IMCA Safety Flashes summarise key safety matters and incidents, allowing lessons to be more easily learnt for the benefit of all. The effectiveness of the IMCA Safety Flash system depends on members sharing information and so avoiding repeat incidents. Please consider adding **safetyreports@imca-int.com** to your internal distribution list for safety alerts or manually submitting information on incidents you consider may be relevant. All information is anonymised or sanitised, as appropriate.

1 Pipeline End Manifold yoke dropped from 45° position

Applicable Life Saving Rule(s)

What happened

During adjustment of the yoke securing arrangement for a PLEM (Pipe Line End Manifold), the cargo strap failed resulting in the yoke falling and landing in its horizontal resting position. Two persons were working inside the PLEM in close proximity to the yoke at the time. Neither were injured.

While the rigging team on the vessel were re-arranging the rigging securing the PLEM yoke at a 45° position, the port side top cargo strap tension was released. This resulted in sudden movement of the yoke, causing the starboard cargo strap to fail and the yoke to drop to its horizontal position. Note: re-arrangement of the rigging was initiated after a safety observation on weak rigging was raised by deck crew.

What went wrong

- The wrong kind of cargo strap was used;
  - Old 4 tonne straps were used instead of the new 5 tonne straps provided;
  - Specific rigging described in the task plan was not used.
- The cargo strap was used in an incorrect way;
  - The team copied the use of cargo straps from how it had been done on previous projects;
  - The yoke was not recognised as a suspended load;

  - There was a lack of understanding of the correct use of cargo straps, which were not to be used for lifting or holding the load.
- There was inadequate risk assessment of change.
  - The port side holdback was released without considering if the single holdback was sufficient;
  - There was no MoC (Management of Change) process undertaken, so planning did not break the task into steps and was not properly risk assessed;
  - "Task seen as routine" - the task was considered standard deck work.

Actions and learning

- Design teams to:
  - review standard designs to incorporate engineered securing of yokes & wings;
  - review checklist for standard designs.
- Take caution when handling or working near temporarily restrained yokes and wings and consider additional controls to prevent or mitigate unexpected movement;
- Review boundaries between changes that require formal "Management of Change" and those that are more general;
- Review TRA's (Task Risk Assessments) to ensure a better understanding of task limitations;
- Use the rigging and equipment provided for the specific project task in hand;
- Review the practice of securing suspended loads using cargo straps.

Members may wish to refer to:

- Near miss: unplanned deployment of PLET outrigger
- Failure of lifting equipment: Dropped ROV
- Rigging failure during riser recovery – soft slings parted

2 LTI: Damage and personal injury arising from heavy weather

Applicable Life Saving Rule(s)

Line of Fire

Work Authorisation

What happened

On a vessel waiting on weather, a weathertight door in the crane pedestal from the main deck to the crane room was forced open by a large wave coming from a different direction than the prevailing wind and sea. During operations to close the weathertight door, a vessel crew member was hit by water gushing through the door, and was washed down two flights of stairs within the crane pedestal, causing serious injuries.

The crew member was taken into the vessel hospital to be assessed by the medical team offshore in communication with the onshore medical advisory service. The vessel sailed into port for assessment by the hospital and thereafter the crew member was airlifted to another hospital for specialist trauma support as an additional precaution.

Image: gCaptain

What went right

- There had been a Heavy Weather Checklist completed beforehand, as per company requirements;

- The crew members involved in the operation made use of the internal engine room access to the winch room in order to avoid the associated hazards of being on deck in stormy weather;
- Shore-based management and the client were notified in good time after the event and correspondence maintained throughout;
- Management of the injured person was well-coordinated between vessel and onshore and handled in a timely way.

What went wrong

- This was a rogue wave, not consistent with the general wave pattern;
- The seas were 10-11m at the time and the distance from the waterline to the top of ships bulwark (railing) was approximately 3.1m;
- The existing weathertight door had not been installed in the optimal direction.

What was the cause

The design of the weathertight door was such that it opened forward rather than aft. Typically, waves can be expected from the bows of the vessel. The force of seas impacting on the door forced it open rather than closed.

Lessons

- Redesign the positioning of the weathertight door: If the hinges were mounted on the opposite side then the force acting on the door would close it instead of forcing open. Thus the door opening should be sheltered from the ingress of water on deck;
- Vessel crew to continue to maintain good situational awareness of any change in weather conditions.

Members may wish to refer to:

- BSEE/USCG: Dealing with extreme weather events
- Serious incidents involving the weather
- Head injury when crew member fell over in bathroom during heavy weather

3 Crew Transfer Vessel (CTV) hit protruding scaffolding on a supply vessel

What happened?

During transfer of crew to an Offshore Supply Vessel (OSV) at anchor, a Crew Transfer Vessel (CTV) came into contact with protruding scaffolding on the OSV, causing minor damage to a railing on the CTV. This was the fifth such transfer of personnel without incident; the Master was aware of the protruding scaffolding. The fifth time, during manoeuvring the CTV stern towards the OSV, the CTV contacted the OSV protruding scaffolding, causing minor damage. There were no injuries. The Master of the CTV under-estimated both how far the scaffolding protruded and how the OSV would swing round whilst at anchor.

What went wrong?

- Task seen as routine: the CTV Master and crew had carried out multiple passenger transfers in similar conditions on several occasions. Crew members did not see this as an imminent hazard and no changes were made to their approach, no need was seen for additional safety measure at that point in time;
- The existing risk assessment did not address the protruding scaffolding nor the risk of the OSV swinging round whilst at anchor.

Lessons

- Greater account should have been taken of the repair works requiring protruding scaffolding. A more comprehensive risk assessment was required, covering protruding objects and covering the potential for continuous swing on an anchored vessel.

Showing the moment of collision

Members may wish to refer to:

- Vessel collision with fixed structure on wind farm
- Crew transfer vessel in collision with anchor wire

4 Heavy equipment fell over during manual handling

Applicable Life Saving Rule(s)

Line of Fire

What happened?

During manual handling of a heavy control cabinet, the centre of gravity was compromised, and the cabinet fell over onto a crew member's leg, resulting in a bruise to their knee. The incident occurred when crew were moving control cabinets each weighing 130kg. Each cabinet was fitted with wheels by the manufacturer to facilitate handling. The activity required manual handling of the wheeled equipment to clear the access to the electrical panel in the switchboard room where they were to be installed.

Showing wheeled control cabinets each weighing 130kg

What went wrong?

- The crew member attempted to prevent the cabinet from falling over, which placed them in the line of fire;
- The risks associated with manual handling of wheeled loads were not included in the Task Risk Assessment (TRA);
- The handling instructions were not followed;
- Persons were not positioned correctly during the manual handling.

Lessons

- If the job can't be done safely, **stop the job** and find a way to do it safely;

- Manual Handling assessments should address requirements based on the task, load, work environment and also on the individual capabilities of the crew members involved;
- Line of Fire assessment should be a part of task risk assessment and pre-work discussion;
- Look closely at safe positioning when conducting manual handling of wheeled loads;
- **Read the manual!!** Instruction manuals and guidance documents provided by suppliers/manufacturers should be reviewed by the work team with safety precautions adopted into TRA and work activities;
- Our members' crew fabricated a ramp to facilitate safe handling of such heavy cabinets – see illustration.

Showing new ramp constructed subsequently

Members may wish to refer to:

- Fatal incident during change-out of chain wheel (gypsy) on anchor handling tug supply (AHTS) vessel
- Caught between: unplanned movement of equipment leads to severe injuries
- LTI: finger crushed while moving mobile gantry crane

5 UK HSE: Crane boom collapse

Applicable Life Saving Rule(s)

Bypassing Safety Controls

What happened

The UK HSE has fined an offshore drilling company after the catastrophic collapse of a crane boom. See here for the press release.

The HSE reported: *"Nobody was hurt in the incident on 31 March 2016 but a chaotic scene ensued after the collapse of the Rowan Gorilla VII's boom, with flying debris damaging a nearby vessel, whipping a hose out of control before it ruptured, leaving a cloud of cement dust."*

The event occurred as crew were preparing to recover a faulty submersible pump. As the crane operator raised the boom to clear one of the three legs of the installation, the boom failed catastrophically and collapsed. Three of the four boom sections fell to sea between the rig and the supply vessel alongside which was pumping dry cement to the rig via a flexible hose. The crane's auxiliary hook, cables, components, and rig debris landed on the deck of the supply vessel. The boom tip snagged the flexible hose, dragging it below the sea surface, causing it to rupture and whip back onto the deck of the vessel engulfing it in fine cement dust.

Although no one was injured, there were at least five employees on and around the crane at the time of the collapse and thirteen crew onboard the supply vessel.

Damage to the lifeboats following the collapse

What went wrong

Investigation found that:

- The immediate cause of the crane collapse was that a limit switch had not been checked. The limit switch, designed to prevent the crane boom being raised to the point of mechanical failure, had not been correctly set;

- Safety mechanisms, designed to prevent inadvertent operation of the slew, hoist, and boom joystick controls in the port bow crane cabin had all been overridden to prevent them returning to their locked neutral position.

The HSE inspector noted that *"…the circumstances leading to the collapse of the crane were years in the making and symptomatic of a defective safety management system that allowed those conditions to exist and persist. This was quite simply an accident waiting to happen and illustrates the vital importance of maintaining and testing crane limit switches to ensure they will always provide the intended level of protection."*

Members may wish to refer to:

- Reliance on crane limits caused crane damage and dropped objects
- Unsafe actions and conditions – inhibited alarm buttons
- Oil tank sight glass push buttons wired open
- Be alarmed by all alarms (USCG)