

IMCA Safety Flash 05/15

April 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.

I Fatal Incident during Change-Out of Chain Wheel (Gypsy) on Anchor Handling Tug Supply (AHTS) Vessel

A member has reported an incident in which one crewman died and another received minor injuries when a gypsy wheel fell over whilst being moved, resulting in two crew members being trapped between it and a cargo rail bulwark. The incident occurred when a vessel was mobilising for a project which required the use of an 84mm wide gypsy wheel. At the time the starboard side forward winch was fitted with a 105mm unit. This was removed and stored on the main deck. Installation of the 84mm unit then started.

The crew disconnected the gypsy wheel from the crane without checking its final landing position. Therefore, they did not see that the rims of the gypsy wheel were on each side of the skid rail for the chain lifter. Immediately after disconnecting from the crane, the crew started to roll the gypsy wheel. This resulted in the starboard rim dropping into the gap in the rail causing the gypsy wheel to tip beyond balancing point. It fell over and pinned two crew members against the bulkhead. This resulted in one fatality and one first aid case.

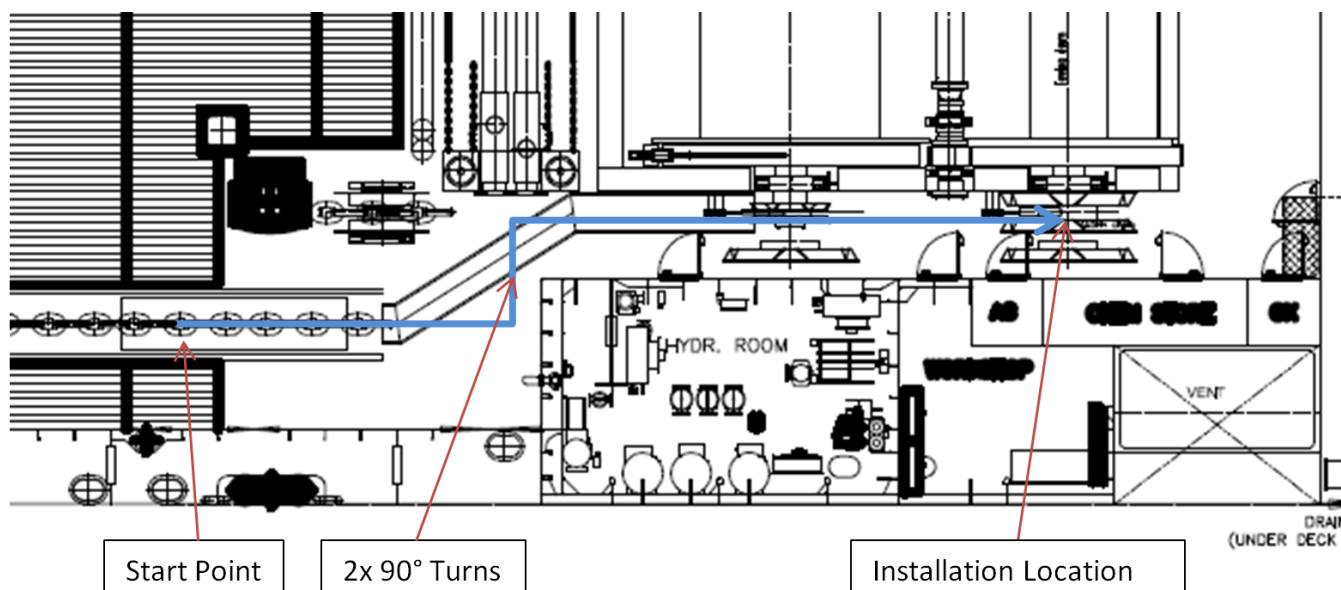


Figure: Plan view drawing of the intended route for the installation of the gypsy

Our members' investigation noted the following:

- ◆ The immediate causes were:
 - Gypsy wheel rolled into skid rail causing it to tip over
 - Lack of risk management:
 - Failure to identify hazards and risk
 - Failure to comply with safe working practices;
- ◆ Contributing factors:
 - Inadequate design review for this particular mode of operation conducted by vessel
 - Gypsy wheel was not handled in the intended method as established when vessel was designed

- Insufficient lifting or handling appliances for handling and changing the gyps wheel;
- ◆ Root Causes:
 - Inadequate monitoring and verification of organisational performance
 - Weaknesses identified in the design review processes
 - Lack of effective implementation of risk management.

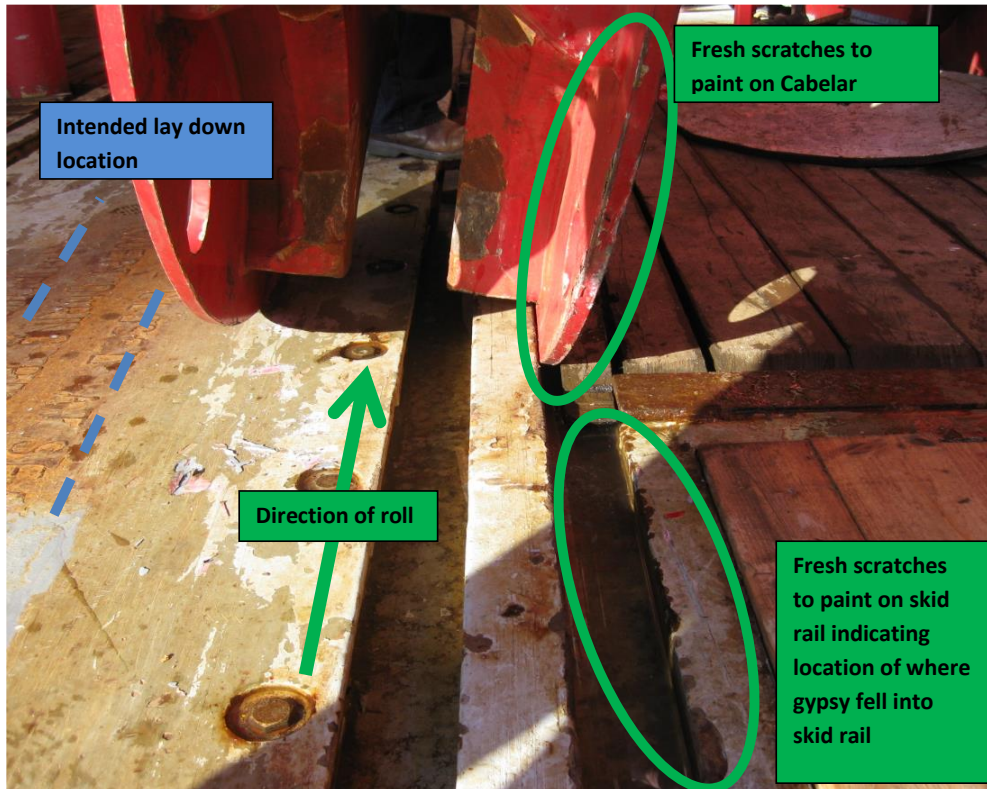


Figure: Showing the cause of the gypsy wheel tipping over (in this photo the term “cabelar” is used as well as “gypsy”)

The lessons drawn were as follows:

- ◆ Gypsy wheel should not be manually handled or rolled;
- ◆ Monitoring and verification of worksite performance was found to be inadequate.

The actions taken were as follows:

- ◆ Company-wide instruction forbidding free-rolling of these heavy items;
- ◆ Technical task force to evaluate a safe method for the installation of gypsy wheels in the short and long term and review change out methods across the fleet;
- ◆ All vessels to review and re-risk assess current methods for handling gypsy wheels and submit risk assessment for approval.

Members may wish to refer to the following similar incidents (key words: *crush, fatality*):

- ◆ [IMCA SF 14/11](#) – Incident 3. *Crewman injured when steel plates fell against him*;
- ◆ [IMCA SF 16/13](#) – Incident 2. *Fatality – man overboard* (the crewman in this example fell overboard as a result of the sudden and unplanned movement of heavy objects);
- ◆ [IMCA SF 18/13](#) – Incident 1. *Fatality during lifting operations*.

2 Lifting Equipment Failure: Objects Dropped into Moonpool

A member has reported an incident in which a chain hoist failed causing a 700kg load to fall into the moonpool. The incident occurred when crew were moving moonpool carriages and frames into position during mobilisation of multibeam echosounder equipment through the moonpool. The moonpool carriage was successfully positioned. As the crew lowered the second moonpool frame into position, the chain on the hoist crane suddenly parted and the frame and carriage fell into the moonpool damaging one of the stopper bars on the wall of the moonpool before being stopped by the other stopper bars.

There were no injuries. There was some damage to the stopper bars and brackets.



Figure: Multibeam carriage before deployment to moonpool



Figure: Frame before deployment to moonpool, attached to multibeam carriage underneath

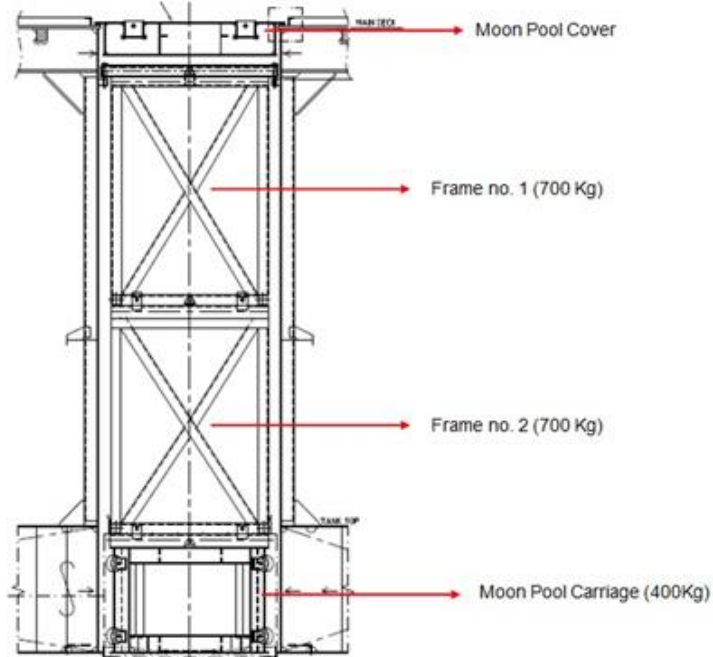


Figure: Damage to engine room wall (other side of moonpool) following stopper bar broken

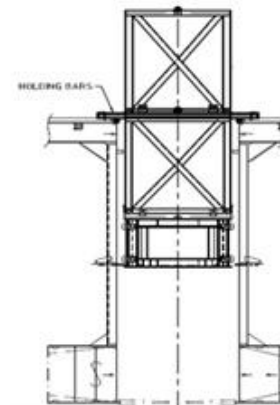


Figure: Damage to side of moonpool after stopper bar was broken

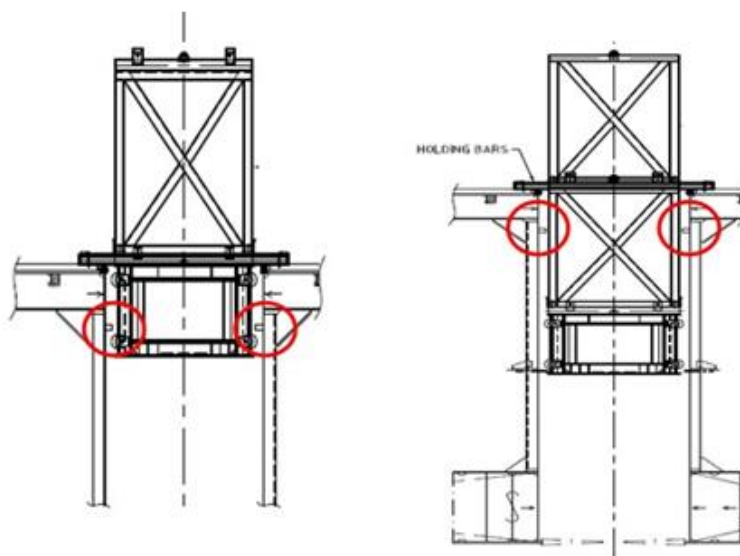
4.2 Details of Moon Pool Frame Arrangement



Picture 1 – Moon Pool Arrangement



Picture 6 – Lift up or lay down the Frame no.1



Picture 9 – There are 4 stopper bars on the upper of moon pool

Figure: Details of moonpool frames and stopper bars

Our members' investigation noted the following:

- ◆ Before starting the job, all personnel involved took part in a toolbox meeting and job safety analysis (JSA). A permit to work had been granted;
- ◆ The first lift, using the crane in remote control mode, was successful;
- ◆ The hoist crane had a safe working load (SWL) of 5 tons;
- ◆ The **immediate cause** of the incident was found to be that during the lifting of the frame, it was obstructed by one of the bracket stoppers;
- ◆ The **underlying cause** was stress and subsequent failure of the chain of the hoisting crane;
- ◆ The **root causes** were:
 - Lack of specific procedure regarding lifting a moonpool frame
 - Lack of awareness from crew who handled lifting moonpool frames to ensure smooth process during lifting.

The following corrective actions were taken:

- ◆ Update annual load test to include dye penetration test to check for unseen cracks on hoist chain;
- ◆ Update procedures and JSA for moonpool activity;
- ◆ Replace hoist and chain and repair stopper bar inside moonpool;
- ◆ Defective chain sent to certified third party testing for examination of strains caused by overstressing.

Members may wish to refer to the following similar incidents (key words: *chain, failed*):

- ◆ [IMCA SF 12/11](#) – Incident 1. *Offshore tank container rigging failure*;
- ◆ [IMCA SF 01/15](#) – Incident 2. *Near miss: safe use of chains in rigging*.

3 Winch Brake Failure

A member has reported an incident in which an ROV winch brake failed, leading to the uncontrolled movement of an ROV as approximately 800m of umbilical ran off the winch drum in less than 90 seconds. The incident occurred whilst the ROV was being lowered to 1843msw depth. It was then raised to a final stopping point of 1813msw (30m off bottom), and the winch was shut down. Within moments the winch started to slip and pay out small amounts of umbilical. This quickly developed into an out of control run-away on the winch drum, resulting in all, approximately 800m of umbilical running off the winch drum in less than 90 seconds. When the winch finally stopped there was 225m (approximately 3/4 of the last layer) of umbilical left on the winch.

During those 90 seconds, the ROV control room (on the same deck as the winch) was evacuated, the bridge was notified by phone and clear communications, and the vessel was ordered to move away from any subsea assets with utmost haste. The vessel moved 18m to the north.

All electrical power to the ROV system was isolated. Due to friction, or some other unknown element, the winch drive motor caught on fire. The ROV crew extinguished the fire with portable extinguishers. The area was barricaded, a fire watch posted and all non-essential personnel except for the fire watch and his runner were cleared from the area.

There were no injuries.

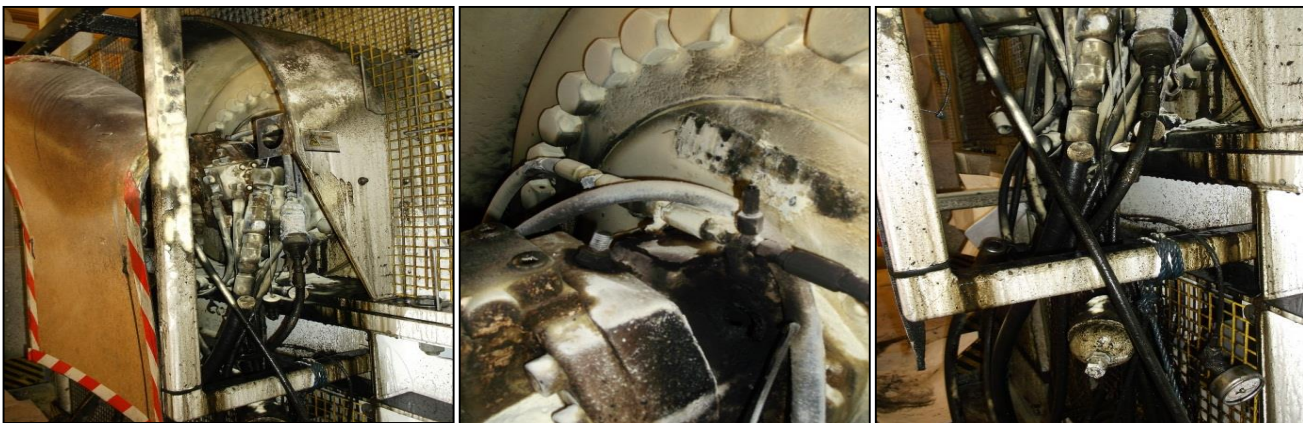


Figure: Showing winch motor after fire

Our members' investigation noted the following:

- ◆ A preliminary on-site investigation of the failure by the manufacturer was conducted with no conclusive root causes identified. The failed winch brake was shipped to the manufacturer for a detailed analysis to determine root cause(s);
- ◆ Following extensive testing and analysis, the manufacturer identified the most likely root cause of the run-off was probably a blockage in the winch secondary brake release line;
- ◆ Given the damage to the winch the incident investigation could not determine a **definitive** root cause but were able to establish through elimination a probable cause for the occurrence. A series of actions to prevent occurrence had been established these were included in the manufacturer's technical bulletin.

The following actions were taken:

- ◆ The manufacturer released a service bulletin to all operators of winches with this type of brake advising them of two checks to perform to prevent recurrence:
 - One check, the Brake Release Line Check, verifies that the release pressure was dropping in the specified time and should be performed every time the brake release line or hydraulic power unit (HPU) controls were serviced;
 - The second check, the Motor-to-Brake Load Transfer Check, verifies that the load has fully transferred from the hydraulic motor to the failsafe brake and should be performed before the HPU was purposely shut down while the winch is under load.

Members may wish to refer to the following similar incidents (key words: *winch, brake, failure*):

- ◆ [IMCA SF 08/01](#) – Incident 1. *Failure of ROV lift umbilical winch brake*;
- ◆ [IMCA SF 18/09](#) – Incident 2. *Fatal incident onboard a dive support vessel*.

The rest of the incidents in this safety flash are hand injuries reported to the Marine Safety Forum.

4 Routine Task: Badly Cut Finger Changing Mop Head

The Marine Safety Forum has published the following safety flash regarding an incident in which someone suffered a painful cut to the finger whilst engaged in a routine cleaning task. He was in the process of changing a sponge mop head. Whilst attempting to fit a new mop head he saw that one of the retaining channels had glue in it which was preventing it from fitting the holder. He tried to clear out the glue with his pocket knife and in doing so he slipped and sustained a cut to the left index finger. The cut was quite deep, partially severing the flexor tendon and damaging the associated nerve. A surgery was required to repair the damage.

The incident highlights failure to manage change properly. The injured person deviated from the original intent to carry out routine cleaning duties, and instead attempted to fix a new problem with the mop head with the tools and facilities to hand, without recognizing the inherent risks of the new task.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-15.05.pdf.

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

- ◆ [IMCA SF 06/10](#) – Incident 2. *LTI – severed tendon*;
- ◆ [IMCA SF 05/13](#) Incident 4. *Finger and hand injuries*.

5 Hand Injury during Stowing of Anchor Chains

The Marine Safety Forum has published the following safety flash regarding an incident in which someone suffered a first aid injury to his hand. The crew were re-stowing the anchor chain after calibration in dry dock. They were trying to get the chain into the compression bar but it was slightly misaligned preventing the bar from closing. They tried lowering and raising the anchor a few times but to no avail. A crewman then successfully used a large pinch bar to turn the link slightly as the chain was raised the last short distance to allow the chain to fit snugly in the compression bar. Unfortunately he failed to notice the pinch bar was now aligned with the handrail on the adjacent bulkhead and as he lowered it his hand was caught between the pinch bar and handrail.

The safety flash can be downloaded from www.marinesafetyforum.org/upload-files//safetyalerts/msf-safety-flash-15.06.pdf.

Members may wish to refer to the following similar incidents (key words: *crushed, finger*):

- ◆ [IMCA SF 03/05](#) – Incident 1. *Finger injury during loading operations*;
- ◆ [IMCA SF 02/06](#) – Incident 4. *Hand injury sustained by diver*.

Hand and finger crush/amputation injuries of this sort tend to occur where the immediate cause is not properly taking into account the risk of sudden and unplanned movement of very heavy or massive objects.

Please see also the following similar incidents:

- ◆ [IMCA SF 02/08](#) – Incident 2. *Serious hand injury*;
- ◆ [IMCA SF 01/12](#) – Incident 2. *Lost time incident (LTI) – laceration to finger*;

- ◆ IMCA SF 05/12 – Incident 3. LTI: crewman’s finger pinched when moving the gangway;
- ◆ IMCA SF 12/14 – Incident 7. LTI trapped finger.

Members should be aware that IMCA has a **pocket safety card** on this topic, *Watch your hands – you’ve only got one set!*
<http://www.imca-int.com/media/102527/imcascpc08.pdf>.

Watch your hands - You've only got one set

Your hands...



... the best set of tools you'll ever be issued with and the only ones you can't replace

- ◆ Don't put your hands where you can't see them
- ◆ Don't expose your hands to hazardous substances
- ◆ Don't use tools for the wrong purpose - use the right tool for the job
- ◆ Do wear gloves or PPE as appropriate
- ◆ Do stop or rearrange the job if your hands are at risk



No. 8 in a series of pocket safety cards issued by the International Marine Contractors Association

Issue 1 - April 2005

Watch your hands - You've only got one set

THINK

What are you about to do?

- ◆ Do you know how to do it?
- ◆ Do you know when to do it?
- ◆ Do you need to tell anybody that you're going to do it?
- ◆ Think about the risks to your hands:
 - jewellery, pinch points, sharp objects
 - stored energy, line of fire, hazardous substances

CHECK

Have you made the necessary checks?

- ◆ Is it too heavy? Is it too high? Is it too dangerous?
- ◆ Do you need a permit to work (PTW)?
- ◆ Are you using the correct equipment?
- ◆ Have you got the correct PPE?
- ◆ Is it safe to proceed?

If in doubt - STOP!

- ◆ Follow best practice and remain within the limits of your authority. If the task changes, reassess the risk

Remember: *Remove jewellery
Wear gloves whenever safe and practical
Watch where you put your hands*

For more information on IMCA's safety-related initiatives, please visit our website at www.imca-int.com



6 Finger Injury – Pinchpoint – during Hose Handling

The Marine Safety Forum has published the following safety flash regarding an incident in which someone injured his finger during hose handling. The incident occurred when a vessel was performing operations at the leeward side of the platform. The fuel hose was lowered by a bridle which was connected to the saddle fitted on the hose. The hose coupling was hanging loose. An Able Bodied Seaman (AB) handled the hose coupling and moved it away. The other AB positioned the saddle on the ship's side, between two yellow pins, and started to secure the saddle to one of the pins using a rope. When the vessel moved due to the wind and swell, the saddle moved on the railing between the pins and the AB's finger was pinched between the saddle and the pin.

The safety flash can be downloaded from <http://www.marinesafetyforum.org/upload-files/safetyalerts/msf-safety-flash-15.11.pdf>.