MARITIME FEEDBACK

CHIRP

An independent and confidential reporting system for the Maritime industry

SUPERYACHTS

Issue 05
Winter 2024

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Stay Aware – Stay Safe

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Welcome to the 5th edition of Superyacht FEEDBACK. It's hard to believe that this is the publication's first anniversary already. With the assistance of our amazing reporters, we've tackled some significant safety issues: how to pre-empt and respond to unsafe requests; the importance of minimising distractions on the bridge or in a tender – especially at night; the challenges posed by lithium-ion batteries; and why even new-builds can suffer with safety issues (and how to spot them).

This edition revisits some of the common themes, especially planning, communications and situational awareness. In our first report, we highlight the different challenges that arise when daytime tender operations continue into the night (it's more than the lack of daylight!).

Readers will be well aware of the MarPol regulations and the prohibition on throwing items overboard, But what if that is necessary to save the vessel? The Captain in our 2nd report faced this conundrum when a lithium-ion battery on charge was found to be rapidly heating up. We think they made the right decision – what are your thoughts? Email us and let us know.

Our next report reminds us why wearing kill-cords in small boats is so essential, and how to avoid forgetting to put it on.

Chefs will be well aware of the difficulties of securing even 'marinized' galley equipment for sea in such a way that it can still be accessed and used. This topic is the subject of our fourth report, which discusses design inadequacies, and a lack of consideration during fitting and installation as to how it would actually be used.

Finally our last report highlights how easily an incident can go awry, and how swiftly potentially lethal circumstances can arise. In this particular case, the bridge team were startled into taking action without ensuring that swimmers in the water were first recovered.

As ever, please do let us know what you think of this edition, and of course, do keep those reports coming.

Yours in Safety,
The CHIRP team

M2168

Tender grounding

Intial report

At 2200hrs, a tendezzr was returning from a crew pickup carrying three individuals. The tender began to reduce its speed as it approached the main vessel. Unfortunately, the helmsman failed to notice that the tender had veered off course from the tracks typically navigated during daylight hours. In the darkness, the tender collided with a sizable, unmarked rock and ran aground approximately 100 meters from the yacht.

Subsequently, the incident was reported to the bridge via radio communication. A second tender was swiftly deployed, and a rescue team was dispatched to assess the extent of water ingress and damage to the vessel. The passengers on board were immediately checked for injuries, with one individual found to have suffered a sprained leg. A trained crewmember aboard the tender then administered oxygen to the injured passenger.

The tender itself sustained superficial damage to its hull and propulsion system. The reporter informed CHIRP that a passage plan had been established for daytime navigation; there was no specific plan for navigating these known hazards during night-time hours. The waters were characterised by shallow depths and a high density of other small vessels at anchor, contributing to the challenging conditions.

CHIRP Comment

CHIRP has reported a similar incident in SYFB 01, M2083, where there was insufficient assessment of the risks during a night-time passage.

More attention should have been given to monitoring the track of the vessel. The tender entered an unfamiliar hazardous area by veering off the course used during daylight hours.

The passage plan evaluation must be revised to consider additional hazards. The management company must ensure that the tender operating procedures are clear for the type of passage to be undertaken and that new dangers are included in the passage plan. In particular, a thorough handover of the duties for the crew carrying out nighttime pickups. The crew must be suitably rested to remain alert to additional dangers, such as the loss of unlit visual cues for the passage, e.g. the unlit rock. It is strongly recommended that waypoints are included in the passage plan, which a deck officer verifies. Crucially, to have more time to assess other dangers which might be present in a crowded anchorage, slowing down the transits by reducing speed should be considered.

Human Factors

Situational Awareness – During the pick-up of passengers and the crew back to the Yacht, situational awareness was lost. There was likely an assumption that the driver knew where they were going, and there was no challenge or input from the other crew to check on the route. This creates a single point of failure! Some positional signposts available during the day can be lost at night, making the transit back to the yacht challenging. Slowing down the transit speed will allow more time to assess the situation, and damage will be lessened in the event of collision or allision.

Distractions – It can be very easy to become distracted when new crew are joining. It's natural to want to catch up on news and events. It should be part of the tender boat training that the driver must not be distracted and focus solely on driving the boat. Signage indicating that the driver is not to be distracted should be considered. A run-through on the route and a buddy system for checking that it is being followed should be part of the procedures for driving the tender.

Alerting – There appears to have been minimal or no contact or assistance from the Yacht to alert the tender when it veered off course. When setting off from the pick-up point, an initial course with waypoints should be part of the passage plan. Is your passage plan signed off for day and night-time navigations? What equipment do you have to direct your tender back to your yacht?

M2164

Lift E-Foil Battery Thermal Run-away

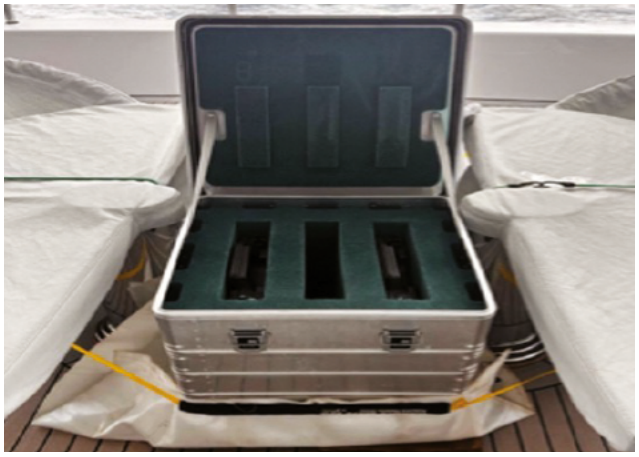
Intial report

During a routine inspection by the deck crew, one of two Lift E-Foil lithium-ion batteries, stored inside a purpose-built battery storage box, was significantly warmer than the other. The batteries were charged the day before for routine maintenance, and no abnormalities were detected during the charging.

Upon finding the warm battery, a temperature reading was taken of 37°C. The storage box with both batteries inside was moved to the main deck aft to a location visible by CCTV. The box was placed on top of a fire blanket.

Hourly inspections of the battery and readings of the temperature were added to the hourly rounds of the deck crew. By noon the following day, the temperature of the battery had risen to 47°C, and the captain gave the order to dispose of the battery overboard. The battery was disposed of at the recorded position at sea and time. The incident was recorded in the official logbook, and the disposal was recorded in the garbage record book.

The investigation revealed that there was a suspected thermal run-away developing. The cause of this was potentially a faulty cell within the battery.



CHIRP Comments

A commendable and very professional response by the master and the crew to mitigate the potential of a severe fire on board the vessel.

The master adopted a short-term strategy approach to managing this situation with everyone involved by identifying the problem, setting priorities, checking the plans, and monitoring the situation. The master took decisive action to mitigate the threat to the vessel when it was suspected that a "thermal runaway" was developing and adequately documented all actions taken in the official logbook and the garbage record book.

CHIRP urges all owners and masters carrying LIB on their Super Yachts to understand the manufacturer's guidelines clearly. Importantly, they must train the crew to be aware of potential harm from LIB, including how to respond to a possible thermal runaway incident.

There is excellent guidance in the UK MCA (MGN 550) and the C-SAR No.101A.

Company SMS should be reviewed to see if changes are required using the latest industry information on LIBs, including guidance for handling LIBs and emergency preparedness if a battery malfunctions and shows potential for a thermal runaway event.

It is recommended that the life history of the lithium-ion battery should be documented from the factory to their disposal. CHIRP notes that while the industry is still discovering more about LIBs and their life cycle, greater information sharing should be provided on LIBs within the superyacht industry. A standardised logbook within the super yacht sector should be considered.

Human Factors

Teamwork – An excellent, coordinated response to mitigate the threat. A good example of a short-term strategy in action.

Design – It is unsure if the quality of the E-Foil battery was the primary causal factor for the potential for thermal runaway because other batteries with similar usage history did not start to overheat. Poor handling resulting in physical damage to the battery may also contribute to overheating. It is crucial to treat batteries that have been damaged, e.g., being dropped, with caution, and prudent overreaction is required.

Alerting – The company's management team that procures LIBs for the water sports equipment should adopt robust procedures to mitigate the threat of poor-quality batteries. How do you do this in your company? Would your crew notify the master if a battery was dropped?

M2177

Near Miss

Intial report

In this incident, a large yacht was anchored in a confined area with other yachts when a sudden squall with strong winds struck. The anchor chain stretched, and the yacht began to drag the anchor, which was confirmed by the radar anchor watch. To respond, the bridge team started the main engines to reposition the yacht.

However, the crew in the water, who were busy securing recreational water equipment like jet skis, must be made aware that the engine was about to start. When the swim platform was raised for manoeuvring, those in the water could not reboard the yacht.

With no means of communication and the strong wind making it difficult to shout warnings, the crew dropped a line into the water to allow the yacht to manoeuvre freely. Those in the water had no choice but to get on the jet skis to stay afloat and were forced to tow inflatables, lines, and other skis away from the yacht, making the situation more complicated.

The propulsion system was engaged without warning, creating a severe safety risk. At this crucial moment, the captain and chief officer were on the bridge while the second officer was on a break. There were no officers available on deck to manage the unfolding situation.

CHIRP Comments

This incident highlights the critical importance of effective communication, adherence to safety procedures, and situational awareness to prevent potentially hazardous scenarios involving crew members and watercraft near the yacht.

Line squalls, a common meteorological phenomenon, can be predicted with a vigilant bridge watch during recreational activities, including a weather forecast in the assessment before deploying watercraft equipment, which is fundamental. Once the decision to deploy watercraft and allow passengers and crew into the water is made, the bridge must always be aware of who and what equipment is in the water, and continuous monitoring is imperative. Unfortunately, in this case, the lack of rapid communication between the bridge team and the crew in the water compromised safety.

The morning toolbox talk should encompass all planned recreational activities, emphasising communication protocols, weather forecasts, and contingency plans for aborting activities if conditions become unsafe.

A thorough review of the anchor-dragging procedure is necessary for a dragging anchor. Initiating engine operations without informing anyone, especially with passengers and crew in the water without communication, poses a significant danger. Before any yacht manoeuvres, it is crucial to ensure the proper securing or retrieval of water sports equipment to prevent damage to propellers and the motor yacht.

Effective safety management involves assigning designated crew members the responsibility for deck safety, ensuring a constant focus on safety, even without

officers present. Monitoring weather conditions, particularly preparedness for sudden changes like a line squall, is essential for proactive safety measures.

Regular safety training for all crew members is required, including routine safety drills to prepare the crew for emergencies, such as "cutaway procedures."

Following an incident, conducting a thorough review is imperative. This post-incident analysis is crucial for learning from the experience and implementing improvements in safety measures on the yacht to prevent similar incidents in the future.

Human Factors

Situational Awareness – The imminent change in weather was realised when it was too late and prevented early action to get everyone back on board safely. What procedures does your company have for deteriorating weather when passengers and crew are engaged in recreational water sports? Do you carry out a "cutaway" drill?

Capability – can your officers recognise the signs of a line squall?

Distractions – With passengers and guests in the water, this should be classified as high-risk. Focusing on the vessel and passengers must be the top priority, with nothing to create a distraction.

Communications – Do you announce to all passengers and crew that this activity will be cut short if the weather conditions change? How do you inform your passengers and crew in similar circumstances?

Alerting – How would you arrange to alert everyone in the water engaged in water sports? What communications equipment does your vessel possess?

M2143

Poor internal design for securing shipboard appliances

Intial report

The reporter noted that, in rough weather, unsecured appliances in the accommodation area created a hazardous work environment, potentially endangering the crew, passengers and the vessel. These unsecured appliances included galley freezers, galley ovens, and laundry washing machines. E.g., the galley freezers had locking bars for securing them, but this made them unusable in their secured state, and they weren't directly attached to the vessel. The galley oven had no securing mechanism and needed a mop to keep it in place, which was unsafe and impractical.

More consideration was needed for designing and securing these appliances during installation, leading to problems when the vessel was at sea.

To fix this issue, the reporter suggested installing purpose-built securing arrangements during the next refit and for all future appliances. Given the vessel's size and speed, the reporter was concerned that the crew was not adequately protected against the movement of the appliances during rough sea conditions.

CHIRP Comments

CHIRP advocates for a holistic approach to addressing challenges posed by unsecured appliances in rough sea conditions. Central to this strategy is the commitment to stringent marine grade standards for all shipboard

equipment within working areas. Installing secure locking or latching systems on appliances is crucial to preventing shifts during rough seas. Further, incorporating effective locking mechanisms for cupboard doors and utilising non-slip containers minimises accidents caused by shifting objects in heavy weather.

Repositioning appliances strategically to reduce exposure to rolling movements and using anti-slip materials underneath them offers additional strategies to enhance stability without compromising their functionality during adverse conditions. CHIRP underscores the importance of integrating a heavy weather checklist into the Safety Management System (SMS) and maintaining a register of moveable heavy objects, e.g., forklifts and loose furniture. These tools proactively manage challenges from heavy weather, ensuring a systematic and well-prepared response.

Regarding crew safety, CHIRP recommends establishing an alert system that notifies crew members when using appliances in adverse sea conditions becomes unsafe. Crew safety training plays a pivotal role, with clear guidelines emphasising the need to delay tasks during rough weather. Regular inspections by safety officers during normal operations and drydock/refit periods are deemed crucial to confirm the functionality of securing mechanisms, contributing to the reliability of safety measures over time.

Fostering a culture of hazard reporting is highlighted as equally important, encouraging the crew to identify and resolve issues related to appliance movement promptly. By prioritising crew safety through these measures, CHIRP aims to minimise potential risks and cultivate a safer working environment on board, ultimately contributing to an overall enhancement of the vessel's design for crew safety.

Human Factors

Design – Equipment to be used on vessels which operate at sea in all weathers must be designed to allow effective securing of the equipment. Have you considered how effective your super yacht securing arrangements are?

Situational Awareness – The new build team needs more understanding of the environment in which a super yacht operates and would appear oblivious to the environmental factors affecting the super yacht whilst at sea on passage. Does your new build team have the necessary experience to assess the risks for equipment placement and securing?

Capability – Does the new build team have the necessary knowledge and experience to supervise and make changes to the installation if they find a potentially hazardous issue? Is this work outsourced to shipyard contractors?

Local Practice – Ensure a standard unified approach to equipment design and physical security throughout the company. Management must oversee the new build process and ensure they have the right people for this skilled work.

M2176

No Kill Cord was worn while operating a Tender

Intial report

Reporting a tender driver from a superyacht for not wearing their kill cord when transporting passengers back to the Yacht.

CHIRP Comments

CHIRP has mentioned the value of a kill cord in several articles concerning tender drivers. These valuable safety devices will cut/kill the engine to slow down, stop the tender, and prevent it from impacting anyone who may have entered the water.

CHIRP recommends that they are part of any pre-departure checklist and should be considered part of an interlock so that unless they are worn, the tender will not start. Like a car seatbelt, wearing a kill cord should become an intuitive thing to do.

CHIRP recommends that the manufacturers are consulted to include a kill cord if they have not been fitted to a tender or other transport vessel. It is not difficult to retrofit and can save lives and serious injuries.

If a kill cord is difficult to wear because it is uncomfortable or physically challenging to connect with the driver, consider installing proximity sensors that kill the engine if the driver is thrown out of the boat.

Human Factors

Local practices – The company should standardise the use of kill cords throughout its fleet. Personnel from other companies must be trained on a company policy that demands the kill cord be worn.

Design – Kill cords should be designed as part of an interlock mechanism whereby the tender cannot be started unless the kill cord is worn. The kill cord design should also be looked at to make it comfortable for the driver of the tender to wear.

Alerting – Operational leaders providing instructions to tender drivers must reinforce the imperative to wear kill cords. The support crew must also reinforce the message to the driver to wear the kill cord. Ideally, the kill cord should be part of an interlocking mechanism.

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