ANNUAL DIGEST

CHIRP

An independent and confidential reporting system for the Maritime industry

2024

WELFARE ISSUES
PORT OPERATIONS
DESIGN ISSUES
RECREATIONAL AND DIVING
CRUISE AND FERRY
SUPERYACHTS
ENGINEERING AND TECHNICAL
DECK AND CARGO OPERATIONS
BRIDGE, PILOTAGE AND NAVIGATION

Are you interested in becoming a CHIRP Maritime Ambassador?

CHIRP and the Nautical Institute have an established ambassador scheme to raise awareness of our incident reporting schemes and encourage the submission of incident, accident and near-miss reports.

As an ambassador you will join an international network of over 50 seafarers (see map) who also share your passion for safety, and you will quickly gain a broad knowledge of current safety issues. These are great additions to your CV and increase your employability.

Together we can promote the development of a 'just' reporting culture across the maritime sector to improve safety outcomes. The key attributes of a successful ambassador is a passion for safety and a willingness to speak up for CHIRP among your colleagues and contacts.

If this sounds like you, please contact us to discuss this opportunity at **mail@chirp.co.uk**

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Annual Digest of Reports and Insight Articles 2024

The CHIRP Charitable Trust, 167-169 Great Portland Street,
London, W1W 5PF United Kingdom

Designed by Phil McAllister Design
Printed in the UK by The Print Consultancy

Maritime Director's Foreword

As we reflect on another busy year, it is clear the need for our independent, impartial, and confidential reporting system is greater than ever. 2024 brought new challenges, from addressing emerging risks such as Marine Autonomous Surface Ships (MASS) to shedding light on operations within the 'dark fleet.' Yet, our reporters have stepped up, sharing their experiences with courage and conviction.

In 2024 we received over 200 reports from individuals and another 980 from maritime companies and other organisations, demonstrating that we are widely trusted in maritime safety. To everyone who reported, I give sincere thanks. We listened, and we took action. Your reports enabled us to engage across all levels and sectors of the industry, including over 20 maritime administrations, to transform your experiences into tangible safety improvements. We raised awareness of these safety issues via the 12 FEEDBACK newsletters we published and the 8 Sea Views podcast episodes we released. Together, our newsletters and podcasts reached over 244,000 people in more than 85 countries. The expansion of our global reach is greatly assisted by our 89 volunteer Maritime ambassadors in 39 countries who advocate for a just safety culture across their regional networks and raise awareness of our safety reporting programme, and I am grateful for their passion for safety. Closer to home, our outputs are immeasurably improved by the guidance of our Maritime Advisory Board members, each of whom is a subject matter expert in their own field. They guarantee the accuracy of our findings and ensure that they reflect best practice for the sector from which the report was submitted. Their work, and that of the ambassadors, is vital to our success.

Collaboration with other partners is central to our success. We work alongside other maritime charities, associations and academia on shared interests to achieve more impactful results. In 2024 we worked with IMPA and EMPA on the perennial issue of non-compliant pilot ladders, we engaged with flag states to highlight to the superyacht industry that working at height without a safety harness is unacceptable, and we are tackling enclosed space deaths with several industry partners. We co-hosted a Kind Leadership workshop with the Maritime Professional Council, co-sponsored the 3rd International Maritime Human Factors Conference held at the IMO Headquarters, and contributed to key discussions at the International Harbour Masters Association conference in Tangiers. These partnerships reinforce a vital truth—maritime safety is everyone's responsibility.

Of course, none of this would be possible without the support of our committed sponsors, and we continually strive to repay their generosity through our efforts to make the maritime industry safer.

Although we are proud of what we have achieved, we want to do more. In 2025, we aim to deliver greater impact by expanding our engagement and influence of maritime administrations, enhancing our global reach by recruiting more ambassadors, and expanding our collaborations with partners on critical safety issues. We hope that you will join us on this journey.

Yours in Safety,

Adam Parnell
Director Maritime

CHIRP Maritime's collaboration activities

- CROSS and CHIRP issued an Amber Alert publication in November 2024 on Bridge Strikes by large vessels.
- CHIRP Maritime co-hosted a Kind Leadership workshop on HMS President London in June 2024.
- CHIRP Maritime co-sponsored the third annual International Maritime Human Factors Conference at the IMO Headquarters in London.
- CHIRP Maritime was invited to participate in the International Harbour Masters Association conference in Tangiers, Morocco.

Anonymous comments from the CHIRP survey October 2024

- Informative and edited for easy digestion.
- Interested to learn lessons from mistakes made by others. Active in safety risk assessment during the working day (CEng MRAeS). Leisure sailor.
- They inform me as an industry professional.
- It is extremely wellpresented and informative.
- I run Safety and Survival courses for yachtsmen through Australian Sailing and am always looking for good case histories. After 35 years in the Superyacht industry (1970s to 2010s), it's interesting to compare the safety culture in place today with the practices of my time in the business. While my key interest is large yachts, I find it salutatory to see similar safety errors made across the board in commercial vessels and yachts.
- It broadens my knowledge and makes me think about incidents in a new light.
- Great insight into the safety within the industry, nonbiased and objective.

Introduction

Welcome to CHIRP Maritime's tenth Annual Digest, containing all the reports we published in 2024 and other items of interest.

Our structure and staffing remain the same as I described last year, with Adam Parnell and David Watkins doing excellent work and somehow finding enough time to perform all the tasks for which they are responsible, ably supported by Stephanie Dykes.

Our website is now more user-friendly, reporting is more manageable, and we offer translations of many of our publications into Chinese, Filipino, Indonesian, Portuguese, Spanish, Arabic and Ukrainian. If there are other languages you would like us to feature or, even better, if you can volunteer to translate into another language, we would love to hear from you.

We now have 89 Ambassadors in 39 countries, and they do an excellent job of spreading the word about our services, but we are always looking for more volunteers.

Our reporters are the key to our success, and it is an honour to thank them on behalf of all our readers. When their reports are gathered together in this Annual Digest, it is obvious what a tremendous service they are performing for everyone at sea. This year, in addition to more traditional reports, they also provided us with our first report about Marine Autonomous Surface Ships (MASS), and even a report from within the murky world of the 'dark fleet'. Their dedication to safety and their courage in speaking up is laudable, and I hope they will inspire others to do the same.

Once their reports are rendered anonymous, they are discussed by the Maritime Advisory Board (MAB), which is comprised of experts from various maritime-related fields. I am always amazed at the MAB's depth and breadth of knowledge. Even when many of us were struggling with the ramifications of the MASS report, one member knew the latest rules and guidelines, and was able to give informed and sensible expert opinion. Whatever the problem, we always seem to have the expertise within the MAB to handle it.

Finally, we must acknowledge the invaluable support of our sponsors, without whom we could not function. Their generous commitment to safety allows us to bring you this Annual Digest, and they are listed on its pages. To all the sponsors of our work, we offer our sincere thanks.

We hope you will find the Annual Digest useful and, until next year, may all your voyages bring you safely home.

Editor: Captain Alan Loynd
FNI FITA MCIArb BA(Hons)

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1. Welfare

A Safe Ship Is More Than Steel and Regulations

We were shocked to learn that cases of crew abandonment more than doubled last year from 2023's record levels. According to the International Maritime Organisation, there were 310 cases of crew abandonment registered in 2024. This is totally unacceptable and undermines the excellent work being done by the vast majority of companies and managers to look after their crews. It is appropriate, therefore, that we begin this Annual Digest with a section on welfare.

Crew welfare is fundamental to a safe ship, yet failures in food provisions, medical care, and workplace safety persist. A vessel under-provisioned for a voyage or an unrecorded medical allergy can turn fatal. Harassment and poor conditions drive skilled seafarers away.

Regulations exist, but without enforcement, they are meaningless. Seafarers deserve more than the bare minimum—does your vessel meet that standard? If not, we have included some valuable contacts at the end of the section.

M2266

Rationed food

Initial report
A vessel was provisioned with a month's supplies for a two-month passage and planned anchorage, and the crew was instructed to ration its provisions. Since they had not been paid for three months, they could not purchase additional provisions, so they approached CHIRP for assistance.

CHIRP Comments
The shore management company claimed they did not have enough money to provide sufficient provisions. CHIRP contacted the vessel's Flag State, which immediately intervened, directing the company to supply adequate victuals and water and to pay the outstanding wages.

The Maritime Labour Convention regulation 3.2 requires vessels to ensure that sufficient food and drinking water of appropriate quality is on board. It also states that pay arrears of more than two months can be considered crew abandonment.

Factors related to this report
Capability – The shore management company lacked the financial ability to operate safely and thus put the crew at risk.

Culture – The company does not respect the workforce employed to operate its ships. Crew welfare is inextricably linked to safety, and the safety of the vessel's crew was compromised. Have you experienced anything similar?

Local practices – Keep local practices from becoming established norms. Report them!

M2255

Shortage of provisions on board

Initial Report
The reporter informed CHIRP that a bulk carrier crew was out of food. When some crew members visited the seaman's mission, they received expired food supplies from a local supermarket at a reduced cost to the crew. The reporter indicated that the crew was starving as no provisions were on board.

The report requested that CHIRP intervene and inform the authorities to check the food status on board.

CHIRP contacted the Port State Control, and an investigation was carried out.

CHIRP Comments
All Flag States mandate a minimum requirement for crew daily food provisions, which must be reflected in the company's budget. This includes allocating a reserve allowance for essential provisions when there may be uncertainty in the vessel's port rotation and access to good providers.

The provision of poor-quality, inexpensive food not only leads to higher wastage but also poses long-term health risks to the crew, including increased rates of diabetes, obesity, and heart problems. Running out of food for the crew is totally unacceptable and should only occur in exceptional circumstances.

The master and crew failed to give adequate attention to provisioning, a critical aspect of ensuring the vessel's seaworthiness. The amount of food required must be assessed based on crew size, trading pattern, and the availability of suitable victualing companies. Neglecting this assessment can result in severe consequences for crew health and morale.

Purchasing expired, or reduced-price food indicates that the food budget is driven by cost-saving measures rather than prioritising the crew's well-being. This practice is unacceptable and compromises the safety and welfare of those onboard.

Human factors
Capability – The master usually has the responsibility of checking the quality and quantity of food on board. This requires close attention to the requirements and working closely with the cook. How well do you manage this job? Do you feel your provision budget is too tight to order good quality food?

Capability – Does the cook on your vessel hold the appropriate cooking certificates? Are there regular refresher cooking courses that can be taken? How varied are your meals?

Alerting – If you felt that your food quality and quantity were insufficient, would you contact your DPA?

Culture – Having the right type of food available creates an excellent social atmosphere and is part of good onboard social culture. *Please see The Social Integration Matters (SIM) project, which was carried out by The International Seafarers Welfare Assistance Network (ISWAN).*

M2140

Allergic reactions

Initial Report
A crew member experienced an allergic reaction during a recent incident while working in the catering department. They reported feeling tingling in their gums and a tightening sensation in their throat after having lunch. They promptly took antihistamines, and the Head of Department (HOD) was notified.

Although the symptoms did not worsen, the decision was made to seek further advice as a precautionary measure. Medaire was contacted, and they recommended taking the crew member to the local hospital for a thorough check-up. Another crew member accompanied them, and an EpiPen was administered as a precautionary measure. The crew member received two additional injections at the clinic and was observed for two hours before being discharged.

The investigation revealed that the crew member had unknowingly consumed citrus fruit juice during their prepared lunch, which they were allergic to. The tingling gums, throat tightness, and difficulty breathing matched the symptoms of an allergic reaction.

CHIRP Comment
Although the company ensured that chefs were aware of the allergic effects of some foods, neither they nor the master knew that someone on board was allergic to citrus. Persons who know that they are allergic or intolerant to certain items are encouraged to declare this when they sign on. While such information is 'medical in confidence', it needs to be recorded somewhere so that effective first aid can be given should they be incapacitated and unable to communicate this.

To ensure your safety, your manning agents must be aware of your allergies, and your medical chest should carry sufficient medication in case of a reaction. Additionally, ensure you know your medical response contact details, especially when you are not in or near a port.

CHIRP would like to commend the officers and crew of the motor yacht for their excellent response in seeking advice and promptly getting the crew member to the local clinic for further assessment. The company's commitment to a strong safety culture, prioritising the crew's well-being, is highly commendable.

Factors related to this report
Alerting – Ensure you alert your managers and the crew you work with about your allergies. It can save your life!

Communication – Does your company have a policy on allergy reporting? Society has more allergic reactions than ever, so we must be more mindful. Does your SMS health and safety section have a section on allergies and their response?

Teamwork – The response by the crew was excellent in ensuring the crew member's safety- How often do you practice medivac drills using a similar scenario?

M2293

Harassment on board

Initial report
The reporter told CHIRP they were in an uncomfortable situation on board while working on a temporary contract.

"Our captain has acted unprofessionally, creating a hostile work environment that makes it hard for me to do my job. This is my first role in the industry, so I reached out to a colleague, who confirmed that the captain's behavior was not normal or professional.

The captain constantly sought me out, especially during my night shifts, to discuss personal matters, which made me feel uneasy. He stayed awake to talk even though it was not his usual habit, and it disrupted my focus.

One incident really stood out: we had an hour to go ashore, and the captain insisted on joining me. Another crew member noticed my discomfort and assured me that others found his behavior inappropriate, too. During this outing, he kept asking me to join him at a restaurant, despite my refusals. When I reminded him that I was there to work, he pushed back, asserting his authority as captain to justify taking more time. I had to set boundaries repeatedly, but he ignored them.

Back on the vessel, the night shift issues continued—he'd stay up, offer to do my tasks, and try to start personal conversations. I had to find another area to work, but he followed me, persisting with the interactions. At one point, he presented a new seasonal contract, despite my earlier refusal, and seemed upset when I declined again.

The situation escalated during another night shift. After promising to drop the subject, he returned from bed shortly after to try discussing personal matters again, disregarding my request to keep things professional. I was so uncomfortable that a crew member offered to stay with me so I wouldn't be alone with him.

Later, at a crew gathering, he followed me back to the boat and tried engaging in more personal talk. I eventually began recording the conversation to document his behaviour. When he wouldn't stop, I called a friend, then another crew member, to avoid being alone with him. The tension culminated in him making a derogatory remark before finally leaving.

This morning, the captain created a group chat and called for a meeting today. He also sent me contract termination rules, saying I need to give seven days' notice. Right now, I'm in my cabin, unsure how to proceed. I feel very uncomfortable here and cannot continue in this environment.

While I am unharmed, I am deeply upset that this situation has disrupted my work, my contract, and my learning experience. I've stayed professional, but I'm at a loss on how to handle this. Any advice on how to proceed today would be greatly appreciated. Thank you."

CHIRP Comments
No crew member should endure this harassment. Companies employing masters must provide firm guidance that any form of harassment is unacceptable and will not be tolerated. Such guidance should apply to all superyacht crew and contractors.

CHIRP understands that the master was dismissed by the company, but nothing prevents them from being rehired by another company. The reporter has also left this company and found safer and more rewarding work elsewhere.

Factors related to this report
Culture – Unbeknownst to the company, the master used their position of authority to behave unacceptably. A safety culture cannot exist if people feel unsafe.

Communications – The crew rallied around the reporter to shield and protect them. Reporting your concerns is one of the most powerful tools you have—do not suffer in silence.

Alerting – Many organisations in the maritime domain are very willing to assist anyone going through such harassment, including CHIRP Maritime, which will escalate the matter to the DPA and Flag State if the company cannot resolve it. You are not alone. Please spread the word.

2. Port Operations

Safety vs. Commercial Pressure

Port calls often put safety at odds with commercial demands, forcing shipmasters into difficult decisions. Concealing a damaged anchor to avoid extra costs or rushing departure in strong winds can lead to disaster.

The reports in this section clearly demonstrate the benefits of having skilled pilots and tug crews, and safety should never be compromised for convenience. Masters must exercise their overriding authority, while companies must respect and support safety decisions. If something goes wrong, will your decisions withstand scrutiny?

M2216

Inappropriate pressure placed on the master

Intial report

The master of a large vessel received unusual instructions from charterers concerning pre-arrival reporting to the authorities.

The vessel had sailed with both anchors damaged, one more so than the other. A dispensation to sail was granted, and a condition of class was imposed on the vessel. New anchors would be supplied to the vessel at the next portThe master was advised not to mention the dispensation letter to the port authorities at the next port, as revealing the state of the anchors would require a tug escort to the berth.

CHIRP advocates that when such requests are received, the master consults them to the ship's DPA in writing

CHIRP Comments

A dispensation letter is usually a one-off temporary permit to sail to the next port, where spare parts or replacements for technical problems can be rectified. The authorities granting the dispensation letter, usually from the class society, do so based on a risk assessment. As such, it must be conveyed to the next port during the port pre-arrival information exchange. The dispensation letter is a lifeline, granting temporary reprieve amidst technical challenges.

The Master must exert their overriding authority to mitigate the risks. This is a legal requirement, and pressure to do anything other than act safely must be refused. CHIRP advocates that when such requests are received, the master consults them to the ship's DPA in writing.

Given the complete loss of anchoring efficiency for one of the anchors, employing an escort tug is the correct mitigation measure in a higher-risk port area to ensure safe passage to the berth.

Additionally, failure to follow the dispensation requirements can invalidate the vessel's insurance cover in the event of an incident. Cutting corners has severe consequences—a single misstep can unravel insurance coverage, leaving the vessel vulnerable to legal issues.

Ultimately, in an incident where the anchors are required but they cannot function, and the port has not been informed, the company can be prosecuted for failure to notify.

When in doubt, escalate. The master's duty is not just to navigate the vessel; it is to navigate through a maze of regulations, ensuring every decision is a commitment to safety. Commercial costs for providing an escort tug must never interfere with the vessel's safety.

There is no compromise in maritime operations: safety must always come first.

Human factors

Pressure – Excess pressure to ensure that commercial costs and operational deadlines are met is a dangerous human factor that creates unnecessary doubt and can cloud the judgement of those making critical safety decisions.

Culture – The chartering team's connection with safety was poor, and the ship management team did not support the master's openness in reporting the dispensation with the port authorities and sharing the risks outlined by the dispensation letter.

Teamwork – The organisation is pulling in different directions, compromising safety. Reading this report, do you feel that this sometimes happens to you?

Local Practices – Follow the correct legal requirements as Master and put in writing your concerns. Contact the DPA. The financial consequences of using an anchor that cannot function and then discovering that the situation has not been disclosed in the port arrival information will be many times higher than the tug escort fees. The reputational damage to the company will be even higher.

M2253

Fire – charcoal

Initial Report

Smoke and a burning smell were detected during port operations. One container stowed in the hold was found emitting smoke, and the side wall of the container was bulging due to the heat and pressure.

The container was discharged promptly and moved to the terminal container yard.

CHIRP Comments

Fortunately, an observant crew member or stevedore saw the signs of fire early before other containers were loaded on top.

"Charcoal, categorised as UN1361 and falling under Class 4.2, presents unique risks due to its tendency to spontaneously ignite if stored improperly. Essentially, when exposed to oxygen, charcoal oxidises, generating heat. To ensure accurate understanding, shippers must precisely label the cargo as carbon/charcoal, as it goes by other names, and its hazardous nature may not be apparent otherwise.

The IMDG Code includes a special provision (SP 925) allowing exemption from Class 4.2 classification under specific conditions, permitting bulk shipment of charcoal. Accredited authorities must conduct and document tests and issue certificates to confirm compliance before transportation is permitted.

Storing warm or hot charcoal accelerates oxidation, leading to dangerous heat build-up that standard cooling methods may not counteract. This self-heating process can escalate to ignition, posing significant risks. The duration for self-heating varies by charcoal type and weathering and is typically around two weeks before loading into a container.

To address the challenge of charcoal fires, CHIRP advises storing containers on deck for easier access, facilitating swift containment and safe discharge in port, thereby reducing hazards.

The Cargo Incident Notification System (CINS) and the International Group of P&I Clubs offer valuable guidance on the stowage and handling guidelines, jointly published in their 2017 document 'Guidelines for the Carriage of Charcoal and Carbon in Containers'.

Human Factors

Pressure – Did undue pressure allow the charcoal container to be shipped without the proper procedures? Have you examined how your charcoal is processed before being shipped on board?

Local practices – This is a high-risk cargo, where there is always a risk of fire. Never cut corners. Ensure that proper documentation is provided and be alert to local norms at different ports.

Capability – Do your office and ship's staff have the necessary training to appreciate the IMDG code fully? Does your regular shipper have proper processes to ensure the charcoal is safe to carry? Do you regularly check the temperatures of containers loaded with charcoal? Does your ship have an infrared heat gun?

Design – is your ship fitted with the necessary firefighting equipment to handle a fire in charcoal stowed on deck?

M2258

Good teamwork averts a serious incident

Initial report

Two pilots boarded an LNG carrier before making an approach along a fairway to an offshore LNG terminal. The weather was rough, with a long swell. Four tugs were made fast before proceeding at approximately 5kts.

As the chief pilot prepared to make a planned alteration of course, both engines of the tug attached to the centre lead forward failed within minutes of each other, and the tug was overtaken and pulled hard against the LNG carrier's bow by the towing line.

Because of the risk of damaging or capsizing the tug, the chief pilot could not conduct the planned turn while the stalled tug was still attached, but through a combination of good bridge teamwork and skilful control of the remaining three tugs, the LNG vessel was slowly manoeuvred alongside without further incident.

Throughout the incident, the co-pilot liaised with the stalled tug for regular updates and with two standby tugs in the vicinity, directing one to assist the disabled tug in detaching its towing line and pulling it to safety. At the same time, the second tug assisted in manoeuvring the LNG vessel. The pilots also provided regular updates to the port authority.

A combination of the sea state and the tug's ballast arrangement was found to have caused the sea chest to become starved of cooling water for the generators, which were automatically shut down to preserve the equipment.

Because of the risk of damaging or capsizing the tug, the chief pilot could not conduct the planned turn while the stalled tug was still attached

CHIRP Comment

CHIRP is aware of 3 similar tug events published in 2024, and readers may be aware of the case in 2019 in which a large passenger ship lost propulsion and nearly foundered because the ship's motion in rough weather caused the oil pressure to drop, shutting down the engines.

In *Bow Tug Operations*, a manual by Henk Hensen, he writes, "Bow tug operations of a ship having headway are very risky." The International Harbour Masters Association recommends a 6-knot speed limit for such operations.

Tugs sometimes undertake bow-to-bow (reverse) towing because it keeps their propellors further away from the pressure fields around the towed vessel's bow. This method also ensures that if the tug propulsion fails (as in this incident), it is pulled alongside the towed vessel by its bow, which reduces the risk of capsizing.

However, when reverse-towing (as in this incident), there is a risk that the tug becomes trimmed by the bow, lifting the stern (and sea-chest water intake) out of the water and starving the sea chest of cooling water to the generators. This risk is lessened by towing more slowly, adjusting the vessel's trim, and ensuring that the sea chest vents are open so that any air trapped inside can be expelled to allow it to re-fill.

The automatic shut-down system protects the equipment from overheating and being damaged or even catching fire. However, many systems do not have a manual override for use in emergencies. Tug vessel operators are advised to investigate how their equipment would react in a similar scenario, whether it would alert the operators before shutting down, and then develop emergency procedures accordingly. A checklist that includes the operating area (open water, sheltered water), draft and trim, ballast arrangement, and type of towing for the job will ensure that the risks of a blackout are mitigated.

This incident was successfully mitigated without injury or damage because of the close integration of the pilots, effective bridge team management, and close coordination between the vessels and port authority. Everyone understood their role and responsibilities, and information exchanges were clear and effective. The speed of response of all parties demonstrated their readiness to respond to an unplanned incident.

Factors related to this report

Situational Awareness – Tug crews should be alert to the changing dynamics operating on the tug hull, especially in open waters. A simple checklist for the type of towing arrangement would ensure an adequate draft for all tow stages, and that equipment is correctly configured.

Teamwork – The pilots and the bridge team worked excellently to manage the situation, highlighting the effect of adequate resources and training.

Alerting – From a technical perspective, there appeared to be insufficient warning concerning the generators shutting down. Temperatures would have risen quickly once the cooling water could not reach the generators.

Design – Given the nature of towing operations and the increasing use of ASD tugs in narrow channels, towing from the bow has considerable benefits concerning performance and girting safety. The change in trim that results if ballast is not correctly applied needs to be factored into design considerations.

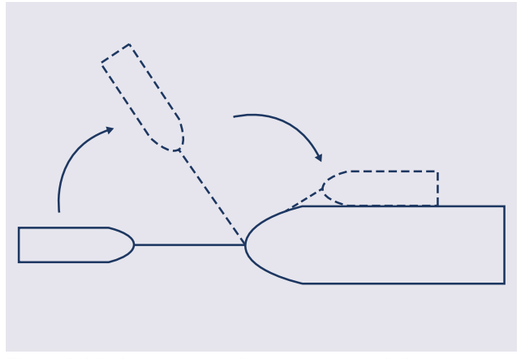


Figure 1: Likely response of a tug to engine failure

M2265

Difficulties leaving port in strong winds

Initial report

A passenger ship was due to depart port at 2150. This was the master's first time sailing from the port, and during the master/pilot exchange, the pilot had suggested delaying departure due to the forecast strong winds of up to 25 knots. The passage plan required the vessel to reverse out of the harbour and then turn in one of 2 charted turning areas – one just outside the breakwater and the other a few miles out. The master chose the closer turning point against the advice of the pilot.

As the vessel passed the breakwater, the ferry commenced its turn with tug assistance. The wind gusted up to 50 knots, pushing the passenger vessel leeward onto a navigational buoy.

Despite the tug pushing on full power and the passenger vessel increasing speed, it was blown within 10m of the rocks before it could make headway to windward and regain the planned nav track. There were no injuries or pollution on the vessel, but the tug sustained minor damage.

CHIRP Comments

This report emphasises the need to prioritise the safety of the vessel, passengers, and crew rather than the scheduled timetable. Still, CHIRP recognises that because organisations rarely set wind guidance for vessels, masters are subject to considerable implicit commercial pressure to carry on, even in marginal conditions.

The best practice is for companies to provide weather guidance rather than limits, empowering masters to exceed the guidance if it can be justified by a risk assessment that considers local circumstances (including any advice provided by the pilot).

Factors related to this report

Pressure – A master operating on a tight schedule must never be placed in a situation where safety is compromised for commercial expediency. Does your company provide guidance to the master, especially when the master is calling at a port for the first time or during a different season?

Local practices – In this case, the pilot has experience, and their advice should have been heeded. Local knowledge can improve the interpretation of area weather forecasts.

Situational Awareness – If there was any doubt, the master should have consulted the ship's staff and shore management. The pilot's doubt should have beensufficient to register with the master that the departure would be challenging. Prudent overreaction should have been applied, and the vessel should have delayed departing.

Capability –The vessel's ability to manoeuvre under high wind conditions with exposure to high sides was not assessed. The wind forces acting on the hull must be understood when designing passenger vessels with high sides. Simple rules for calculating wind force exist. Were these rules used during the master pilot exchange?

E.g. Length overall (m) x Max freeboard in (m) = windage area

An approximate wind force in tonnes per 1000 sq. m can then be calculated using:

V wind speed (meters/second) = wind speed (knots) /2

The Force (tonnes) per 1000 sq. meters = V2 / 18

3. Design

The Hidden Risks of Poor Design

Good design should enhance safety, but poor choices—such as unsafe pilot ladders, failing mooring bitts, or unsecured equipment—can have severe consequences. In the superyacht industry, aesthetics sometimes override functionality, leading to hazards.

Safety must be embedded in design, with rigorous testing and consultation with seafarers to prevent incidents before they occur. Senior officers attending every new building and being given the authority to identify design faults and raise concerns will pay dividends when the vessel enters service.

M299

A 'bitt' of a hazard!

Initial report

The mooring bitts pictured below had a D-ring attached to them, which was used as the strong point for connecting a rope stopper. When the weight of the mooring line came onto the stopper, the D-ring's connecting screws sheared off, and the D-ring was fired into the air towards the mooring party. Luckily, no one was injured.

CHIRP Comments

Stoppers – and whatever they are connected to - must be capable of supporting the loads transmitted through the mooring lines. The small-diameter screws connecting this D-ring to the bitts were entirely inadequate for this task. A better arrangement would be to attach the standing end of the stopper around the bitt or a nearby cleat.

Factors related to this incident

Design – If your super yacht has a similar design, ask the manufacturers to confirm its safe working load (SWL).

Local Practices – Any equipment designed to take a load should be documented in the vessel's SMS and inspected/tested as appropriate.

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.

Crew safety training plays a pivotal role, with clear guidelines emphasising the need to delay tasks during rough weather

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.

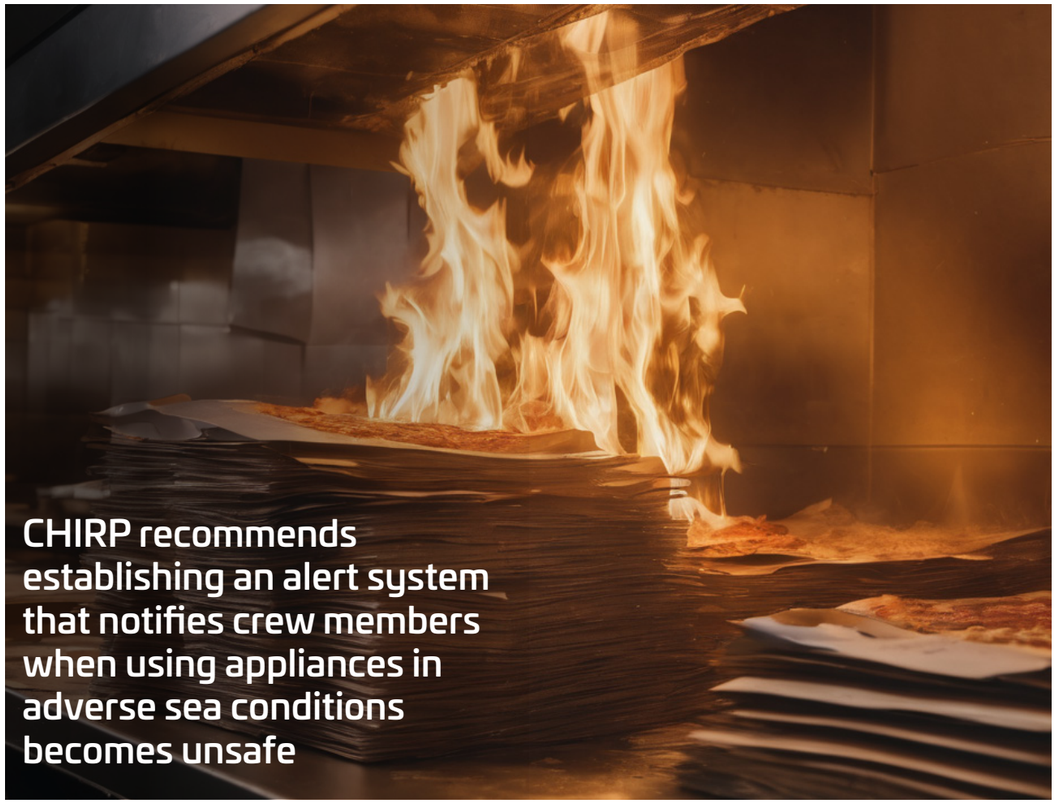
Human Factors

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.



M2296

Unsafe pilot transfer arrangements

Initial report

A pilot informed CHIRP that during embarkation onto a super yacht, the pilot ladder rungs were not horizontal, and the ladder was not shackled to the deck. There were no fixed stanchions, and oversized fenders obstructed the ladder. There was no cut-out in the deck-level belting, so the ladder hung away from the ship's side.

CHIRP Comments

The overhanging superstructure makes it impossible to meet SOLAS regulations for boarding arrangements, which require the ladder and spreader bar to rest firmly against the hull. This is a fundamental design flaw. Note that boarding arrangements have to be SOLAS compliant irrespective of whether or not the vessel itself has to be SOLAS compliant.

The International Maritime Pilots' Association (IMPA) poster Pilot Ladder Poster.pdf is free to download and provides guidance on rigging compliant boarding arrangements.

Surveyors for Flag states and classification societies must ensure boarding arrangements meet safety standards. CHIRP will raise this issue with the Flag State concerned.

In consultation with pilots, CHIRP has suggested that the following guidance be provided for all visiting super yachts to ensure compliance with the pilot transfer arrangements (PTA) regulations.

- Specific super yacht pilot ladder guidance will be issued to visiting yachts during their visits.
- Specific super yacht pilot ladder guidance is to be issued to pilots.
- Vessels that do not comply with the requirements must receive a letter stating that they must rectify this before their next call.
- The Harbour Master is to be contacted when booking vessels for their next visit for early engagement to ensure that past issues have been rectified.

The overhanging superstructure makes it impossible to meet SOLAS regulations for boarding arrangements, which require the ladder and spreader bar to rest firmly against the hull

Factors related to this report

Design – Designed for aesthetics and not for operational requirements.

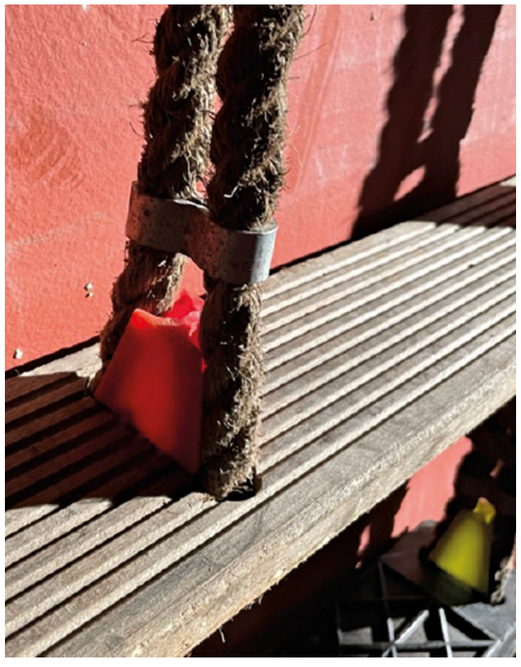
Local practices – Check that your boarding arrangements comply with the regulations – use the poster referred to above for guidance.

M2308

Unsafe pilot ladders

Initial report

The reporter stated that a pilot ladder had to be condemned as it was unsafe for use. It had very loose steps, which is typical of a certain manufacturer whose ladders seem to have a serious design flaw. The matter has been raised to the port authority.



CHIRP Comments

There is a notable issue with the manufacture and design of pilot ladders, particularly regarding the stability of the steps. A common problem arises with the clamping mechanism used to secure the chocks, if it is not robust enough to ensure that the ladder steps remain horizontal throughout the ladder's working life.

Some pilot ladders have good clamping and are constructed in accordance to ISO799, and some manufacturers have clamps that come loose at 300k force (where 880k is mandatory as per ISO799).

Regarding the steps, IMO A.1045 states in 2.1.2.7: they should be secured in such a manner that each will remain horizontal. If rope is used to secure the steps to keep them horizontal the correct type of rope to assemble a ladder is three-ply tarred marlin of minimum breaking strength of 800N (ISO799-1:2019 rule 4.7)

On a related note, using shackles to secure the ladder damages clamping mechanisms and makes the steps become loose. Shackles must not be used. Pilot ladders shall only be secured at intermediate lengths by a device designed by the manufacturer for that purpose, or a rolling hitch. No other method is acceptable.

CHIRP wishes to remind readers that pilot transfers are high-risk operations. It is crucial for crew members to maintain heightened safety awareness to ensure that the transfer from the pilot boat to the bridge is conducted as safely as possible.

To address this safety concern, CHIRP recommends developing a standardized securing arrangement for pilot ladders, approved by pilots, to ensure step stability. It encourages collaboration among manufacturers to create a common design that improves ladder safety.

Additionally, it is essential for companies to assess their crews' understanding of pilot transfer arrangements. These assessments can be conducted during internal audits, safety inspections, and visits to the vessel by the Designated Person Ashore (DPA). Regular evaluations will help ensure crews are adequately trained and that safety protocols are consistently followed.

Factors related to this incident.

Design – Clearly, there are flaws in the design. This is borne out by the number of times that pilots are seeing the same issue. How do you assess the quality of the pilot ladder when one is procured by the company? Do you have any input in the procurement process?

Capability – Pilot Transfer Arrangement (PTA) knowledge and safety can easily be assessed by management. Does your company have a process for ensuring that the crew have the necessary knowledge? Does your company carry out training for PTA?

CHIRP recommends developing a standardized securing arrangement for pilot ladders, approved by pilots, to ensure step stability

M2208

Bunker station design

Initial Report

The reporter sent a concise video highlighting the poor design of the bunkering station on a very large yacht.

The reporter informs CHIRP that super yachts use a variety of bunkering facilities, and it is very rare to connect with a Marpol flange.

Most bunkering hoses have camlock fittings, and because of poor design issues at the bunkering station and poor maintenance of the camlocks, many connections leak, creating pollution, health hazards, and fire hazards.

CHIRP Comments

Design issues with bunkering connections often need to be thoroughly thought out. Bunker connections are frequently positioned in tight spaces, making it difficult to connect the hose. Once connected, the connecting flanges can often come under much stress due to poor alignment, making a tight seal difficult to achieve.

CHIRP requests owners reconsider their bunkering design and, during the next drydock or lay-up period, consider changing the pipework to ensure connections are positioned to allow better alignment and a tighter seal to prevent leakages while bunkering.

CHIRP strongly believes persistent leakages when bunkering are unacceptable and indicate a normalisation of deviance, where this practice is accepted as the new norm.

CHIRP strongly believes persistent leakages when bunkering are unacceptable and indicate a normalisation of deviance

Human factors

Design – The design needs to be improved for secure bunkering. The workspace for hose connections needs to provide adequate space to allow alignment for the camlock. Does your bunker station have sufficient clearance to obtain good alignment when bunkering?

Alerting – Alerting management to the fact that buckets must not be used to control leakage from a bunker connection and should not be tolerated. Management should also be advised of the remedial action required to be taken.

4. Recreational and Diving Operations

Managing Risk and Responsibility

Recreational boating and diving necessitate thorough planning and risk awareness; however, lapses persist, particularly within the superyacht sector. The incidents detailed in these reports underscore failures in permit-to-work processes, crew communication, and diver safety. Merely raising the Alpha flag when a diver enters the water is insufficient—stringent safety procedures must be established. Whether at sea or underwater, leadership and accountability are crucial to preventing accidents.

M2283

Diving SOP's not followed

Initial report

A near-miss incident during a routine maintenance operation on a 60-meter commercial sailing vessel could have had severe consequences. The task involved cleaning the generator sea chest inlet, which had become clogged with weeds. An Alpha flag was hoisted, indicating a diver was in the water, and a permit to work was signed and issued. The first mate oversaw the operation from the deck, using a tagline tied to the diver and timing the manoeuvre. Meanwhile, the engineer was ashore.

While the master was also ashore, he called the first mate, and a long conversation ensued, distracting the mate from his duties. Unbeknownst to the first mate, the engineer returned to the vessel and, failing to notice the Alpha flag, proceeded to start the engines and test forward and aft propulsion as previously instructed by the master. This action was totally at odds with the current diving operation and indicated a severe lapse in communication and procedures.

Several critical errors contributed to this dangerous situation. The permit to work was not issued to the engineer, leaving them unaware of the ongoing diving operations. Additionally, no measures were taken to prevent the engine from being activated during this high-risk task. Consequently, the propeller began turning approximately 25 meters from where the diver was working underwater. Tied to the deck by the tagline, the diver could not swim away from the turning propeller, which could have resulted in a severe accident or even a fatality. The first mate's distraction during the telephone call with the master allowed this hazardous situation to develop unchecked.

CHIRP Comments

This incident underscores the importance of rigorous communication, adherence to safety protocols, and the need for all crew members to be fully informed of ongoing operations to prevent similar near-miss events in the future.

The hoisting of the Alpha flag is a requirement when a diver is down but ineffective on board the vessel when key crew members are omitted from the work planning meetings. In this case, the lock-out tag-out try-out (LOTOTO) barrier control is required, to ensure all ship's staff are alerted to the work activity that is planned for this time.

CHIRP wonders who 'owned' the permit to work in this incident. The permit needed to be completed fully. It is also clear that this work was communicated to only some crew members, and there was a communication breakdown.

Consider this work activity from the point of view of the diver tasked with carrying it out. How confident would you be that your safety is being adequately managed?

The officer assigned to look after the diver spoke with the master on the telephone, an apparently dangerous distraction. At the same time, the master had requested that the engineer, unaware of the diving operation, conduct tests of the vessel's propulsion systems, a conflicting work activity given the diving operation being carried out.

We repeat our emphasis on the level of education and qualifications of the diving crews that sail on super yachts concerning their levels of qualification and reiterate that if you do not possess the necessary diving qualifications for the work activity, you must not carry out the work. If you have the required qualifications, you must take ownership of the permit to work and insist that its requirements have been thoroughly implemented and resourced. Otherwise, no diving operation takes place.

Factors related to this report.

Alerting – Alerting with signal hoists is correct but can only be effective if it is part of a permit-to-work system made known to everyone on board.

Situational Awareness – Diving operations are high-risk and must be prioritised by everyone. Knowledge that a diver is below the hull must be shared with everyone. It is not an isolated work activity. If you are trained to carry out diving work on your vessel, do you insist this work is prioritised over everything else? Do you check and sign off the permit to work?

Distractions – Clearly, the diving supervisor was distracted by a call from the master, who was ashore. How would you react if you received a call while supervising a diving operation? There were also conflicting work activities planned for this day, such as testing the engines as agreed by the master.

Communications – Work planning meetings did not appear to address conflicting work activities simultaneously with the diving operation. Do you have a section on conflicting work activities at your work planning meetings?

Culture – Is your safety culture strong enough to inform the master that the call cannot be taken now because you are attending to the diver?

M2282

Lack of safety assessment by the Master

Initial report

Onboard a small motor yacht alongside the dock, someone dropped their radio into the water by the stern, directly under the propellors. The captain directed that it be retrieved by sending someone down with scuba gear. When informed that this would require a permit to work, the captain insisted it was not required. Despite concerns about the need for a permit or some formal procedure, the captain dismissed the idea and requested proof of legislation that mandated a permit to work for diving under the boat. When the suggestion to consult the Code of Safe Working Practices (COSWP) was made, the captain insisted on quickly retrieving it without any permit.

CHIRP Comments

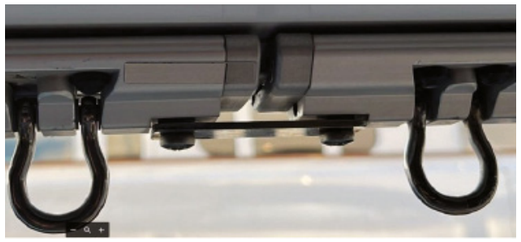
In this situation, the appropriate steps involve consulting the Code of Safe Working Practices for Merchant Seafarers, which provides guidelines for safe practices, including diving operations. If unsure, calling the Designated Person Ashore (DPA) to seek advice on the diving risk would be appropriate.

A stop-work authority would be the ideal tool for evaluating the risks. However, the company's safety culture must be proactive enough to implement this process.

According to the latest Diving at Work Regulations, diving operations conducted as part of work activities require a risk assessment and proper procedural adherence. The COSWP chapter on diving operations outlines the need for permits and safety procedures for diving. The relevant excerpts indicate that before any diving operation is undertaken, a risk assessment must be carried out, and a diving permit must be issued to ensure all safety measures are implemented. This aligns with the requirement that only a person shall dive in connection with a work activity if a suitable and sufficient assessment of the risks to health and safety has been made.

Most divers on board superyachts have a Professional Association of Diving Instructors (PADI) certification. This is for recreational diving only and is NOT sufficient to undertake commercial diving; that needs a professional commercial diving certification, which requires a higher standard of training and an equally well-trained diving support team.

CHIRP recognises that standing firm can be daunting when an authoritative figure pressures a crew member. Safety protocols, such as contacting the Designated Person Ashore (DPA) or a stop-work policy, are crucial for justifying the issuance of permits. The master's conduct was unacceptable, and the company's lack of written guidelines for diving operations reflects a tolerance for risk.



A typical rail arrangement – not the one in the report.

Factors related to this report

Culture – The crew's attempt to influence the master's decision to retrieve the radio using a diver was blocked, and there was no safety, highlighting a poor safety culture. Thinking about your experiences on your vessel and past vessels, have you encountered this type of behaviour? What would you have done?

Alerting – How would your DPA respond if you contacted them to seek advice on this matter? You can also contact the Flag State. The master should have made this call.

Teamwork – A shared mental model of the safety risks and the usefulness of retrieving the radio was not shared by everyone. How good would you be at creating a shared mental model where the risks for carrying out a dive to retrieve the radio could be persuasive enough to stop the operation?

M2305

Close quarters situation

Initial report

The skipper of a recreational sailing vessel was the stand-on vessel in an encounter in calm sea and bright daylight with a radar reflector and AIS in operation. The skipper reported:

"A large container vessel passed us very close astern... within 50m. I maintained my course and speed as a stand-on vessel. The ship claimed that the engineers had to perform engine performance tests and, therefore, had to keep their course and speed."

The skipper sent CHIRP a video of the conversation and screenshots, which confirmed their report.

The yacht was probably not visible from the larger vessel's bridge at only 50m

CHIRP Comments

Engine performance testing is a routine operation carried out periodically by most merchant ships. It is done to identify problems and prevent major failures, improve efficiency, optimise performance, assess quality and ensure compliance with environmental regulations. It is part of the SMS and PMS.

Such testing is carried out ideally when conditions are good and external factors such as wind, sea state, and current are as low as possible to obtain the best results. Maintaining course and speed ensures that the load on the engine is stable; however early and gentle alterations of course of one or two degrees at a time using minimum rudder movements can avoid a close-quarters situation developing without jeopardizing the engine performance test. In any event, adherence to ColRegs is paramount and the trial should, if necessary, be abandoned and rescheduled. Did the container vessel OOW lack the confidence to abandon the trial, or did they feel that they were not empowered to do so? CHIRP posed these and other questions to the vessel's management company, who were extremely helpful in investigating this incident.

Although the sailing vessel was the vessel not to be impeded and maintained its course and speed (ColRegs rule 17a ii) it was evident that a risk of collision existed, and it was thus obliged (ColRegs rule 8f(iii)) to take action under rule 17b to avoid collision. Large, high-sided vessels have a blind sector at very close range and the yacht was probably not visible from the larger vessel's bridge at only 50m.

Factors relating to this report

Situational Awareness – Whilst engine performance testing is important, the paramount requirement is to adhere to the ColRegs. Remember that large vessels have a 'blind sector' that often extends a long way from the bow.

Culture – The company should ask whether its officers have the necessary confidence to challenge instruction/orders even when there is a known danger.

5. Passenger Vessel Safety

A Wake-Up Call

These days, passenger vessels range from luxury superyachts catering to the very rich to monsters of the sea carrying almost 10,000 passengers and crew. Operators attempt to differentiate their offerings and attract customers in several ways, especially by stressing the fine dining on board and the quality of the shore excursions, but safety must always be the priority.

In this section, two alarming incidents—a dry ice asphyxiation and a dangerous passenger excursion—reveal safety failures in passenger operations. A lack of hazard awareness, fatigue, and ignored warnings put lives at risk. Regulations hold little weight without enforcement. Companies must prioritise proactive risk assessments, training, and a culture in which safety concerns are addressed before tragedy strikes.

M2205

Asphyxiation hazard

Intial report

A crewmember entered a freezer compartment for routine duties where, unknown to them, dry ice was being stored. The crewmember quickly lost consciousness because of the high CO2 levels produced by the dry ice. Luckily, another crewmember quickly raised the alarm, and they were rescued and given first aid. They were then sent to the hospital for a confirmatory check-up.

CHIRP Comments

The decision to transport dry ice for culinary presentation carries significant risks, and management is responsible for them. The management team must thoroughly evaluate the associated risks at the organisational level before approving the procurement of dry ice.

Strict adherence to regulations and guidelines is essential when dealing with dry ice, considering its inherent hazards. Key considerations involve recognising dry ice as a dangerous good (UN 1845) and understanding the specific risks it poses during transportation. Compliance with regulations becomes vital for ensuring the cargo's safety and the well-being of the individuals involved in its handling. Emphasis must be placed on proper handling, packaging, and ventilation to mitigate the risks of transporting dry ice.

A thorough risk assessment must be conducted to ensure that all potential hazards are explored.

Since the dry ice is sourced from a franchisee/ sub-contractor, it is imperative to communicate detailed information regarding its hazards, proper handling, and safe storage to various stakeholders, including management, the master, the chief officer, the chief engineer, and all ship's staff. The storage compartment for dry ice immediately falls under the classification of an enclosed space, requiring an enclosed space permit for entry.

Solid dry ice must be packaged in non-airtight containers to allow the safe release of carbon dioxide gas produced during sublimation (change from a solid to a gas without becoming a liquid), thereby preventing container overpressure and the associated risk of an explosion. Adequate ventilation becomes crucial, avoiding the accumulation of carbon dioxide gas in enclosed spaces and mitigating the potential for asphyxiation for anyone working in the compartment. Entry into a fridge space containing dry ice necessitates a permit to work.

Comprehensive training for crew members handling dry ice is a management responsibility. It covers hazards such as explosion, suffocation, and tissue damage due to extremely low temperatures. Training programs must highlight the importance of proper ventilation and avoiding unventilated compartments. Management should establish robust mitigation strategies and emergency response procedures, including incorporating personal gas detectors and enforcing appropriate PPE to prevent skin contact damage.

Human factors

Capability – Dry ice, or solid CO2, demands good knowledge to mitigate the risks. Does your shore management team have the necessary skills to manage the risks for the crew? Have you been aware of the dangers if you have carried it, especially on a cruise liner or superyacht? Did you know that it is classified as a dangerous goods cargo? Have you received training in the handling of dry ice?

Communication – How well are you aware of the carriage of dry ice in the galley fridges of other compartments where it may be stored? Are these spaces labelled as enclosed spaces?How is this communicated to everyone on board?

Alerting – A crew member nearly died because of a lack of knowledge of dry ice and its hazards. Does your company provide extra information on dry ice carriage? Have you seen dry ice's material safety data sheets (MSDS)? Have they been explained to you?

M2261

Critical safety failures and crew fatigue on cruise ship during passenger excursions

Initial report

A crew member on an expeditionary cruise vessel reported serious safety concerns following a recent passenger excursion.

The vessel planned to land passengers at a remote location known for its impressive wildlife. There was a considerable onshore swell, so the vessel anchored a mile offshore. The captain assessed that the distance to shore, the sea state and the surf conditions on the beach exceeded the safe operating limits for the vessel's own inflatable passenger launches, and a local, larger, ferry was commissioned to move passengers ashore. Unfortunately, however, the ferry ran aground on its way out of harbour. To avoid cancelling the trip, and without consulting with the captain, the expedition leaders directed that the passenger launches be used, and nominated several of the crew members as helmsmen, even though not all of them were qualified to do so.

Our reporter was one of several people who expressed concerns to the expedition leaders, pointing out that this went against the captain's earlier orders, and the weather had further deteriorated. These concerns were over-ruled.

The launch crews then worked from 8am to 7pm without breaks or meals, in tropical heat and high humidity. The considerable sea state, surf, and lengthy transits were uncomfortable for the passengers and highly stressful for the crews, who were aware that they were operating in unsafe conditions, which were further exacerbated by the lack of reliable communication equipment. Several safety incidents occurred, including a man overboard incident, and passengers left on a beach near wild animals.

Following the day's operations, one crew member experienced severe psychological and mental stress, which the onboard doctor later assessed. After submitting an official report to the captain detailing these safety concerns, the crew member was summoned to a meeting with the cruise director and was asked to disembark at the next port of call.

CHIRP Comments

This report raises important safety concerns, particularly for expedition cruise ships that emphasize excursions. The pressure to meet passenger expectations can lead expedition leaders to prioritize the delivery of excursions at all costs. In this case, delays caused by a grounded ferry likely created additional time pressure, which may have pushed the leaders to use the ship's launches without consulting the captain. Without deck experience, they may not have fully understood the safety risks, especially if the crew operating the launches were not properly trained. Ignoring the captain's earlier orders also undermined the captain's authority, which was further weakened when the captain failed to reassert control after discovering the launches were in use. CHIRP has ascertained that there is no industry SOP for the transfer of passengers from cruise liners other than individual company Safety Management System (SMS) guidelines and procedures.

A ship's launch has both design limits (such as maximum passenger capacity or sea conditions) and operational limits, which take into account passenger mobility, safety, and comfort. To help make better decisions on board, companies are encouraged to define these operational limits in their SMS. This should include not just weather and sea conditions, but also passenger mobility requirements. Some companies use a simple 'step test' to assess if passengers can safely board or disembark.

Using the ship's launches with unqualified personnel and without proper communication equipment should have been an obvious safety risk and a clear violation of the company's SMS. However, the expedition leaders overlooked these concerns in their focus on satisfying their passengers cruise experience. Several passengers reported safety concerns to CHIRP.

The crew's high workload, along with insufficient rest and food, further compromised safety. The 11-hour work shifts left tender operators fatigued, leading to risks that were not minimized to acceptable levels (As Low As Reasonably Practicable, or ALARP).

Additionally, the cruise director did not properly care for a crew member suffering from work-related stress, which raises concerns about ethical working practices.

CHIRP brought these issues to the attention of the company, which dismissed them, so the matter has been escalated to the vessel's flag state and classification society, both of which are now investigating.

Factors relating to this report.

Culture – The company was dismissive when contacted by CHIRP, suggesting its safety culture is lacking. The practical consequences were a series of safety violations including the captain's orders being ignored and the crew's concerns rejected. Despite objective evidence with two serious incidents, risky behaviour was allowed to continue and there was no intervention by the master.

Fit for purpose – Neither the launches nor the communication equipment were suitable for the task.

Capability – Some crew members were not qualified to operate the launches, and their capability was further eroded by fatigue in the difficult weather conditions.

Communication – There was a breakdown of communication between the captain, expedition leaders and launch crews.

Teamwork – Members of the team were focused on different goals and there was no shared understanding of the risks nor the importance of safety. Collective challenge was ignored, and the crew did not have 'stop work' authority despite the hazards.

Local practices – Local practices are clearly stressful and should be reviewed by the company's HR team at the earliest opportunity.

6. Superyachts

Safety Lapses and Lessons Learned

This is by far the most extended section of the Annual Digest, which is a tribute to the excellent reporting by the superyacht sector – a fact that is reflected in our production of a dedicated Superyacht FEEDBACK bulletin four times each year. The number of reports does not mean the sector is inherently unsafe but indicates a willingness to learn and improve. We salute all our reporters and would encourage people in other sectors of the maritime industry to emulate them!

Tender groundings, entanglements with mooring lines, and structural failures highlight critical safety gaps in superyacht operations. Poor planning, inadequate training, and commercial pressures often override safety concerns. Stability assessments, proper passage planning, and enforcing work-at-height protocols are essential. Good seamanship can mitigate risks, but safety must be prioritised at all levels.

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?

M2142

Contact with ground lines while departing a repair berth

Initial Report

The reporter informed CHIRP of an incident during departure from the berth.

The vessel was med-moored (berthed stern-to) in a challenging location. It was positioned between another yacht on the port side and a dock of small sailing vessels approximately 50 meters ahead on the starboard bow. The departure manoeuvre required careful controlling, with only 1 meter of clearance on either side and numerous ground lines present.

During the departure, the starboard stabiliser fin snagged a ground line belonging to one of the smaller sailing vessels. This incidental contact caused a slight movement among the adjacent yachts, resulting in a slow collision between the yacht's hull and the vessel whose ground line was entangled.

Upon realising the situation, the master held the vessel steady in an awkward position while the entangled ground line was safely removed. The shipyard was promptly contacted, and they confirmed that no evident damage was observed except for the snagged line. The stabiliser was also assessed and proved to be operational with no damage.

CHIRP Comment

The reporter informed CHIRP that a pre-departure meeting was conducted before they left the tight berth. Due to the narrowness of the berth, the proximity of the ground lines and the limited space ahead, manoeuvring took a lot of work. The reporter also mentioned that this incident marked the second time they had encountered difficulties while departing from such a tight berth.

Our Advisory Board members discussed whether additional mitigation measures might have further assisted the master and crew during the departure. These included asking the port to temporarily relocate some of the other small boats to provide more clearance or the use of mooring lines to warp the vessel until it is clear of potential hazards.

It is best practice to discuss problematic departures the port authorities, and an illustrated departure plan is very helpful in such situations. These plans must consider the vessel's specific requirements and consider potential hazards like the presence of ground lines. Escalating the issue to the port's management well in advance can ensure adequate attention and resources are allocated to address your (un)berthing concerns effectively.

CHIRP emphasises the significance of thorough planning, clear communication, and situational awareness when manoeuvring in and out of challenging berths. The master's skill in positioning the vessel to allow the removal of the ground lines from the stabiliser fin played a crucial role in preventing a much worse outcome.

Key Issues relating to this report

Local Practices – Engage with port authorities: employ open communication and, when appropriate, seek assistance early. If this practice is not common, challenge the status quo.

Pressure – Avoid letting pressure drive decisions. Prioritise safety above all else and avoid making decisions solely based on external pressures or tight schedules. Conduct thorough risk assessments and carefully consider the potential consequences of not exercising caution during manoeuvring operations. If a situation feels unsafe, insist on receiving support from the port before proceeding.

Teamwork – Embrace teamwork and encourage challenges: foster a culture of teamwork and collaboration among all involved personnel. Encourage team members to continuously question existing practices and propose improvements to enhance safety and efficiency. Even seemingly minor contact damage can escalate into more severe incidents, making teamwork and cooperation crucial.

M2136

Capsize of a Dive Safari Vessel and Rescue of Tourists and Crew

Initial Report

Two additional decks had recently been added to a large liveaboard diving vessel which was subsequently chartered by a diving group for a trip to do both wreck and reef dives.

Early in the voyage, members of the dive group noticed that the vessel had a consistent list to port of approximately 2 to 3 degrees. They raised this with the crew, who assured the divers that this was most likely due to the unbalanced filling of the freshwater tanks for the voyage.

The vessel departed in the morning, and group completed two guided dives before the vessel went to anchor overnight. It was a calm night, but the group noticed that the list had increased to 4-5 degrees. Again, the crew reassured the group that all was well.

At first light, the vessel got underway and set off to another dive site – this time with a list of 5-6 degrees. As it approached the main shipping lane at 10 knots, the vessel heeled over to starboard and over the next hour the list progressively worsened until it capsized onto its side in less than 30 seconds. One of the vessel's life rafts was released but did not inflate as the painter was not secured to the vessel. It was later manually inflated but could not be righted. The 2nd life raft was released and inflated, and the vessel's tender boat, despite being slightly damaged, was used to tender passengers and crew to the life raft. Flares were released, and other nearby dive vessels came to assist. The dive team on board carried out dangerous and courageous rescues within the vessel to free trapped passengers and crew.

All passengers and crew (35) were eventually accounted for and taken back to port, where further assistance from the navy was provided to the traumatised survivors.

According to our reporters, escape from the vessel was hampered by missing handles on one of the emergency escape hatches, and missing handrails on the stairs between decks made it extremely difficult to get out of the vessel. The lack of securely fastened furniture, including unsecured beds, also created a hazardous environment with floating debris obstructing escape routes. None of the passengers received a safety briefing upon boarding the vessel.

CHIRP Comments

Significant structural changes invariably affect stability, and inclining tests must be conducted to update the vessel's stability curve data. Despite the passengers raising concerns on several occasions, it is troubling that the crew neither recognised nor reacted to the obvious warning signs. At best, this indicates a lack of training and at worst, the company put commercial interest above crew and passenger safety by continuing the voyage. Although the vessel had significant safety design defects e.g., lack of handrails on the steps between decks, the crew also demonstrated a complacent attitude to safety: items were not correctly secured for sea, nor were basic safety items such as the life raft painter correctly fitted. These, and the lack of a safety briefing for the guests, all point to a poor safety culture compounded by inadequate crew training and competency,

The successful rescue of all passengers and crew is a testament to the diving guests' exceptional bravery and quick thinking. CHIRP has maintained contact with the dive team following the traumatic rescue. Many of them, including the passengers, are now receiving trauma counselling therapy.

Factors identified in this report

Design – Poor design choices when installing the additional decks significantly affected the vessel's stability. Scrutiny of the stability requirements should have occurred before the refit; and after the work had been completed, it should have undergone an Inclining test overseen by the Class society and Flag.

Pressure – Commercial pressure to return the vessel to service meant that stability tests and sea-trials were not conducted. And once it had begun its fee-earning voyage, passengers' concerns were ignored, which ultimately led to the vessel's capsizing and endangering the lives of all passengers and crew. **Commercial considerations must never be at the expense of safety.** If you are a crew member joining (or on) a vessel that has had substantial structural change, ask to see evidence that stability tests and sea trials were correctly carried out.

Situational awareness – The crew did not recognise that the unexpected list was a sign of potentially inadequate stability, nor did they react when this got worse during the voyage. This is most likely due to insufficient training.

Culture – The operating company and the owners lacked care for the passengers and crew, as reported to CHIRP. They were not offered any counselling following their traumatic ordeal and had little in the way of any compensation despite losing all their equipment and possessions. Their lives were only saved because of their professionalism as divers.

M2138

Personal Injury during mooring operations

Initial report

During mooring operations, and while a 25' tender was simultaneously being secured alongside the superyacht, the yacht's aft spring line unexpectedly came under pressure. The Chief Officer's fingers were caught between the mooring line and the deck cleats, resulting in three broken fingers and nail and skin lacerations. The chief officer was working alone. The incident prompted the company to introduce safety improvements during mooring operations to prevent such accidents in the future.

According to the incident report, the company should consider sourcing smaller diameter custom length mooring lines to secure the line's working end aboard the tender. This change would leave only the spliced loop to be secured aboard the super yacht, eliminating the risk of two bitter ends being secured over each other on the yacht's deck cleat. They should also consider switching to a more flexible line and installing snubbers to absorb stress on the deck cleats. These measures will help reduce the likelihood of accidents and injuries during mooring procedures.

Additionally, the company proposed additional training for all crew members working with lines on deck, highlighting the dangers of working alone during mooring operations.

CHIRP Comments

This is very much a seamanship matter concerning securing the tender and other vessels alongside, and the suggestion proposed is reasonable and seamanlike.

The company should consult the master on how the tender may be released in an emergency. CHIRP also suggests that preventing injuries to crew must be part of the design specification. The sleek-looking arrangement is in keeping with the aesthetics of the motor yacht, but it needs to be safe for the crew operating the moorings.

Factors identified in this report

Situational Awareness – Mooring operations demand good situational awareness and physical coordination, given the risks of lines under tension. Carrying out mooring operations without having the necessary support to keep you advised of changing line tensions is very dangerous. Always have someone supporting you during mooring operations.

Teamwork – Mooring operations demand collaboration where one person monitors the operation for safety, and everyone else looks out for each other. At the Toolbox meeting, emphasise to everyone taking part to challenge if something needs to be corrected or is potentially unsafe.

Pressure – Never rush mooring operations due to pressure, perceived or otherwise.

M2111

Grounding and Dismissal

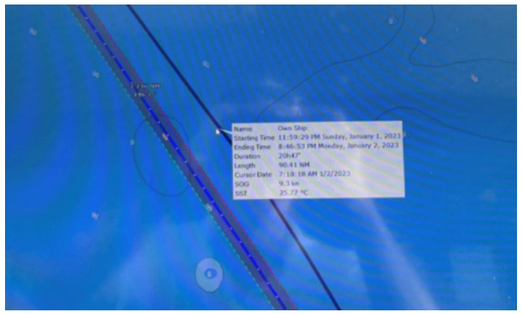
Initial report

Our reporter, a watchkeeper on a yacht, informed CHIRP that their vessel ran aground while navigating in an area of shallow water at over 9 knots. It was approximately 3 hours after sunrise when the grounding occurred.

Screenshots of ECDIS (Electronic Chart Display and Information System) show that the planned track – shown as a dotted line – went over the top of a 1.9m shoal depth even though the vessel's draft was 2.3m. The vessel's course – shown as a solid line – was starboard of the planned track buts still grounded because of a combination of shallow water, speed and squat. This resulted in the vessel dry-docking for several weeks for significant repairs.

The reporter explained that the master created all passage plans, but none were recorded in the vessel's navigation management system and that watchkeepers frequently had to deviate from the planned routes to avoid charted hazards. Our reporter was concerned that the master's proficiency in planning navigationally safe routes was lacking and that they sometimes struggled to interpret RADAR and ECDIS information. The reporter's employment was terminated when they raised these concerns through the company's safety reporting system.

Subsequent correspondence with the reporter revealed that to satisfy the owner or guests' requests to visit certain locations, the vessel often navigated to areas 'by eye,' i.e., visually detecting shallow areas because even large-scale charts lacked sufficient sounding data.



CHIRP Comments

This report raises several issues. Firstly, although certificated, the master's navigational skills appear inadequate. It is vital that company managers validate the skill of masters and other senior officers and do not rely solely on the possession of a certificate as a measurement of competency. Secondly, route plans should always be cross-checked by another watchkeeper because even the best navigators can make mistakes.

The third issue is that guests' wishes to visit a particular destination need to be balanced against the navigational risks of getting there. In Superyacht FEEDBACK edition 01, we strongly encouraged masters to get agreement from the owner or guests at the outset that they will respect the master's professional judgement and the need to say 'no' when a request compromises the vessel's safety. Navigating 'by eye' is not sound practice and is unlikely to be accepted as such by an accident investigation board!

CHIRP discussed with the relevant hydrographic office (HO) the issues experienced concerning navigating in the area related to the report. Crucially, a compliant ECDIS system must be used, and the charts must be updated to the latest edition and corrections. It was noted that an official ECDIS system with ENC was not used for the navigation of the vessel.

The HO placed great weight on using the sailing directions for the area as a pre-requisite before planning the passage. They contain valuable navigational information, including the nature of the seabed and the likelihood of shifting sandbanks, which in this case were prone to shifting. The vessel's speed must be set according to the under-keel clearance to avoid significant squat. Most fine-lined super yachts will trim by the stern when experiencing squat effect, and damage to the propellers and rudder can be expected if the vessel touches the seabed.

Source data (Zones of confidence)

The source data for the charts used should be considered part of the navigation passage plan (risk assessment). Again, the area under consideration in the report shows sparse-sounding data, with some of the best data shown by occasional lines of miscellaneous soundings. Risk for groundings must be considered high given the lack of data, and routes that have been proven safe in the past should be considered in the passage planning.

Many hydrographic offices (HO) operate a system for navigators and other watchkeepers to report areas where they believe the chart data is insufficient to support safe navigation. Often, they have limited resources and necessarily prioritise known areas of high traffic (e.g., commercial routes), but they are also keen to understand the needs of other users. When CHIRP contacted the appropriate HO about this report, they immediately added it to their list of areas to be reviewed, and readers are encouraged to do likewise.

Most hydrographic offices have good reporting apps or reporting forms to allow data to be sent so that paper and electronic charts can be updated. CHIRP encourages all Super Yacht owners and managers to provide the relevant hydrographic offices with the latest sounding data by using the various reporting apps that are available. This will provide reliable data for other users to consider in their passage plans.

The final issue is that of the reporter being sacked for raising safety concerns. This demonstrates a very poor safety culture within the company and does absolutely nothing to reduce safety risks. CHIRP encourages Flag States to introduce employment protections for those who are sacked for raising valid concerns.

Factors identified in this report

Capability – Those responsible for appointing senior officers (e.g., masters or first mates) should satisfy themselves that the appointees can demonstrate practice competence and evidence that they have maintained their skills since qualification, which in some cases might have taken place years or even decades beforehand. This mitigates against skill-fade and any bad habits picked up along the way.

Alerting 1 – Navigation plans and other critical work should always be cross-checked. This helps with the early detection of errors, prevents 'group-think', and can be a powerful learning/teaching opportunity for everyone involved. No one is too senior to learn from others, and rank does not confer infallibility!

Alerting 2 – Being unafraid to challenge constructively is vital to safety. Sacking someone for raising a safety concern sends a clear signal that your company is not interested in safety.

Alerting 3 – Navigating in areas which need to be adequately sounded requires those that can record accurate data to do so. Sounding information, passed on to the relevant hydrographic office, is very valuable and helpful for all mariners.

Local Practices – Navigating 'by eye' and similar practices may be accepted unofficial practice in some vessels, but it doesn't mean that it's safe – and "But it's what others do" is not a valid defence. If the correct process (e.g., using charted data) isn't adequate, report it to the relevant authority or to CHIRP.

Culture – Dismissing a person from the company's employment for reporting an incident does not demonstrate a just culture. It should be the aim of every organisation to strive for continual improvement and sharing the learning outcomes from any incident can only help in improving safety. Can you share with CHIRP similar incidents that you have experienced?

M2164

Lift E-Foil Battery Thermal Run-away

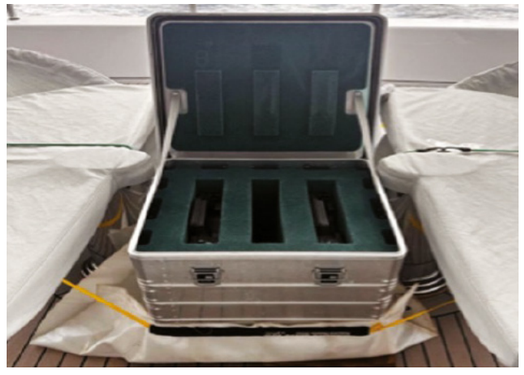
Intial report

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?

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.

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 t he 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?

M2242

Near miss - breach of watertight integrity

Intial report

While underway during a busy trip, the lookout performed their deck rounds. They found the shell door fully open when they entered the tender bay, which is located on the lower deck, approximately 8" above the waterline. Water entered the tender bay due to the vessel's movement and swell.

This caused the loss of some equipment but, fortunately, the vessel's stability was not severely affected. The issue was quickly reported, and the door was secured safely.

Upon investigation, it was found that there was severe salt build-up inside the controls of the door, which had caused a 'short' of the 'open door' button. This caused the door to operate and open without any human control.

The bridge has indicators for the door status, but they are inconspicuous and inaudible. There is also an isolation switch, but the Standard Operating Procedure (SOP) did not include using it at sea.

Subsequently, the company installed a Deadman switch into the door system to eliminate the single point of failure, updated the SOPs, informed the fleet (especially the sister ships), and reviewed the risk assessments for similar issues elsewhere on the vessel.

CHIRP's comments

This incident highlights a critical flaw in the design of the vessel's tender bay doors, requiring immediate action to prevent potential accidents. CHIRP commends the crew members for their vigilance in detecting and averting a severe malfunction and notes that good old-fashioned safety rounds brought this to the master's attention before the amount of water being taken on board seriously affected the superyacht stability.

The vessel's alarm systems and reliance on a single point of failure raise concerns about the thoroughness of consultation concerning the ergonomics of alarms and controls during construction. Alarms placed in inconspicuous places that cannot be seen and are inaudible due to normal background sounds are useless.

Management's proactive steps to eliminate this single point of failure and update safety procedures in the Safety Management System (SMS) are commendable. However, CHIRP also recommends prioritising enhancements to the weatherproofing and sealing mechanisms of the tender bay doors, alongside measures to combat corrosion.

Maintaining watertight integrity in vessel design and operation is paramount, and CHIRP feels that implementing these measures and enhanced crew maintenance training is necessary. This incident highlights the importance of addressing vulnerabilities in vessel design, particularly concerning environmental factors and technical failures.

Human Factors

Design – There was a latent defect that meant the equipment was not fit for purpose either on the bridge for alerting or on the tender deck against exposure to the weather. Do critical controls for your vessel's opening and closing appliances rely on a single point of failure? Have you checked?

Alerting – How well do your alarms alert you to a problem? Can you recognise the alarm from its sound or light function? Are you shown these alarms as part of your familiarisation?

Situational Awareness – During your motor yacht's operational service, ask questions to identify potential single points of failure for operational and personal safety.

M2243

Explosion in the engine room

Intial report

The incident occurred on a relatively small motor yacht (70ft) with just three crew members. After approximately six hours at anchor, the guests decided to head back to the marina. After stowing all the water sports equipment onboard and securing the aft platform, the master engaged the main engines.

With contacts on, the starboard engine exploded in the engine room, located aft, under the area where the guests were. By checking the CCTV, the master could see only misty air. None of the alarms were activated.

The master switched the contacts off, and the ventilation system was cut off automatically. The master went down and didn't know what to expect, as no alarms were raised. After looking through the viewing port, the door to the engine room was opened to ensure there was no fire, but the engine room was full of contaminated air. The door was closed immediately.

The guests were notified that a tow was requested to return the vessel to the marina.

CHIRP Comments

A starting battery explosion is a regular occurrence on some superyachts, where the necessary knowledge of battery maintenance is lacking.

From a technical perspective, CHIRP highlights that the maintenance of the starting batteries requires a good knowledge of them to ensure that they are safe to operate and adequately charged. Venting hydrogen during any charging operation is vital to provide a safe atmosphere. There was a lack of knowledge or a lack of knowledgeable crew to check that the batteries were in good condition and safe to use.

From a crew resource perspective, a risk assessment based on assessing the hazards and threats to the vessel should be carried out to determine the number of crew members to employ to cover maintenance and emergencies safely.

There appears to be no minimum manning level for a yacht of 21 meters, and it is based on the owner's financial willingness to employ the minimum number of crew for the service being provided rather than being able to respond to an emergency.

CHIRP advocates that Flag States should have a say on the minimum manning level based on the risks of the vessel's operations and the number of guests being carried.

Human Factors

Capability – The vessel did not have adequate inspection and maintenance schedules to ensure the batteries were safe. Does your motor yacht have a maintenance schedule for items of critical importance?

Culture – Organisational culture needs to change, and safety should be managed using a risk-based approach. How many crew members does your vessel carry compared to a similar-sized vessel?

Teamwork – With only three crew members, including the master, the feeling of teamwork can be challenging to achieve.

Not actual event, for reference only.

M2244

Lack of crew in an emergency

Initial report

A private motor yacht of approximately 40m LOA experienced steering loss due to a loss of pressure on the hydraulic system. The hydraulic system solenoid had broken, and there was no spare solenoid onboard or competent engineer to repair the existing solenoid.

The failure resulted in the loss of function for the steering, anchor winch, and hydraulic transom door hatch, all operated by the same hydraulic pack. Due to stormy weather conditions, the vessel nearly ran aground before it reached the nearest safe haven.

Only three crew members were on board, and the owner of this private boat refused the master's request to employ additional crew for a vessel of this size, which, according to industry practice, should be approximately seven people. As a result, the three crew members (captain, motorman, and stewardess) ended up in a near-miss situation, which could have been much worse.

Fortunately, using good seamanship, they brought the vessel into the marina using only engines and the emergency steering system.

CHIRP Comments

It's concerning to hear about the unsafe situation onboard the vessel due to the design and redundancy issues with critical equipment. Relying on one hydraulic power pack for multiple critical functions such as steering, transom door hatch, and anchor winch creates significant risk, especially concerning equipment redundancy, crew size and knowledge.

The crew's skilful averting of a grounding and safe return home demonstrate their competence and good seamanship. However, the inability to repair the solenoid due to the lack of technical knowledge and spare parts highlights a severe deficiency of preparedness.

The recommendation from CHIRP to conduct a thorough risk assessment to determine the appropriate manning levels for a vessel of this size is crucial. Adequate staffing is essential for ensuring the safety and effectiveness of operations, particularly in emergencies.

While the 3-person crew's good fortune and decision-making may have helped avert a grounding this time, this is not a reliable resource level for future voyages. The owners should take proactive steps to address the underlying issues and implement necessary changes to prevent similar incidents in the future. This includes investing in equipment redundancy, carrying essential spare parts onboard, and providing sufficient crew training. Failure to do so could lead to potentially catastrophic consequences for the vessel and its crew.

Human factors

Design – Large superyachts should always have redundant critical spare parts to repair or replace essential equipment. This should be part of the vessel's design and requested by the flag and insurers.

Capability – Ensure the motor yacht crew has the right skills and knowledge to handle an emergency. The current crew level, with their combined knowledge, which managed the emergency, was not a safe number.

Culture/Overconfidence – Just getting by is not good enough. Safety management must be a proactive approach to assessing potential risks. Just because nothing has happened before is no reason not to take all precautions. Prudent overreaction is always the safest way and should be part of the company's vision for the crew and passengers.

M2240

Damage to a tender under tow

Intial report

Upon approaching an anchorage with a 38ft tender in tow, the crew noticed the tender sitting low in the water and assumed it was sinking. The master was notified by radio, and the chief officer ran to the aft to assess. The chief officer noticed that the speed reduction (when approaching the anchorage) was causing the tender to sink, so he requested that the captain increase speed again and not enter the anchorage.

Another yacht's tender noticed the problem and came over to offer assistance. Two crew members were transferred to the other yacht's tender, taking fenders and a pump.

As the crew approached the towed tender, it was apparent that the side boarding door was slightly ajar. A crew member was transferred to the towed tender and was able to shut the door. With the boat's movement through the water, the tender soon emptied via the aft scuppers and freeing ports. The tender was saved, although the engines were flooded.

CHIRP Comments

The crew on the towing vessel and the response team are to be praised for their good actions, especially the officer's quick thinking and seamanship skills, preventing a more serious situation. As demonstrated in this case, proper training and expertise onboard are crucial for handling unforeseen incidents effectively.

The failure to secure the tender for towing during pre-departure checks and procedures underscores the importance of thorough preparation and adherence to good seamanship. Implementing a checklist that cross-checks the towed vessel's watertight integrity could prevent similar incidents in the future. Additionally, considering weather conditions and setting appropriate limits for towing operations are other essential safety measures which must be considered.

CHIRP recommends rigging a camera on the tender for visual monitoring during towing. This would enhance safety and situational awareness, allowing for timely adjustments to course and speed and interventions if necessary.

Human factors

Capability – The crew checking the tender before towing paid insufficient attention to its watertight integrity. The flooding of the engine compartment shows the consequences of this omission, which could have been much worse. Do you have a checklist for your towing operations?

Situational Awareness – When towing, consider the bigger picture and conduct a risk assessment to ensure all hazards are considered. Is towing a tender part of your SMS?

M2236

Working at height without any PPE

Intial report

Our reporter sent a photograph of a crewmember working at height outboard of the vessel, engaged in window cleaning. They were not wearing any fall arrest equipment, and if they had slipped, they would have fallen approximately 10m to the concrete quayside below and been seriously injured or killed.

They were contacted by a nearby crew on another yacht to wear protection, but they refused to take any action.

CHIRP Comments

CHIRP has raised concerns about the incident with the appropriate Flag State for the vessel and received a very positive response. An investigation was carried out, and the DPA investigated the incident.

CHIRP was notified that equipment was available and that training had been provided to all the crew. However, safety gear was not worn, and no permit to work or operational supervision was evident. The crew member in question was dismissed from the vessel because of not adhering to the requirements. There is never any comfort in learning that a crew member was dismissed from the vessel, as it usually implies a failure in the management system on board.

The investigation revealed that the DPA was, in fact, the Master of the vessel, which is entirely wrong in terms of defining the DPA's role according to the ISM Code.

The DPA serves as a crucial link between the ship and shore management. Their primary responsibilities include ensuring that the safety management system is implemented and maintained effectively, providing support and guidance to the ship's management, conducting audits and reviews of the system, and serving as the liaison with external parties, including flag states and classification societies.

In this case, the revelation that the DPA was also serving as the vessel's Master represents a conflict of interest and a violation of the ISM Code. The DPA's role is to be independent of operational duties aboard the vessel to maintain impartiality and oversight.

Human factors

Culture – This incident highlights a poor safety culture where senior management does not drive safety. There was a lack of operational supervision. The work being undertaken by the crew falls under the category of working at height and necessitates a Permit to Work.

Alerting – When third parties warn you about how unsafely you are operating and nobody from your vessel raises any concern, there is something clearly wrong with your shipboard safety management.

Overconfidence – No matter how many times you have carried out such an unsafe act, at some time, you will not be so fortunate and will slip and fall.

Local Practices – Follow local good practices. You are ultimately responsible for your safety. Do you know your DPA and their contact details for your vessel? Is the DPA of your vessel the master?

Not actual event, for reference only.

M2263

Vessel tender recovery injures crew member

Initial report

Our reporter told us, "I reported to engineers that a bilge pump was not working on the 9m catamaran RIB, but nothing was done. I also reported that the lifting points were slightly deformed, which allowed water to access the bilge. With the bilge pump not working, additional water was added to the tender's weight. The tender is stowed on the main deck approximately 2.5/3m from the water line.

The RIB is used frequently, and it is recovered from the water with the two crew members inside. Once it reaches the yacht's main deck, it is pulled alongside the main deck and the two crew members step out of the tender in turn. As the first deckhand got out, one – then all - of the lifting points on the RIB failed and it fell several metres into the sea with the bosun still inside. The bosun suffered a minor back injury and shock."

CHIRP's comments

Both the securing points and lifting points of a tender must be adequately designed to handle the deadweight and other reasonably foreseeable shock loading that might arise (eg failure of one of the other securing points).

CHIRP could not determine why the previously reported defects had not been addressed by the vessel's senior officers, but it is good practice for defect-reporting systems to assign responsibility for rectifying a defect to a named officer, who should assess and prioritize resolution, and if necessary, take the equipment out of action until this is done.

Safety is everybody's responsibility, and CHIRP wonders why crew boarded a tender with known lifting point issues? It is only by sheer good fortune, the bosun was not killed or permanently incapacitated for life.

Finally: we have previously reported on lifting point failures before, so it is encouraging to hear that Flag State inspectors are now checking the SWL of the lifting points during annual inspections.

Factors related to this report

Design – The tender's lifting arrangement was insufficient for its weight. Deformed lifting points allowed water to enter the boat, a clear sign that they were operating at their limits. The defect is serious and must be reported to management and the manufacturers.

Culture – These known faults were reported but not acted on, highlighting a weak safety culture at a management level. Would you refuse to operate the tender if you found a similar situation on your boat? Would you take the boat out of service?

Alerting – Inform the manufacturers of the issues encountered on the tender and seek clarification of the SWL of the lifting points.

Overconfidence – All lifting equipment has a failure point, mainly when operating at its limits. Take early action to prevent severe injury and loss of life. Never assume all is OK!

M2271

Fouled anchors

Initial report

A 70-meter superyacht was anchored in a very 'tight' anchorage with limited swing circle and depth. There was around 3 meters of depth under the keel, and the swing radius was 130m (160m would have put the vessel aground)

With some bad weather expected, the master decided to put two anchors down. Once the weather cleared, both anchors remained deployed.

When the anchors were retrieved a few days later, both anchor chains were severely twisted and the crew had spent more than 12 hours trying to free them – all the while slowly dragging towards the shallows nearby.

More bad weather was forecast so a decision was taken to release both anchors from their bitter ends to prevent the vessel from grounding. Once both anchors were released, the vessel made its way to port before the weather closed in and a salvage company later recovered the anchors and returned them to us a few days later.

CHIRP Comments

Anchorage locations should continuously be assessed for proximity to known hazards, including under-keel clearance and potential grounding, safe swinging distance from other nearby vessels, and holding ground capability in inclement weather.

Although vessels will generally anchor close to the shore for their passengers' convenience, vessels should be ready to move to a deeper anchorage if the vessel's safety cannot be assured. In this incident the vessel was anchored only 30 meters from a lee shore. Given the expected weather forecast, this was an unacceptable and unnecessary risk.

Using two anchors when expecting bad weather can help to control the vessel's yaw but should be considered a temporary measure only, because of the heightened risk of them being fouled. As soon as the reason for deploying the second anchor has passed, it should be weighed and brought home. An anchor home ready for an emergency is good contingency planning.

Factors related to this report

Capability – Does your bridge team have the necessary knowledge and training to understand and appreciate the use of the ship's anchors? Given the proximity to the shore and other vessels in the anchorage, a vigilant bridge anchor watch is required. What does your SMS advise on anchoring operations?

Teamwork – Continually review whether the second anchor is required and weigh it when the original reason for using two anchors is no longer required.

Situational Awareness – While at anchor, a member of the bridge team should periodically visit the forecastle to monitor the direction and weight of the anchor/s, particularly during changes of tide or wind direction, so that issues can be identified early—i.e. before the chains become twisted. Engines should be ready for immediate use.

Alerting – If you were in a similar situation, would you alert the master that the other anchor should be brought home so it can be used in an emergency?

M2290

Working aloft without proper PPE (again!)

Initial report

This photograph, taken from a nearby yacht, shows crew members working aloft without visible fall arrest equipment (e.g., harness, safety line) or other PPE.

CHIRP Comments

We often receive photographs of similar incidents. When we contact the vessels concerned, we are usually told that these are individual crew members who have not complied with the vessel's SMS for working at height.

The regularity of the photos submitted to CHIRP - often several each month - suggests that such behaviour is normalised across the industry. At best, it demonstrates that many vessels do not adequately supervise their crews, and at worst, it suggests that, on some vessels at least, such behaviour is actively condoned to save time. In reality, donning a safety harness is much swifter than dealing with a severe medical emergency following a fall from a height.

CHIRP has previously highlighted the dangers of working aloft when the crew's safety is completely disregarded. The Flag State has been notified of the matter and is investigating.

Whilst the fundamental principle is that we are all responsible for safety, many crew members will not challenge the orders of a superior officer if it means they will risk losing their employment.

Factors related to this report

Culture – In an industry where reputation is paramount, it is shocking that overt signs of poor safety culture are still prevalent. This dangerous practice must not become normalised. Transforming the culture of safety is not just necessary—it is urgent.

Teamwork – Vessels with a strong teamwork ethic can stand together and challenge unsafe work practices. Have you experienced this type of teamwork on your vessels? If not, CHIRP is here to advocate for you.

M2307

Life raft maintenance was ignored

Initial report

Upon boarding a large superyacht which had been relocated between continents, the reporter prioritised safety checks. They discovered both life rafts needed to be correctly rigged and were mislabelled, with unreadable hydrostatic release units (HRUs). One life raft had a painter line incorrectly secured to the cage instead of the HRU, while the other life raft was not secured to any fixture.

Seeking immediate action, the reporter sent the rafts to a nearby manufacturer for annual servicing. The manufacturer identified serious discrepancies, including oversized strapping that could potentially hinder the life raft canister opening.

During an inflation test witnessed by the yacht manager and deck crew, both rafts exhibited alarming issues: water infiltration, mould, corrosion of some fittings, and disconnected gas cylinder firing pins. Corroded high-pressure gas lines further compromised safety, leading to one line's failure during testing, emitting CO2 into the workshop.

These findings underscored the rafts' unfit condition, with expired flares and unprotected safety equipment, which would have posed grave risks in an emergency.

The new management has carried out a rigorous inspection regime to ensure that the vessel's safety has been brought to a state of operational readiness.

CHIRP Comments

Life rafts are essential life-saving appliances and must be properly maintained. The service company responsible for this maintenance should always be reputable and approved. Unfortunately, no maintenance had been conducted, and inspections — both internal and by the flag and port state—had failed to identify the problems. Additionally, crew members were unaware of the condition of the life rafts, their hydrostatic release units, or their securing points. This highlights a serious lack of safety culture within the company, leaving the crew with equipment that would not function in an emergency.

It is excellent practice, as the reporter demonstrated, to witness the inflation of the life rafts during servicing by the appointed company. Doing so ensures that maintenance standards are upheld and reassures the crew that the life rafts will function correctly when needed. The reporter deserves commendation for prioritizing safety upon joining the vessel. The flag state have been contacted to raise their awareness of poor quality inspections.

Factors relating to this report

Capability – The failure to recognize an unsafe situation with the life rafts highlights a lack of knowledge and experience among the crew at all levels. During safety inspections on your vessel, do you participate in the inspection process? During safety drills, are life-saving appliances (LSA) explained to you? Do you know the correct method for securing the life raft hydrostatic release units?

Culture – Do you feel that the company employing you as crew on board your vessel genuinely cares about your safety?

Alerting – The reporter has gone the extra mile to highlight how poor the safety conditions on the vessel are. These actions have led to a positive change in safety practices.

M2284

Breach of watertight integrity

Initial report

Shortly after a 50+ meter sailing vessel set sail, an unusual amount of spray was noticed on one side of the deck. It was discovered that a shell door had been left open. This door, used as a boarding platform, had a cavity for a guest shower and storage. While it did not open directly to the yacht's interior, it could have caused significant damage, including rupturing hydraulic hoses, if not caught in time.

Pre-departure checks (PDCs) included securing all hull openings. However, due to the hull and door shape, this opening could only be seen by leaning over the side. The shell door sensor was also sometimes faulty, giving inaccurate alarm and monitoring system readings.

Closing the shell door was a two-stage process: first, the ladder section, then the door, and these operations were often done by two crew members at different times. This contributed to the incident, as each crew member assumed the other had completed the task. The desire to be ready quickly led to shortcuts and assumptions without confirming each PDC.

CHIRP Comments

This report involves several critical factors contributing to the safety issue. Firstly, a design flaw meant that it was difficult to see if the shell door was securely closed and sealed. This was worsened by a faulty sensor for door closure status, known for unreliability yet not maintained and thus compromising safety alarms. CHIRP has frequently highlighted sensor issues, especially in exposed areas.

Additionally, time pressure to complete tasks quickly led to shortcuts and assumptions, with crew members prioritising speed over thoroughness. Each assumed the other had completed their part, resulting in communication breakdowns. The two-stage closing process involved different crew members and needed clear communication and confirmation. CHIRP emphasises that positive confirmation of PDC requires a cross-check, like how airlines do when placing doors to manual and cross-checking.

The issue was ultimately alerted not by the faulty sensor but by a crew member's visual observation of unusual spray patterns, indicating a problem missed due to the sensor and poor communication.

In summary, the incident stemmed from a combination of factors: problematic door design, an unreliable sensor, and a fragmented closing process with inadequate communication among crew members. This underscores the need for reliable equipment, thorough checks, and clear communication to ensure vessel safety and watertight integrity.

Factors related to this report.

Communication – Closed-loop communications did not work in this incident during the pre-departure inspections due to pressure to depart on time. Do your pre-departure checklists work effectively when under pressure? Is there a chance that cross-checks on shell doors can be overlooked?

Alerting – If you know of an equipment malfunction, how easy is reporting it on your vessel? Is the reporting process thorough enough to prioritise critical alarm systems for repair?

Design – The alarm and monitoring system's design appears temperamental and needs regular maintenance. Its unreliability created a single point of failure. This should have been addressed as a priority; otherwise, its effectiveness is rendered useless. Have you had alarm systems on your vessel that sometimes did not work? Would a camera provide the additional backup required?

Situational Awareness – The crew performed excellent visual monitoring to note an unusual spray pattern.

7. Engineering

Preventable Incidents and Lessons in Safety

Engineering mishaps—from elevator accidents to fuel contamination and machinery-related injuries—underscore the need for strict safety protocols. Lock-out/tag-out procedures, proper risk assessments, and adherence to maintenance schedules are critical in preventing life-threatening incidents. Safe practices must be non-negotiable, with clear communication and enforcement at every level.

M2207

Potentially lethal near miss: elevator maintenance

Initial Report

Our reporter stated that they were asked to open a vessel's elevator doors so that a cleaning crew could ride to the top of the elevator for cleaning purposes.

The reporter explained to the cleaning crew why this would not happen and how they must plan to do the work. The reporter provided a copy of a flag state incident report highlighting a severe injury to a crew member, which is produced here:

A senior engineer on a large yacht was preparing the passenger lift for a service technician to undertake remedial work on the decorative coverings in the lift shaft. The technician was not affiliated with the lift manufacturer or any lift servicing supplier and was on board solely to attend to the decorative coverings in the lift shaft.

The senior engineer called the lift car to the bridge deck and then entered the lift shaft onto the car top by manually opening the door on the Sun Deck and stepping onto the car top. When the lift doors on the sun deck closed, the lift rose to the sun deck position, crushing the engineer between the car top and the top of the lift shaft. The engineer sustained severe injuries to his legs and ankles and was off work for a considerable time.

The reporter is confident that similar practices are taking place on other ships with elevators and wanted to draw our attention to this. Although nothing happened in this case, there have been incidents where people have been crushed to death when working on the top of an elevator that wasn't properly isolated.

CHIRP Comments

CHIRP contacted the Flag State to find out more information concerning this incident. They readily assisted CHIRP by recounting the details that led to the severe injury.

This work is the same as working at height and must be treated accordingly. A permit to work must be part of the process and form part of the risk assessment. Crucially, a Lock Out - Tag Out - Try Out (LOTOTO) must be implemented and cross-checked before any work is performed. The Try-Out for the acronym LOTOTO is an evolution of the original term LOTO and shows further safety enhancement of the hierarchy of controls.

The report highlights that this incident was categorised as an "optimising violation", where the engineer tried to make the work easier by not fully isolating the main power to the lift.

For most companies, lift maintenance is carried out by the original equipment manufacturer (OEM). However, the ship always has a duty of care to ensure that shipboard safety controls cover the maintenance contractor. It must be applied even if the contractor has its own safety requirements.

CHIRP notes that the engineer was working alone, so there was no one to cross-check or challenge any unsafe behaviour.

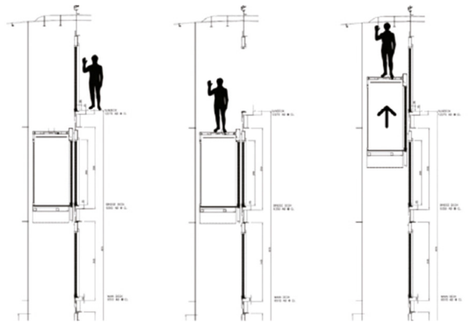
Given the increasing number of elevators used in commercial shipping, CHIRP questions whether an introductory safety maintenance training course should be offered for all ship's officers.

Human Factors

Culture – Capability for this work could be improved, given the high risk associated with lift operations.

Complacency – A casual attitude to the work was displayed, which has probably been evident in the past and has been accepted as the norm. Does your SMS have procedures for lift maintenance? If so, are these made known to contractors working on the lifts?

Capability – Are there introductory safety training courses for the ship's staff in lift maintenance? This is usually left to a qualified lift technician from the lift manufacturers to carry out. Do you involve your lift manufacturer?



M2209

Marpol contravention

Intial report

Several reporters informed CHIRP that their tanker was burning Intermediate Fuel Oil (IFO) with a sulphur content of 2.4% even though the vessel was not fitted with an exhaust gas cleaning system (scrubber) to reduce the sulphur content to below 0.5% as required by Marpol VI reg 14. The ship trades worldwide and is not fitted with an exhaust gas cleaning system (scrubber) to reduce the sulphur content below 0.5%. *(Marpol VI reg 14)*. To avoid detection, they knew the vessel switched to burning marine diesel fuel when operating in ports or emission control areas (ECA).

The reporters were highly concerned about reporting this matter because the vessel is part of the 'dark fleet' of vessels breaking international sanctions. They were fearful of potential reprisals should their identity become known.

CHIRP Comments

Following extensive communication with the reporters, CHIRP raised these concerns to the Flag State, the designated person ashore (DPA), and the Hull and Machinery Insurers.

This report illustrates the lengths to which some irresponsible vessel owners will go to circumvent regulations designed to protect the environment. This is likely because the cleaner fuel is more expensive, and the company puts profit over safety.

The incident also suggests that Flag and Port State inspections should be reviewed to ensure that such behaviours can be detected. Vessels admitting to carrying fuel exceeding the 0.5% limit should be required to demonstrate how they intend to reduce sulphur levels, either through a scrubber system or another method.

The exhaust gas cleaning system should only be considered a temporary measure, and ultimately, all ships should be converted to using low-sulphur-compliant fuel.

Human factors

Culture – The vessel's organisation does not appear to be invested in environmental compliance. This is perhaps unsurprising given that the vessel is involved in 'sanction busting". The requirement to burn cleaner fuels or have scrubbers fitted has been in force for three years. Is your vessel following the rules?

Pressure – The company uses economic pressure to conceal the vessel's non-compliance with Marpol, but if caught, the monetary fines will outweigh any short-term savings.

Local Practice – The practice of a company operating ships which are not fitted with an exhaust gas cleaning system must be ended. If you are operating on a vessel with a similar operation, please get in touch with CHIRP.

M2183

Fire in the laundry room

Intial report

Directly after some tea towels had been in the tumble dryer, they were put in a plastic garbage bag and placed on top of it. After some time, the fire/smoke detector in the laundry room was activated, and the crew was alerted. When entering the laundry room, they noticed smoke from the plastic bag. They managed to put out the smouldering fire with an extinguisher.

CHIRP's comments

Placing hot towels or boilersuits that have not cooled down sufficiently and may still contain oil /grease residues in the fabric in a plastic bag on top of a tumble dryer creates the conditions for spontaneous combustion, which is a common cause of shipboard laundry fires.

Spontaneous combustion occurs when a combustible material with traces of oil/grease in the fibre heats up and reaches its ignition temperature, involving oxygen in the air (oxidation). The oxidation of the flammable material creates the heat.

It is essential to ensure that the tea towels are properly hot washed to remove the grease and oily residues on the cloth before drying them in a tumble dryer. The appropriate type of detergent should be used to ensure they are clean of oily residues.

The tumble dryer should be set appropriately to ensure that the towels go through a proper cycle, including the cooling cycle, so they are not hot when the cycle is completed. The filters in the tumble dryers should be cleaned before each cycle. Blocked filters prevent good airflow and prevent drying of the clothes during the cycle. They should then be separated, placed in the drying room on completion, and never placed on top of the drying machines.

Laundry rooms are particularly high-risk environments for fire, and the cleanliness of the machinery is essential to prevent fires. Detector heads, ventilation fans, FFA, and suitable door-closing arrangements must be adequately maintained to mitigate the fire risk. Regular fire drills should be carried out in this area to train the crew to be alert to the potential for fire.

Given their high use, the equipment should be considered for replacement every five years during a docking period.

Human Factors

Local practices – Follow well-established laundry cleaning procedures and do not adhere to unsafe practices. If you see practices that differ from what you have been trained to do, speak up.

Alerting – Alert those responsible when you see something that is not safe. How often have you visited the laundry room and seen unsafe conditions? Did you report them?

M2234

Fingers amputated in rotating machinery

Initial Report

At about 14:50 hrs LT, the electrician left the engine control room, went to the electrician's workshop to leave his tools, and then went for his work break.

While passing the refrigerant provision plant, he saw dust in the idle No. 2 electric motor compressor. The ETO used a rag to clean the motor's axis and turn the belt.

Also, dust was found on the No. 1 electric-motor compressor. The No. 1 unit was in "auto" mode, and the motor was stopped then. The ETO used the rag again to clean the axis, and at that time, the motor started to operate. The rag got tangled between the motor and the compressor.

In an effort to pull out the rag, the electrician's right hand became caught in the motor's belts. The electrician felt great pain as three last fingers were partially amputated.

The vessel was in port, so the electrician was taken to hospital, where the last three fingers (middle, ring, little) were amputated, about 1/3 of each finger. The injury caused permanent incapacity for employment at sea.

CHIRP Comments

The report highlights the importance of maintaining mindfulness in our actions and surroundings, especially when individuals work independently. Despite being aware of the risks involved, the electrician's decision to conduct unscheduled cleaning resulted in a tragic oversight of essential safety measures. It emphasises the need for a systematic approach, such as **Stop, Look, Think, Assess, and Look Again**, to ensure thorough assessment and awareness before undertaking tasks.

Operating autonomously, ships' electricians may only sometimes have direct oversight, potentially leading to neglect of vital safety procedures. Therefore, it is crucial

to regularly remind the ship's Electro-Technical Officers (ETOs) to seek assistance if they deviate from planned work, typically assessed at daily work planning meetings.

The incident underscores the dangers of machinery operating in automatic mode, which may remain inactive until triggered by specific signals. Implementing robust safety measures like the Tag Out-Lock Out-Try Out (TOLOTO) system is essential to address such risks. This system ensures equipment is adequately secured against unintended operation during maintenance or cleaning activities. Additionally, installing protective guards on equipment adds another layer of defence against lapses in attention or mindfulness.

Human Factors

Teamwork – Considering your last ship, how well did you communicate with the electrician? Were they provided the necessary support, and did they feel they were part of the team?

Distractions – How often do you become distracted from your current intentions to go to a place or do a job of work? Would you alert someone if you were going to make a change of plan and do something different?

Situational Awareness – The refrigeration provision plant runs continually throughout the ship's working life. Its machinery operates periodically in an idle state and can start without notice. Working in this area demands a high level of awareness, and work should not be undertaken unless signed off by another supervising senior officer.

M2267

Rotating shafts create a lethal hazard

Initial report

While on passage, the crew was tasked to clean and paint the engine room tank top. One crewmember was seen working near the vicinity of the tail shaft and narrowly avoided hitting their head on the revolving shaft.

Another crew member stopped work, and a safety meeting was convened to remind the crew members about the hazards and to wear hard hats.

CHIRP Comments

The rotating tail shaft poses a lethal entrapment or snagging hazard, even if wire guards are present. Better planning would have eliminated this hazard by ensuring that maintenance was only carried out when the shaft was stopped, i.e., in port. However, for commercial reasons, there is a move across the industry to conduct as much maintenance at sea as possible to reduce time spent alongside. Engineers are already fully tasked with other roles when in port.

Was this incident the unintended consequence of a management decision?

CHIRP applauds the crewmember who alerted others to the danger and stopped the work from progressing until a safety briefing was held. We encourage all companies to empower their crews with similar 'Stop Work' authority when safety is in doubt.

Factors related to this report

Alerting and Teamwork – Both were demonstrated in this incident: alerting others to the danger and calling a halt on safety grounds is good teamwork.

Situational Awareness – Consider all aspects of the work, including your proximity to hazards, and consider the consequences.

Better planning would have eliminated this hazard by ensuring that maintenance was only carried out when the shaft was stopped

M2167

Galley fire

Intial report

During a final clean-up, a chef was leaving the galley area and noticed smoke seeping from a door in a smaller, less frequently used section of the galley. Concerned, the chef investigated and found that several pizza boxes had caught fire. These boxes had been stored under heating lamps, which, unknown to anyone, had been inadvertently switched on during the cleaning process. Acting promptly, the chef immediately reported the fire to the bridge using the radio communication system, then turned off the heating lamps and retreated to a safe distance near the doorway.

Responding swiftly, the duty deckhand arrived at the scene without delay. Their initial attempt to suppress the fire using the high fog system was met with challenges due to the fire's growing intensity. Meanwhile, another chef joined the effort, moving the burning pizza boxes away from other items to contain the fire's spread. With the escalating situation, the duty deckhand used a foam extinguisher to effectively put out the flames on the pizza boxes and the area surrounding the heating lamps.

Additional crewmembers quickly arrived and took decisive emergency measures, shutting down all electrical systems and ventilation in the galley to prevent the heat from the fire from spreading. Simultaneously, nearby doors were promptly closed to curtail the spread of smoke to other parts of the ship.

The ship's engineers discussed the manual operation of the ventilation system from the engine control room (ECR), aiming to extract the lingering smoke from the galley area efficiently.

From the moment the fire was reported to the bridge, the containment and control of the fire took approximately six minutes.

CHIRP Comments

CHIRP wants to praise the crew and management for having a well-trained crew which handled a potentially dangerous situation swiftly. However, there are a couple of points that CHIRP wishes to highlight. The

bridge was notified by radio, and the incident was responded to. Still, the fire alarm, including a loud vocal alarm (LVA), if fitted, should always be sounded to alert everyone to the existence of a fire, and the ventilation should be stopped if not done automatically. The use of high fog as an extinguishing medium could have been more effective and, in this case, raises the question of whether it is the proper application for a fire that has taken hold.

Heat energy transference from an energy light source can be extremely high, and direct contact is not necessary to start a fire. Materials such as cardboard and plastic coverings will quickly smoulder or melt, even in close contact with regular shipboard lighting sources. A minimum distance warning sign should be positioned near any heat lamp so that flammable material cannot be heated to combustion, or a suitable guard should be placed around the lamp to provide a physical barrier that meets the minimum safe distance if applicable.

Light switches should be labelled appropriately and positioned in sensible locations close to the storerooms they serve. They should also be clearly labelled. If in doubt, ask the electrical officer to check the function of the switch in question.

Storage of any material should always be considered from the point of view of fire risk and how to control that risk. Eliminating the hazard is the best way to reduce risk. If, after the debrief for this incident, the heating lamps are found to serve no operational function, consideration should be given to isolating the circuit. Hence, they become non-operational and labelled as such.

The incident underscores the importance of crew members' vigilance, effective teamwork, and everyone's critical role in ensuring the ship's and its occupants' safety and security. Different crew members' collaborative and swift actions—from the chef's initial discovery to the coordinated response efforts—ultimately contained and extinguished the fire.

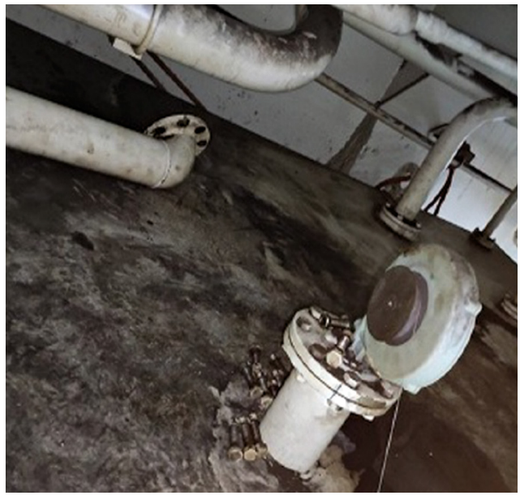
ISM Code Section 8, Emergency Preparedness, mandates regular emergency exercises and drills. This concise response highlights its value. While there were areas for improvement, the crew contained and extinguished the fire. It is a valuable lesson for maritime safety and emphasises the importance of continuous training and preparedness.

Human factors

Situational awareness – The crew response to the emergency was excellent. The probability that the heat lamp switch could be accidentally switched on during the vessel's lifetime and create a heat source to contact packaging stored in the galley store was high.

Communication – This switching arrangement was likely similar to that of other ships of the same class. Communicating the possible hazards to other ships of the same class by labelling the switch and providing safeguards for preventing contact with flammable materials is required.

Design – Better design at the new building stages with built-in safeguards for heat contact and switches in the same room as the lamps would help prevent accidental use.



M2292

Confined space carbon monoxide poisoning

Initial report

A shipyard has been fined after a welder suffered carbon monoxide (CO) poisoning while working in a confined space on a ship in drydock. The welder continued cutting metal for 40 minutes, unaware that his gas monitor had been sounding an alarm.

According to the incident report, the alarm went off just two minutes after the worker began arc gouging, a welding process that uses a carbon electrode, power, and compressed air to cut metal. This alarm should have prompted an immediate evacuation, but the welder didn't hear it and kept working until he started feeling sick and left the space on his own.

The report also revealed that the welder should have been wearing a full-face respirator with its own air supply. However, the respirator was broken, so he used a half-face respirator, which did not protect him from CO.

Additionally, the person assigned to monitor the welder had not been properly trained and was not at the entrance of the confined space for at least 40 minutes. When the welder finally exited, another worker noticed his condition and raised the alarm. Paramedics took the welder to the hospital, and he made a full recovery.

CHIRP Comments

This report highlights several serious safety violations that could have been fatal, especially in the challenging environment of a shipyard or during vessel maintenance. It underlines the importance of clear responsibilities between the ship's crew and the shipyard's contractors.

Dry docks are among the most dangerous workplaces for seafarers and shore workers. With so many tasks happening simultaneously and a shortage of qualified personnel, there is often pressure to finish work quickly. Many shipyards rely heavily on contractors and temporary workers. This places an obligation on shipyard management to ensure these contractors have the skills and knowledge to perform their jobs safely, and to oversee them to ensure that they adhere to documented safe systems of work.

In general, the ship's master is responsible for the safety of the ship, its crew, and anyone else on board, including shipyard workers and contractors. The master also has to ensure that all work areas are safe, typically through a Permit to Work system. Meanwhile, the shipyard must ensure that its workers are properly trained and capable of doing the work safely, with risk assessments and inspections in place to maintain high standards. The provision of welding sentries and other safety personnel is usually agreed upon in formal meetings between the ship and the shipyard unless specified in the contract. CHIRP recommends that company SMS documents are reviewed and updated on drydock safety management to ensure they include all identifiable risks to the crew and the shipyard workers.

In this incident, the space was a confined space rather than an 'enclosed space' (see definitions below), and not properly risk-assessed by the shipyard for hazards arising from the intended work. The company failed to monitor the space while the worker was inside, failed to provide a trained welding sentry, and failed to supply the correct protective equipment for the welder.

Enclosed Space – Defined as a space with limited openings for entry or exit, inadequate ventilation, and not designed for regular occupancy.

Confined space – Defined as a space that is large enough for an employee to enter and work in, with limited or restricted entry and exit, and not designed for continuous occupancy.

Confined space permits require clear communication between workers inside and a safety person outside, usually through radios or visual signals. However, these methods were not in place during this incident, worsening the situation.

This places an obligation on shipyard management to ensure these contractors have the skills

Factors relating to this report

Culture – Shipyards must ensure that the proper equipment is available for safe use and provide appropriate training programs, especially for drydock safety. Given that drydock work is one of the most dangerous environments, the lack of training and experienced personnel was a serious oversight.

Capability – While shipyards do have safety teams, they are often overworked and stretched thin. This means the ship's crew needs to be extra vigilant about enforcing safety measures that are usually routine on board, particularly in a drydock or repair dock setting. Both the welder and the standby crew lacked adequate training, and safety protocols require that only experienced and trained personnel be assigned to such tasks. Furthermore, the task was conducted without the necessary personal protective equipment (PPE), highlighting a lack of operational knowledge. The use of an incorrect half-face respirator further emphasises this gap.

Pressure – Drydocks often have a line of ships waiting for access, creating intense pressure to complete work quickly. Effective management, with careful daily planning, is essential to ensure that all tasks are properly assessed for safety risks. Does your company have tools to ensure that work is being carried out safely under such pressures?

Communications – There was a critical breakdown in communication between the welder and the standby person who was supposed to be monitoring both the work and the atmosphere in the confined space. This lack of communication further endangered the worker.

Teamwork – Teamwork in this situation was inadequate. The standby crew member abandoned their position for over 40 minutes, showing a clear lack of awareness of the dangers involved. Proper teamwork is crucial in ensuring safety in high-risk environments like drydocks.

M2297

Unfinished maintenance creates hazard

Initial report

During routine safety rounds in the engine room, the crew found that the vent pipe for the main engine lube oil settling tank had not been properly resecured back into position after it had been removed during maintenance. This oversight posed a significant risk, as the pipe could fall from the tank top while the ship was underway.

CHIRP Comments

Although the crew deserves praise for their diligent safety checks and quick response in reporting the issue to the chief engineer—especially given the difficult location of the settling tank vent pipe—leaving the job unfinished is unacceptable, given the tank's importance.

If the pipe were to fall to a lower level in the engine room, it could result in fatal injuries or serious damage to nearby machinery. Additionally, the unsecured vent pipe leaves the settling tank exposed to potential contamination.

Work like this requires a detailed toolbox talk and a proper risk assessment. No task should be considered finished until it has been inspected and signed off by a supervisor, and this should be clearly stated in the toolbox talk.

This report raises several questions: were there enough people available to complete the task properly? Did the team get distracted by another task- if so, what procedures were in place to ensure that it wouldn't be forgotten? Were supervision levels adequate?

Factors relating to this report

Situational Awareness – The crew working on the job appeared unaware of the potential consequences of leaving the vent pipe unsecured. If the hazards had been properly identified during the risk assessment and toolbox talk, would the pipe have still been left unsecured?

Teamwork – The crew should have questioned the security of the pipe and taken steps to re-secure it. If you were part of this job, would you discuss the necessary steps with your team? Does your company have a strong safety culture that fosters teamwork and a shared understanding of safety?

Alerting – The crew member who reported the hazard to the chief engineer deserves recognition for their quick action in raising the issue.

Procedures – No task should be considered complete until it has been inspected and signed off by a senior engineer.

No task should be considered finished until it has been inspected and signed off by a supervisor, and this should be clearly stated

8. Deck and Cargo Operations

Addressing Common Hazards

Insufficient training, inadequate supervision, and neglected hazards persist in causing serious incidents. From crew members falling overboard to nitrogen asphyxiation in tanks, failures in safety procedures persist, and whether proper gangway installation, mooring practices, or hazardous cargo management, clear protocols and a culture of reporting concerns without fear of reprisal are essential.

It is heartbreaking to acknowledge the number of incidents involving enclosed spaces, which often lead to loss of life. Our comments on the reports provide valuable guidance, and we urge all seafarers to pay particular attention whenever they must enter an enclosed space. Senior officers should always consider whether it is truly necessary to enter the space and only grant permission if all precautions are in place and all protocols have been followed.

M2137

Personal Injury due to gangway malfunction

Initial report

While walking down the gangway to receive a package being delivered to the vessel, the gangway swung out from underneath them and they fell into the water, hitting their chin and right wrist on the quayside on the way down. They were partially submerged under the dock but kept one hand on it.

Luckily, they were swiftly rescued by a passing dock worker who pulled them out of the water, and although they had a sore head, neck, and arm, they could easily have suffered much more significant injuries.

A post-incident investigation found that the gangway had not been correctly installed and that this was due to poor supervision.

CHIRP Comments

This incident highlights the importance of proper equipment installation and safety certification for superyachts. CHIRP discovered several critical flaws.

Firstly, the design of the securing arrangement was inadequate and had likely been this way since build. The securing bolts were only screwed into the GRP fairing because the backing plate (into which they should have been affixed) was misaligned. This seriously compromised the structural safety of the gangway fixing arrangement.

Secondly, there was no Safe Working Load (SWL) plate next to the fixing point, so the crew could not know the gangway's maximum capacity or working limitations.

The incident raises questions about the quality assurance of the vessel's build, and whether differences between the vessel 'as designed' and 'as built' were properly identified and documented. It is imperative that these are discovered in during the building because they can significantly alter operating limitations. Once the vessel has been handed over to a crew, it is highly likely that such deficiencies will only come to light when the equipment catastrophically fails. Readers may detect similarities with the report in our previous edition about the failure of a lifting eye when hoisting the seaboat.

Collaboration among the shipyard, classification society, and contractors is crucial. Managers for the superyacht need to work closely with all parties involved to ensure proper communication and coordination throughout the construction and installation processes. All equipment should be certified as safe according to the appropriate design specifications before being put into service.

For newly built superyachts, an experienced new-build team should work closely with the shipyard, class, and contractors to identify and rectify potential issues during construction. It is noted that not all owners use a new-build team during the construction and fitting-out phases. If this is the case, management must be responsible for verifying the testing and sign-off for the equipment.

Factors identified in this report

Capability – Always check out the capabilities of contractors employed to carry out work on safety critical or access equipment. Seek assurances that they have the experience to carry out the work and always check the result by someone experienced to sign off the job as being carried out competently. Consult with the shipyard and class society to check if they have signed off on the installation. This cannot be left to the crew to do!

Local practices – When commissioning new vessels or equipment, question and challenge everything (yes, we know this can be very tiring and time consuming, but it can save your life!) Has the installation been completed according to the specification and testing requirements? A member of the management team or new build team should be responsible for ensuring that the work has been completed and tested.

The fact that there was no SWL plate on the gangway indicates that proper sign-off for the installation was not carried out.

M2194

Unsafe tug/barge operations

Initial Report

Our reporter was very concerned about the operational practices used in their tug and barge operations:

"As a new employee and apprentice in the industry, my onboard experience has raised serious doubts about the overall safety culture and protocols in place.

While on the tug, I observed a significant need for more familiarisation and the absence of buddy support. Instead of being paired with a qualified deckhand for essential on-the-job learning, I was left to navigate tasks independently. This absence of mentorship has resulted in a notable gap in my understanding of crucial safety procedures.

More alarmingly, I suffered a severe injury due to exposure to an unlabelled chemical referred to as "carbon remover." The lack of proper labelling and informed usage resulted in severe eye burns. This incident raises concerns about the company's safety protocols for handling hazardous substances.

In addition to these safety issues, I observed unsatisfactory conditions on board, particularly regarding cleanliness. Coupled with the lack of training, this paints a concerning picture of the overall working environment."

CHIRP Comments

CHIRP has raised the reporter's concerns with the Flag State Authority, who have informed CHIRP that they are investigating the claims.

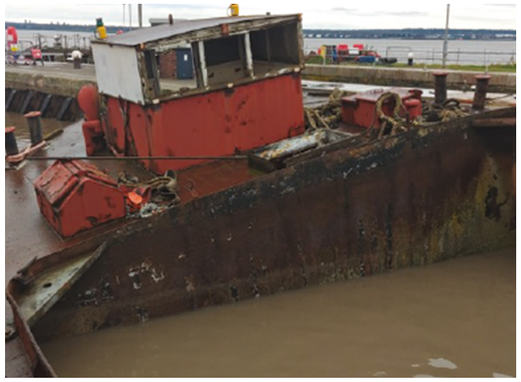
The ISM Code implicitly requires familiarisation and training (6.3, 6.5). This must be done to identify all hazards and reduce the associated risks to avoid significant safety incidents on board the vessel. The reporter has dared to report the company's inadequacies to CHIRP, which is commendable.

Human Factors

Capability – The company's management appears to lack the necessary resource capability to ensure that the crew employed is provided with basic safety familiarisation. Does this situation, as described, apply to you? If so, please get in touch with CHIRP.

Teamwork – According to the reporter, more cooperation is needed to help new joiners in the industry. Does your company operate a mentoring system for new joiners or have a" buddy" system?

Culture – The company's management needs to demonstrate a safety culture. Taking on a contract to tow a damaged barge, which is not fit to be on the water, is a clear example of safety being given a very low priority.



M2211

Open hatches at sea

Initial Report

CHIRP received a report from a vessel at sea. They passed a handy-sized bulk carrier and observed a light within one of the cargo cranes, with two of its six hatches open. At the time, the observed vessel was proceeding at 7 knots in a busy shipping area.

The vessel's AIS gave the vessel's port of destination nearby. While observing the action of the handy-size bulk carrier, the reporter noted that the vessel had changed course to seek shelter in the lee of a nearby island.

It was nighttime, and the weather conditions were Beaufort 3, with a significant swell of 1.0 m and a chance of precipitation.

CHIRP Comments

It is crucial to underscore the high-risk nature of certain maritime operations. Opening hatch lids and operating cranes in a seaway present significant dangers and should be strongly discouraged. Additionally, working at night while the vessel is underway is unnecessary and should be avoided.

The decision to seek shelter in the lee of an island, as reported, indicates that the vessel may have taken this action due to an emergency.

Operating cranes and fully opening cargo hatch lids at sea can subject crane components, such as heel pins, slewing bearings, and sheaves and wires, to additional forces. Even under low swell conditions, the potential for synchronised motion with the sea and swell can lead to uncontrollable swinging movements of the grab, pose a severe threat, and risk damage to the hold, crane, and associated wires.

Cargo hatch lids are designed for operation in port or at sheltered anchorages. Attempting to open them at sea can result in substantial damage to the hydraulic rams controlling the hatch covers and potential misalignment issues.

Regarding navigation, the vessel must adhere to Collision Regulations while underway. Taking appropriate action to avoid collisions, such as altering course, can impact the dynamic forces acting on the vessel's hull, cargo, cranes, and hatch lids. Ensuring strict compliance with safety guidelines and regulations is essential for mitigating risks and ensuring the crew's well-being and the vessel's integrity.

Human Factors

Situational Awareness – The consequences of carrying out operations at sea must be understood. This is a last resort and requires managers' input to mitigate the risks.

Alerting – If cargo is shifting, affecting the ship's stability, then help is required from the nearest coastguard station, and a port of refuge must be sought. Management must be informed.

M2254

Fire – Resin in a container

Initial Report

The fire was discovered as the vessel lay anchored off a port. Following the activation of the vessel's fire alarm, assistance from the shore authorities was sought. Fireboats from the maritime authorities were dispatched. Water cannons were employed to engulf the burning deck container stacks. After several hours, the fire was reported to be under control.

The operation involved firefighting in a restricted space and resulted in damage to the containers on fire and to adjacent containers.

CHIRP Comments

CHIRP commends the crew and shore authorities for their swift action in containing the fire, which posed a significant threat to the vessel. The incident underscores the difficulty of combating fires in confined spaces like those found on ships.

Understanding the contents of containers is crucial for crew safety and vessel integrity. Mis-declared containers, a common issue, can significantly endanger crew lives. In

this case, the containers involved contained resin, which can be transported in various forms, such as bags, drums, containers, or bulk, and may fall under IMDG Class 3 or 4, depending on their state.

Liquid resins, classified as IMDG Class 3, are highly flammable and can form explosive vapours in the air. Some resins may polymerise explosively when exposed to heat or fire.

Both liquid and solid resin spillages can trigger exothermic reactions when they come into contact with other substances in the container. It is essential to exercise due diligence with shippers to ensure proper packaging, stowing, and labelling of goods.

CHIRP recommends providing a photograph of the stowed dangerous goods (DG) container before sealing the doors. This allows the crew to understand the cargo behind the doors, enhancing their awareness of the challenges in combating fires involving such cargoes.

Shoreside firefighters assist the crew in tackling the fire.

Human factors

Capability 1 – Do your ship and shore staff properly know the IMDG code to understand the risks? Have you been given a training course on transporting dangerous goods by sea?

Capability 2 – Does your ship have the necessary firefighting equipment to fight different types of fire in restricted spaces?

Communications – How diligently does your company engage with shippers who ship dangerous goods?

M2252

Hand injury while mooring on a workboat

Intial report

A reporter recently had an incident on board one of their vessels, where a deckhand injured the fingers on their right hand.

The vessel was headed to the pontoon to moor alongside her regular berth. As the vessel's aft port quarter came alongside the pontoon, the deckhand used the boat hook to pick up the 'in-situ' mooring line and began feeding the spliced eye through the fairlead. They then started placing the line over the bitts; this is where the deckhand's fingers on their right hand became trapped, and serious injuries were sustained to three fingers.

CHIRP Comments

Placing a mooring line over the bitts requires very good situational awareness of the vessel's movement, the position of the mooring line, and the crewmember. The risk of hand entrapment is a well-known hazard, and it can be normalised during routine operations.

Once the eye of the mooring line is through the workboat's fairlead, a sufficient length of the mooring line should be available on the workboat so that the eye can be placed over the bitts without the crew's hand making contact with it. This would prevent any sudden snatching of the line, which could trap the crew's fingers if they were holding the eye of the mooring line.

For heavier lines, a short, stout rope can be fastened to the mooring's eye so that it can be hauled over the bitts without any hand contact with the mooring eye.

Vigilance from another crew member, usually the coxswain, to provide a safety cross-check should ensure that hands are always clear of the eye when securing the eye to the bits on the work boat. However, the design of a workboat does not always provide a clear line of sight to the working deck.

Hazards encountered during routine work can be normalised and create greater danger for the crew. Additional safeguards are required, including alerting, training, and changing working practices to keep hands away from the eye of the moorings.

Human factors

Situational awareness – Maintaining good situational awareness when doing a regular job can be demanding. Do you have someone checking on you?

Communication – It Is essential to check on your workmates whilst doing the mooring. Does your workboat have a good line of sight so everyone can see what is happening? Do you have a buddy alerting system?

Design 1 – Is the workboat's design adequate to ensure that mooring transfer operations are optimised for safety? Is the correct length of the in situ mooring line appropriate? Should it be lengthened to allow less chance of finger entrapment? Or should the mooring line not have a mooring eye and be turned up on the bitts?

Design 2 – Management should review the design of the workboats to determine whether they are fit for purpose.

M2291

Fatal tank inspection

Initial report

During a nitrogen inerting operation on a ship, nitrogen was being pumped into the tanks to displace oxygen, which helps preserve the cargo and prevents oxidisation. Before the process began, an able seaman (AB) conducted a final inspection to ensure the tank was clean and ready. However, after the inspection, the ship's captain noticed the AB had not reported back as expected and sent the chief officer to check on him.

When the chief officer arrived, he found the AB unconscious on the lower platform inside the tank and immediately raised the alarm. The captain rushed to the scene, only to find the chief officer also unconscious on the upper platform. A rescue team equipped with breathing apparatus entered the tank and retrieved both men. Sadly, the First Officer could not be revived, while the AB was severely injured and required hospitalization.

The investigation revealed that a faulty valve had caused nitrogen to leak from an adjacent tank, displacing oxygen and creating a deadly environment. Although the crew was aware of safety protocols for confined space entry, they had not been followed. Critical steps such as conducting a risk analysis, performing gas measurements, and issuing an enclosed space entry permit were not carried out before the AB's inspection. Furthermore, although both the AB and chief officer were wearing protective gear, they did not carry personal gas analysers.

This incident highlights serious safety failures that led to the tragedy and underscores the need for strict adherence to safety protocols, proper risk assessments, and the use of appropriate equipment when entering enclosed spaces.

CHIRP Comments

Tank inspections are typically conducted by an officer. In this case, nitrogen likely leaked from an adjacent tank through interconnected pipes, which can happen even with double-valve isolation. CHIRP strongly recommends that vessel Safety Management Systems (SMS) direct that, once inerting has started, all cargo spaces should be considered inert (ie dangerous), even those previously 'certified safe', and entry is prohibited. This episode clearly shows that hazards can, and do, arise through unforeseen leaks during inerting that render safe spaces lethal.

The incident suggests a poor onboard safety culture. The management failed to adequately resource and train the crew or enforce safety protocols. The fact that no one questioned the decision to enter the tank without necessary safety controls suggests a lack of investment in both crew training and a robust safety culture.

These controls would have included critical safety steps, such as wearing a personal gas analyser to detect hazardous gases. The lack of challenge suggests that deviations from safety protocols were accepted practice on board.

Factors relating to this report

Culture (Safety Culture) – The organisation lacks a strong safety culture. Would you enter a tank if directed to do so without a proper enclosed-space entry permit?
The company urgently needs to reassess its safety management system, involving both the flag state, class authorities, and its insurers, to implement substantial improvements in their operational procedures.

Situational Awareness – The crew did not fully understand the operational environment, and there was no intervention from other crew members to prevent the unauthorized entry. This lack of awareness tragically resulted in the loss of a crew member's life.

Overconfidence – Confidence should never be a factor in enclosed-space entry. Such environments are inherently unnatural and carry a heightened risk of incidents occurring due to the numerous potential hazards within a tank. Proper precautions must always be taken, regardless of prior experience or perceived familiarity with the task.

M2300

Open Manhole Cover Creates Hazard

Initial report

During coal cargo discharge operations, the duty officer noticed that the manhole cover on the lower stool between cargo holds 2 and 3 had been left open without any warning signs.

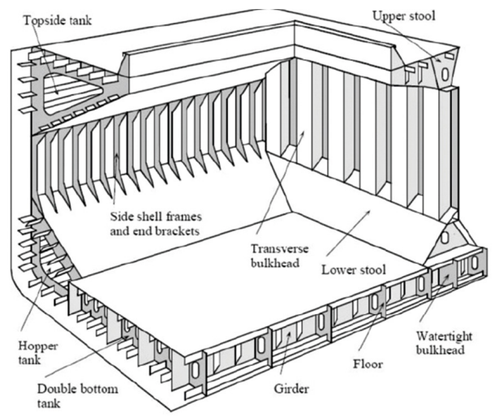
It was later found that work had been interrupted, and the access to the stool was left open before loading began. In a toolbox meeting held afterwards, it was clarified that accessing the stool required an enclosed space entry permit, along with a proper risk assessment. Due to the nature of the cargo, the stool structure could potentially contain dangerous levels of methane gas.

CHIRP Comments

Entry into enclosed spaces requires a permit to work to be opened, which should be signed off and closed once the work is complete. This cannot have been properly done on the previous occasion that it was opened and is a serious violation of the enclosed space entry requirements, indicating significant deficiencies in the ship's safety procedures.

While uncommon, these incidents emphasize the critical need for thorough inspections before loading operations begin. Independent inspectors normally check the holds, but if the new cargo is the same as the previous one then this inspection might have been omitted, or conducted from the deck, leaving the open manhole unnoticed.

The potential risks of these oversights are severe, particularly with cargo entering the stool, which would make retrieval difficult, especially as methane gas could accumulate in the area, creating a fire or explosion hazard.



Factors relating to this report

Capability – The crew lacked the necessary capability to properly carry out basic enclosed space entry procedures. Ensuring that the cargo hold is secure and ready for the next cargo is vital for maintaining safety on board.

Communications – There seems to be a breakdown in communication on the vessel, as evidenced by the failure to secure the manhole lid. This crucial piece of equipment was overlooked, indicating a weak reporting culture that needs to be addressed.

M2276

Unauthorized entry into an enclosed space

Initial report

The company's Head of Safety was conducting a tour of a vessel which had been laid up for over a year, accompanied by potential purchasers. They were witnessed opening and entering a void space, which was correctly labelled as an enclosed space, despite not having a permit to work to do so. They were not carrying an atmospheric gas analyser. They had not completed pre-entry activities, e.g., venting the compartment, having crew and emergency equipment standing by, and an enclosed space entry checklist thoroughly completed and signed off by the master. The reporters approached CHIRP about this matter because any report raised through their company system would have gone directly to the Head of Safety, and they feared reprisals. They did not speak up at the time because they did not want to embarrass a senior company member.

Incorrect enclosed space entry can be lethal (Stock image for illustrative purposes only)

CHIRP's comments

Entering an enclosed space without completing the pre-entry activities is exceptionally hazardous. Last year, 16 seafarers were killed because they entered enclosed spaces where the air was not breathable.

Even if the Head of Safety did not have a seagoing maritime background, they ought to have been aware of these hazards and the safety protocols that should be followed.

We will not speculate on the reasons that led to this specific incident, but people generally deviate from safety protocols for one of several reasons. One is that they underestimate or are unaware of the risks or overestimate their abilities (arrogance). Another is that they feel (real or imagined) pressure to complete a task quickly or without the right resources (lack of time or equipment).

Officers and managers have a special responsibility to lead by example in safety. They set the standards for a company's safety culture.

When CHIRP contacted the company, they immediately understood the seriousness of the incident and responded immediately to ensure that it could not happen again.

Factors related to this report

Communication – In this case, actions speak louder than words. The manager's actions destroyed any safety messaging the company may have communicated to its fleet.

Local practices – An enclosed space entry operation requires a significant number of crew members to be in attendance. Make sure that everyone knows that enclosed space entry is taking place. The permit to work must be distributed to all parts of the ship: the bridge, engine room, the master, and the entrance to the enclosed space. Is this what happens on your ship? How well are enclosed space entry work activities communicated?

Alerting – If you see a safety breach, even by a senior manager, speak up! It is better that they are embarrassed than dead!

Pressure – Be aware that real or perceived pressure can lead anyone to deviate from procedures if they think it will save them time. If you feel under pressure, pause for a moment, and re-evaluate the risks. If you see others taking shortcuts, call it out.

Complacency (under-estimation of risk) – Enclosed spaces can be lethal if incorrectly entered.

Culture – Managers' actions set the tone and standard of a company's safety culture. In this incident, the reporter did not feel safe raising this issue through the company's reporting system. CHIRP exists to capture these reports and advocate for improved safety while protecting the reporter's identity.

M2248

Fall while working aloft

Initial report

The reporter was tasked with cleaning the outboard windows and donned a safety harness, which was secured by a single line to the carabiner on the rail. See the picture showing a typical arrangement below:

As they traversed the rail track from forward to aft, a gap in the track system caused the safety line to detach from the rail, and the reporter fell into the water as the carabiner slipped off the end of the track.

Our reporter stated that they had received no training; that no permit to work was carried out; the track and carabiner system had not been inspected or tested, and that only a single securing point was available.

CHIRP Comments

Working at height is a high-risk activity that requires an industry-standard permit. The number of incidents involving working at height is not decreasing, and Flag States and management companies are strongly encouraged to focus on this aspect of superyacht safety.

The requirements are straightforward: working at height is only allowed if a risk assessment has been carried out and a permit to work is thoroughly completed.

A permit to work at height requires that safety equipment, including PPE, be thoroughly checked. It also requires the crew to be adequately trained and supervised. Completing it is not a tick-box exercise and requires considered thought. All stages of the permit need to be answered, especially by the crew carrying out the work. The crew must be empowered to stop the work if the permit has not been completed properly.

The carabiner rail to which the line from the harness was attached must be inspected and form part of regular maintenance inspections. The gap in the track system would be apparent to see if it was properly inspected. Inspections of the carabiner rail must form part of regular maintenance checks. In this case, the rail should have been taken out of service until it was repaired.

CHIRP highlights the design of these frequently used safety rails, which require extensive maintenance due to their many moving parts. Retrofitted rail connections may not be as strongly connected to the superstructure as those fitted at the new building stage. CHIRP recommends that the class attend to advise on superstructure connections for retrofitted rails.

All parts of the safety harness must be secured entirely; no buckles or straps must be left undone, as all parts of the harness play a part in absorbing the body weight in the event of a fall. The safety line or lanyard must be connected to the safety ring at the back of the harness and not on the front due to the possibility of severe spinal injury in the event of a fall.

Crucially, there must always be a rescue plan to retrieve anyone who has fallen while wearing a safety harness. The time to recover a fallen crew member suspended in a harness should be at most 15 minutes, as blood circulation will be seriously affected and could be lethal.

Factors related to this report

Alerting – No one had reported the defective safety rail, so no action was taken. Does your PMS system require that the safety rails be regularly checked? How do you report a safety failure? Has this been explained to you as part of your familiarisation process?

Teamwork – If you have not received training or are uncertain about using the safety equipment, seek help from others. Never assume that everything is okay. Falling into the water versus falling to the jetty has two different outcomes!

Pressure – Never be pressured into doing something you have not been trained to do. In this case, insist on being supervised and demand that a working-at-height permit be completed. When you sign the permit to work, do you check that everything has been completed, including the risk assessment?

Capability – Have you received training in conducting a risk assessment and completing a permit to work?

M2206

Personal injury due to not following a permit to work for working aloft

Initial Report

The OOW spotted a faulty navigation masthead light warning on the bridge's navigation light control alarm system while the vessel was at sea. The issue was reported to the chief engineer and master, but due to the sea state, the decision was made to wait until the vessel was alongside before going aloft.

Immediately upon coming alongside, while the rest of the crew were busy rigging the gangway, the chief engineer climbed up the mast without completing the permit to work for working aloft or wearing a safety harness. While the CE was up the mast, the wake of a passing vessel caused the vessel to roll violently, causing the CE to fall and break their arm.

CHIRP's comments

The decision to delay attending to the light while underway at sea was correct. Once alongside, vessel motion can still be affected on both large and small ships, especially as the ship's stability can change significantly during cargo, bunkering and ballasting operations.

Contacting the port authority to check on vessel movement for the time the work is carried out is standard practice.

The fact that the Chief Engineer went aloft so swiftly indicates a self-imposed time pressure to get the task done as soon as possible. Similarly, not following safety procedures before going aloft suggests that the chief engineer succumbed to optimism bias (also known as the "It won't happen to me" syndrome). More concerningly, it points to poor safety culture and safety leadership: if others see the chief engineer (who is very often the ship's safety officer) taking safety shortcuts, how does this incentivise the more junior crew members to follow safety procedures?

Human Factors

Culture – When it comes to safety culture, senior officers must lead by example and model the safety behaviours they want their team to adopt. As the saying goes, it is better to set an example than to be one!

Alerting – Making sure that the master/safety officerand crew were aware that the light was going to be fixed would have alerted everyone to the requirement to use the permit to work for going aloft. Does your vessel operate a permit-to-work system when going aloft?

Situational awareness – Being aware that even in a port where conditions are not affected so much by environmental factors, you can sometimes overlook the dynamic action on your vessel by passing vessels.

Pressure – here appeared to be pressure to get the work done. This work should have been allocated to crew members who are more used to working aloft. The permit to work for going aloft could have been supervised by the chief engineer. How do you control your permits to work? Do you know the rank of your safety officer?

9. Bridge and Navigation

Avoiding Groundings Through Better Planning

A grounding incident highlights the consequences of distractions, poor preparation, and ECDIS mismanagement. A master preoccupied with administrative issues and an ineffective bridge team led to avoidable errors. Human factors remain a leading cause of navigational failures. Thorough passage planning, clear communication, and proper use of navigation systems are crucial to safe operations.

This section is notable because it contains the first report we have received relating to autonomous vessels, also known as marine autonomous surface ships (MASS). The rules governing these vessels are still not widely understood, so we have included some helpful guidance that is worthy of careful study.

The report highlighted a troubling incident where two autonomous MASS vessels operated unpredictably, violating COLREGs and forcing a merchant ship into evasive action. This raises concerns about the safe integration of MASS into conventional shipping lanes.

While the IMO is working on a MASS Code, current regulations largely focus on vessels over 500GT. In the meantime, industry-led frameworks like the UK MASS Code of Practice provide guidance, but awareness among seafarers remains low. Training gaps in STCW courses leave crews unprepared for encounters with autonomous vessels.

MASS is here to stay, offering economic and environmental benefits, but safety hinges on regulatory clarity, proper oversight, and improved industry-wide understanding. As adoption grows, proactive measures—including robust training and compliance—are essential to prevent future incidents.

IMarEST remains at the forefront, supporting safe and effective MASS integration into the maritime sector, and we are fortunate to have an Insight article from them to conclude this section. It contains vital information that will be useful to all of us, and we urge you to study it carefully.

M2246

Grounding

Initial Report

A reporter recounted an incident to CHIRP involving a grounding that resulted in the loss of jobs for the reporter and another officer. The incident caused minor damage to the vessel's hull bottom but no physical injuries. Contributing factors were distractions and poor preparation.

On the day of departure, the master was preoccupied with obtaining a crew visa and addressing engineering problems. Due to the visa requirements, the vessel was already a few days late setting sail for the 10-day passage to return to its home port. Despite these challenges, the passage plan was completed by mid-afternoon. However, a critical issue arose with the primary ECDIS system, displaying incorrect charts for the planned route. Despite this, the decision was made to depart using information from other sources, including paper charts and a secondary ECDIS display, and knowing there would be a pilot onboard.

During the vessel's unmooring, the pilot's apparent distraction with their phone hindered communication and coordination. Despite the very brief master pilot exchange for the outbound passage, there appeared to be no overall control over the vessel's navigation. Concerning the pilot's action, there was a lack of appropriate response and communication to some basic navigational queries, including the buoyage, during which time the vessel strayed off course. The master's intervention to get the vessel back on the track came too late to avert the grounding.

Following the grounding, the crew responded promptly and effectively. Efforts to refloat the vessel at the next high water were successful, with minimal damage sustained. Subsequent inspections found no significant damage to the vessel's structure or running gear after an underwater inspection was carried out in accordance with the port authority's requirements.

CHIRP Comments

This grounding incident stemmed from a series of human factors issues, indicating a breakdown in navigational procedures and communication on the vessel.

Upon arriving at the bridge, both the master and the pilot were distracted, compromising their ability to focus on safely navigating the vessel. This distraction likely contributed to a lack of thorough understanding and discussion of the passage plan, which had only been completed shortly before departure. As a result, there was insufficient time for the master and other officers to assess and approve the plan properly.

Responsibility on the bridge was diffuse, leading to no action or delays in decision-making and a failure to take necessary actions to correct deviations from the passage plan. Furthermore, the inability of instrumentation alarms, specifically the ECDIS and echo sounder, to activate when the vessel deviated off track and entered shallow waters suggests potential technical failures or improper setup of these systems.

Despite having alternative navigation systems, such as paper charts and another ECDIS system, there was no evidence that these were utilised to verify deviations from the passage plan. This highlights a missed opportunity to cross-reference information and mitigate the risk of navigational errors.

Overall, this incident underscores the importance of effective communication, thorough planning, crew training, and the proper functioning of onboard systems in ensuring safe navigation at sea.

Distractions 1 – Too many issues affected the master during this very hectic departure, and insufficient attention was given to the vessel's navigation.

Distractions 2 – The pilot was also distracted with phone calls and did not assist the bridge team with adequate navigational information.

Teamwork 1 – Bridge teamwork was dysfunctional, creating an unsafe condition for navigation. The vessel was left with no overall control until the grounding.

Teamwork 2 – Applying for a visa should be delegated to another member of the officer complement or the ship's agent.

Pressure – Commercial pressure to return the vessel to its home port created unnecessary stress for the master. Visa issues, engineering problems, and bridge navigation issues were compounded by a pilot who appeared detached from the job he was employed to perform.

M2286

OOW asleep on watch!

Initial report

CHIRP received a report about an officer who regularly slept on the bridge during solo morning watches (0400-0800) and relied on automated navigational alarms. Several crewmembers witnessed this behaviour over the course of a week.

CHIRP Comments

Sleeping while on a watch is a severe breach of the international collision regulations, and CHIRP contacted the vessel's Flag State, which is investigating.

Normally, no officer deliberately sleeps on a watch, especially a solo watch. In many cases, the onset of fatigue creates this desire to close one's eyes on watch and go into a deep sleep. CHIRP suspects that the individual is suffering from exhaustion to the point that their judgement is impaired, causing them to take unacceptable risks during their bridge watches.

CHIRP questions what working practices are taking place on the vessel operating without a dedicated lookout to create such a state of tiredness. Or is the officer deliberately ignoring their safety responsibilities and breaking the rules? Either way, the safety of the ship is severely compromised.

Factors related to this report

Fatigue – The incident report highlights the officer's lack of concern about the severe lapse in navigational safety. Clearly, the officer is suffering from sleep deprivation and has reduced mental capability and decision-making. Fatigue kills: the company must take steps to manage it.

Alerting – CHIRP was alerted to the issue, but why was the master not alerted? This serious safety situation affects everyone on board - speak up or contact CHIRP. The officer should be able to speak with the master and inform them of their fatigued state. This may likely apply to other officers and crew on the same ship.

Culture – There appears to be a very poor safety culture on the ship, which may be reflected within the company. Does anyone care about safety? This issue would not have happened if the company operated a just culture and senior officers demonstrated kind leadership.

Teamwork – Good teamwork by the officers and crew can assist everyone in challenging, unsafe situations. Looking out for each other and feeling confident about reporting personal well-being issues is a sign of good teamwork. This takes time to achieve and is driven by a good company safety culture.

M2304

Collision Regulations and autonomous maritime vessels

Initial report

Our reporter recounts an encounter between their large vessel in the North Atlantic and two small autonomous surface vessels, also known as Maritime Autonomous Surface Ships (MASS). Although both vessels were detected on AIS and radar from 7 nautical miles away, visual detection was difficult, even in mild sea conditions.

About 45 minutes later, a second, slightly smaller uncrewed vessel was encountered. It was initially assessed to be drifting, with a CPA of 0.2 nautical miles on the starboard side, and the ship altered course to port to increase the CPA to 0.4 to 0.5 nautical miles. However, as the ship approached, the uncrewed vessel increased speed to about 5 knots and started crossing the ship's bow at close range requiring an immediate alteration of course to result in passing at a safe distance.

CHIRP Comments

There are an increasing number of uncrewed vessels operating at sea, and the IMO is developing a MASS Code for adoption as early as 2025. In the interim, existing regulations such as SOLAS and the Collison Regulations apply, and vessels must have a designated human 'master' regardless of the level of autonomy (see table). This person, if not on board, will work from a remote location and remains obliged to maintain a proper lookout by all available means (ColReg rule 5). Presently this includes transmitting its location on AIS and monitoring VHF – even uncrewed vessels should respond to radio calls!

Degree	Definition
1	Some processes automated but there are seafarers on board
2	Remotely controlled ship with seafarers on board
3	Remotely controlled ship without seafarers on board
4	Fully autonomous ship

Table 1: The IMO's 4 degrees of autonomy

Vessels encountering autonomous vessels should treat them as they would any other vessel and apply the ColRegs accordingly. This includes passing at a safe distance, and not making the mistake of approaching closer because of their small size.

Mariners encountering uncrewed surface vessels (USVs) during commercial and recreational navigation are encouraged to identify and record the AIS information and report any deviations from the Colregs to CHIRP Maritime (reports@chirp.co.uk) Such reports will

contribute valuable insights into the operational challenges and safety considerations associated with autonomous vessels, supporting the development of best practices and regulatory measures for safe navigation around USVs. By sharing these experiences, mariners will play a critical role in enhancing awareness and ensuring that the transition to greater autonomy at sea prioritises safety for all.

Factors relating to this report

Situational Awareness – Autonomous vessels can be very small – keep a good lookout and refer to AIS and Notices to Mariners to identify if they are operating or being trialled near your area of operations.

Communications – It might feel counterintuitive or unreasonable but do contact the vessel by VHF if in doubt regarding their intentions.

M2302

Collision at anchor

Initial report

A wind shift caused the swinging circles of two superyachts anchored overnight in close proximity to overlap. One vessel noticed this and started its engines to manoeuvre away from the other, but it could not do so before they inevitably collided. The other vessel did not respond to verbal and radio calls from the first vessel until after the collision because its bridge was unmanned. Luckily, the damage was minimal.

CHIRP Comments

Although at anchor, a vessel is still at sea and should ideally remain on sea watches, including with a manned bridge. However, many smaller vessels do not have sufficient personnel to stay on sea watches and simultaneously meet guests' needs.

In our first edition of Superyacht FEEDBACK (Report M2088), we noted that one of the more difficult tasks for a captain is to moderate the owner's or guests' expectations. This includes the uncomfortable conversation that their vessel might not be crewed to safely operate at sea overnight—even at anchor—while simultaneously running tenders ashore and supervising the use of water toys, etc.

This is one instance where a comprehensive risk assessment, which refers to scenarios like the one above, can help. And as we noted in that first edition:

"Shrewd owners will accept that the captain is looking after their interests... [and if they don't]... this should be a 'red flag' to the captain that safety on board at some point will be compromised. Better to seek alternative employment."

Factors related to this report.

Situational Awareness – The bridge should remain operational to identify and control reasonably foreseeable hazardous scenarios even when at anchor. This includes timely observation of changing weather conditions and the risk of collision.

Culture – Safety is always paramount, even if that means disappointing owner/guest expectations.

Local Practices – Review existing risk assessments regularly. Refer to incident reports published by CHIRP and others to identify potential safety risks.

Does your equipment fit meet contractual spec? (Stock image for illustrative purposes only)

M2279

Commercial pressures placed before safety concerns

Initial report

Our reporter informed CHIRP about contractual requirements for a recent operation involving an Offshore Supply Vessel (OSV) and Floating Production Storage and Offloading vessel (FPSO).

The OSV was a DP 1 vessel and did not require a follow-target function for normal operations. However, given the FPSO's movement in the operating environment, having one was a contractual requirement.

According to the agreement between the contractor and the charterer, the contractor had to equip the vessel with two reference systems: a Differential Global Navigational Satellite System (DGNSS) and either a laser or microwave system capable of 'Follow Target' functionality. These systems are essential for FPSO operations. They ensure that a specified distance is maintained between the vessel and the FPSO and adjust the angle between their longitudinal axes to match any horizontal rotation of the FPSO.

Under pressure from the client's schedule, the master proceeded with the operation despite his vessel not having the required 'Follow Target' function. This decision led to potentially unsafe conditions, requiring the crew to manually adjust the vessel's position against visual references for a 12-hour fuel oil transfer. The Designated Person Ashore (DPA) cautioned against operating under such precarious circumstances, but the master continued anyway. The crew realised safety was being compromised to meet client demands and reported this to CHIRP.

CHIRP Comments

The agreement between the contractor and the charterer stipulated specific technical requirements for the OSV, including having a 'Follow Target' function and being capable of dealing with the expected movement velocities of the FPSO, which can be considerable. This function is crucial for maintaining a safe distance and alignment with the FPSO. The OSV in question was only equipped with a DP 1 (Dynamic Positioning Class 1) system, which typically does not include a 'Follow Target' capability. This discrepancy meant that the OSV did not meet the contractual requirements necessary for safe operations with the FPSO.

Despite not meeting these requirements, the OSV's master proceeded with the operation under pressure from the client's schedule. This decision led to potentially unsafe conditions because the vessel lacked the automated capability to maintain safe proximity and alignment with the FPSO. The crew recognised the compromised safety conditions during the operation, particularly during a critical 12-hour plus fuel oil transfer. They resorted to manual adjustments based on visual and radar references, which are less precise and more prone to error compared to automated systems like 'Follow Target'.

The crew's awareness of the compromised safety and their decision to report this to CHIRP indicates a responsible approach to safety reporting and an understanding of the potential risks involved. The Designated Person Ashore (DPA), who is responsible for ensuring compliance with safety and environmental standards, ensuring adequate resources are applied, and providing a vital link between the vessel and the company, cautioned against proceeding, given that the "follow target" function was required. This caution from the DPA underscores the seriousness of the safety concerns. Despite this explicit advice, the master proceeded with the operation, disregarding the DPA's recommendations. This decision not only heightened the risk involved but also called into question the company's safety culture and organizational structure. The master's choice to ignore the DPA's advice raises significant concerns about the prioritisation of safety within the company and highlights potential flaws in its risk management and communication practices.

In recent years, several collisions have occurred aboard vessels undertaking DP operations near mobile assets, such as drilling vessels and FPSOs. While having a relative position referencing system fitted, such as the "Follow Target" function, training on its use is essential.

CHIRP would like to acknowledge the Information note provided by the *International Maritime Contractors Association (IMCA) No 1650- November 2023*, which details the Important Position Reference Systems (PRS) considerations when operating close to an asset that is not rigidly fixed to the sea bed.

This caution from the DPA underscores the seriousness of the safety concerns

Factors related to this report

Pressure – Pressure to meet commercial objectives overruled safety considerations regarding the crew, the FPSO, and the environment. What would you do in the same situation, given the request by the DPA to stop the operation from being carried out due to a lack of safeguards?

Teamwork – The master's behaviour does not indicate teamwork. The master is acting alone, and the crew do not appear empowered to exercise 'stop work' procedures. What would you have done in this situation?

Culture – Company culture applies to everyone, and the master has a responsibility to demonstrate the company culture through actions.

Capability – Would you operate outside the requirements if your vessel lacks the capabilities to meet dynamic positioning standards? In this case, are DP safety standards being disregarded?

Local Practices – Keep local practices from becoming a new standard. Ask the company to install the necessary equipment to meet compliance requirements.

Insight

Navigating the Challenges of Autonomous Shipping

A recent CHIRP Maritime report highlighted a troubling incident where two autonomous vessels (MASS) operated unpredictably, violating COLREGs and forcing a merchant ship into evasive action. This raises concerns about the safe integration of MASS into conventional shipping lanes.

While the IMO is working on a MASS Code, current regulations largely focus on vessels over 500GT. In the meantime, industry-led frameworks like the UK MASS Code of Practice provide guidance, but awareness among seafarers remains low. Training gaps in STCW courses leave crews unprepared for encounters with autonomous vessels.

MASS is here to stay, offering economic and environmental benefits, but safety hinges on regulatory clarity, proper oversight, and improved industry-wide understanding. As adoption grows, proactive measures—including robust training and compliance—are essential to prevent future incidents.

IMarEST remains at the forefront, supporting safe and effective MASS integration into the maritime sector.

CHIRP MARITIME ADVISORY BOARD

Maritime Autonomous Surface System (MASS) Operations Updatemfrom the Institute of Marine Engineering, Science and Technology Representative

Richard Alan Cartwright - BSc MA CEng FIMarEST FIMechE Technical Advisor – IMarEST Small Ships Special Interest Group

October 2024

At a recent CHIRP Maritime Advisory Board meeting, a report was discussed at which two autonomous vessels (Maritime Autonomous Surface Systems – MASS) operating in open waters moved erratically and entirely contrary to the COLREGs, and seriously disadvantaged a large merchant ship that (under COLREGs) had right of way. Because the movement of the MASS vessels, the ship had to take avoiding action but could have been in danger of running down one of the vessels. Although the MASS vessels' radar reflections were intermittent (due to their small size), the vessels were identified as MASS through their AIS returns. They were painted grey, but we are aware that many MASS manufacturers/operators use grey colouring as a means to attract the defence market, and it is perhaps unlikely that these were the UK MOD's or other nation naval assets. The merchant ship's report to CHIRP Maritime included a plot of the merchant ship's and MASSs' tracks, from the AIS data, which corroborated the report and erratic / non COLREG compliant movements of the MASS vessels.

In the subsequent discussion, it became clear that the understanding among seafarers of the world of maritime surface autonomy is – understandably – limited by the lack of information available in STCW training or other courses to seafarers (and to regulators and safety groups, such as CHIRP) of the current capabilities, limitations, state of technology and, indeed, terminology current within the MASS sphere.

As well as representation to CHIRP, my professional role involves some significant involvement with the MASS sector. Until recently, I was surveying and supporting the certification of a number of MASS vessels, through a UK Certifying Authority. I have been contributing to the Maritime and Coastguard Agency's Workboat Code Edition 3 and Annex 2 (WB3), that now allows for remotely operated uncrewed vessels of up to 24m length on the load line, to be assessed, surveyed and certified as workboats. As a member of the Institute of Marine Engineering, Science and Technology's (IMarEST) Small Ships Special Interest Group and MASS Special Interest Group, I have contributed to the Maritime UK MASS Code of Practice, most recently helping to update the Code to encompass the requirements of WB3 for MASS.

Many seafarers see MASS as a threat, perhaps to their jobs because of perceived changes to crewing requirements, or because they see these vessels as a physical nuisance (as reported to CHIRP in this recent incident). However, as an element of maritime activity, MASS is 'here to stay' and, undoubtedly, will increase, as the economic, capability and environmental advantages that may be gained through such automation are recognised and developed.

However, the world of MASS is becoming regulated. IMO has a considerable work package under way to develop a MASS Code, that will (eventually) become international law – albeit some years away, at present. However, current proposals are that the IMO MASS Code will apply (like some other Conventions) to vessels of over 500GT. For smaller vessel operations, the UK has developed and published an industry MASS Code of Practice, through Maritime UK, with Edition 7 available at this link:

https://www.maritimeuk.org/priorities/innovation/maritime-uk-autonomous-systems-regulatory-working-group/mass-uk-industry-conduct-principles-and-code-practice-2023-v7/

It is expected that the UK MASS Code of Practice Edition 8, including the references to the MCA WB3, will be published in late November 2024. While the UK is perhaps not alone in publishing such Codes of Practice, the comprehensive nature of the Maritime UK Code means that it is recognised and used by many international MASS operators, to represent 'best practice'.

This comprehensive Code of Practice deals with all aspects of MASS operations, to help operators work to industry-recognised best practice and within technical, operational and navigational hazard identification and risk assessment, with all risks reduced to As Low as Reasonably Practicable (ALARP), certainly in comparison with the operation of conventional crewed ships and vessels. Among the fundamentals of the UK Code, and also the MCA's Regulations are:

- MASS vessels are considered as 'Ships', in legal definition and, therefore – however remotely or autonomously controlled – are required to obey COLREGs and 'keep a good lookout' as much as any conventional ship, albeit from the Remote Control Centre, which may be on an adjacent ship or on land either near (by VHF) or far (by satellite sensor and controls link). The UK Code and MCA Regulations require MASS vessels to be equipped with reliable and duplicated systems for observation and sensing of the navigational situation, such that situational awareness at the Remote-Control Centre, is equivalent to that on the bridge of a conventional ship and duplicated systems, to ensure that control can be maintained, even in the event of a breakdown in one means of communications or a single control system.
- Under the UK Regulations, MASS vessels are required to have means of demonstrating their navigational status (under way, not under command, etc.), and also to have means of VHF communication with ships in their vicinity, through relay from and to the MASS vessel to and from the Remote-Control Centre, where control and monitoring is taking place.
- The Master of the MASS vessel is responsible for all aspects of safety and control of the vessel in the same way as the Master of a merchant ship or Captain of a naval ship. The MASS Operator similarly carries the same responsibility for 'good lookout' and control of the vessel in accordance with COLREGs, as the Officer of the Watch of a conventional ship.
- Training and qualifications for MASS Masters and MASS Operators are based upon equivalent maritime training, experience and qualifications for conventional workboats and ships of equivalent size and operation. For MASS vessels above the scope of WB3 (24m length on the load line), STCW training and certification form the basis for remote and autonomous Masters' and Operators' qualifications, with appropriate MASS training provided by the operating company. An MCA Marine Guidance Note (MGN 703) is being published to identify the additional areas of MASS training and qualification expected by the MCA.

The UK MASS Code and MCA Regulations include significant other requirements upon the MASS vessel, Remote Control Centres and operating companies, that should help to ensure that such operations as safe as conventional ship and vessel operations. However, as with conventional ships and vessels, things sometimes go wrong, and incidents will occur. But, if awareness of MASS vessel capabilities and limitations, and the regulatory and best practice requirements upon MASS operators, to ensure 'a good lookout' and full compliance with COLREGs, are understood more widely in the maritime community, then – hopefully – such incidents as recently reported to CHIRP should be rare, despite the growing numbers and areas of operation of MASS vessels, and the completely understandable requirement upon MASS Masters and Operators to obey the 'Rule of the Road', and control their vessels accordingly.

IMO has a considerable work package under way to develop a MASS Code

Further information is available from the IMarEST, whose Special Interest Group members are closely involved with all aspects of MASS operations.

The 2023 version of the Maritime UK Code of Practice for MASS has been updated (it is each year, as this is a fast-moving technology), and the 2024 Edition, published in November for this year (and the future), published through SMI. Here is a link:

https://www.maritimeindustries.org/application/files/9417/3375/8340/MASS_COP_2024_V8_pages_V1.1.pdf

10. Appendices

Appendix I: **Acronyms**

AB	Able Bodied Seaman
ACGIH	American Conference of Governmental Industrial Hygienists
ADA	American Disabilities Act
AIS	Automatic identification system
ARPA	Automatic Rader Plotting Aid
BA	Breathing Apparatus
BRM	Bridge Resource Management
BS	British Standards
CBM	Conventional Buoy Mooring
CD	Compact Disc
CHIRP	Confidential Human Factors and Incident Reporting Programme
CNIS	Channel Navigation Information System
COLREGS	The International Regulations for Preventing Collisions at Sea
COG	Course Over the Ground
COT	Cargo Oil Tank
CPA	Closest Point of Approach
DGPS	Differential Global Positioning System
DPA	Designated Person Ashore
ECDIS	Electronic chart data information system
EEBD	Emergency Escape Breathing Device
EMSA	European Maritime Safety Agency
ER	Engine Room
ERM	Engine Room Resource Management
EU	European Union
FRC	Fast Rescue Craft
GISIS	The International Maritime Organization's Global Information System
GPS	Global Positioning System
H_2S	Hydrogen Sulphide
HE	(The) Human Element
HELM	Human Element Leadership and Management
HRO	High Reliability Organisation(s)
HSE	Health, Safety and Environment
IG	Inert Gas
IMO	International Maritime Organization
IMCA	International Marine Contractors Association
IMPA	International Maritime Pilots Association
ISM	International Safety Management Code.
ISGOTT	International Safety Guide for Oil Tankers and Terminals
ISO	International Organization for Standardization
ISWAN	International Seafarers Welfare and Assistance Network
IT	Information Technology
ITF	International Transport Worker's Federation
LOP	Letter of Protest
MAB	CHIRP Maritime Advisory Board
MAIB	Marine Accident Investigation Branch
MARPOL	International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
MASS	Maritime Autonomous Surface Ships
MCA	The United Kingdom Maritime and Coastguard Agency
MEPC	The Marine Environment Protection Committee – IMO
MFB	Maritime FEEDBACK
MGN	Marine Guidance Note
MLC	Maritime Labour Convention
mmwg	millimetres of water gauge
MNM	Merchant Navy Medal
MOU	Memorandum of Understanding
MPX	Master / Pilot Information Exchange
MSC	Maritime Safety Committee (IMO)
MSF	Marine Safety Forum
NB	Nota Bene
NM	Nautical Mile
NOx	Nitrous Oxides
OOW	Officer of the Watch
OS	Ordinary Seaman
PACE	Probe, Alert, Challenge, Emergency
PDF	Portable Document Format
PEC	Pilot Exemption Certificate
PM	Particulate Matter (Nox and Sox)
PM	Planned Maintenance (System)
PPE	Personal Protective Equipment
Ppm	parts per million
PPU	Portable Pilot Unit
PSC	Port State Control
QA	quality Assurance
RHIB	Rigid Hulled Inflatable Boat
RIB	Rigid Inflatable Boat
RN	Royal Navy
RPM	Revolutions per Minute
SCABA	Self-Contained Breathing Apparatus
SI	Statutory Instrument
SMS	Safety Management System
SOG	Speed Over the Ground
SOLAS	International Convention for the Safety of Life at Sea (SOLAS), 1974 as amended
SOx	Oxides of Sulphur
STCW	The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978 as amended
STEL	Short Term Exposure Limit
SWL	Safe Working Load
TCPA	Time to Closest Point of Approach
TDG's	Tactical Decision Groups
TLV	Threshold Limit Value
TSS	Traffic Separation Scheme
TWA	Time Weighted Average
UCL	University College London
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
UKMPA	United Kingdom Maritime Pilots Association
US	United States
USCG	United Sates Coast Guard
VHF	Very High Frequency (radio)
VLCC	Very Large Crude oil Carrier
VTS	Vessel Traffic Services

Appendix II: The Maritime Programme – How it works

CHIRP receives reports from commercial and recreational seafarers, passengers, port workers and members of the public who have either experienced a near-miss or incident, or who have concerns about safety that they wish to report. Reports can be submitted online (http://www.chirp.co.ul/maritime www.chirp.co.uk/maritime), through our app, or by email (mailto:reports@chirp.co.uk reports@chirp.co.uk).

We do not accept anonymous reports, because they cannot be validated. All validated reports are acknowledged and investigated.

We encourage reporters to use official reporting channels if they feel safe and confident to do so. We are also able to do so on their behalf, and thereafter advocate for them if they wish, while protecting their identity.

Where necessary, we will contact 3rd parties (eg the company concerned, port or flag state etc) to get more information about an incident or to seek resolution of an issue. In such discussions, the reporters identity is never revealed.

To further protect the identity of reporters, we delete identifying information from our database and other electronic systems once we have gathered sufficient information about a report. After a maximum of 63 days, this is also removed from all back-up systems, and the information is irretrievably deleted. At this point, CHIRP cannot make contact with the reporter. The reporter is, however, able to contact CHIRP if they wish to provide more information.

Once our investigations are complete, we will remove all identifying data such as the name of people, ports, places etc and then present it to our Maritime Advisory Board (MAB). This is a body of maritime subject matter experts who apply their expertise and experience to provide industry context and to help identify underlying causal human factors and to make recommendations to prevent incident recurrence.

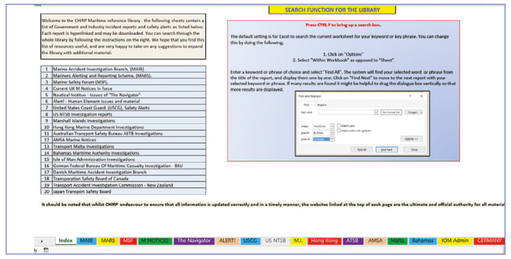
A selection of reports are considered by the MAB for publication in our FEEDBACK newsletters. These are further scrutinised for identifying information and this is removed prior to publication. The aim is to learn how an incident occurred, not to identify those concerned.

All of our published material is freely available for reproduction and use by other parties so long as they credit CHIRP as original authors.

Director (Maritime)
December 2022

Appendix III: **Our Publications**

Reference Library



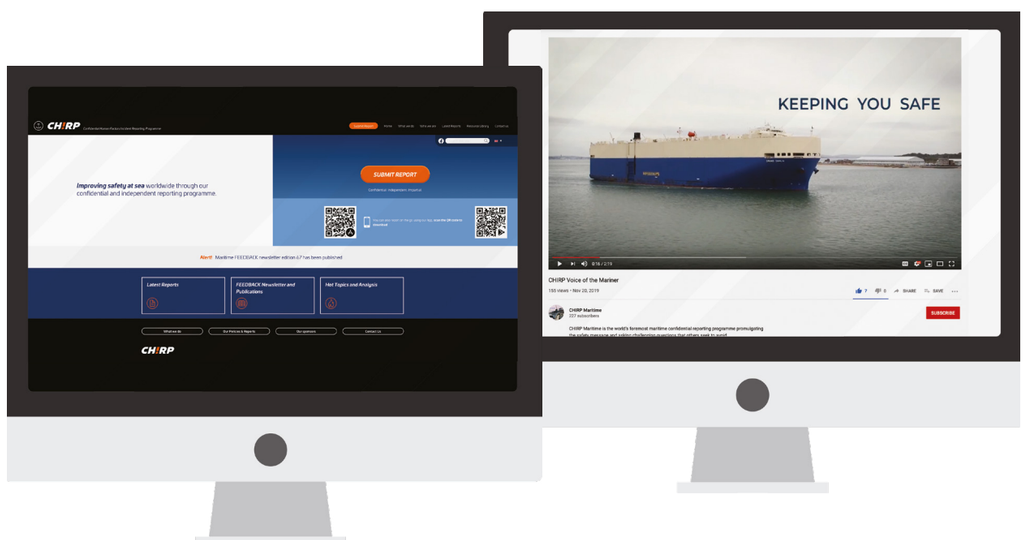
The link below will take you to the reference library page on the CHIRP website. From there you can download an Excel workbook which contains links to a comprehensive list of incident investigations, near miss reports and safety alerts issued by a selection of government maritime agencies and shipping industry sources around the world.

The library has been written in Microsoft Excel on a Windows 10 operating system – the browser used for links was Google Chrome. With these in place, all links should open automatically. It has been found that when viewing the files on an Apple Macintosh, that links to the internet tend to open correctly, but links to a specific PDF file do not open. If this is the case, then copy and paste the link into your browser – the requested file should then open.

We should emphasise that that the official source of information is the actual web sites of the Agencies included in the workbook. The links to these sites may be found at the top of each sheet of the workbook and should be consulted for the most current data.

The library is updated on a regular basis – any suggestions for further enhancements of the library will be very much welcomed.

www.chirp.co.uk/maritime/external-resources/



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Design: Phil McAllister Design Ltd | Printed in the UK by The Print Consultancy

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To submit email reports, please use: reports@chirp.co.uk

Please add as much detail as possible about the incident/safety issue, including date, time and location. Please note that CHIRP does not recommend the use of unencrypted email for reports and the preferred method of reporting should be online at www.chirp.co.uk.

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