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 BSEE - "Green hats" – training and supervision of short service employees

The United States Bureau of Safety and Environmental Enforcement has published Safety Alert #440 relating to reducing incidents through increasing training and supervision of short service employees.

What happened

Since the beginning of 2022, the BSEE has seen a significant trend in reported incidents with causes or contributing factors that point to short service employees. The BSEE defines such an employee as one who has worked at a worksite or facility for less than six months, worked in an industry for less than six months, or who has recently changed positions, where some period of on-the-job training or mentorship is required.

Some of the incidents seen are noted here:

- A short service employee was injured during a maintenance operation on rotating equipment. The employee placed his hand on the belt connecting the electric motor to the repaired pump, and then subsequently started the electric motor before removing his hand. The belt guard had been removed during the repair. The post-incident investigation findings cited major factors as lack of knowledge and experience and inadequate work planning or training in the field;
- During an offshore inspection, platform leadership informed BSEE inspectors that *"they are at max capacity of SSEs and cannot afford to lose any experienced personnel";*
- Deepwater production facility personnel reported to BSEE that they had experienced a 40% personnel turnover during annual performance reviews in the past two years;
- A short service employee was injured on the rig floor during tool running operations. He placed his hand between a bushing and the running tool, and when the bushing was released, it dropped and injured his hand. The post-investigation report found that he used improper hand placement and failed to use hands-free tools. This was only his second time working as rig floor support staff;
- During a BSEE inspection at a facility, inspectors noted that the employees present were not familiar with safety device testing requirements, nor could they perform the necessary safety system testing. The inspectors also pointed out that the employees were new to the platform. BSEE inspectors issued an incident of noncompliance (INC) at that facility.

The BSSE notes that *"like many other industries, the offshore oil and gas industry has experienced a tremendous upheaval/disorder in the workforce due to COVID-19 and other related factors, with more new personnel working on facilities and more frequent transfers between facilities. However, the complexities and imminent dangers faced by offshore energy industry workers have not changed or dissipated".*

IMCA notes that this is also true of the offshore renewables sector.

Recommendations BSEE recommends:

- Adequate training and mentoring of new employees. Training should include, but is not limited to, hazard identification and specific job hazard mitigation. Zone awareness training, including hands-on drills, should be mandatory for new rig floor workers. All short service employee should have some form of assessment at the appropriate time to evaluate and address any gaps in knowledge;
- Establishing a program or policy that trains and prepares experienced employees to become mentors for short service employees entering the workforce or work location. Such a program should include hazard identification and risk management training as well as leadership training;
- Sending short service employees to hands-on training classes, instead of courses that primarily rely on classroom discussion. Appropriate use of simulators could be used so that typical hazards seen offshore can be identified hands-on (including visually and audibly) instead of courses relying solely on pictures and classroom discussions;
- Assessing training and competency before arrival offshore. Upon arrival, crew should be assigned a qualified mentor. The qualifications and hazards local to the job scope and the facility should be extensively reviewed and discussed to increase understanding before starting work.
- Establishing a policy for the maximum permitted ratio of new crew to existing or experienced crew, both on a facility or vessel and on specific jobs or tasks;
- Evaluating the workload and competencies of new crew until expertise is fully assessed and evaluated. Understanding that personnel gain knowledge with experience. Involving new crew in in specific high-risk jobs should be evaluated based on all risk factors;
- Ensuring adequate supervision and oversight of new or inexperienced crew.

2 American P&I Club: Vessel grounding - fatigue was a factor

What happened

The American P&I Club, as part of its "Good Catch" safety series, has published a bulletin relating to a towing vessel grounding in which fatigue was a factor. A towing vessel was on a coastal voyage pulling a large deck barge. The vessel had departed port earlier that morning after a very busy night loading and securing cargo on the barge. Cargo loading was not completed until 2:00 am and all of the cargo was confirmed to be properly secured by 6:30 am. The towing vessel got underway shortly thereafter.

The Mate took a nap before his watch at noon but still felt tired. He got off watch at 4:00 pm, slept, woke up at 11:00 pm, and relieved the Master on watch shortly before 11:45 pm.

The seas were exceptionally calm and there was no other traffic in the area. The towing vessel was on a course consistent with the voyage plan and the Mate was monitoring progress on the vessel's ECDIS. He noted that a course change was planned for 1:15 am to avoid a shoal area.

At approximately 1:25 am, the towing vessel ran aground on the shoal. The grounding caused both main engines to shut down. The engineers were unable to restart either main engine and suspected damage to both propellers and shafts. Both ducted propellers were heavily damaged. The towing vessel was out of operation for 10 weeks. Repairs cost over $950,000. The vessel itself could easily have been lost had the hull been breached, or had one of the propeller shafts been seriously compromised.

What went wrong

- The Mate fell asleep in his chair on watch. He indicated that a combination of the previous sleep disruption, extra work the night prior, and very calm seas caused his fatigue;
- A review of the work/rest log on the vessel indicated that the true hours of work were not being recorded daily. They appeared to be recorded once weekly for the entire week. A quick review indicated that the hours did not vary from day-to-day despite a varied work schedule for the crew;
- The Mate indicated that he had:
  - worked 13.5 hours in the 24-hour period prior to assuming the watch on which he fell asleep.
  - worked just over 29 hours in the 48-hour period prior to assuming that watch.
- The Mate also indicated that he did not set an alarm in the ECDIS to remind him of the planned course change nor did he set up depth contour alarms. He said he was familiar with how to do both, but it had not been their standard practice onboard this vessel.

Lessons learned

- Except in emergencies, the requirements for adequate rest should never be ignored for the sake of operations;
- Records of hours worked should be honestly filled out and maintained. Recordkeeping associated with work and rest should be made part of the culture onboard each vessel and part of the vessel's safety program;
- Mariners on watch who are having difficulty staying awake should recognize that the safety of the crew, the vessel and the cargo is at risk. They should either take direct action to maintain their alertness (stand up, move around, call a deckhand to come to the bridge, have a cup of coffee) or call the Master and ask for assistance.
- ECDIS alarms are valuable tools that should be fully used and correctly set.

Members may wish to refer to:

- MAIB: Grounding of general cargo vessel Kaami *[fatigue through under-crewing may have been an issue here though it is never stated out loud]*
- MOB: person fell into water during gangway installation *[The crew were tired and in a rush to complete the job]*
- MAIB: Fatal accident during cargo operations on Karina C *[Tiredness might also have adversely influenced the second officer's actions]*

3 MAIB: Capsize and sinking of fishing vessel *Joanna C* – vessel stability

Applicable Life Saving Rule(s)

Bypassing Safety Controls

The UK Marine Accident Investigation Branch (MAIB) has published Accident Investigation Report 7/2022 into the capsize and sinking with loss of life, of the fishing vessel *Joanna C*.

What happened

Early in the morning, in darkness and windy conditions, the crew of a scallop dredger was recovering the dredges, full of catch, back on board. As the gear emerged out of the water, the skipper realised that the starboard dredge bar was snagged on a potting line. At the same time, the vessel started to heel to starboard and rapidly capsized. The mate, who was on deck, was thrown into the sea, but the skipper and deckhand were initially trapped inside the floating, upturned hull. After about 40 minutes, the skipper managed to escape as the boat sank, but the deckhand remained trapped inside.

Only the skipper survived this accident. The deckhand was unable to escape from the upturned boat and his body was recovered from the wreck by divers the following day; the mate's body washed up ashore sometime later.

What went wrong?

The MAIB's investigation found that through-life modifications, culminating in extensive alterations in 2019, had reduced Joanna C's previously good stability to a state where she had very low reserves of positive stability and increased vulnerability to capsize. The detrimental effect of the modifications was unknown to the crew and regulator alike because, although a stability assessment had begun after the 2019 modifications, the analysis was never completed, and the vessel was free to continue operation.

The vessel's life raft did not inflate during the accident because the uninflated life raft had insufficient buoyancy to initiate the inflation mechanism. The absence of a life raft adversely affected the survivability of the crew in the sea after the vessel sank.

Some of the lessons drawn from the MAIB's safety flyer about this incident:

- Modifications will alter a vessel's stability characteristics.
  - Post-accident analysis identified that multiple modifications over many years had eroded the fishing vessel's stability condition from one of being very satisfactory, to that of failing the required criteria by a wide margin;
- Automatic lifesaving appliances need to be arranged so that they float free and aid survivors.
  - After Joanna C sank, the float free life raft was released from its cradle by the Hydrostatic Release Unit (HRU) but did not subsequently inflate. The life raft did not inflate because it was a model intended for use in the leisure industry and was not manufactured to meet any design standard. At the time of this accident, the carriage of a liferaft that did not meet any industry standard was acceptable under the small fishing vessel regulations.

Members may wish to refer to:

- USCG: Remain upright by fully understanding vessel stability