considered that the incident had the potential to have caused a fatality or serious injury to personnel.



Figure (L) showing guide bar and (R) guide



Figure: showing stripping out of threads

Our member's initial investigation of the incident revealed the following:

- ◆ The two snubbing damping cylinder rams had stripped out from their clevis threads on the swing frame;
- ◆ The welds between the sheave guide posts and the docking head had also separated;
- ◆ The initial investigation suggested that the guide post welds had been compromised, allowing movement of the docking head out with the design of this system. This movement eventually transferred through to the damping cylinder clevis points, causing stretching of the clevis points over time until they reached a failure point;
- ◆ The stresses that led to the guide post weld failures were most likely to have been induced over time by operating the A-frame with the damping cylinders in the locked position.

The following causes were identified, subject to clarification when the fuller investigation is completed:

- ◆ Equipment
 - A review of the clevis design is required to assess their suitability for the loads to which they can be subjected;
- ◆ Procedures
 - The site-specific launch and recovery procedure called for putting the snubber ring in the "locked" position in marginal sea states to prevent excessive swinging of the ROV/TMS, for both launch and recovery. The manual for the type of A-frame involved in this incident makes specific references warning against moving the A-frame with the snubbing damping cylinders in the "locked" position;
 - The preliminary investigation indicates that the stress on the guide post welds is possibly a result of the A-frame being operated with the system in the "locked" position over a period of time;
 - The manual for the type of A-frame involved in this incident contains storage and start up procedures which include instructions to "inspect structure for inadvertent damage" and "check condition of paintwork ensuring there are no bare metal surfaces". Had these procedures been followed, it is possible that damage to the guide post welds would have been spotted before the failure.
- ◆ Inspection and Maintenance
 - Inspection of the weld areas between the sheave guide posts and the docking box suggest that these areas had been compromised and possibly separated for some time prior to this incident, and should have been identified already as part of routine maintenance on the A-frame.

Members may also wish to refer to the following IMCA documents:

- ◆ **IMCA R 011** – *The initial and periodic examination, testing and certification of ROV handling systems;*
- ◆ **IMCA SEL 019** – *Guidelines for lifting operations.*

2 Failure of Lifting Equipment: Dropped ROV

A member has reported an incident during offshore lifting operations in which a sling failed, causing an ROV and TMS to drop 30cm onto deck. The incident occurred during moving of the ROV and TMS. The whole assembly, weighing approximately 8 tonnes, was directly slung to the hook of the vessel's crane using a 10 tonne round fibre sling choked around the main lifting eye. The failure of the sling happened when the load was swung towards its temporary landing spot, after it had been lifted from its initial position. The sling failed suddenly and completely, causing the ROV/TMS assembly to drop from 30 cm onto the deck. There were no injuries, but the frame of the ROV was noticeably damaged.

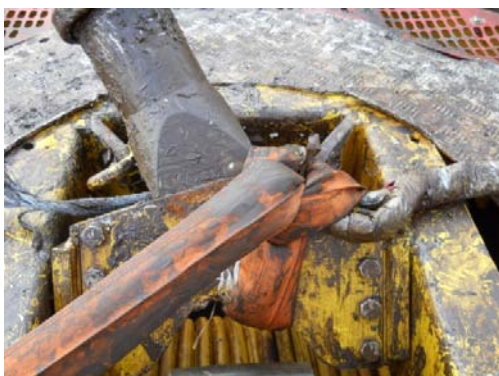


Figure 1: 10 tonne round fibre sling choked around the main lifting eye

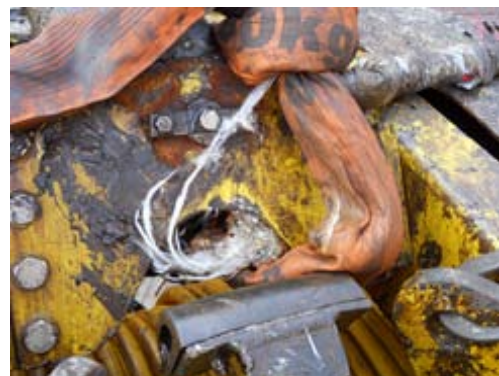


Figure 2: fibre sling was choked around a sharp edge



Figure 3: Damage to ROV frame



Figure 4: Sling after failure

Our member's investigation revealed the following:

- ◆ The company's own safety management system was not followed by the involved personnel (watch-keeping officer, sub-contractor's staff and crane operator);
- ◆ No lift plan was conducted before the start of the operations;
- ◆ The on-duty deck foreman was not present on deck to supervise the operations;
- ◆ The adequate rigging equipment and accessories (9.7 tonne four leg assembly and four 4.75 tonne bow shackles) required to lift this particular load was not used, and a 10 tonne round fibre sling was used instead;
- ◆ The fibre sling was choked around a sharp edge, and no protection or "packing" was placed between the sling and the sharp edge.

Our member identified the following preventative actions:

- ◆ Remind all personnel onboard vessels, including sub-contractors and client personnel, to follow company safety management system, particularly with respect to lifting operations;
- ◆ Ensure lift plans are undertaken before every lifting operation, and ensure lift plan is strictly followed during lifting operations;
- ◆ Ensure the on-duty deck foreman is always present on deck to supervise any rigging and lifting operations;
- ◆ Ensure that only certified and adequate rigging and lifting equipment and accessories are used;
- ◆ Ensure that improvised solutions are never used for lifting operations;
- ◆ Ensure the rigging and lifting equipment and accessories cannot be damaged by sharp edges, chemicals, hot items etc.;
- ◆ Where appropriate, place protection or "packing" between slings and any identified sharp edges;
- ◆ Remind personnel that sharp edges do not have to be "razor-sharp" to cause failure of rigging equipment.

Members may wish to refer to the following IMCA documents, in particular the pocket safety cards which are intended for use by vessel crews:

- ◆ [IMCA SEL 019](#) – Guidelines for lifting operations
- ◆ [IMCA SPP 04](#) – Avoiding dropped objects
- ◆ [IMCA SPC 05](#) – Lifting equipment
- ◆ [IMCA SPC 12](#) – Avoiding dropped objects

3 Securing of Cargo

The Marine Safety Forum has published the following safety flash regarding an incident in which incorrectly stowed cargo toppled over due to the vessels motion on encountering unexpected adverse weather conditions. The equipment was incorrectly positioned during the outbound load out and not secured.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-13.14.pdf

4 Generator Fire Incident

A member has reported an incident in which there was a small fire onboard an offshore vessel. Excessive smoke and bright light were observed coming from a rental generator and the fire alarm was raised. The vessel fire team were called and they were able to suppress the fire within twenty minutes.



Figure 1: Generator cable caught fire suspected worn wiring over time and lay out cables over the terminal



Figure 2: Phase 2 of the generator bus bar possibly contacting the generator casing; thus burning through phase 2 bus bar

- ◆ Our member identified the following immediate causes:
 - On board the vessel, two of three generators have a protection plate above the output plate, above the HV output terminals. This generator did not have that protection plate. There was evidence that the cable retaining bar was rusted and showing no signs of ever supporting cables. This would have meant that the starter motor cable was lying on top of the HV output terminals; over time this cable may have worn through due to vibration and causing a short circuit on phase 2, thus starting the fire;
 - On examination, the phase 2 bus bar appeared to be touching the generator casing (see Figure 2). As the bus bar burnt, the heat inside the generator caused the cables on the cable retaining bar to fall. However, the expectation was that the cable retaining bar would be blackened and not rusted.
- ◆ Our member noted that root cause investigation was on-going, and the following lessons were learnt:
 - Proper maintenance and routine check on generators and make sure no wiring laying across the terminal;
 - All generators should have appropriate protection cover to prevent water getting inside the terminal;
 - Fire extinguishers stood by near generators;
 - Internal nuts and bolts to be checked, fitted with lock washers as appropriate, and tightened properly.

5 Increase in Dropped Object Events

The Australian National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has identified a concerning increase in dropped object events on mobile offshore drilling units (MODUs) in the first quarter of 2013. Nine dropped object notifications have been received by the authority in the first quarter of 2013.

The weights and heights of the dropped objects ranged from 2 to 2300 kg and from less than 1 metre to 43 metres. The dropped objects were sections of drill pipe and casing, a spool of wire rope, a navigation light fitting, slip inserts, a hose bundle, an equipment handle and a camera located in the derrick. Three members of the workforce were injured in three separate dropped object events. Two workers each suffered a crush injury to the foot requiring a medical evacuation from the facility, while another worker required first aid treatment for a leg injury. In another case, a member of the workforce was standing only 2 metres from where a 28 kilogram object landed having dropped from a height of 19 metres.

Analysis using the industry supported DROPS Calculator indicates that six of these dropped object events could have resulted in a fatality.

Further information can be found at www.nopsema.gov.au/assets/alert/Safety-Alert-56-Dropped-objects.pdf